

The Use of Soft System Methodology in Evaluating the Business Strategies in Organic Farming: The Case from Yogyakarta, Indonesia

Sekar Wulan Prasetyaningtyas

School of Business – IPB University
International University Liaison Indonesia (IULI)
Correspondence Email: sekarwprasetya@gmail.com

Syamsul Maarif

School of Business – IPB University

Ridwani Sobir

Department of Agrihorticulture, Faculty of Agriculture – IPB University

Aji Hermawan

School of Business – IPB University

ABSTRACT

The purpose of this research was to evaluate the business strategies applied in one of the sustainable organic farming in Yogyakarta, Indonesia. The methodology used is Soft System Methodology (SSM). SSM is an organizational process modeling method that can be used for general problem resolution and change management. Rich picture, Root definitions and conceptual model were presented in the paper. Data were taken using focus group discussion and in-depth interviews with the owner, staffs, and farmers from the organic farm. The focus of this research is to get knowledge about the actors, their behavior, relationships and their influence on decision - making processes.

From the analysis, eight main results were obtained as the key strategies in organic farming: identification of actors and critical factors in the farm, vision and mission socialization, operational evaluation, transformation, managerial improvement, measurement of revenue and profit, consistency in sustainability indicator used, and mitigation plan.

Keywords: agribusiness, business strategies, organic farming, soft system methodology

Introduction

In recent years, environmental issues have become the focus of society. People started to realize the dangers posed by the use of chemicals, one of which is used in the business of agriculture. The use of non-chemical materials received attention to be used in agricultural activities, known as organic farming. Indonesia as one of the developing and emerging economy countries with approximately 252 million in population in 2015 and an economic growth of 5.2 % per annum has the potential to be both of the largest producers and market for the organic products.

The Eureka Indonesia Foundation in its website (2009) as quoted from Hubeis (2013) said that Indonesia has 17 million hectares of vacant land. Organic food export revenues from the 17-million-hectare land are estimated at US \$ 100 billion per year. In general, the average income that will be obtained from organic farming is around US \$ 6,000 per hectare. In terms of price, organic products in the international market range from 5-10 times the price of ordinary products. At a macro level, this can drive the

economy. In addition to economic benefits, the development of organic products is labor-intensive. The creation of these new jobs, contributes to rural social and economic growth.

In this 4.0 industrial era, organic farming movement in Indonesia facing great challenge due to the rapid change in global economy and open market competition. The demand for organic food products is high (Hubeis, 2013) but according to David and Ardiansyah (2016) in a meta-analysis of organic agricultural research in Indonesia, the condition of organic agriculture in Indonesia is stagnant. According to the Indonesian Organic Alliance (2017), until 2014, only 67,426 ha of land was certified and considered as organic farmland. The total area of land considered organic compared to the total area of agricultural land in Indonesia is only 0.86% (Indonesia Organic Alliance, 2017). Apart from that, there is no clear strategy yet in managing the organic farms in Indonesia (Mayrowani 2012). Strategy is needed in developing the organic farming in Indonesia in order to meet the demand for organic products, along with the increasing demand from the middle class in Indonesia (David and Ardiansyah 2016).

Based on problem defined, the aim of this paper was to evaluate the business strategy in one of the successful farm farms in Indonesia, by utilizing the Soft Systems Methodology (SSM) framework. SSM has not yet been used in the organic farming in Indonesia; therefore, this research was an exploratory study.

Literature Review

Organic Agriculture in Indonesia

Organic agriculture in Indonesia started with the green revolution campaign in 1980. The environmental issue was the main reason for the establishment of organic agriculture in Indonesia (David and Ardiansyah, 2016). Modern organic agriculture in Indonesia was introduced by the Bina Sarana Bakti Foundation (BSB), by developing organic vegetable farming in Bogor, West Java in 1984. The organic agriculture movement in Indonesia emerged as part of the development of the global organic movement that opposed ecological destruction and social degradation. In 2000, the Department of Agriculture made a policy on organic farming, called "Go Organic 2010". Under the policy, the Indonesian Organic Certification Agency (BIOCert) was established as an organic certification body by 33 Indonesian organic NGOs, researchers, the private sector and farmer groups in 2002. The objectives of BIOCert include protection for small farmers, while promoting environmental and agricultural sustainability. Biocert recognizes the importance of the concept of environment, and places the importance of social justice (Biocert 2018).

The Indonesia Organic Agriculture Network (JAKERPO) founded in 1998. This is an umbrella organization of organic agriculture organizations in Indonesia. The Indonesia Organic Community (MAPORINA) was founded in 2000. Expanding market access for organic foods is often presented as a solution to farmers and agribusinesses trying to cope with global market challenges. Organic standard was launched by Indonesia Organic Alliance (IOA) in 2005, based on the IFOAM and the Codex Alimentarius commission. The National Standardization Agency of Indonesia (BSN) has created the Standar Nasional Indonesia (SNI) with number 01- 6729-2002 to cover definition, labeling, procedure in production, processing, internal audit systems, certification, and import and audit system in organic food

Over time, the "Go Organic" movement has not yet had a real effect on increasing the amount of land and organic agricultural production in Indonesia, even though the

potential for organic land is very large. There have not been many studies on the causes and solutions to the underdevelopment of organic agriculture in Indonesia. David and Ardiansyah (2016) mentioning a small number of publications focusing on organic agriculture in Indonesia. The most investigated topics are land and water resources in organic farming. This might be related to the fact that Indonesia is in a tropical climate zone where land and water have a significant influence on organic farming. However, there are still many aspects of organic farming, especially in the fields of business and management that have not been addressed

Business Strategy

Business strategy is the ability of entrepreneurs / companies in the analysis of the company's external and internal environment, formulation (formulation) of strategies, implementation (implementation) of plans designed to achieve company goals, and conducting evaluations to get feedback in formulating future strategies. This variable is measured by 3 dimensions, namely: differentiation, low cost, and focus strategy (Mahmud & Anomsari, 2011). The general philosophy that describes the business or business of a company is reflected in the mission that must be translated into statements in the established business strategy. Strategic planning states that long-term strategies are derived from the company's efforts to find the basis of competitive advantage of generic strategies, namely to pursue low cost (overall cost leadership) in the industry, pursuing to create unique products for varied customers or differentiation and pursuing to serve special requests to one or several consumer or industrial groups. In line with the research, Porter provides an overview of business strategies from the results of the research he developed which are called generic strategies, namely cost leadership strategies, differentiation and focus. Miller modified Porter's framework by proposing two types of differentiation instead of the focus dimensions based on marketing and innovation (Holy 2009).

Three dimensions of strategy according to Porter are cost leadership, marketing differentiation and innovation differentiation. Several studies have shown that these dimensions are appropriate and have close relationships. Tjiptono (2010) explains that the long-term strategy is derived from the company's efforts to find the basis of competitive advantage of generic strategies, namely to pursue low cost (Overall Cost Leadership) in industry or differentiation. To control costs in the overall cost leadership, cost efficiency can be obtained from having experienced employees, controlling overhead costs, minimizing the costs of research and development, service, salespeople, advertising and so on. This is an internal orientation strategy where the company concentrates on product efficiency and controlling costs in an effort to obtain the lowest production costs compared to competitors. Cost efficiency can also be done by minimizing the cost of innovation with the aim of keeping customers vulnerable to changes in product prices.

The next dimension is differentiation. Differentiation is the pursuit of creating unique products for varied customers. Differentiation can be done through the dimensions of the design or brand image, technology used, special characteristics, service to customers and better distribution. The advantage of using differentiation in addition to profit above the average is consumer sensitivity to less prices, differentiation products create high barriers to entry and the position of substitute products is also high (Tjiptono 2010). This is considered very beneficial for the company.

The focus strategy is based on efforts to meet the needs of particular customers, with a small product line. It is an activity within the company that includes creativity in product development, application of new technology and quality design. The first two

strategies sought competitive advantage with a wide range of industrial segments. The focus strategy is to gain excellence in narrow segments. That is, management must choose one or a number of segments within an industry and adjust strategies to serve their customers.

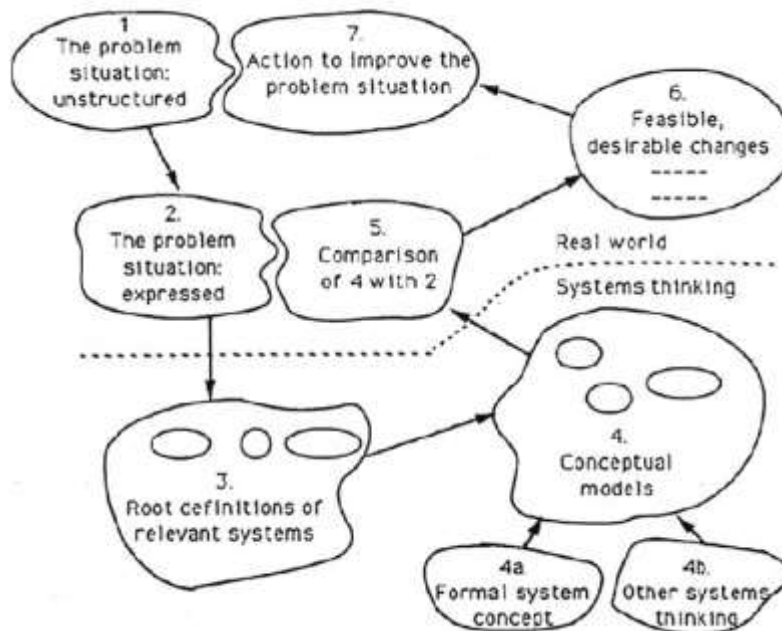
Efficient and effective performance evaluation is needed in management (management) of strategies that are in accordance with the characteristics of the business concerned. Strategy management is usually associated with an integrative management approach that puts together all elements, such as planning, implementing, and controlling a business strategy (Octavina 2009). Strategy management aims to identify why in competition some companies can succeed while others fail. The role of management strategy is trendwatching and invisioning, translating vision and strategy into action plans, and managing resources to realize the organization's vision, through a holistic and systemic approach.

Soft System Methodology (SSM)

Soft System Methodology (SSM) is a qualitative research method based on thinking systems that places importance on meaning, self - reflection, interpretation, human experience, learning and participation. (Jackson, 2003). SSM was constructed because there are limitations in the system engineering approach, which insufficient in the social complexity of human situations. Systems engineering is classified as a method of hard systems, whereas SSM focuses on learning rather than designing a solution. (Khisty, 1995).

The SSM phases started by identifying issues and analyzing cultural and power relations (Checkland & Poulter, 2006). The first phase of SSM is Rich Picture making. Rich pictures can be used to explain the situation by showing the stakeholders and the problems they experienced, as well as the interactions and relations between actors. The second phase of SSM is building the relevant activity models that correspond to a particular worldview, called Root definitions. It identifies the core purpose of the activity system (Checkland & Poulter, 2006). The next phase is making the PQR formula that behaves as a transformation model. The P is what, Q how, and R, why. A general model of purposeful activity, known as the CATWOE is then modeled (Checkland & Poulter, 2006). The abbreviation of CATWOE is explained as follow: C for the Customers who got benefits or victims, A for the Actors, T for the Transformation, W for the Worldview, O for the, and E for the environmental constraints. After that, the conceptual models are then created. The models are then used to structure debate about the situation. The final stage in the SSM consists of defining and implementing necessary actions with the aim of identifying desirable and culturally feasible changes.

Figure 1. SSM steps



Source: Checkland 1999

Methodology

This research was an exploratory research, using qualitative approach. Interviews and Focus Group Discussion (FGD) were used as the data collection method. Multiple stakeholders in the farm area (the farmers, staffs, and owner) were involved in the research. Open-ended questions were used to allow the different inputs from the stakeholder. All interviews were digitally recorded and transcribed.

Results & Discussion

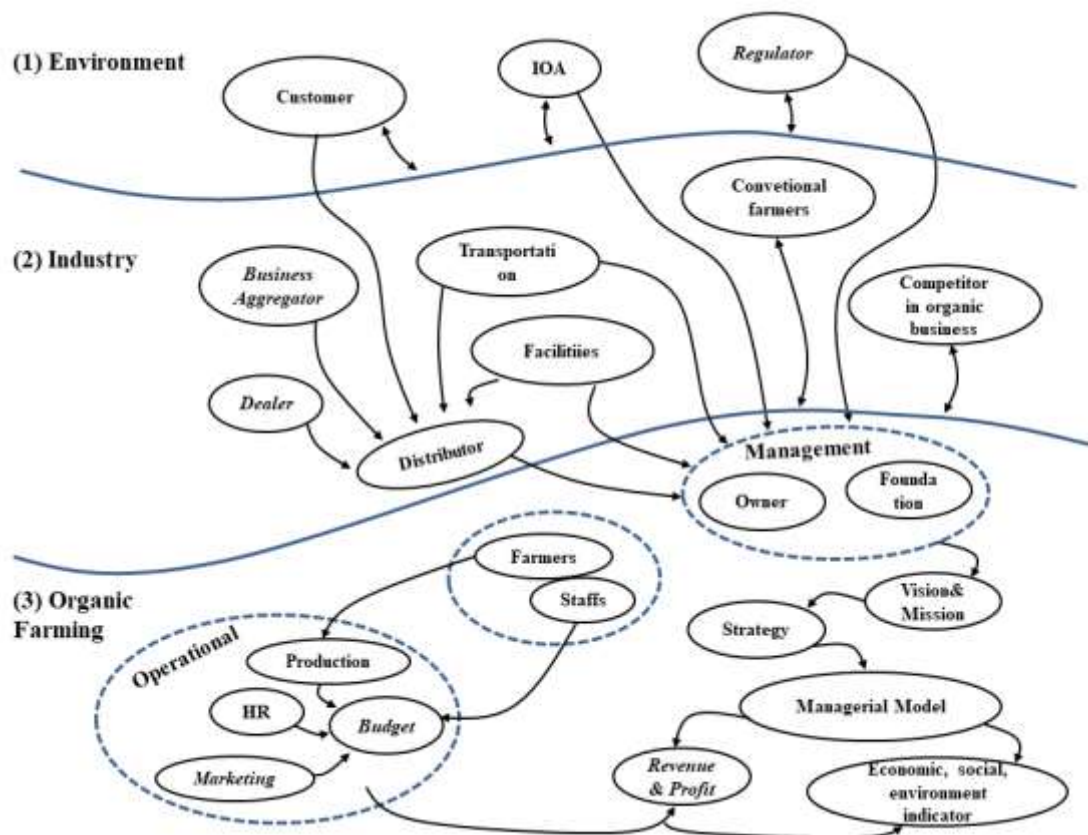
The purpose in the first phase of SSM was to get information regarding the main problems in farm from all perspectives of stakeholders. In this phase, researcher focus in the soft issues in farm such as leadership style, communication, and shared-goals. The next phase is to picture the problem situation, by conducting the first FGD. In this FGD, the participants were asked to use a few words as possible in constructing the rich picture. The purpose was to make the rich picture simple and concise. Checkland (1996) stated that a simple rich picture is needed to make all stakeholders from all levels of education to understand the concept.

After the interview, researcher conducted the Focus Group Discussion. The purpose of the first FGD is to identify the stakeholders in farm. Apart from that, the participants also identify the role and concerns. They also drew the connection between the stakeholders. This rich picture was then evaluated at the end of the FGD to allows the mutual understanding between the stakeholders. Stakeholders' concern was shown in the rich picture using think bubbles and conflicts using crossed line. This phase is crucial because as Brenton (2007) said that rich pictures enable the identification of

issues. The process was not smooth due to the culture of Indonesia people that does not want to damage the relationship if they tell the truth. With this condition, the researcher realized that some issues might not have been mentioned by the participants, or they might be not completely honest.

Apart from that problem, through the FGD, the stakeholders realized that one stakeholder might affecting other stakeholder in the system. They also able to picture that some of the fundamental problems in the farm arise because they don't have the skills needed to handle the communication of the diverse stakeholders. Not only the communication, the transparency and the trust were highlighted as something that crucial. The rich picture can be seen in Figure 2.

Fig 2. Rich Picture in Sustainable Organic Farm in Yogyakarta



Based on the Rich Picture above, it can be seen that the organic farming in Yogyakarta is divided into 3 layers based on the level of importance and proximity to agriculture, namely:

1. Environment

This layer consists of the community as consumers, regulators and the Indonesian Organic alliance. Stakeholders within this layer cannot directly influence decision making in agriculture, but are able to influence the making of sustainable strategies in organic farming. The problems in this layer do not directly affect organic farming.

2. Industry

This layer has a direct influence on organic agriculture in Indonesia. Problems that occur in this layer will influence decision making in organic farming. Making a sustainable strategy is focused on dealing with problems that arise in this layer

3. Organic farming

This core layer consists of all core organic agriculture stakeholders who are fully involved in making sustainable strategies. In this layer, problems that arise can be in the area of management and operations. Making a sustainable strategy becomes an activity in this layer by paying attention to short-term plans and long-term plans.

The next phase of SSM is transforming the rich picture into the relevant system. In transforming this rich picture; CATWOEs, Root definition, and conceptual models were made. According to Checkland and Scholes (1990), root definition can also be said as an expression of short verbal definitions of system activities that aim and are considered relevant for exploring problem situations. Root definition must follow the PQR formula: a system to do P by Q in order to achieve R (Checkland and Scholes, 1990). This root definition is matured and finalized by CATWOE and then continued with performance measurement criteria using 5 E (Efficacy, efficiency, effectiveness, elegance, and ethics). Root definition in this study can be seen in below.

Root definition:

The business strategy in organic farming is a strategy that involves all stakeholders to make improvements managerially and operationally (P) through monitoring measurable performance and sustainability indicators (Q) so that it is more focused on economic, social and environmental (R) goals.

Furthermore, the creation of CATWOE analysis will begin with an understanding of each component in CATWOE. The definition of each CATWOE component and its Analysis in this study can be seen in table 1 below.

Table 1. CATWOE analysis for Business Strategy of Organic Farming in Yogyakarta

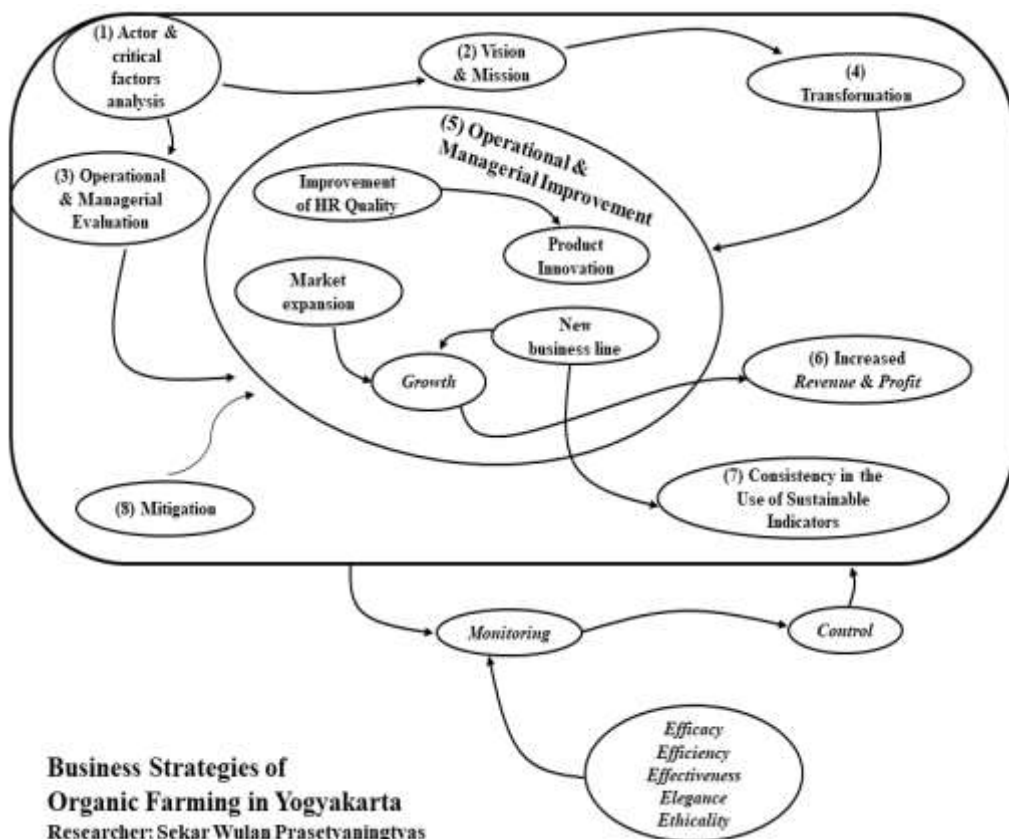
Customer	Who benefits from changes?	Farmers, staff, owners, customers
Actor	Who is involved in the change process?	Farmers, staff, owners, government
Transformation	What changes do you want to occur in the system?	organic farm that is less professionally managed (operational + managerial) → organic farm that is professionally managed, focuses on performance measurement
World view	What is the big picture of the expected change? The broad impact of the issue?	Collaboration between stakeholders and improving agricultural management will benefit agriculture not only financially but also sustainability benefits
Owner	Who is the owner of the issue under investigation?	Farm manager

Environment	What factors can inhibit the solution to the problem being studied?	Culture, mindset, access to information
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After making the CATWOE analysis, then the researchers developed the conceptual model. Checkland and Poulter (2006) have a number of steps that must be taken done to make a conceptual model. In compiling a conceptual model, the researcher builds a model without referring to the real world, meaning that conceptual mode is built from the ideas of researchers based on the theory used and formal rules that apply so that the idea of system thinking becomes important at this stage. Fitriati (2014) describes how the conceptual model is made up of the following rules:

1. The conceptual model must be constructed from words written in root definition without reconnecting to certain situations. In incorporating a number of activities into the conceptual model, the researcher is supported by words or phrases in root definition.
2. The researcher must use words that can describe the activities in the transformation process that are explained correctly. This relates to the explanation that each activity in the conceptual model can be a root definition development tool for the analysis of relevant systems and a more detailed conceptual model.
3. The conceptual model must be accountable. Therefore, there must be a relationship that can explain the availability of resources and there must be a monitor subsystem and control in the conceptual model created. The conceptual model can be seen in Figure 3.

Figure 3. Conceptual Model for Business Strategy of Organic Farming in Yogyakarta



The conceptual model of the organic farms in Yogyakarta built on this research begins with activities (1) understanding the main actors and the critical factors that affects the decision making in the farm, activities (2) understanding of the organization's vision and mission, activities (3) evaluating the operational activities and managerial activities that have been carried out, and activities (4) transforming specifically in the operational and managerial fields of organic farming. Furthermore in the activity (5) the process of improving operational and managerial activities is carried out which includes improving the quality of HR, product innovation, new business lines, market expansion, and organizational growth. Activities (6) monitoring the increase in revenue and profit, activities (7) measuring the consistency of the use of sustainability indicators, activities (8) mitigating possible deviations.

In business strategy, it is very important to analyze their stakeholders first. Stakeholder theory emerged as another contribution towards a better understanding of organizational management through focusing on the groups or individuals who either affect or are affected by the organization's actions (Freeman, 1984). Thus, an organization's social performance may be more effectively analysed and assessed through its relations with its stakeholders (Mainardes, Alves & Raposo, 2011).

Identifying the organization's vision and mission (activity 2) is an absolute thing that must be done by the business owner in order to create a long-term business strategy (Porter 2008). Activity (3) is also important because production and operational management are closely related to efficiency and effectiveness. Efficiency is doing something at the lowest possible cost. Effectiveness is doing something right to create the best value for the company. The reason underlying the activity (4) is because transformation is one of the ways companies achieve competitive advantage. The implementation of the company's transformation process must be supported by sources of competitive advantage which include physical resources, financial resources, organizational process structures and systems, and human resources (HR). In order to transform operational and managerial activities at organic farming (activity 5), the focuses are improving the quality of human resources and market expansion. Profitable marketing depends on competitive advantage to meet market preference values and voter priorities among existing competitors (Barney 2002).

After transformation, the next step is to do is measuring the success of transformation through activities (6) monitoring the increase in revenue and profit and activities (7) measuring the consistency of the use of sustainable indicators. The assessment of the company's financial performance is very important for companies to know the allocation of assets owned effectively and efficiently in order to achieve the company's goal of obtaining maximum profits to maintain the existence of the company (Cahyani 2015). Therefore to be able to survive and grow in a competitive business environment, organizations need to use planning tools specifically designed to multiply financial performance. The competitive business environment requires organizations to carry out continuous innovation, one of which is measured through financial performance (Mulyadi 2009).

In measuring activity (7), many concepts can be used. In the context of a company that has a lot to do with environmental conditions, one of the measurement concepts used is the triple bottom line concept. Regarding sustainability with a triple bottom line perspective, according to Smith and Sharicz (2011) states that triple bottom line sustainability is a result of the activities of an organization that shows the organization's ability to maintain the continuity of its business operations (including financial viability) and does not have a negative impact social and ecology.

Activity (8) related to mitigation of possible deviations is very important. Organic agriculture is labor intensive, low use of external inputs, has a higher likelihood of higher yields, and is followed by a higher risk (Rahayu 2011). Risk implies change of loss, possibility of loss, and uncertainty. Several types of risks that affect organic farming practices (Moncada & Seaffer 2010) are (1) production risk, (2) price risk, (3) institutional risk, (4) human resource risk, and (5) financial risk.

Conclusion

The aim of this exploratory research was to evaluate the business strategy applied in one of the sustainable organic farm in Yogyakarta. This research used SSM to organize system thinking in complex situation where multiple human interacts. Based on this research, eight main results were obtained as the key strategies in organic farming: identification of actors and critical factors in the farm, vision and mission socialization, operational evaluation, transformation, managerial improvement, measurement of revenue and profit, consistency in sustainability indicator used, and mitigation plan.

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