DEVELOPING A FRAMEWORK ON GREEN ENTREPRENEURSHIP IN THE CONTEXT OF ORGANIC INDUSTRY IN NUEVA ECIJA, PHILIPPINES

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ABSTRACT

The importance of green entrepreneurship has long been a controversial topic as its features are still indistinguishable. Here, we demonstrated the development of a green entrepreneurial framework based on the entire organic industry in Nueva Ecija. Comprehensive benchmark and needs assessment of the green entrepreneurial practices using a Likert scale formatted questionnaire was a tool to develop the framework. Green entrepreneurial management practices were identified and used to determine industry gaps highlighting the roles of each industry player in the facets of business operations, marketing, financial, and sustainability. Through data triangulation, the developed framework has shown interrelationship of suppliers and consumers bound by government engagement, thereby enhancing market outcomes. Meanwhile, identified gaps were used to formulate policy recommendations to close organic industry chain blockage and promote higher income opportunities for organic food producers.

Keywords: Green Entrepreneurship, Operations, Marketing, Financial, Sustainability.

INTRODUCTION

Nation's living standards depend on its ability to produce goods and services. In essence, the higher level of goods and services production reflects higher growth potentials (Mankiw, 2020). However, evidence has shown that an increase in the production and consumption of goods and services has led to the depletion of flora and fauna (Ataman et al., 2018). In turn, the growth over the years became incompatible with the preservation of nature.

Entrepreneurship as one of the four major factors of production (Gabay et al., 2012) has been extensively accused of negative impacts on society from its business activities. Such business activities have been labeled as a "business-as-usual model". Yet, the emergence of green entrepreneurship in the late 20th century has created a growing awareness of environmental issues like the deterioration of environmental quality (Farinelli et al., 2011).

Why Green Entrepreneurship?

Features of green entrepreneurship are at present still indistinguishable because an industry within communities when taken in the context of a provincial territory is permeable. For instance, there are jurisdictions in which industry delineations are distinct, yet, not presented in a particular framework that could account as benchmarks for development purposes. These benchmarks particularly provide starting points for evaluation to determine needs, and other

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requirements to maintain conditions achieving progress (Kahan, 2013). Further, research on multidimensional concepts such as green business, society, and economy, is still limited.

Considering the environmental impact, many entrepreneurs around the world have incorporated greening strategies into their businesses. This is the same with a reconceptualization of what is about business and which method will lead to playing the game accurately in the industry. This phenomenon led to the emergence of a sustainable community through green entrepreneurship which must start from overhauling the business practices of entrepreneurs towards environmental sustainability. In the end, green entrepreneurship became a response to the challenge of achieving compatibility between economic prosperity and environmental protection (Demuth, 2014).

Assessments are a crucial element of the entire humanitarian program cycle, informing decision-making processes and response options (FAO UNIDO, 2009). This is why creativity and innovation are increasingly important especially for businesses operating in a market with multiple opportunities to differentiate goods and services (Mujuru, 2014). Thereby, it is noted that the framework on green entrepreneurship is significant in designing a program for development projects which can be done through benchmarking and needs assessment (Allen, 1990; Kahan, 2013). Benchmarking and needs assessment accounts as strategic innovation adapting organizational requirements with environmental changes such as new ideas, processes, techniques, and services, allowing entrepreneurs to recognize opportunities that could result in to increase in market share.

Sustainable consumption and production (SCP) are increasingly recognized as an effective, workable approach for businesses to improve their environmental performance Therefore, the notion of environmental responsibility within the global business community has become more prominent in business decision-making, strategic planning, and performance management than ever before. Anything that contributes to its success and expansion should now be shared urgently in the push to use our earthly resources more efficiently.

The Context of Organic Industry

The difference and the correlation between quantity and quality in agricultural production have never been more pronounced as it was with the inception of the World Trade Organization (WTO) in 1994, which was brought in by globalization, particularly global economic liberalization. Globalization has changed how and where food and farm products are produced, processed, and trade. Awareness about negative externalities generated by conventional farming is gaining momentum with consumers around the world, opting for alternatives, namely organically produced food products. Information about consumers' awareness is an essential element for farmers and marketing agencies to successfully plan production that can capture a greater market share.

Agri-food production is viewed as the country's main economic activity; it contributes to the overall creation of wealth in the country particularly in terms of Gross Domestic Product (GDP), employment, and environmental sustainability. This then suggests that both small-scale and large-scale farmers practice entrepreneurial agriculture. Besides, new growth potentials have to be activated through innovation, new business models, and strategies (Mujuru, 2014). The combination of environmental protection and the business of agriculture encourage a more sustainable community. Thus, green entrepreneurship when taken in the context of the organic industry can be a factor for development since the global organic market continues to grow worldwide.

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In terms of organic products, ITC (2011) reported that in many other countries, organic products are relatively expensive and consumers who purchase them are mainly from well-off families with high levels of education. They also include people working for large or foreign companies, managerial staff, expatriate families, and high-ranking government officials. Nevertheless, the previous study shows that awareness about the advantages of organic agriculture has not been well-considered. Reiterated that the world community is consuming organic food and it can be seen from the demand for organic products throughout the world that increase about 20% per year and the demand creates a potential market for organic products. The appearance of organic products is not as attractive as that of inorganic products. Green vegetables often seem perforated or punctured due to the bites of insects and have many spots around them. However, from time to time consumers of organic products realize that the most important thing about an organic product is its quality, freshness, and taste (Ik M & Azeesz, 2019.

In the Philippines, the promotion of Organic Agriculture faces many challenges. This includes policy gaps, lack of production support, promotion and awareness activities; fragmented and inadequate research and development, extension and capability building activities; and poor market systems. One of the main challenges in organic agriculture is to be competitive with conventional farming systems. However, the passing of the "Organic Agriculture Act of 2010" or RA 10068 paved the way for the Philippines to comprehensively promote and enhance organic food production. It includes the realization of the negative effects of conventional agriculture on the environment, land uses of the farm, health and socioeconomic conditions of the farmers, particularly the smallholder farmers. Therefore, a multi-stakeholder partnership of the government and the entire organic industry promotes sustainable consumption and production as an effective approach to improve environmental performance, and the way to its success and expansion should be shared urgently to promote the efficient use of scarce resources producing commodities at maximum satisfaction of unlimited human needs and wants (Gabay et al., 2012).

OBJECTIVES

- Provide an overview of the organic industry in Nueva Ecija.
- Determine the business practices of the organic farmer-entrepreneurs and organizations of Nueva Ecija in terms of operations, marketing, financial, and sustainability aspects.
- Determine the needs of locales considered in terms of entrepreneurial operations, marketing, financial, and sustainability aspects in Nueva Ecija.
- Develop a green entrepreneurial framework depicting the organic industry in Nueva Ecija.

METHODOLOGY

The research focused on the benchmark practices on green entrepreneurship of the organic farmer entrepreneurs and organizations in Nueva Ecija. It covered the different aspects of entrepreneurial management which concern operations, marketing, financial, and sustainability. The result of the benchmark was used as basis of framework construction that will be deemed helpful in the holistic development of the green entrepreneurial industry in Nueva Ecija.

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Locale of the Study

The locale of the study is selected rurban communities in Nueva Ecija which has been practicing organic farming. It will represent the green sector, referring to the agriculture-based industries engaging in organic crop production and processing. Areas considered in the research were only limited on the category of rurban community in Nueva Ecija and those who are recommended by the Municipal/City Agricultural Office (MAO). Rurban communities are zones which constitutes an area chiefly residential but where farming is carried on (The national organic agriculture program, 2016.

Data Collection

Primary data collection was undertaken with the use of a questionnaire made into two parts. Part I entails questions profiling the respondents' socio-demographic characteristics and industry position, and Part II was about the rurban benchmarking variables. The major variables considered for the status of green rurban entrepreneurship focused on operations, marketing, financial and sustainability aspects. The questionnaire used for the business practices is in Likert scale format which is appropriate for qualitative research such as benchmarking and needs assessment (Gibbs & O'Neill, 2012).

Sampling Design

Given a limited number of respondents, the method used was total enumeration or census. The samples were chosen from the rurban cities/municipalities in Nueva Ecija. Samples were gathered from the recommended list of organic farmer-entrepreneurs and organizations in Nueva Ecija engaging in organic crop production and processing (Hasan et al., 2019).

Data to be Collected

The variables considered for the description of facets of green entrepreneurship in Nueva Ecija focused on the main entrepreneurial aspects: operation, marketing, financial and sustainability. The entrepreneurial aspects are further specified into several industry and business variables as presented in the Figure 1.

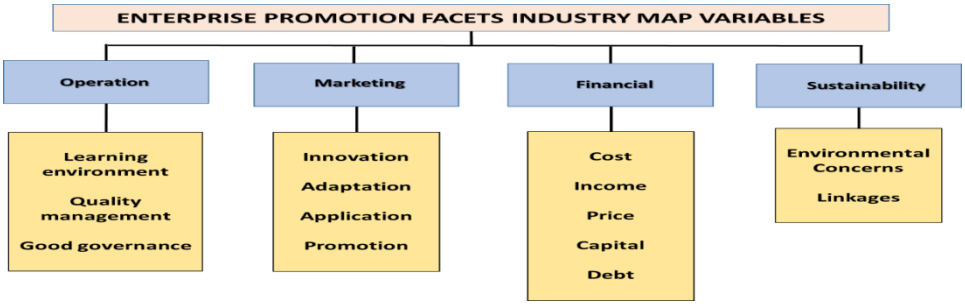

FIGURE 1
GREEN ENTREPRENEURIAL VARIABLES

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Instrumentation

Primary data gathering involved the use of Geographical Information System (GIS) for the farmer-entrepreneurs and organizations. Personal interview and Focus Group Discussion (FGD) combined with survey questionnaire were used for the identification and appraisal of the benchmark practices of the chosen key players in the green entrepreneurial industry in urban communities of Nueva Ecija.

Data Analysis

Percentages, frequency counts for quantitative evaluation and triangulation, and secondary data and comparative breakdown of inputs were used for qualitative appraisal and assessment.

THEORETICAL FRAMEWORK

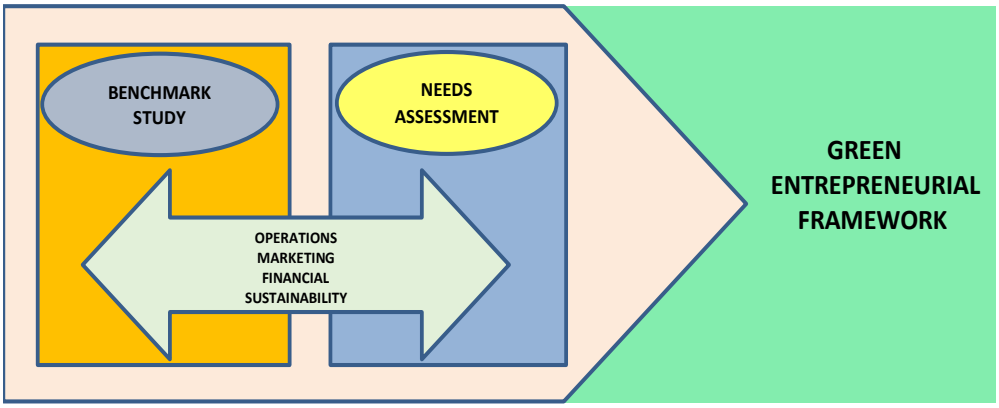

FIGURE 2
CONCEPTUAL PARADIGM OF THE STUDY

Green Entrepreneurship Framework was derived from benchmarking model based on the "tabula rasa" argument and comparative inquiry argument whereas; the needs assessment model is based on profiling and policy recommendation arguments. The conceptual framework of the study is depicted by a continuous independent study list that is interconnected by the determinants of the benchmark and needs studies in Figure 2. In the end, the outputs of the interrelated studies are formed into a framework that shows the entire organic industry in Nueva Ecija.

RESULTS AND DISCUSSION

Demographic Profile

Validation for organic practitioners is being done through verification on whether these practitioners use organic technologies such as composting, green manuring, organic foliar fertilizing, or any materials that excluded the use of any chemical fertilizer and pesticides within a period of three years (Galindez, 2012). According to Nueva Ecija Provincial Agricultural Office (PAO), there were 47 organic practitioners from the province's three districts in 2015.

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However, based on the survey and recommendations of MAO during the conduct of the study, the existing organic practitioners were summed and accounted only for 22 organic practitioners. Data implies that on average, 50% of the organic farmer – entrepreneurs in Nueva Ecija were no longer in operation. Therefore, the organic industry in Nueva Ecija is deteriorating as the numbers of interested farmers are depleting. Other things equal, this occurrence can also affect disequilibrium of supply and demand for organic products since there is an increasing demand for safety and health care.

Age

Out of 22 organic farmers, the majority (86.36%) fall under the adult category (41-65). The elderly (65 –above) comprises 9.09% and only one (4.55%) fall in the young adult category (18-40). This is an implication there is an aging population of Novo Ecijanos engaging in organic farm business as they were aware of its benefits on the environment and to their health. Aside from health concerns, price is also an issue regarding the consumption of organic products because the increasing awareness about its benefits compared to other non-organic foods are relatively expensive. However, data also indicates that the need for an advocacy campaign in creating awareness about the benefits and income opportunities of organic agriculture should be prioritized to encourage the youth to venture into such farm business and prevent agricultural land degradation (Braber, 2016).

Gender

The total population of organic farmers in Nueva Ecija comprises 54.55% male and 45.45% female. It implies that organic farming in Nueva Ecija is dominated by males. However, the gender difference does not necessarily reflect the reason why the respondents ventured into organic farming.

Civil Status

Given age differences, the majority (77.27%) or 17 out of 22 organic farmers are married. Three (13.64%) are widowed and among the organic farmers, only one (4.55%) is single and separated. The latter means that having no partner is not a hindrance to organic farming.

Educational Attainment

In general, 100% of organic farmers attained tertiary education. This supports the fact that since organic products is relatively expensive; consumers who purchase them are mainly from well-off families with a high level of education (ICT, 2011).

Position in the Organization

The organic farmers were categorized according to the position they hold in their respective organizations. The majority (27.27%) of organic farmers are officers of their respective organizations. This means that having a higher educational background qualifies them to assume managerial positions. However, there is no strong evidence that organic farmers should have at least tertiary education to assume managerial roles in their respective organizations. Further, 22.73% of the respondents serve as chairman of the organization.

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Similarly, six out of 22 (22.27%) respondents are individual owners of their organic farm business and 13.64% are members. Meanwhile, only two out 22 (9.09%) respondents serve as president. The information indicates that organic farmers in Nueva Ecija actively participate in organizations created for organic farming (Faghih et al., 2018).

Years of Operation

In terms of years in operation, 31.82% of the organic farmers in Nueva Ecija are operating for less than five years. It means that majority of the organic farm businesses are in the take-off period or have surpassed the three-year conversion period set in the Philippine National Standard (PNS) for Organic Agriculture. Meanwhile, 27.27% are operating for 16 to 20 years and 18.18% of organic farms are operating for six to 10 years. Similarly, organic farms operating for more than 20 years garnered the same percentage of 18.18% which was the longest period of organic farm operation in Nueva Ecija. Only one out of 22 (4.55%) organic farmers answered that they are in the range of 11 to 15 years of operation. The preceded information implies that the organic industry in Nueva Ecija existed even before the passing of Executive Order 481 and RA 10068 (Organic Act).

Operational Facet

Type of operation

Given that majority of the organic farmers is operating for less than five years, the data shows that 18 out of 22 (81.8%) use both manual and mechanized types of operation for their organic farms. Organic farm operations include processes prescribed in the PNS for Organic Agriculture starting from the choice of crops, and land preparation up to postharvest activities. This is in connection with the information that organic farming is an important tool for achieving green productivity and mitigates the negative impacts of conventional input-intensive agriculture. Data also implies that organic farmers' investments are dependent on the required number of machines and labour necessary for organic farming. Meanwhile, three out of 22 (13.6%) use a pure manual type of operation and only one (4.5%) use a pure mechanized type of operation. Given the available technologies in organic farming, the result shows that the type of operations for organic farming is also dependent on the accessibility of the available technologies for organic farming.

It is noted that organic farmers employ a combination of mechanized and manual types of operation. A major concern of organic farmers in the maintenance of the machine. Although they are knowledgeable in operating the machine and equipment used for farming, none of them has proper knowledge on how to troubleshoot machine errors. This problem is associated with the cost they incur which they considered as other expenses. Also, manual types of operations require comprehensive knowledge on how to efficiently produce inputs for crop production which they found limited at their end. This also adds to their total cost for it is considered as direct labor. By chance, new organic farming techniques found in the researches of various institutions may help in overcoming this problem. Thus, this can be attributed to the need of the farmers to invest in both technological and human capital undertakings of the farm business; as well as be linked with organizations/institutions providing such available technologies.

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Inputs to Production/Raw Materials

An essential need of the farmers was the purchase and production of direct materials. The inputs of the farmers include organic fertilizer and seeds which are produced by them. Although it is technically sustainable, the availability of efficient technologies remains a challenge. In the case of no production of inputs like organic fertilizer and crop seeds, they noted that suppliers are not easily accessible. This delays the operation which limits the level of their productivity and increases the cost of production (Edpan, 2017).

An additional cost driver for the farmers is the packaging. Since PNS for Organic Agriculture sets the standard for packaging organic products, organic farmers need to meticulously choose the type of packaging that should be used. This also remains a challenge for organic farmers since they do not have proper knowledge and tools on how to make their packaging. Therefore, organic farmers continuously purchase packaging and it accounts for a higher operation cost. For some of the organic farmers who do not have the packaging, they encourage consumers to provide their own (e.g. jars, baskets, sacks, and banana leaves).

Crop Seeds

Majority (40.9%) of the crop seeds are being produced by organic farmers. It means that most organic farmers do not purchase crop seeds for their plantation. On the other hand, 27.3% source crop seeds by means of purchasing and 31.82% get both of the supply from production and purchases. This implies that the need for crop seed supplier is also relevant in the operation process of organic farming, and a link between suppliers to supplier is beneficial.

Fertilizer

Generally, 68.2% of organic farmers produce their fertilizers. This revealed that organic farmers are in dire need of input used in organic fertilizer production like molasses and animal manure. In contrast, only 4.5% source fertilizer from purchases which means that majority of the organic farmers do not depend on purchasing organic fertilizer.

Seemingly, 27.27% of organic farmers also engage in both production and purchases for the source of fertilizer. These data imply that the need for the technology in organic fertilizer making must be linked to organic farmers to improve the level of efficiency and minimize supply shortage.

Packaging

Sources of raw materials for packaging were rated the same manner as crop seeds and fertilizer. The majority (50%) of organic farmers rely on purchases for their organic product packaging. It means that part of the costs incurred by the organic farmers is accounted for the purchase of packaging. Meanwhile, 18.2% of organic farmers produce their packaging. It implies that organic farmers also need to access inputs and proper technologies in doing such. On the other hand, a similar percentage (18.2%) of organic farmers uses both techniques. However, 13.6% showed no response regarding the source of packaging due to some consumers providing their containers like baskets and sacks.

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Suppliers

The following data contains the relationship of the organic farmers to their respective suppliers. Generally, 45.45% of organic farmers maintain a regular transaction with their input suppliers. In connection to the majority of farmers producing their inputs (crop seeds, organic fertilizer, and packaging), they must maintain a regular transaction with their input suppliers. Similarly, 45.45% of organic farmers answered that the regularity of suppliers did not apply to their operation. This result is attributed to situations in which organic farmers produce their input supplies. Meanwhile, 9.1% or only two of the organic farmers do not have regular suppliers (Brewer et al., 2016).

In terms of accessibility, organic farmers stated that there are situations in which suppliers are accessible whenever needed. In contrast to the majority of organic farmers who had a regular supplier, 68.18% answered that suppliers are do not easily access suppliers. This means that even though organic farmers regularly maintain transactions with their suppliers, accessibility remains a challenge. Given that not all of the organic farmers regularly transact with input suppliers, there are situations when supplies are needed to be purchased, however, limited suppliers are available causing bottlenecks on production and operation.

The maximum length of linkage of the organic farmers concerning their suppliers is 16 to 20 years from 22.7% of respondents. Subsequently, organic farmers often produce their inputs, and experiences difficulty in supplier accessibility; however, majority (40.9%) has no response to the length of linkage with their suppliers. This means that gaining knowledge about the efficiency of input sources and production will significantly help organic farmers increase productivity.

Facilities

As shown in the table 1, the majority (86.4%) of respondents provide storage facilities for their farm inputs. Second on the list with a high level of priority is the harvest (81.8%), followed by machine and equipment (72.7%), and finished product (77.3%). Organic farming follows strict policies/standards for the maintenance of farm inputs and produce. This is because organic crop production precisely required storage facilities. It is in connection with a standard that organic products must never be mixed with non-organic products (PNS, 2010). However, the monitoring system, if this is being widely practiced, is not yet cited in most literature. Therefore, the need for monitoring and control regarding this matter must be taken into consideration (Porciuncula et al., 2014).

Table 1
OPERATIONS MANAGEMENT PRACTICES OF ORGANIC FARMERS

Item	Mean	SD	Descriptive Rating
Develops a production/operation plan	3.71	0.96	Highly Practiced
Monitors the production/operations plan	3.71	0.96	Highly Practiced
Revises the production ad operations plan when needed	3.71	0.96	Highly Practiced
Inputs are Highly Practiced available when needed	4.00	0.00	Highly Practiced
Considers the accessibility of the supplier	4.00	0.00	Highly Practiced
Buys inputs/raw materials in big quantities	3.55	1.15	Highly Practiced
There are choices on brands of inputs	3.40	1.31	Highly Practiced
Screens the suppliers	3.68	0.75	Highly Practiced
Considers the brand of inputs	3.50	1.10	Highly Practiced
Considers the price of inputs	3.80	0.89	Highly Practiced

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Does not encounter problems in price of inputs	3.60	0.99	Highly Practiced
Machines/equipment is operating effectively	3.50	1.30	Highly Practiced
Follows preventive maintenance schedules for facilities and equipment	3.67	1.06	Highly Practiced
Conducts training to improve the efficiency and effectiveness of the employees in the production (specify training)	3.67	0.80	Highly Practiced
Has a record system on operational costs	3.76	0.77	Highly Practiced
Monitors production yields and operational costs (computer or record book)	3.84	0.69	Highly Practiced
Compares production yields/operational costs with the previous years	4.00	0.00	Highly Practiced
Has a record system of production quality	3.85	0.67	Highly Practiced
Monitors production quality	4.00	0.00	Highly Practiced
Conducts research on new production technology to improve the operations	4.00	0.00	Highly Practiced
Average Mean	**3.75**		**Highly Practiced**

1.00 - 1.74, Not Practiced; 1.75 - 2.49, Slightly Practiced;
2.50 - 3.24, Moderately Practiced; 3.25 - 4.00, Highly Practiced

It is noted that the majority of the respondents used a combination of a manual and mechanized type of operations. Generally, as shown in the table, the overall rating of the common operations management practices has a descriptive rating of "Highly Practiced" (X=3.75). This indicates that organic farmers in Nueva Ecija strictly follow a necessary operational process for their farm business. This is why organic farmers research new production technology (X=4.00) for the development, monitoring, and revision of their farm operational plans (X=3.71). Since inputs are available when needed (X=4.00) the result shows that organic farmers do not select input supplies based on brands (X=3.40).

Given some constraints in production and operation, organizations frequently face limited availability of essential inputs, such as skilled labor, raw materials, energy, specialized machinery, and warehouse (Hirschey, 1996). It is surprising that for the farms' business operations, the result shows that all the common operation management practices were "Highly Practiced". This means that organic farmers in Nueva Ecija place the importance of proper planning and execution of the processes involved in organic farming. Since this aspect was highly practiced by the organic farmers, it is suggested that these operational activities must be maintained and take into consideration the number of investment funds available for continuous operation (Hirschey, 1996). Besides, even farming necessitates the use of computers for records management; organic farmers' specific operational plan is only written in their notebooks/diaries with their farm plan and budget. Further, organic farmers decided to take the traditional way of documentation the reason that using computers increases their expenses in the form of utilities and other administrative costs. In summary, the organic industry in Nueva Ecija remains traditional in the aspect of operations.

It is noted that one of the highly practiced operation activities, is the conduct of research on new production technologies to improve the operations. It also targets the development of an operational plan which in turn creates a connection on all the common operational practices. In other words, the results of innovation could be considered in the new business model (including the architecture of new value chain), new markets (through creating new markets or reshaping the existing market), and creating added value for customers and company. Although these practices should be maintained, they still created a hindrance when the assistance to get these available technologies is out of reach.

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Organic farmer-entrepreneurs in Nueva Ecija are engaged in comprehensively improving their manner of operations. However, the possibility of its proper execution depends on the support of proper authorities to create access to the available technologies. Further, one of the main challenges in organic farming is to be competitive with conventional farming systems. Since the goal of RA 10068 is to develop and promote organic agriculture, the ease in organic food production can be used as a promotional tool to convert conventional farmers to venture into organic farming (Gevrenova, 2015).

Marketing Facet

Promotion helps create awareness about the benefits of organic food production and distribution. However, an extensive advertising campaign accounts for a higher cost. Therefore, marketing management practices should be weighed according to the capacity of the business to support such activities. To reach a target market, the marketer uses three kinds of marketing channels. Communication channels deliver and receive messages from target buyers and include newspapers, magazines, radio, television, mail, telephone, smartphone, billboards, posters, and the Internet (Kotler & Kellaer, 2011).

Buyers

Seventy-two percent (72%) of the consumers of organically grown products come from the sellers' neighbourhood. Meanwhile, 63.6% of the organic farmers sell their products to neighbouring towns and cities. This means that there is only a single channel of distribution when it comes to organic products in Nueva Ecija. This is because the channel of distribution only includes direct demand and supply wherein there is a direct exchange of goods from farmer to the customer or from customer to the farmer. Meanwhile, indirect consumers like cooperatives (36.4%) and traders (31.8%) serve as few consumers who patronized organic products. This revealed that the participation of middlemen is limited when it comes to the distribution of organic products. Further, this result was supported by the findings shown in Table 2 wherein the presence of middlemen is slightly practiced. This implies that the market for organic products in Nueva Ecija is not yet well-established due to the absence of different distribution channels. This can be solved by the fact better than the traditional view, finding new environments in the market using the process of value creation through innovation increases demand.

Advertisement

Generally, 72.7% of the respondents used word of mouth to advertise their products. Since the majority of the organic farmers only sell their products to their neighbourhood and neighbouring towns, advertising does not necessitate a high level of investment. Second in the rank (54.5%) is the use of social media. Organic farmers utilize the use of social media as a practical way to advertise products so that it reaches a large audience with no necessary expenses. Next is advertising by print ads/posters (22.7%), radio, TV advertisement (13.6%) and the least (4.5%) type of advertisement being used is through newspapers. Although organic farmers only advertise in local TV and radio stations as well as in local newspapers, the result revealed that many organic farmers do not invest in such type of advertisement for it is more costly to promote their products (Sancho, 2010).

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Product Delivery

As shown in Table 2, the majority (59.1%) of the goods produced by organic farmers are delivered to the customers and 54.5% are picked up. It means that the mode of product distribution is logistically efficient since there is only a single distribution channel that includes the neighbourhood and neighbouring towns/cities.

The result also implies that the delivery may vary on the buyer-seller (market) agreement wherein the mode of goods transfer depends on the instance that is both convenient for the buyers and sellers (Philippine Statistics Authority, 2017).

Delivery Duration

The fastest duration in which products are delivered to consumers is within one day. It also garnered the highest percentage (45.45%) among the period comparisons. This means that organic products are normally delivered efficiently which would preserve the quality of organic products. On the other hand, 13.64% indicates that goods are delivered within four to seven days, and only one (4.55%) delivered the products to the buyer within two to three days. Some organic farmers deliver their products occasionally in Metro Manila catering Sunday markets. This means that the delivery of the products may also vary on the geographical location and the mode of transportation of the buyers and sellers; further the existence of demand in a particular location.

Table 2
MARKETING MANAGEMENT PRACTICES

Item	Mean	SD	Descriptive Rating
Develops a marketing plan.	2.80	1.61	Moderately Practiced
Monitors the marketing plan.	2.80	1.61	Moderately Practiced
Revises the marketing plan when needed.	2.74	1.63	Moderately Practiced
Improves the products and services to meet consumers' demand.	3.16	1.38	Moderately Practiced
Sets the price based on what is prevailing in the market.	3.20	1.32	Moderately Practiced
Sets the price based on cost.	3.40	1.27	Highly Practiced
Understands the external factors that affect the market.	3.44	1.34	Moderately Practiced
Seeks help of middlemen.	1.95	1.91	Slightly Practiced
Conducts research to determine the needs of customers.	3.29	1.38	Moderately Practiced
Asks for feedback from customers and other stakeholders.	3.19	1.54	Moderately Practiced
Design packaging for customer's convenience.	3.33	1.43	Highly Practiced
Explore new market opportunities.	3.52	1.25	Highly Practiced
Average Mean	**3.07**		**Moderately Practiced**

1.00 - 1.74, Not Practiced; 1.75 - 2.49, Slightly Practiced;
2.50 - 3.24, Moderately Practiced; 3.25 - 4.00, Highly Practiced

Marketing Management Practices

As shown in the table, the assessment of the organic farmers regarding the common marketing management practices has an average mean of 3.07. It indicates that common marketing management practices are "Moderately Practiced" by the organic farmers. Also, among the provided marketing management practices, exploring new market opportunities landed at the top priority of the organic farmers having a descriptive rating of "Highly Practiced" (X=3.52). It means that organic farmers rely on the concept of research and development as a

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strategy for their farm business. This finding also supports the reason why organic farmers "Moderately Practiced" the conduct of researches to determine the needs of their customers (X=3.29) and understands the external factors affecting the market (X=3.44). As evidence, the Nueva Ecija Development Exchange (NEDEX), an organization for organic farming offer their products through catering services that only serves 100% organic dishes. However, the type of research they normally conduct is informal due to the reason that organic farmers do not have enough technical knowledge on proper marketing research. Although organic farmers "Highly Practiced" (X=3.52) exploring new market opportunities, it is indicated that the development and monitoring of marketing plan are only "Moderately Practiced" (X=2.80) therefore not at the top of their priority. Further, seeking the help of middlemen (X=1.95) is "Slightly Practiced" due to the initial finding that the majority of organic farmers only sell their products to their neighbours and neighbouring towns/cities.

Quantity demanded depends on the willingness and ability of buyers to pay (Mankiw, 2020). The result of the focus group discussion (FGD) indicated that there is a relatively high demand for organic products in Nueva Ecija due to the environmental and health concerns of its constituents. Therefore, the search for a healthier meal remains thorough for those people who preserve the longevity of life. This phenomenon indicates that the demand for organic food must be matched with the level of available supply. However, this situation provided a gap that makes the organic food production and distribution imbalance. The gap arose when organic farmers in Nueva Ecija discovered that if organic food will be hardly marketed to the community, the level of supply will not support the level of demand. Therefore, the marketing aspect should be weighed accordingly not only for the advertisement of the organic food but to the advocacy of converting conventional farmers to venture into organic farming. This would be possible if the market opportunities will be opened through linkages to institutional buyers like hospitals, hotels, and restaurants. Further, the creation of a separate market for organic products should also be considered (Franks & Collis, 2003). The fulfillment of this need would create higher market potentials for organic farmers thereby increasing the level of their income. This is related to the fact that awareness about negative externalities generated by conventional farming is gaining momentum with consumers around the world, opting for alternatively, namely organically produced food products. Moreover, information about the consumers' awareness is an essential element for food farmers and marketing agencies to successfully plan production that can capture a greater market share.

Another consideration in this aspect is the price of organic food. It is noted that organic farmers follow a cost-plus method for pricing their product and some farmers put prices based on their competition. This indicates that the reason for higher prices for organic products is not only the health benefits of organic food but also dependent on the level of available supply. For example, when demand exceeds supply, it creates shortage; shortages result in higher prices due to many buyers chasing too few goods and according to the law of demand, as price increases, quantity demanded falls (Mankiw, 2020). This continues to cycle as consumers and producers are matched with the level of their ability and willingness to purchase and sell goods. Therefore, the increase of the level of suppliers increases the level of supply matching the demand of the local consumers of organic food. This could also mean that the comprehensive promotion and encouragement of conventional farmers to venture into organic farming results in better income opportunities (Durkin, 2016). For instance, Central Luzon Organic Market (CLOM) has launched its market at San Fernando City, Pampanga, not only to promote and introduce to consumers the use of organic and natural products, and harmful pesticides and offensive

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preservatives but aims to help smaller entrepreneurs and organic farmers from Central Luzon create a market for their products and gain sales from organic farming (Santos, 2013).

Financial Facet

Gross income per year

The majority (31.8%) of organic farmers have a recorded range of income from 250,001 above. This indicates that an organic farmer in Nueva Ecija approximately earns more than Php 20,000 per month or Php 125,000 every cropping period. This also implies that most organic farmers in Nueva Ecija are above the poverty line since their standard of living is higher than the United Nations Development Program (UNDP) measure of absolute poverty or people living with less than $1- $2 per day. Meanwhile the second in the rank has a 22.7% rating with 50,001 to 100,000 as gross income. This was followed by 18.2% having an average income of 200,001 to 250,000. The lowest (13.6%) has an income bracket of 50,000 and below. However, 13.6% has no response which implies that having no formal record of financial activities results in inaccurate tracking of income. An organic farmers' income could increase over the years since organic farming does not require a high level of capital. This is based on the information that the majority of organic farmers mostly producing their farm inputs (refer to Table 1).

Source of Capital

Most (95.5%) of organic farmers finance their farm business using their personal investment. It suggests that the majority of organic farmers access financial needs from their savings or in the consolidated income of the family.

Meanwhile, 18.2% came from government grants and only two (9.1%) of the respondents depend on loans. Since organic farmers do not have established financial data, having no track record remains a challenge in availing loans. The result also shows that farmers get their finances either on the combination of personal investment and loans, and personal investments and government grants.

Source of Credit

As shown in the table, 9.1% of organic farmers only access credit in banks. This is because government banks provide reasonable terms and conditions to farmers as support to the promotion of organic agriculture. It also implies that the majority of organic farmers do not rely on credits to finance their organic farm businesses. Further, lack of collateral, having no track record, and no financial statements are also the reasons why organic farmers do not usually avail themselves credits. According to the respondents, organic farming does not require a high level of capital requirement due to the reason that most of the inputs are produced or easily accessible in the environment like green materials (e.g. leaves, rice straw, etc.).

Terms of Credit

The respondents were given options on the usual terms of credit they acquire from short term (below one year) to long term (more than five years). The result indicates that (9.1%) of organic farmers acquired long-term credits.

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Listing of Costs/expenses

The majority (45.5%) of organic farmers regularly maintain a listing of their costs/expenses. Meanwhile, (40.9%) of them do not maintain a listing of their costs/expenses. It implies that the financial information system is not well established. As a result, organic farmers lack financial statements and track records. Meanwhile, (13.6%) of organic farmers did not respond due to the irregularity of the listing. Some answered that sometimes they list, sometimes not. This means that they practice poor accounting methods that give them difficulties in determining accurate financial performance and condition of the business.

Cost Recognition

In general, 54.5% of the respondents consider cost when the item was used. It implies that the majority of them employ the accrual basis of accounting (recognized expense when incurred), and 45.5% recognize cost when they already paid for the item which means that b they employ the cash basis of accounting. Further, it implies that they recognize transactions based on cash flows.

For the cost incurred, the majority (68.2%) of organic farmers account that most of the cost incurred comes from labour. Since most organic farmers produce their farm inputs, a higher amount of labour is required. It also implies that the operation in organic farming specifically in input preparation is labour-intensive. With similar percentage, input purchases and utilities (54.5%) ranked second in the cost incurred by organic farmers. This suggests that aside from input production the cost incurred by farmers also accounts in purchases of other raw materials and utilities employed for the farm operations. On the other hand, legal fees (45.5%) also contribute significantly to the farms' cost. It means that organic farmers perform their responsibility abiding by the regulations set by the government in the form of business license and registration, as well as land taxes. Meanwhile, interest (18.2%), rent (9.1%), and advertising (4.5%) were considered least in the cost incurred by the farmers (Festejo-Abeleda, 2016).

Account Separation

Sixty-three (63.6) percent of the respondents answered that they maintain a separate account for their farm business however 36.4% do not. That means the majority of them apply the entity concept of accounting which means that the transactions of the business are accounted for separately from the personal transaction of the owner (Table 3).

Table 3
FINANCIAL MANAGEMENT PRACTICES

Item	Mean	SD	Descriptive Rating
Prepares cash budget.	3.94	0.25	Highly Practiced
Monitors cash budget and revises it when needed.	4.00	0.00	Highly Practiced
Implements internal control to minimize costs.	4.00	0.00	Highly Practiced
Maintains sufficient cash to meet the needs of operations.	4.00	0.00	Highly Practiced
Deposits money in the bank.	3.94	0.25	Highly Practiced
Sets aside cash for future investment.	3.82	0.53	Highly Practiced
Invests in profitable activities.	4.00	0.00	Highly Practiced
Adopts strict credit policy.	2.59	1.97	Moderately Practiced
Implements internal control on cash.	3.75	1.00	Highly Practiced

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There is proper authorization for purchase.	4.00	0.00	Highly Practiced
Conducts periodic inventory count.	3.94	0.25	Highly Practiced
Evaluates investment projects before making investment decisions.	3.94	0.24	Highly Practiced
Prepares financial statements at least annually.	3.53	1.12	Highly Practiced
Compares current financial performance with the previous years.	4.00	0.00	Highly Practiced
Performs financial analysis using ratios.	3.59	0.94	Highly Practiced
Average Mean	3.80		Highly Practiced

1.00 - 1.74, Not Practiced; 1.75 - 2.49, Slightly Practiced;
2.50 - 3.24, Moderately Practiced; 3.25 - 4.00, Highly Practiced

Financial Management Practices

The result shows that organic farmers "Highly Practiced" (X=3.80) basic financial management techniques. It is indicated that organic farmers "Highly Practiced" financial analysis using financial ratios. Meanwhile, organic farmers "Highly Practiced" the comparison of current financial performance with the previous years (x=4.00) and evaluates investment projects before making investment decisions (X=3.94). These practices are made easier because the organic farmers "Highly Practiced" the preparation of financial statements at least annually (X=3.53). Yet, their practice is only based on their perception of how business transactions are accounted for.

Findings also show that organic farmers "Highly Practiced" the preparation of cash budget (X=3.94), monitor cash budget and revises it when needed (X=4.00), and implements internal control to minimize costs (X=4.00). This means that they give high importance to liquidity because cash is one of their working capital. Due to the nature of cash, organic farmers give importance to implementing strict internal control to avoid fraud and theft. Meanwhile, lowest on the rank is the adoption of credit policy (X=2.59) which was "Moderately Practiced" by the organic farmers. This was supported by the fact that the majority do not extend credit to their customers which means that they sell products in terms of cash on a delivery basis.

Sustainability Facet

The poorest developing countries will be hit earliest and hardest by climate change, even though they have contributed little to causing the problem (N. Stern, 2006). The need for sustainable production and consumption must be taken into account through awareness creation. This alone underscores the importance of the seventh Millennium Development Goals (post-Sustainable Development Goals (SDG)): to "ensure environmental also argued that since the cultivation of marginal land is largely the domain of lower-income groups, the losses are suffered by those who least can afford them. Similarly, the inaccessibility of sanitation and clean water mainly affects the poor and is believed to be responsible for a preponderance of disease worldwide. Because the solutions to these and many other problems involve enhancing the productivity of resources and improving living conditions among the poor and achieving environmentally sustainable growth synonymous with economic development. The ultimate measure of the sustainability aspect of the research is in the combination of all entrepreneurial undertakings (operations, marketing, financial) practiced by the organic farmers which are attributed to organic food production. Since the study was made in the context of organic agriculture, Philippine National Standard (PNS) for Organic Agriculture was considered to support the data. For instance, the researcher used the standard for minimum requirements for

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crop production to measure the awareness of organic farmers in the proper preparation of land and other inputs for organic crop production. Further, the minimum requirements for processed organic products were also considered.

The majority of organic farmers are fully aware of the standards for organic agriculture specifically in crop production. The result has generated a descriptive rating of "Highly Practiced" (X=3.82) which means that organic farmers in Nueva Ecija strictly follow the prescribed standard for organic crop production.

Since the respondents of the study are only limited to the farms which were identified by the municipal/city agricultural office, the result shows that organic farmers in Nueva Ecija are highly knowledgeable about the RA 10068 and the Philippine National Standard for Organic Agriculture

The majority of organic farmers are fully aware of the minimum standard for processed organic products. The result indicated a descriptive rating of "Highly Practiced" (X=3.82) which means that organic farmers strictly follow the proper standard for postharvest operations up to product labelling

All mentioned standard supports the fulfilment of RA 10068 which is an act providing for the development and promotion of organic agriculture in the Philippines and other purposes. It means that fulfilment of all standard stated in the PNS for Organic Agriculture also supports sustainability as it contributes cumulatively in the condition and enrichment of the soil, increase farm productivity, reducing pollution and destruction of the environment. This would also prevent the depletion of natural resources, further protect the health of farmers, consumers, and the general public, and save on imported farm inputs. Republic Act 10068 also stated that towards the end, a comprehensive program for the promotion of community-based organic agriculture systems which include, among others, farmer-produced purely organic fertilizers such as compost, pesticides, and other farm inputs, together with a nationwide educational and promotional campaign for their use and processing, as well as the adoption of the organic agricultural system as a viable alternative shall be undertaken.

Green Entrepreneurial Framework

Based on the indicated findings, researchers were able to create a simple framework depicting the economic activities involved in Nueva Ecija Organic Industry. As shown in the figure 3, the chain of supply and demand is from left to right. Industry actors are cast of farmers on the supply side, government engagement on framework linkage, and organic food consumers on the demand side. These industry actors are interrelated based on their functions represented as follows:

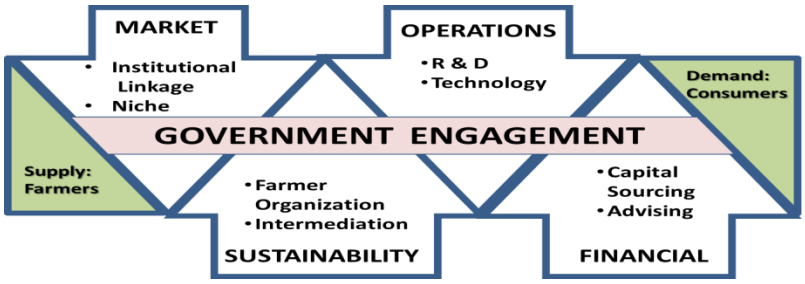

FIGURE 3

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GREEN ENTREPRENEURSHIP FRAMEWORK OF ORGANIC INDUSTRY IN NUEVA ECIJA

Supply Side

Organic farmers manage the resources based on the concept of green entrepreneurship. Using its aspects in finance, operations, marketing, and sustainability, it helps farmers produce organic products with higher volume at low cost. Farmers stimulate supply by employing organic farming technologies through research and development. Supply creation also involves the management of capital for operational activities such as the production and marketing of organic products. Further, organic farmers enhance the use of organic farming technologies including land preparation and raw material preparation to promote environmental sustainability. Through second-party monitoring performed by organic farmer organizations and MAO, farmers secure the authenticity of the organic products ensuring their quality before, during, and aftermarket distribution.

Government Engagement

The government encourages market activities by linking financial intermediaries to support the financial needs of organic farmers and create better access to capital. Further, the link to matured technologies coming from government research and development aid the organic farmers in improving operations and production efficiency. The government also reassures the compliance on PNS for Organic Agriculture through intermediation and farmer organization to safeguard a second party monitoring, and maintain an authentic organic market.

Demand side

The entire organic products produced by organic farmers are further linked to markets particularly to individual consumers and institutions. These consumers are identified as organic product advocates, aiming for a healthy lifestyle. They are linked to the organic market by a direct supplier to buyer arrangement and through the linkage of government and main organic product suppliers.

The interrelationship of the government with suppliers and buyers in the organic industry promotes strategic innovation management. The identification of benchmark practices and needs has shown gaps in the chain of activities in the organic industry. Further, gap identification among industries, if supported by innovation will lead to a higher level of profit; and creating a new market environment for the organic industry would alleviate the value for customers with reduction of costs.

CONCLUSIONS AND RECOMMENDATIONS

In the light of the preceded findings, the following conclusions were drawn:

Green rurban entrepreneurship in Nueva Ecija in the context of organic farming has great market potential due to the high level of demand matching the low level of supply. Therefore, the link creation between supply and demand of organic products would promote income opportunities encouraging conventional farmers to switch to organic farming.

The business practices (operations, marketing, financial, sustainability) of green entrepreneurs in Nueva Ecija were old and traditional practices that result in inefficiencies in

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creating market opportunities. Therefore, proper technologies that can reduce production inefficiencies must be introduced to organic farmers.

Benchmarking was a useful tool in determining the business practices of organic farmers in Nueva Ecija as it revealed several needs and gaps which necessitate linkage through various institutions.

Several recommendations are provided to enrich the organic industry in Nueva Ecija.

Market opportunities should be tapped through the linkage of organic products to institutional buyers like hospitals, schools, hotels, and restaurants. Further, create a separate marketplace for organic products.

A case study should be conducted to further assess the business models appropriate for organic farming.

Extension activities by concerned institutions should be conducted to cater to the needs of organic farmers in adopting new organic farming technologies and proper business management courses.

Ultimately, extensive promotion about income opportunities in organic farming should be conducted.

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