



PARTICIPATORY GUARANTEE SYSTEM AS STRATEGY FOR SMALL FARMER'S AUTONOMY AND SUSTAINABILITY DURING PANDEMIC

Professor Shan Li cho

Winkly Research Institute for technology and science

Abstract- During the pandemic, there was an increase in demand for healthy food. Consumers assume food should not be contaminated by synthetic chemicals or excessive human interference; consequently, organic products' need increases and benefits the production's economic scale. On the other hand, it also increases the risk of dishonest traders exploiting the added value of organic products; thus, organic standards become a concern for consumers. Instead, third-party certification bodies have been widely criticized for being difficult to access by the small farmer and causing market monopolies. An alternative approach for them to get an organic label is through the Participatory Guarantee System (PGS), which is mainly intended for local markets, perceived to be democratic, independent, and based on all the small farmer and consumer participation to guarantee the organic products. This article's focus is to analyse PGS as an avenue for farmers to grab organic guarantees amid the pandemic that limits mobility and market access. We applied systematic literature studies supported by questioners and selected in-depth interviews with the small farmers who adopted PGS in East Java Province, Indonesia. We found that PGS able to support small farmer to gain broader exposure to organic guarantees and a considerable rise in product sales during a pandemic. The procedures adopted by the PGSs help building agroecology and strengthening farmers in the food system. Then contributes to increasing small farmer autonomy and sustainability in dealing with stressors during the pandemic.

Keywords: healthy food, organic products, Participatory Guarantee System (PGS)

I. INTRODUCTION

Pandemic Covid-19 is an unpredictable stressor that threatens human health; for this reason, people think massively about what they eat, where they get our food from, and how they store and prepare food to increase immunity against Corona virus. A healthy lifestyle is influenced by the idea that "health as purity" [1]. In this view, food purity is shown by not containing addictive substances, preservatives, and chemical residues. For this reason, Organic food is considered healthy as long as it is purer than conventional food that has been contaminated by chemical substances or excessive human interference [2]. Now, consumer behavior to buy healthy food has become a worldwide trend.

From the production side, organic farming creates autonomy and sustainability from the production process to sales, especially in the covid-19 pandemic. Organic farmers' autonomy is shown as farmers' independence in making their seeds, fertilizers, and pesticides without depending on the market [3]. The lockdown policy that limits the people mobility and operating hours market does not prevent organic farmers from maintaining a sustainable business because they are directly connected to consumers without conventional markets. During the pandemic, the global organic food industry growth 25-100% as consumers continue to recognize immunity as ammunition against coronavirus [4].

However, the main issue in the sustainability of organic food in the market is the need for organic guarantees to ensure consumers get products that comply with organic standards. In many countries, the government only guarantees organic certification by third parties. Unfortunately, the third party's organic certification is difficult to access for small-scale farmers because they require high entry costs [5, 6]. Another criticism is that third party guarantees will burden small farmers because farmers have to pay additional costs that are not comparable to the yields obtained [7, 8].

Farmer autonomy is also a focus on the study of peasantries in the context of globalization. That study highlight that farmers connect with the community and the private sector as market controllers and the state as a regulator [9]. Organic guarantee by third parties is a form of market and state intervention to

farmers to protect consumers but impose a burden on small-scale organic farmers. Thus, the world's organic farmer movement has promoted the Participatory Guarantee System (PGS). PGS is a local based organic quality assurance system, where this guarantee is carried out through social control and knowledge building. The PGS system is based on the active participation of organic farmers, consumers, traders, and NGOs. They come together to make decisions, visit agriculture, support each other, and check whether farmers are producing according to organic standards [10]. These standards refer to the organic standards issued by IFOAM.

In many studies, the PGS Model is considered a way to make a social change based on the same values and ideology among all parties, such as the equality of farmers, traders, and consumers [11]. From the aspect of community development, PGS can create social cohesion and build trust between farmers and consumers [5, 6, 12]. Also, PGS creates opportunities for farmers to share knowledge and resources so that they can increase greater collective power [13]. Farmers feel more autonomous and confident because agricultural products are recognized as genuinely organic products. There is already legitimacy from consumers or other parties involved in the organic guarantee process in PGS [14]. Furthermore, PGS is considered to strengthen food sovereignty [8].

PGS is also claimed to have a contribution to social, economic, political, and environmental development. In the social aspect, PGS facilitates broader information about agroecology-based agricultural practices. At the same time, from an economic benefit, PGS contributes to expanding access to organic markets because the participatory certification can help increase consumer confidence, share information, and build more farmer networks. Meanwhile, from the political aspect, PGS contributes to increasing participation from the entire community by promoting meetings, events and initiating discussions in various spaces, which can encourage farmers to create a decentralized and participatory food system [15]. From an environmental aspect, PGS is a control for farmers to carry out agricultural practices that use biological processes in plants and animals to build soil fertility and control pest diseases towards ecologically-based agriculture [16].

This study aims to analyze in detail how the organic farming model with the PGS can increase autonomy and sustainability for farmers in Pacet Village, especially in dealing with the pandemic covid-19. In every country, the PGS organization is different, depending on the political conditions in each state. In Brazil, guarantee through PGS has been recognized in government regulations [17]. Likewise, in Thailand, PGS guarantees are recognized by the Ministry of Agriculture in collaboration with the Organic Agriculture Foundation and Food and Service Companies. Still, in the Philippines and Indonesia, PGS has only been carried out at the farmer and consumer communities' level.

II. THE METHOD

The authors applied systematic literature studies supported by 2 data collection methods. First, the authors distributed questionnaires to 23 farmers who are members of PGS Pacet. Second, by selecting indepth interviews with 12 PGS farmers and two consumers and a PGS Pacet supporting, interviews were conducted in September and October 2020, where the condition of Covid-19 in Indonesia still shows an increasing number. The data analysis technique is done by descriptive and by organizing the data into coding. According to Miles & Huberman (1994), codings are tags or labels for assigning units of meaning to the descriptive or inferential information compiled during a study. Codes are usually attached to "chunks" of varying sizes - words, phrases, sentences, or whole paragraphs, connected [18].

The research was conducted at PGS Pacet, located in Claket Village, Pacet District, Mojokerto Regency, East Java. This village has an area of 225,733 hectares, which are generally highlands. The total population of Claket Village is 3,546 people, with 1,098 heads of families. Most of the land in Claket Village is allocated for rice field farming of 90,000 hectares, followed by upland or dry land of 57,740 hectares [19]. The livelihoods of the people of Claket Village are mostly dependent on agriculture, but only 15% own land, and most are only landless agricultural laborers.

III. RESULT AND ANALYSIS

3.1 *Organic guarantee at PGS Pacet*

PGS Pacet is formed by an organic farmer group consisting of 23 farmers divided into five groups and most of them are women. All land managed by the group has a lease status, with a land area controlled by the group between 500 to 3,600 meters. On this limited land, the farmer groups plant various commodities such as vegetables, fruits, and tubers. Each item is grown in turn, in limited but varied quantities. Currently, PGS Pacet has verified 54 types of commodities produced by farmer groups.

Table 1. Condition of Farmer Groups in PGS Pacet

Farmer groups	Land Size	Land Status	Average age farmer
Twelve	3.600	Lease	51
Madani	2.900	Lease	44
Swadaya	500	Lease	38
Miyatani	500	Lease	41
Berdikari	500	Lease	46

The organic standard verification process at PGS Pacet is carried out in a participatory between farmers, consumers, and village officials' little involvement. In the next step, the PGS's Secretariat will cross-check the organic standards in farmers' gardens. If the verification process passes, the farmer group will get organic guarantees (figure 1). Still, if it fails, there will be a mentoring process to educate farmers to carry out organic cultivation according to standards.

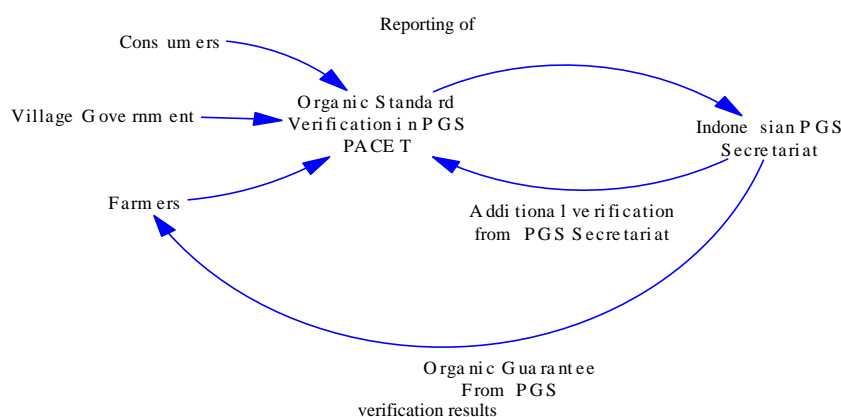


Figure 1. Organic Guarantee Procedure through PGS Pacet

3.2 Organic farming and PGS contribute in terms of income security for farmers.

Based on our study, we found that farmers' problem before transform to organic farming is the uncertainty of income obtained from conventional agricultural products due to uncertain selling prices or no buyers. When farmers practice conventional cultivation, they only plant monoculture so that production is abundant and prices fall, while crop failure is usually caused by weather problems as shown in table 2 below.

Table 2. Conventional farmer problems in Claket Village

Farmer Group	No buyer	Unstable price	Crop failure	Cheap selling price	Just being a farm laborer without land
Twelve		1	1		
Madani	1		2	4	
Swadaya	4				
Miyatani			2		2
Berdikari	2	4	2		
Number of farmers	7	5	7	4	2

After the shift to organic farming and obtaining an organic certificate from PGS, farmer think that they can get additional income, can sell their crop for a good price, can gain knowledge, have no worry that someone will not buy the crop, and have a flexible time compared to become a farm laborer without land, as table 3 below.

Table 3. Problems That Can Be Solved by Conducting Organic Farming in Claket Village

Farmer Group	Getting additional income	Good selling price	Getting new knowledge	Buyer certainty	Flexible time
Twelve	1			1	
Madani	4		2	4	
Swadaya	1			3	
Miyatani	2	1			1
Berdikari	4		6		
Number of farmers	12	1	8	8	1

3.3 *Small farmer's autonomy and sustainability*

Based on interviews at PGS Pacet, several themes related to organic farmers' autonomy include the selfcontrol resource-based, organic farming as the primary family income during Pandemic Covid-19, and building a food system that involves farmers.

3.3.1 Self-control resource-based

Before doing organic cultivation, farmers are very dependent on the inputs purchased in the market, especially seeds, fertilizers, and pesticides. The increase in input prices causes farmers to bear enormous production costs, where these costs are not proportional to the income from their harvest. Some of the ways that farmers can reduce production costs are by using cheap materials but have an enormous impact on human health, especially those who consume these agricultural products. As said by Mr. Pr as follows.

"When I do conventional farming, my hands are damaged like this due to using chemical fertilizers for my cabbage plants. Besides that, I also often use dangerous drugs to save costs. At that time, I thought what was important was the result; I didn't—care who eats my vegetables. In the past, I often used formaldehyde for pest; I can't afford the medicine, one can costs Rp. 170,000. I am looking for another way by giving dish soap to plants because the price is only Rp. 10,000. I once had the experience of 2 weeks of work to buy two cans of medicinal plants until I couldn't provide a living for my family at home; what I thought at that time was, the important thing is that I can buy medicine and my plants can survive. Finally, a friend told me to use a particular treatment for plants, which damaged my hand. Now in organic cultivation, we use natural pesticides, even if we buy it like multifunctional pesticides, it's cheap, and we can also make it ourselves now. " (Mr. Pr, farmer, October 2020).

Since farmers converted to organic farming and established PGS Pacet, the farmers have independently produced agriculture input. The Miyatani group, for example, has succeeded in making low-cost organic fertilizers for their farming and has been able to sell them to the market. Also, the cultivation procedures stipulated in PGS help farmers make planting plans, which are useful for keeping all commodities planted by farmers absorbed in the market, as quoted from the farmer interview below.

"At PGS Pacet, we plan commodities to be planted from each farmer group, such as vegetables, fruit, and tubers. Here we already have two groups that specialize in vegetables; from 2 groups specifically for vegetables, we have a planting schedule. In this planting schedule document, there is a division into one area of land. We give each farmer a program of 4 to 5 types of vegetables. So, there are about 25 types of vegetables in one land. Our mini cropping schedule rotates between vegetables, fruit, and tubers. Each ground and group will have different planting shifts, maintain soil fertility, and ensure that the farmers plant everything. can be absorbed in the market. " (Ms. My, Farmer and manager of PGS Pacet, September 2020).

3.3.2 The primary family income during pandemic covid-19

During the Covid-19 pandemic, family income for farmers only depended on the sales of organic gardens. Some the husband farmer works as construction builders and farm laborers, when the government enforce lockdown policy (or in similar situation), income from those jobs is decline, as experienced by the following Mrs. Rn below,

"My husband works as a construction worker, now it is difficult to do his job after this Covid, so our family income only relies on the produce of this organic garden. In the past, if I was short on money, I borrowed it

from a neighbour, for example, to pay for school; later, if I had income from the fields, I would pay it. But since it's organic, I don't borrow any more money; family expenses can also be reduced, because the cost of food such as vegetables is taken from the garden, so it's more economical ". (Mrs. Rn, Farmer, October 2020)

Currently, the organic sales rise doubled, farmers sell directly to consumers without intermediaries, even when people's mobility decreases during a pandemic, organic sales increase because consumers do not need to buy in supermarkets to get vegetables. Through PGS, the guarantee process facilitates farmers to directly interact with consumers so that product sales can reduce the long conventional chain system.

"I am so amazed, at the time of Covid, we were able to get one quintal of vegetable orders. Never before. Yesterday it was during the holidays, even though usually there were no orders, yesterday it almost reached one quintal, twice a week ". (Mrs. Rn, Farmer, October 2020)

3.3.3 Involve farmers in the food system

The PGS scheme gives farmers access to the cultivation process and handles the promotions and sales by them in the market. In the cultivation process, farmers are involved in land processing, providing seeds, fertilizers, pesticides, and harvesting by a farmer without machines. PGS also facilitate farmer to make promotion and sales during their meet with consumers, both in farmers' gardens or at other exhibition venues.

"apart from providing guarantees, PGS also facilitates market access to farmers. PGS provides meetings between these Pacet's farmers and consumers. So far, consumers and producers rarely meet, always associated with traders. But yesterday, two months ago, we held a consumer meeting between producers and consumers. There the farmer told him about the planting process from start to harvest. Consumers also tell stories about the quality of the product they want." (Mr. Sk. Indonesian Organic Alliance, September 2020)

PGS Pacet has three activities that involve farmers directly meeting consumers, first during a meeting for organic verification on farmers 'land, second during a guest visit at harvest time, farmers' gardens are opened for tourist attractions where consumers can harvest themselves as well as farmers who explain organic agriculture. Third, PGS facilitates farmers to attend organic community meetings such as *Pasar Surabaya Sehat*. This market is a means of gathering for artisan communities, organic farmers, environmentalists, and health activists. Representatives of organic farmers in the group take turns participating in this market activity to get to know consumers more closely, opening up the farmer and consumer networks, and at the same time, a place of entertainment for organic farmers.

"So, we invite farmers to Pasar Surabaya Sehat, I introduce them to customers. Besides, I also help sell farmers' products, I also help them give them the types of updated commodities, what commodities should be planted that are liked by customers trends." (Ms. Agn, Consumer, September 2020)

In a food democracy's concept, all people (citizens) have an opportunities to actively participate in sustainable food systems in order to enable alternative perspectives on how food should be produced and consumed [20]. The findings of this study show that PGS engages farmers to produce health food, conduct sustainable agriculture, protect the environment, and increase their rights to get a fair price in the market. For consumers, PGS also provides true information to help consumers make decisions on the products they consume.

IV. CONCLUSIONS

The ability of farmers to produce and control resources is a way to struggle for autonomy in facing a hostile environment [9]. Besides, small farmers have to deal with various rules created by the state and the market, so that cooperation among farmers is needed to help themselves to survive in the market. In line with these peasantry conditions, the PGS model helps the farmer get an organic guarantee and facilitates farmers to be involved in the whole food system from food production until consumers consume the food. For ahead, PGS model gives the citizens opportunities to actively participate in contributing to food democracy.

During the Covid-19 pandemic and most of place under lockdown, almost of food consumed in household. Consequently, organic products can increase sales by two times, particularly for direct sell to end consumers. Thus, the organic farming model with PGS certification and a sell goes directly to the end consumer can be an alternative in redesigning a food chain system to trigger farmer autonomy, focuses on developing local food production, and more resilient to major stressors such as covid-19.

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