



## Environmental Science and Sustainable Development

DOI: 10.21625/essd.v2i2.447

# Smallholder Organic Farming: An Entrepreneurial Strategy in Harmony with Nature

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### Abstract

The paper examines the relationship between smallholder organic farming and entrepreneurship taking into account the environmental conservation approach of organic farming and the economic enhancement features of entrepreneurship. Furthermore, it intends to determine, through qualitative analysis using case studies, how smallholder organic farming can be planned, and the competencies needed by an organic farmer when venturing into an organic farm enterprise.

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### Keywords

organic farming; entrepreneurship; environmental conservation; smallholder organic farming; farmer entrepreneur; organic agriculture

## 1. Introduction

Organic agriculture and entrepreneurship are two concepts with distinctive characteristics but are interrelated (Larsson, 2012; Lynggaard, 2006; Wolf, Smit, & Lauwere, 2004; Rahmawati & Triyono, 2016). Organic farming is centered toward sustainable production and management of the farm while contributing to food security and biodiversity conservation. Entrepreneurship, on the other hand, is a more complex and risk-prone undertaking that requires not only the capacity and capability of an individual, but most of all the entrepreneurial spirit needed to face the challenges of the enterprise development process.

Literature identified marketing as one of the challenges faced by organic farmers. The conventional products are usually cheaper than the organically produced commodities. Convenience is another factor since most of non-organic produce abounds in supermarkets. In local circumstances, the identified challenges are seen as motivators for some capable organic producers to group themselves, together with some supporters and advocates to embark into a marketing scheme that they termed as “subscription scheme” to ensure a captured market for their produce. Some of them who possess entrepreneurial capabilities even set up food establishments not just as an alternative market but also as a source of additional income. Other organic farmers group themselves together to attract support from their local government units or from concerned government agencies for technical and marketing

assistance.

### **1.1. Organic Farming and Nature**

The HRDA— the Organic Organization (1998) indicated that “organic farming works in harmony with nature rather than against it. . . [utilizing] techniques to achieve good crop yields without harming the natural environment or the people who live and work in it.” Organic farming is “rooted from the traditional agriculture systems wherein the cultural and biological evolution was anchored on the interaction of traditional and indigenous farmers with the environment, without utilizing inputs, capital or modern scientific knowledge, but only intensive experiential knowledge of how natural resources are made productive to ensure productivity through the management of agrobiodiversity in the form of diversified agricultural systems” (Maghirang, De La Cruz, & Villareal, 2011). The emerging efforts in organic farming now combines the traditional methods and modern scientific knowledge of farming to create balance between nature and farming.

For more than three decades, the farmers in the Philippines have been practicing a chemical-based agricultural production strategy (Mendoza, 2008). According to Mendoza (2008), the “crop production strategies adopted by farmers involved the extensive use of fertilizers, pesticides and growth regulators since there are only few practical and feasible alternatives to boost crop yield. He added that even the university-based research identified the agricultural chemicals to include synthetic chemical fertilizers and pesticides as effective means to generate the highest crop yields.”

Farming becomes a family enterprise or business, especially in the rural areas where agriculture serves as the driver of the local economy. The farm is a means to realize profits with farmers as the entrepreneurs.

### **1.2. Smallholder Organic Farming**

Organic farming becomes essential to rural communities and smallholder farmers that do not have financial resources to access expensive synthetic pesticides and inorganic fertilizers. The smallholder farmers recognized organic farming as a cost-efficient means of crop and animal production that would address food insecurity and alleviate poverty given the continuous and rapid growth in the demand for organic produce. Smallholder organic farming becomes highly relevant to income generation if farmers become market-oriented and transform themselves into innovative and forward-looking entrepreneurs. Kahan, (2013) stated that many small-scale farmers possess the qualities of an entrepreneur who “look for better ways to organize their farms; try new crops and cultivars, better animals, and alternative technologies to increase productivity; diversify production; reduce risk – and to increase profits; . . . [as well as] take calculated risks to open or create new markets for their products.”

### **1.3. Legal Basis of Organic Farming in the Philippines**

The passage of the Organic Agriculture Act of 2010 (Republic Act 10068 or RA 10068) has greatly influenced the development of organic agriculture in the Philippines. As defined by the law, organic agriculture includes all agricultural systems that promote the ecologically sound, socially acceptable, economically viable and technically feasible production of food and fibers. It covers soil fertility management, varietal breeding and selection under chemical-free conditions, and the use of biotechnology and other cultural practices. It also excludes the use of genetically modified organisms (GMOs).

RA 10068 aims to promote, propagate, develop further and implement the practice of organic agriculture in the Philippines to cumulatively condition and enrich the fertility of the soil, increase farm productivity, reduce pollution and destruction of the environment, prevent the depletion of natural resources, further protect the health of farmers, consumers, and the public, and save on imported farm inputs. The law establishes 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 adoption of an organic agriculture system as a viable alternative.

The law also encompasses the establishment of the National Organic Agricultural Program (NOAP), protection of the environment, accreditation, registration, labeling and certification of organic products, and provisions of incentives to adopters of organic agriculture. The NOAP covers the preparation of strategic plans to promote, commercialize and cultivate through organic farming methods in the Philippines, conduct research and technology upgrading, as well as capacity building for farmers and consumer education. Environmental protection includes the generation of raw materials from industrial waste and community garbage to produce organic fertilizers and other farm inputs. An entity will be designated to handle accreditation, registration, labeling and certification of organic products. Farmers are also entitled to receive incentives and cash reward when identified as one of the best organic farm in the country. The pure organic agriculture farmer/producer are also accorded with income tax holiday.

## **2. Methods**

### **2.1. Data Gathering**

Two types of data were gathered for the case studies to include the primary and secondary data. The gathering of primary data focused on key informant interview (KII) method which covers an in-depth interview with persons knowledgeable about organic farming and entrepreneurship and familiar with the local situation. The KII covered the interview of three (3) individuals engaged in organic farming and entrepreneurship. The respondents were selected based on the following criteria: a) number of years engaged in organic farming; b) technical knowledge in organic farming principles, approaches and methods; and c) know how in organic farming enterprise planning, development operation and business management. An open-ended interview guide was developed for the KII.

The interview with an organic farm owner cum worker in the landlocked Province of Ifugao in the Cordillera Administrative Region of the Philippines identified the motivating factors in organic farming, the challenges and experiences encountered in the organic production process, perceptions on organic farming and its contribution to food security as well as the conservation of the environment, and the necessary formal training in organic farming and management. An organic farmer cum entrepreneur from the Province of Laguna in the CALABARZON (Calamba, Laguna, Batangas, Rizal, & Quezon) Region was also interviewed to determine how the idea of engaging in smallholder organic farming (vegetables, fruit trees and indigenous crops production, among others) started, the history of the enterprise from start-up to where it is today, and the technical background in organic farming and its management. A farm worker cum farm supervisor from the same province and region was also interviewed to determine the economic aspect of smallholder organic farming, the personal motivation as well as the benefits of working in an organic farm.

Actual visits to the smallholder organic farms were also conducted to observe farm operations and validate the results of the interviews with the chosen respondents. A participant observation approach enabled the researcher to observe things that occurred in the farm/enterprise over a given period of time.

The secondary data gathering consisted of the review of related literature to include print and online review of journal articles, books, and reports on organic farming and its relationship with entrepreneurship.

### **2.2. Data Analysis**

The information gathered from the primary data gathering were analyzed qualitatively. Qualitative data analysis involved the examination, tabulation, and interpretation of evidences that were investigated in the KII.

### **3. Results and Discussions**

The section below discusses the results of the interviews made with the respondents. Furthermore, the analysis of the findings establishes the relationship between smallholder organic agriculture and entrepreneurship based on the perception of the respondents and extensive review of local and foreign related studies.

#### **3.1. The Relationship of Smallholder Organic Farming with Entrepreneurship**

Traditionally, the needed skills of organic farmers are centered into production, operational management, sustainable cultivation and rural development. They focused more on the quality of the produce to command a favorable market value and the importance of environmental protection. But today, the changes in the marketing environment requires smallholder organic farmers to enhance their skills in marketing, business management, networking and most recently, in identifying new business opportunities through social media. Thus, aside from production skills, the farmers nowadays need entrepreneurial skills coupled with a little know-how in social media advertising, selling and networking. These are supported by the testimonies of the respondents from the three (3) case studies taking into consideration their perceptions on smallholder organic farming as elaborated in the succeeding sections. The testimonies are focused on sustainable agriculture, specifically sustainable farming.

##### **3.1.1. Perceptions of an Organic Farmer Cum Farm Owner**

Mr. Villafuerte Camat Jr. of Lamut Integrated Organic Farm in Ifugao Province worked before as a welder in the Republic of China, Taiwan. He chose to engage in organic farming even if he would earn less from this endeavor than as a welder or conventional farmer. Mr. Camat cited passion, love of nature, awareness of the negative impacts of conventional farming on the environment, formal training undertaken on organic farming with the Philippines Department of Agriculture (DA), and the contribution of his education being a second-year college in an agriculture course in Ifugao State University (IFSU), as his motivating factors. Farming has been a tradition and culture for the Camat family. When his father tasked him to manage their farm, he realized the responsibility that it was an opportune time for him to carry on the tradition.

Mr. Camat is a member of the Lamut Organic Practitioners Association. The association receives support from the Philippine DA in the form of training, machineries and seeds for organic farm production. The members of the association have secured a space at the public market, which is provided by the LGU during designated market days. The university is considered as a captured market for Mr. Camat's organic swine.

The following presents the sustainable production approaches and processes being practiced in the farm of the key informant:

##### **3.1.1.1. Adopt Crop Rotation in the Farm**

According to Mohler and Johnson (2009), "crop rotation is a critical feature of all organic cropping systems..." Crop rotation is defined by Reza (2016) as a "system of designing how to cycle a parcel of land through various crops, and reducing the reliance on chemical fertilizers, pesticides and herbicides. It is how successful farmers nurtured their land over generations, and remains vitally important for farmers today wanting to nourish their local environment whilst growing good, healthy food." This is a cultural practice in agriculture where different crops are cultivated in a given parcel of land for a period of time. According to Reza (2016), a carefully designed crop rotation scheme sustains soil nutrients, improves soil fertility and structure, enhances presence of soil organic matter, controls pest populations and diseases, deters growth of weeds, maintains healthy soil, controls soil erosion, improves biodiversity, and reduces commercial risk, among others.

### 3.1.1.2. Practice Resource Use Within the Capacity and Resilience of the Farm

This cultural practice allows the field to rest for a season by planting a crop (in this case mung bean) and cultivates the soil again without harvesting the crop. The crop rots in the field to revitalize the soils and accumulate the nutrients in the form of nitrogen fixing bacteria.

### 3.1.1.3. Prepare Organic Feeds Formulation Using the Leaves of Indigenous Plants and Recycled Peelings of Fruits as Well as Vegetables From the Kitchen as Feeds for the Livestock

The leaves of many trees contain twice as many minerals (calcium, magnesium, potassium, phosphorous, nitrogen and ash) as animal manure that the plants need as their food. The peelings of fruits such as banana are also a good source of nutrients for the soil and make a good fertilizer. For instance, banana peels contain high levels of potassium, magnesium and other good minerals. The peeling of citrus has d-limonene, which serves as a natural insecticide.

### 3.1.1.4. Formulate Organic Sprays and Organic Fertilizers Using Livestock Manure as Fertilizer for Rice and Vegetables Using Indigenous Microorganisms (IMO) Formula to Speed Up Decomposition

The use of IMO in natural framing is an old practice adopted by a number of countries to include Japan, the Philippines, Mongolia, China, among others. Studies revealed many benefits from the use of IMO as follows: a) act as a reserve source for all nutrients; b) add organic matter to the soil; and c) increase soil fertility (Sumathi, Janardhan, Srilakhmi, Gopal, & Narasimha, 2012).

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### 3.1.1.5. Carry Out Vermicomposting

Vermicompost refers to the process of composting using earthworms and microorganism. [It is] an oxidative process (with air) which ends in the stabilization of organic matter. Like the mature compost, the “final product is organic matter, but the earthworms perform the process with the help of microorganisms” (Lazcano, 2008; Roman et al., 2015). Vermicomposting is also a “low-cost technology, environment-friendly process used to treat organic waste” and has the following influences on plants: a) stimulates plant growth to include aromatic and medicinal plants; b) hastens seed germination; c) stimulates shoot and root development; and d) stimulates flowering of the plants; among others (Lazcano & Dominguez, 2011).

As an organic farmer and farm owner, Mr. Camat is earning enough for his family although he emphasized that patience, passion, awareness and know-how are needed to succeed in organic farming as an enterprise. He emphasized that without these traits, the rate of success in organic farming as a business is very low. Mr. Camat urged the smallholder organic farmers in his locality to never give up when experiencing failures in organic farming. According to him, the option to engage in organic farming should not always be equated with the realization of a quick return or profit. What is necessary is the positive impact of organic farming to the farm, to people’s health and to the environment in general.

The organic products from Mr. Camat’s farm are not certified since certification is an expensive and long process. In the Philippines, organic certification is vital to ascertaining the integrity of an organic product. However, the organic farming industry is faced with the issue of the high cost of organic certification. RA 6008 clearly stipulates that only third-party certification is allowed for agriculture produce. The cost of certification ranges from PhP42,000 to PhP150,000. To address this issue, Mr. Camat sought the help of the DA on this aspect. In terms of support from government agencies, Mr. Camat received training while the associations are getting other support in the form of machineries, seeds and other organic farm inputs. From the different training in organic farming, Mr.

Camat disseminates information on organic farming by providing training and lecture in his farm at a certain fee.

### 3.1.2. Perceptions of an Organic Farmer Cum Entrepreneur

Mr. Jabez Flores is an entrepreneur cum organic farmer. He finished his Bachelor of Arts in Psychology at the University of the Philippines in Los Banos (UPLB), Laguna, Philippines. At the time of the interview, he is pursuing his Masters in Environment and Natural Resources Management at the University of the Philippines Open University (UPOU). He is an active member of a group called NU WAVE Farmers (NWF). This group represents the farmers born in the 1980s (hence the “nu wave” label referring to the popular music genre of that decade), but also includes new organic farmers who emerged from the early 2000s to present. . . [with the] slogan “making farming cool again,” [which] aims to change the mentality of the youth towards farming, from where it is usually viewed as a poor man’s and/or retiree’s profession to something that benefits their local community by providing good food in an ecologically friendly and “hip” way.” (Sandoval, n.d.).

Originally, Mr. Flores wanted to employ the “seed-to-cup” philosophy in his coffee shop, Cafe Antonio. As a barista (generally prepares coffee drinks), he wanted to work with coffee farmers. However, he did not know how to talk with farmers and realized the need to learn how to relate to them. Luckily, UPOU was offering a course on Organic Agriculture in 2012. This strengthened his desire to engage and expand knowledge in organic farming.

Aside from coffee, Mr. Flores also wanted to provide organic vegetables to his family because his mother had cancer in 2000. For Mr. Flores, he firmly believed that OA contributes to food security, helps in ecological conservation and mitigates climate change.

As an organic farmer cum entrepreneur, Mr. Flores employs sustainable agriculture practices in organic farming. As characterized by (Menalled et al., 2008), sustainable agriculture (farming) has the following benefits: “a) sustains the economic viability of farm operations; b) satisfies human food, fiber and energy needs; c) maintains or enhances the resource base upon which it depends by emphasizing soil conservation, nutrient recycling, biologically based-pest management and biodiversity; d) takes advantage of the knowledge and skills of farmers; e) is durable and resilient to disturbance, pest outbreaks and market variability; f) makes the most efficient use of nonrenewable resources and on-farm resources; and g) integrates, where appropriate, natural biological cycles and pest control tools with production practices.” The following are among the sustainable production approaches highlighted by the respondent:

#### 3.1.2.1. Act as an Advocate of Organic Agriculture (OA)

Being an advocate of OA is a way of “making a difference” which includes its promotion to a younger, stronger and more capable generation. A voluntary campaign for the youth, the NWF also introduces and implements Community Shared Agriculture (CSA) in the community. The Yummy Magazine (n.d.) referred to CSA as “a sustainable alternative distribution system that supports smallholder organic farming by subscribing to prepaid, local and seasonal vegetables delivered weekly to a community.”

#### 3.1.2.2. Adopt Forward Linkage Activities of Organic Farming With the Food Enterprise

Café Antonio serves a combination of organic and non-organic food products. The former are sourced from the farms managed by Mr. Flores. According to Mr. Flores, he used to have a vegetable stand at Cafe Antonio called The Beige Table. However, he closed it down to focus on his online store instead.

#### 3.1.2.3. Operate the Farm Enterprise on a Trust Basis

Mr. Jabez shared that his farm products are not certified as organic. He cited the long and tedious process as well as the high amount needed to obtain a certification. He operates on a “trust basis” where most of his customers are friends and supporters of organic farming. He also mentioned that he has not received support or seeking assistance

from the government.

#### 3.1.2.4. Expose Individuals on Organic Agriculture Practices Through Field Observation and Networking

As advocate of organic farming, his group NU WAVE Farmers is conducting free training, farm tours, volunteer work in farms, networking and advocacy in organic agriculture. He is also hoping that organic farming, being the core of his group's advocacy, would somehow change the perception of people on organic farming.

#### 3.1.3. Perceptions of an Organic Farmer-Worker-Farm Supervisor

Mr. Claro Naral is an organic farm worker at Kainos Farm in Barangay Camaluigan, Calamba City, Laguna. He revealed that his salary as a driver is the same as his salary today as an organic farm worker. Mr. Naral highlighted three (3) important views on organic farming.

##### 3.1.3.1. Build Up Passion in Organic Farming

It was stressed that the preference to work in the farm was due to intense passion and perseverance in organic farming. His deep-seeded commitment to learn and practice organic farming developed his passion.

##### 3.1.3.2. Earn from Being a Farm Worker-Farm Enterprise Partner

Mr. Naral earns a share in the sale of vegetables from Kainos farm. He co-cultivates and co-manages the organic farm with the owner.

##### 3.1.3.3. Participate in Formal Training Regarding Organic Farming

Mr. Naral attended formal training in organic farming conducted by the DA. He adopts his learning from formal training in organic farming and modern methods in combination with traditional knowledge.

According to Mr. Naral, at least five years is needed for a previously non-organic farm to heal or be converted into an organic one. He mentioned that the success of an organic farm is gradual and the profit is minimal. But what is important is that he is eating and selling healthy food that contributes to the conservation of the environment.

### 3.2. Issues and Challenges in Smallholder Organic Farming as an Enterprise

Marketing is the primary challenge in smallholder organic farming. It is hard for organic products to compete with inorganic or conventional farm products in terms of price, quality, volume and certification requirement. The organic farmers are also confronted with problems when offering their products to big supermarkets.

Accreditation is another problem since it is too expensive for small-scale organic farmers to obtain certification for organic products. The next concern is on training and awareness building where only those with proper training in OA and those who have deep awareness about the positive impacts of the organic produce trading survived. Furthermore, only those consumers who are aware of the benefits of organic farming prefer and buy organic produce.

### 3.3. Addressing Concerns on Organic Farming as an Enterprise: the Need for Development Planning and Competency Building

To address the accreditation issue, concerned government agency may lessen the requirements, especially for smallholder organic farmers or may subsidize the fees. The Agricultural Training Institute of the DA should expand the conduct of a massive free training on a regular basis so that even those non-practitioners on organic farming will be educated to increase their awareness on organic farming as an enterprise. Smallholder organic

farmers should also be linked by concerned agencies like the DA or the local government units with the potential markets for organic products.

### 3.3.1. Development Planning Facet of Smallholder Organic Farming

Development planning is essential as a basis for interested entrepreneurs to venture into organic farming. (Magnaye, 2016) defined three (3) important interrelated principles in planning community supported agriculture (CSA). The principles behind CSA such as climate smart agriculture, socio-entrepreneurial behavior and thinking as well as participatory development planning can be adopted in planning a smallholder organic farming as an enterprise.

In addition, development planning for organic farming as a community-based enterprise or smallholder scale adheres to a participatory approach which requires consideration of the interests not only of the entrepreneur per se but also the other organic farmer-entrepreneurs in the community including the local government agencies, academic community, private sector representatives, and non-government organizations, among others. The four phases of CSA formation as developed by (Magnaye, 2017) can be adopted in planning for a smallholder organic farming enterprise to include the following phases: Phase 1 — Capital Asset Inventory and Assessment; b) Phase 2 — Vision Development and Stakeholder Motivation; c) Phase 3 — Local Development Strategy Identification for Sustained CSA; and d) Phase 4 — Monitoring and Evaluation for Sustained Partnership. The matrix below summarizes the scope of the mentioned phases.

Table 1. Phases of development planning for CSA as a smallholder organic farming enterprise development strategy.

Development Phase	Tasks involved	Actions and strategies
<i>Phase 1: Capital Asset Inventory and Assessment</i>		
Analyze local assets	<ul style="list-style-type: none"> <li>● Characterize human, social, natural, physical and financial capitals:               <ul style="list-style-type: none"> <li>- Human capital - existing and potential organic farmers in the community in terms of skills, knowledge, health and wellbeing.</li> <li>- Social capital - informal networks, membership of formalized groups and relationships of trust that facilitate cooperation (eg. with other farmers or community groups).</li> <li>- Natural capital - quality and quantity of natural resources including land, water and soil</li> <li>- Physical capital- land availability, existence of organic (biodynamic farming) community, basic infrastructure such as irrigation and on-farm sanitation, offices and buildings, computers and communications technology, tools, vehicles and other equipment.</li> <li>- Financial capital - availability of financial resources including savings, credit, and income from farm sales of goods and services to include provision of training to members.</li> </ul> </li> </ul>	

*Continued on next page*

Table 1 continued

Development Phase	Tasks involved	Actions and strategies
Examine capacity of farming community	<ul style="list-style-type: none"> <li>● Evaluate the following aspects:               <ul style="list-style-type: none"> <li>- ability of existing and potential organic farmer-entrepreneurs in the use of resources (land, labor, capital);</li> <li>- strategies adopted vis-à-vis asset utilization;</li> <li>- existing initiatives, duration of business, income generated, locations and members/employees;</li> <li>- policies, institutions and processes that shape access to assets and opportunities; and</li> <li>- factors affecting vulnerability to shocks and stresses.</li> </ul> </li> </ul>	
<i>Phase 2: Vision Development and Stakeholder Motivation</i>		
Define the direction of the development of the enterprise or the desired enterprise development outcomes	<ul style="list-style-type: none"> <li>● Establish the vision of the organization based on the anticipated outcomes of the livelihood or social enterprise.</li> <li>● Determine the social mission in consideration of social and environmental problems.</li> </ul>	
Establish goals, objectives and targets	<ul style="list-style-type: none"> <li>● Formulate goals, objectives and targets based on the vision of the enterprise.               <ul style="list-style-type: none"> <li>- Goals are specific to the building up of partnership between the farmers and the market (buyers of farm produce)</li> <li>- Objectives and targets cover the establishment of fair pricing system; provision of support to small farms and fresh food for the consumers; protection of biodiversity due to efficient</li> </ul> </li> </ul>	
Development Phase	Tasks involved	Actions and strategies
	organic farming; increasing access to organic and local food by low income households; sustaining culture, community and a sense of belonging; reviving culinary traditions; among others.	
<i>Phase 3: Local Development Strategy Identification for Sustained CSA</i>		
Organize the organic farmer-entrepreneurs	<ul style="list-style-type: none"> <li>● Define arrangements and functions of the organization to include identification of interested organic farmer entrepreneurs in the meetings of farmers or association of farmers.</li> <li>● Identify and organize the members of the core group.</li> </ul>	

Continued on next page

Table 1 continued

Development Phase	Tasks involved	Actions and strategies
Prepare business plan and measure viability	<ul style="list-style-type: none"> <li>• Determine capital expenditures (land, equipment, tools, capital, among others), labor expenses, operating expenses, among others.</li> <li>• Estimate the potential income from the enterprise to determine financial viability.</li> </ul>	
Phase 4: Monitoring and Evaluation (M&E) for Sustained Partnership		
Identify and measure M&E indicators	<ul style="list-style-type: none"> <li>• Assess financial and operational performance of the enterprise</li> </ul>	
Review, evaluate and improve plans	<ul style="list-style-type: none"> <li>• Review and evaluate enterprise development plan and management schemes taking into account issues, concerns, and challenges.</li> </ul>	

### 3.3.2. Building and Enhancing Competencies of a Smallholder Farmer-Entrepreneur

Three (3) types of competencies need to be developed by a farmer entrepreneur to succeed in smallholder organic farming as an enterprise. These include entrepreneurial, technical and managerial competencies.

*Entrepreneurial competencies.* Kahan (2013) defines nine (9) key entrepreneurial competencies, which must be developed and strengthened for farmers to survive in a continuously changing environment and realize income based on existing and emerging market opportunities. These competencies include initiative, ambition, focused problem-solving, creative thinking, taking risks, flexibility and adaptability, interpersonal abilities, networking and readiness to learn. He emphasized that these competencies enable farmers to “compete in the changing environment and better able to make profits by taking advantage of new market opportunities”.

*Technical competencies.* Aside from entrepreneurial competencies, farmer-entrepreneurs should also enhance their technical competencies in terms of proper management of farm inputs; production management and marketing management. Similarly, Kahan (2013) established the necessary knowledge, skills and behavior to strengthen technical competencies of farmer-entrepreneurs.

*Managerial competencies.* A farmer-entrepreneur also needs to possess managerial skills aside from entrepreneurial and technical skills. An enterprise involves a number of processes from establishment, growth and maturity that usually exist with social, economic and financial barriers. Thus, managerial functions will define the success of a farm enterprise. According to Kahan (2013), entrepreneurial and technical competencies need to be complemented by managerial competencies. . . to include diagnosis, planning, organizing, leading, controlling and evaluating.”

The table below summarizes the requirements to enhance the entrepreneurial, technical and managerial competencies of a farmer-entrepreneur in three (3) focal areas to include knowledge, skills and behavior

Table 2. Entrepreneurial, technical and managerial competencies for a farmer-entrepreneur

Competency	Requirement		
	Knowledge	Skills	Behavior
Entrepreneurial competency			

*Continued on next page*

Table 2 continued

Competency		Requirement	
Initiative (Acts before others do)	<ul style="list-style-type: none"> <li>• Determine and understand success factors</li> </ul>	<ul style="list-style-type: none"> <li>• Define vision and goals</li> </ul>	<ul style="list-style-type: none"> <li>• Initiate the first move and get things done</li> </ul>
Ambition (Determined to achieve goals)	<ul style="list-style-type: none"> <li>• Know the challenges to be encountered</li> </ul>	<ul style="list-style-type: none"> <li>• Define actions to address challenges</li> </ul>	<ul style="list-style-type: none"> <li>• Patient and tolerant to stress</li> </ul>
Focused on problem solving and decision-making (Trouble-shooter and opportunity-seeker)	<ul style="list-style-type: none"> <li>• Understand decision-making process, farm business problems and new opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Gather data/information in solving problems, define alternative solutions and implement chosen option</li> </ul>	<ul style="list-style-type: none"> <li>• Vigorous in solving problems</li> </ul>
Creative thinking (Thinks out of the box)	<ul style="list-style-type: none"> <li>• Understand the farm business as a system that is vulnerable to constraints given opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Gather new ideas and opportunities information to address problems and maximize opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Analyze farm business, define opportunities and implement actions</li> </ul>
Taking risks (Acts as risk taker)	<ul style="list-style-type: none"> <li>• Understand and evaluate risks in decision-making</li> </ul>	<ul style="list-style-type: none"> <li>• Assess costs and benefits of risks for strategy management</li> </ul>	<ul style="list-style-type: none"> <li>• Calculate and mitigate risks and adopt new strategies</li> </ul>
Flexibility and adaptability (Sensitive to new and changing situations)	<ul style="list-style-type: none"> <li>• Aware of the sources of changes affecting the farm business</li> </ul>	<ul style="list-style-type: none"> <li>• Develop coping strategies based on changing situations</li> </ul>	<ul style="list-style-type: none"> <li>• Patient and tolerant to stress from changing situations</li> </ul>
Interpersonal abilities (Social and fond of maximizing network)	<ul style="list-style-type: none"> <li>• Understand people and strengthen relationships with them</li> </ul>	<ul style="list-style-type: none"> <li>• Keen on sharing ideas with others</li> </ul>	<ul style="list-style-type: none"> <li>• Work well with people of all kinds</li> <li>• Honest and trustworthy</li> </ul>
Networking (Value relationships)	<ul style="list-style-type: none"> <li>• Understand key stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>• Value negotiation and sustaining partnerships</li> </ul>	<ul style="list-style-type: none"> <li>• Trustworthy and honest in all dealings</li> </ul>
Readiness to learn (Keen on generating new knowledge and skills)	<ul style="list-style-type: none"> <li>• Open to new learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>• Timely response to knowledge and skills utilization</li> </ul>	<ul style="list-style-type: none"> <li>• Curious</li> </ul>
<i>Technical competency</i>			
Managing inputs (Cost conscious and strive for efficiency from sourcing and acquiring inputs)	<ul style="list-style-type: none"> <li>• Know the required inputs and the source</li> </ul>	<ul style="list-style-type: none"> <li>• Proper input application and recording of utilization</li> </ul>	<ul style="list-style-type: none"> <li>• Prefer quality and affordable inputs and explore use of new inputs</li> </ul>

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Table 2 continued

Competency		Requirement	
Managing production (Desire sustainability from identifying, organizing and implementing production)	<ul style="list-style-type: none"> <li>Know the most profitable and sustainable way to produce</li> </ul>	<ul style="list-style-type: none"> <li>Know the critical farm activities and record all production activities</li> </ul>	<ul style="list-style-type: none"> <li>Time conscious, adapter of more efficient production systems and explore new systems</li> </ul>
Managing market (Profitable marketing of farm products)	<ul style="list-style-type: none"> <li>Know the location of the most profitable market for the enterprise</li> </ul>	<ul style="list-style-type: none"> <li>Negotiate contracts and keep records of transactions</li> </ul>	<ul style="list-style-type: none"> <li>Search more profitable markets and adaptive to changing market condition and opportunities</li> </ul>
<i>Managerial competency</i>			
Diagnosis (Analyze business setting to determine problems and opportunities affecting profitability)	<ul style="list-style-type: none"> <li>Understand the input, production and marketing requirements of the enterprise</li> </ul>	<ul style="list-style-type: none"> <li>Assess the enterprise to determine issues and challenges</li> </ul>	<ul style="list-style-type: none"> <li>Determine problem causes and effects and proposed solutions</li> </ul>
Planning (Analyze potential actions to support the goal)	<ul style="list-style-type: none"> <li>Know goals and objectives as well as alternatives to achieve them</li> </ul>		

Competency		Requirement	
	Knowledge	Skills	Behavior
Taking risks (Acts as risk taker)	<ul style="list-style-type: none"> <li>Understand and evaluate risks in decision-making.</li> </ul>	<ul style="list-style-type: none"> <li>Assess costs and benefits of risks for strategy management</li> </ul>	<ul style="list-style-type: none"> <li>Calculate and mitigate risks and adopt new strategies</li> </ul>
Flexibility and adaptability (Sensitive to new and changing situations)	<ul style="list-style-type: none"> <li>Aware of the sources of changes affecting the farm business</li> </ul>	<ul style="list-style-type: none"> <li>Develop coping strategies based on changing situations</li> </ul>	<ul style="list-style-type: none"> <li>Patient and tolerant to stress from changing situations</li> </ul>
Interpersonal abilities (Sociable and fond of maximizing network)	<ul style="list-style-type: none"> <li>Understand people and strengthen relationships with them</li> </ul>	<ul style="list-style-type: none"> <li>Keen on sharing ideas with others</li> </ul>	<ul style="list-style-type: none"> <li>Work well with people of all kinds</li> <li>Honest and Trustworthy</li> </ul>
Networking (Value relationships)	<ul style="list-style-type: none"> <li>Understand key stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>Value negotiation and sustaining partnerships</li> </ul>	<ul style="list-style-type: none"> <li>Trustworthy and honest in all dealings</li> </ul>
Readiness to learn (Keen on generating new knowledge and skills)	<ul style="list-style-type: none"> <li>Open to new learning opportunities</li> </ul>	<ul style="list-style-type: none"> <li>Timely response to knowledge and skills utilization</li> </ul>	<ul style="list-style-type: none"> <li>Curious</li> </ul>
Technical competency			

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Table 3 continued

Managing inputs (Cost conscious and strive for efficiency from sourcing and acquiring inputs)	<ul style="list-style-type: none"> <li>• Know the required inputs and the source</li> </ul>	<ul style="list-style-type: none"> <li>• Proper input application and recording of utilization</li> </ul>	<ul style="list-style-type: none"> <li>• Prefer quality and affordable inputs and explore use of new inputs</li> </ul>
Managing production (Desire sustainability from identifying, organizing and implementing production)	<ul style="list-style-type: none"> <li>• Know the most profitable and sustainable way to produce</li> </ul>	<ul style="list-style-type: none"> <li>• Know the critical farm activities and record all production activities</li> </ul>	<ul style="list-style-type: none"> <li>• Time conscious, adapter of more efficient production systems and explore new systems</li> </ul>
Managing market (Profitable marketing of farm products)	<ul style="list-style-type: none"> <li>• Know the location of the most profitable market for the enterprise</li> </ul>	<ul style="list-style-type: none"> <li>• Negotiate contracts and keep records of transactions</li> </ul>	<ul style="list-style-type: none"> <li>• Search more profitable markets and adaptive to changing market condition and opportunities</li> </ul>
Managerial competency			
Diagnosis (Analyze business setting to determine problems and opportunities affecting profitability)	<ul style="list-style-type: none"> <li>• Understand the input, production and marketing requirements of the enterprise</li> </ul>	<ul style="list-style-type: none"> <li>• Assess the enterprise to determine issues and challenges</li> </ul>	<ul style="list-style-type: none"> <li>• Determine problem causes and effects and proposed solutions</li> </ul>
Planning (Analyze potential actions to support the goal)	<ul style="list-style-type: none"> <li>• Know goals and objectives as well as alternatives to achieve them</li> </ul>	<ul style="list-style-type: none"> <li>• Establish alternative evaluation process and mechanism to implement alternatives</li> </ul>	<ul style="list-style-type: none"> <li>• Anticipates results and system or process-oriented</li> </ul>
Organizing (Initiating plan implementation)	<ul style="list-style-type: none"> <li>• Determine resource requirement and sourcing modes</li> </ul>	<ul style="list-style-type: none"> <li>• Adopt process in resource sourcing</li> </ul>	<ul style="list-style-type: none"> <li>• Committed</li> <li>• Process oriented</li> </ul>
Leading (Managing staff/workers/personnel)	<ul style="list-style-type: none"> <li>• Know how to entice people to work</li> </ul>	<ul style="list-style-type: none"> <li>• Share ideas through communication and evaluate workers' performance</li> </ul>	<ul style="list-style-type: none"> <li>• Trustworthy, encouraging and builds trust</li> </ul>
Controlling (Monitoring and evaluation of performance and activities)	<ul style="list-style-type: none"> <li>• Relate control mechanism with profit generation</li> </ul>	<ul style="list-style-type: none"> <li>• Monitoring (checking benchmarks) and proper recording of data and information</li> </ul>	<ul style="list-style-type: none"> <li>• Looks at detail and process-oriented</li> </ul>
Evaluating (Outcome and impact assessment)	<ul style="list-style-type: none"> <li>• Determine impact of the enterprise on profit generation</li> </ul>	<ul style="list-style-type: none"> <li>• Relate actions with outcomes</li> </ul>	<ul style="list-style-type: none"> <li>• Objective and methodical</li> </ul>

#### 4. Conclusion and Recommendations

Based on the organic farm and enterprise management practices shared, the key informants of the case studies represent different groups that promote multi-stakeholder participation and collaboration in smallholder organic farming. The organic farmer cum worker values the importance of the cyclic use of natural resources, resource use within the carrying capacity of the organic farm, value of the tradition and culture of the family by continuing the operation of the organic farm after his father and earning a living from the farm that enhances socioeconomic capacity. The organic farmer-entrepreneur recognizes the importance of working with the community and the

youth as advocates of organic farming. The organic farmer-worker-farm supervisor views that the success of a farmer depends greatly on his training and awareness about organic farming. The three (3) cases proved that organic farming activities are managed in harmony with nature in consideration of the contribution to food security, conservation of the ecosystems, and most importantly in climate mitigation.

After realizing the issues of the case study, it is deemed necessary to enhance an existing program to educate and train communities in organic farming and entrepreneurship at the grassroots level. The Department of Education (DepEd) and the DA-Agricultural Training Institute are key agencies to operationalize these objectives. The Department of Health (DOH) can engage in massive information drive on the health issues associated with chemical uses in the farms. The mass media or social media are very useful modes to disseminate this information.

Development planning for smallholder organic farming and entrepreneurship becomes essential which can be effected utilizing existing community supported agriculture models. However, it is of prime importance that a farmer-entrepreneur should possess the entrepreneurial, technical and managerial competencies in terms of knowledge, skills and behavior to fully realize the success of organic farming at the community level. These will serve as requisites for a competitive organic agriculture industry backed up with the government's commitment to support smallholder organic farming especially in organic certification as well as research, development and extension. The effective implementation of the Organic Agriculture Act will address the development needs of the majority of the poor populace which relies on subsistence agriculture. Organic farming should be able to ensure food security in the context of food availability, affordability and quality in conjunction with environmental concerns and climate mitigation.

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