

Strategic Engagement in Institutions of Organic Farming in Indonesia

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1. Introduction

This paper analyzes the institutional aspects of organic farming (OF) in Indonesia, focusing on the dynamic interactions among stakeholders in OF social networks and their engagement with OF government initiatives by using the Net-Map method based on social network analysis (SNA). OF has been promoted by the state as a strategy towards nature conservation and environmental protection. Following the global consensus on the need to transform the current agricultural systems to achieve some Sustainable Development Goals (SDGs), in particular, SDG 15, OF is considered as a promising model of sustainable agriculture (Willett et al. 2019). Therefore, this paper specifically questions how ‘sustainable’ Indonesian OF is from an institutional perspective. Analysis on sustainability and sustainable development, which are considered as two distinct concepts, should address the specificity of these concepts which are connected to the actors who define them and the subject of the enquiry (Nightingale et al. 2019a). Therefore, following this approach, we analytically show the diversity of views on OF not in order to resolve these differences, but rather to bring these differences to the foreground and to illustrate the various ways people act upon these tensions. We also focus on the ways in which different notions of sustainable agriculture are negotiated through different strategies employed by OF actors. Specifically, we examine how, and to what extent, the development of OF has been supported and/or undermined by the social networks of civil society, government, and the private sector.

Previous studies on SNA and environmental farming practices among cocoa and coffee farmers in Indonesia point out the lack of multi-scale analysis that links local and global social networks (Matous 2015). However, as argued by Neilson and Shonk (2014), a ‘value chain approach’ to draw linkages between small-holder farmers with global players tends to miss the complexity of micro-level interactions between different stakeholders. With a different take, our paper illustrates the importance of combining analysis on the governance and policies of OF at the national level with the social networks of stakeholders at the local level in understanding the implementation of OF. Therefore, this paper addresses the limited study on OF

policies and dynamics between actors in Indonesia (David and Ardiansyah 2016). In addition, the use of Net-Map provides a greater involvement of study participants to interpret the networks they constructed, a feature which reveals insights on their positionality with respect to other actors in the networks. Three research questions were formulated to address the points above:

- (1) Which actors influence the institutions of OF in Indonesia?
- (2) How do these actors interact with one another?
- (3) How do institutional aspects of OF affect the 'sustainability' of OF development?

The paper presents the results of a participatory workshop in Yogyakarta, Indonesia, in 2017 where OF practitioners used Net-Map (Schiffer 2007) to construct the social networks of OF in Indonesia¹. This research was undertaken as part of the transdisciplinary research project 'IndORGANIC', which explores the environmental, economic, and social potential of OF in Indonesia (IndORGANIC n.d.).

This paper is structured as follows. First, we describe the historical development of conventional farming and OF in Indonesia, with particular emphasis on the interactions between government and civil society. This section identifies the principal OF actors and provides an overview of relevant policies that frame sustainability issues in farming. Second, we review the literature on the application of institutional analysis and SNA for the study of OF in various contexts. Third, we describe how the Net-Map method was used in a participatory workshop to elicit the views of OF practitioners on the current state of OF in Indonesia. Fourth, we analyze the SNA data in the social networks produced by participants in the workshop, and the content of audio recordings made during the workshop. Our interpretation of the data leads us to elaborate different notions of 'sustainability' in OF and to propose three different categories of OF actors, grouped according to their degree of engagement with the government. In the final section, we identify a possible space for negotiation within OF institutions where government and different actors could collaborate in formulating a more coherent policy for OF development. For future research, we identify a need for further investigation on the potential links between OF development and decentralization.

¹ Please see the Appendix A for social networks created in the workshop, Figures A1 and A2.

2. Study Area

This section specifies historical development of conventional farming and OF in Indonesia, specifically in Java. In addition, it links the government's paradigms and the governance structure in agriculture, which provide insights on the characteristics of the interactions between the government and broader civil society.

2.1. The Historical Development of Conventional Farming in Indonesia

The productivist paradigm, farmers' dependency on the government, and the top-down transfer of knowledge and agricultural inputs are aspects of governance that still persist in the current government's approach to OF. Following the foundation of independent Indonesia in 1945, the government prioritized the increase of agricultural production and food price stability—of rice in particular—in order to achieve national food security (Arifin 2008). These goals were achieved through agriculture policies inspired by a productivist paradigm, whose key components were the intensification and industrialization of agriculture (*ibid.*). Implementation of these policies involved the creation of top-down bureaucratic institutions that controlled the distribution of agricultural production, managed input subsidies, and claimed to have a monopoly of knowledge on agriculture (Winarto 1995; Sawit and Manwan 1991). In 1960s, as part of the green revolution, the government promoted the use of petroleum-based agricultural inputs and high-yield rice varieties (HYV) in Indonesia. The implementation of these policies in Indonesia is examined in numerous studies, including many that criticize their (intended and unintended) consequences (Fox 1991, 1993; Oka 1997, 2003; Winarto 2004; Winarto 2011; Sawit and Manwan 1991). While the intensification of agriculture enabled the goal of national food self-sufficiency to be achieved in the mid-1980s (Fox 1991 cited in Fox 1993), this success was short lived, undermined by massive outbreaks of the rice pest brown plant-hopper (BPH), which attacked paddy fields throughout the country (Winarto 2011; Fox 1993). Among contributing factors to this agricultural disaster were the bureaucratic inefficiency and centralist control that characterized government during the Soeharto era. All criticism of the government was suppressed, thus, stripping initiative and decision-making power from lower level government officials and civil society (Thorburn 2015). The change of the country's political system from autocracy to democracy during the Reform era in 1998 introduced decentralization, including in agriculture. This important feature of the country's agricultural policy is further elaborated in Section 6. However, overall, the introduction of modern agricultural management during the green revolution period forced farmers to be institutionally, technically, and financially dependent on the government (Winarto 2004, pp. 365–66).

This historical background and institutional context influence the characteristics of the networks of OF actors in contemporary Indonesia, as described in Section 7.

2.2. *Civil Society and OF*

OF in Indonesia, particularly in Java, emerged as a social movement initiated and spread by non-governmental actors. The Bina Sarana Bakti² (BSB) foundation was established in 1983 in West Java to provide an alternative option for farmers locked into a centralized agricultural system that perpetuated their financial and institutional dependency on the state and continuous environmental degradation (David and Ardiansyah 2016). This organization is recognized as being the first to offer training in OF for farmers in Indonesia (Jahroh 2010). Another milestone in the OF movement occurred in 1990, when the Ganjuran Declaration, issued at the conclusion of an international seminar held in Central Java on soil degradation caused by agricultural intensification, called for sustainable agricultural development based on the principles of ecological, economic, cultural, and social sustainability (Utomo 2005). In subsequent years, the World Food Day Secretariat for Farmers and Fishermen (SPTN-HPS)³, which was founded during the same seminar, continued to promote these principles and spread knowledge of sustainable agriculture.

More recently, numerous organizations and initiatives promoting OF at different scales have emerged in Indonesia. In Central Java, communities of organic market provide space for the exchange of knowledge and transactions of healthy and artisanal food, where 'self-certification' of the organic produce is accepted by customers based on trust (Widiyanto 2019). These are community-based grassroots movements initiated by individuals with common aspirations and interests. At a national level, the Indonesia Organic Alliance (AOI)⁴ is a long-established organization that has functioned since 2002 as an umbrella organization, connecting different actors involved in OF, and publishing statistics on OF in Indonesia (AOI 2018; AOI n.d.). OF is also supported by international development agencies, such as the international NGO, Rikolto Indonesia, which promotes sustainable agriculture in Indonesia by providing institutional and technical support to farmers (Rikolto n.d.).

² Yayasan Bina Sarana Bakti.

³ Sekretariat Petani dan Nelayan Hari Pangan Sedunia.

⁴ Aliansi Organik Indonesia.

2.3. *The Indonesian Government and OF*

Government's approach to the development of OF is characterized by productivist and market-oriented agendas, which are exemplified by the following programs and policies. The first government initiative to support the expansion of OF was the "Go Organic" program, launched in 2002, which aimed to transform Indonesia into one of the main producers and exporters of organic food products in the world by 2010 (Ditjen BPPHP 2001). This was supported by the creation of a national standard for OF, based on third-party certification, within the Indonesian National Standard (SNI) certification system (SNI No. 01-6729-2002) (BSN 2002). This SNI and subsequent updated versions of the standard provide guidelines for the regulatory agency OKPO (Competent Authority for Organic Food) and extension workers led by the Ministry of Agriculture (MoA) (BSN 2002; Ministry of Agriculture 2003). The main responsibilities of OKPO are to formulate regulatory policies for the monitoring and development of organic food systems, oversee the establishment of organic food certification bodies, and verify the competence of certification bodies and other entities that perform similar functions (Ministry of Agriculture 2003). All the above standards and regulations cover not only agricultural production but also the activities of other private sector organizations involved in the OF sector, such as certification bodies, suppliers, and retailers (BSN 2002, 2016). While the goal of the "Go Organic" program was not achieved, given that the proportion of organic land is less than 1% of the total agricultural land in 2015 (AOI 2018)⁵, the regulatory and institutional structure it gave rise to remains in place. In 2016, the government of President Jokowi launched the "1000 Organic Villages" program with the aim of creating 1000 organic-certified villages throughout the country (Plantation General Directorate of the Ministry of Agriculture 2016). This program was part of the strategy to achieve food sovereignty within the government's wider development agenda (KPPN/BPPN 2014). Despite the government's acknowledgement of the importance of local knowledge and resources, this program still emphasizes the transfer of knowledge, agricultural inputs, and financial support from the MoA to organic farmers (Plantation General Directorate of the Ministry of Agriculture 2016). The top-down structure of the program is apparent from Figure 1.

⁵ According to these statistics, organic land includes agricultural land of four different groups: the members of AOI who practice OF without having organic certificate, organic-certified farmers, organic farmers who are in the process of being certified, and organic farmers who are certified by PAMOR which is the Participatory Guarantee System (PGS) in Indonesia.

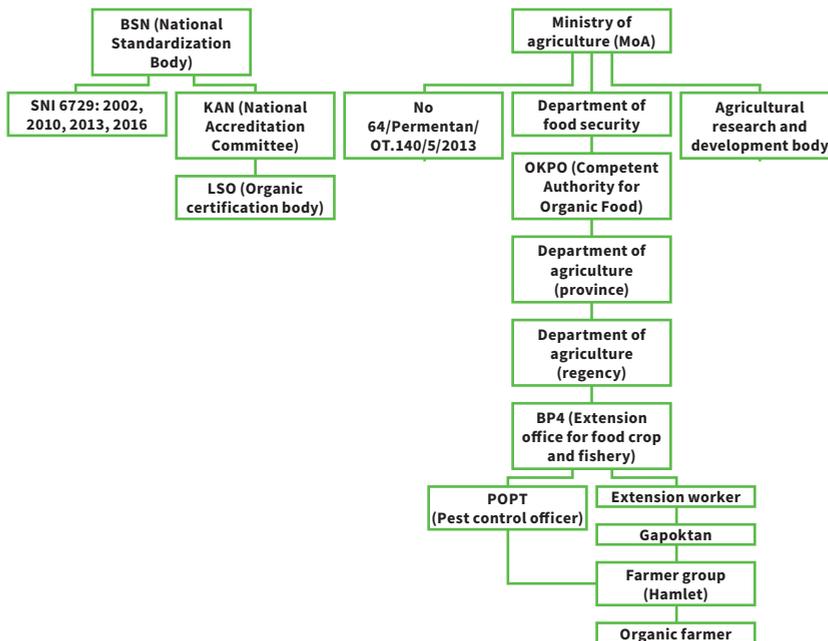


Figure 1. Governance of organic farming (OF) in food crops production in Indonesia (Laksmiana and Padmanabhan 2019 based on BSN 2016; Ministry of Agriculture 2003).

3. Theoretical Framework

3.1. Institutional Theory

In this paper, an institution is understood as sets of prescriptions, such as rules and norms, which shape structured and repetitive human interactions. While social interactions are regulated by these rules, the participants and non-participants of these interactions have the possibility to change them (Ostrom 2005, p. 3). Rules in this context are understood in regulatory terms, as something created by an authority (not necessarily conflated with government) that permit or prohibit certain actions (Black 1962, p. 115 cited in Ostrom 2005, p. 17). Conducting institutional analysis is challenging because of the diversity of situations in which preferences are expressed and choices are made, as well as the implicit nature of many of the rules governing their outcomes (Ostrom 2005, pp. 4–5). It is important to select an appropriate level of analysis that gives sufficient information on the specific situation of interest, but at the same time, provides information on outcomes that is generalizable across a range of cases (Ostrom 2005, pp. 5–6). To address these challenges, we follow the theoretical framework by Michelsen et al. (2001) which identifies three levels of

the institutional environment that constrain decision-making by organic farmers: macro (rules governing civil society, market, and the state), meso (rules governing farming community, agricultural policy, and food market), and micro (rules governing interaction among actors) level. We analyze Indonesian OF institutions at the micro- and meso-level, with a particular focus on the interactions among actors (individuals and organizations) and the governance of OF. Organizations are associations of individuals who share and participate in the same meaning systems or similar symbolic processes and are subject to common regulatory processes (Scott 1994 cited in Lynggaard 2001). We apply SNA for micro-level analysis to explore the emic perspectives of actors, specifically their perceptions of OF, expectations, and positionality in the networks. Meso-level analysis was conducted by reviewing the literature on the institutions of OF and publications of the relevant governmental agencies. By synthesizing these two levels of analysis, we demonstrate that OF institutions in Indonesia are influenced by the characteristics of the social networks of OF actors that are embedded within the governance of OF. In addition, from the current OF institutions, we draw upon different notions of 'sustainability' enacted by the involved actors. The following sections present the results of the meso-level analysis.

3.2. The Institutions of OF

Numerous studies on OF analyze institutions as determining factors in the development of OF, which is measured variously in terms of the number of organic farmers and farms, market size, consumer demand, and the existence of regulations governing OF (Michelsen 2001b; Lynggaard 2001; Bellon and de Abreu 2006; Sanders 2006; Slavova et al. 2017). Studies characterize OF as fundamentally distinct from conventional farming in terms of values and relations among actors (Michelsen 2001a, 2001b). It is suggested that these distinctions arise as a consequence of the origins of OF, particularly in Europe, in social movements that were critical of the environmental and social impacts of conventional farming (Conford 2001; Tomlinson 2008). Historically, the sustainability of OF is variously rooted in environmental protection, health and food safety, and equity issues related to control over means of production in agriculture (Tovey 1997; Tomlinson 2008; Lockie et al. 2006). Tensions arise when the self-regulatory aspect of OF is undermined by the creation of organic standards, thus, diminishing the importance of individual actors in the OF movement and strengthening the position of government agencies (Michelsen 2001a). Michelsen et al. (2001) propose three types of institutional relationships that may exist between OF and the institutions that govern conventional agriculture: pure cooperation, pure competition, and creative conflict. OF institutions in different countries vary, reflecting

their specific national contexts. The OF principles coined by the International Federation of Organic Agriculture Movements (IFOAM) are commonly referred to compare the principles of the global OF movement with national-level organic regulations (Michelsen 2001b; Sanders 2006). However, countries that develop their organic sectors for the export market face the challenge of harmonizing organic regulations with international standards (Mutersbaugh 2004). Harmonization not only poses challenges for the traders and activists involved in the OF movement, but it can also have wider transformational effects, by redefining the meanings of “things”, “people”, and “social relations” that make up property regimes (Verdery and Humphrey 2004 cited in Aistara 2018, p. 138).

3.3. The Institutionalization Process in OF

The literature on the institutionalization of OF addresses the challenges involved in developing a regulatory framework for OF that is compatible with international standards. Institutionalization is considered in this study as a process in which OF is transformed from a social movement that positions itself as distinct from conventional farming into a branch of agriculture that is embedded in conventional farming. This happens, for instance, through alignment with institutional support structures that enable conventional farming to persist or the codification of organic principles into sets of legally recognized standards and definitions (Buck et al. 1997; Tomlinson 2008). Early studies of the institutionalization of OF were mainly concerned with the reconceptualization of OF within the framework of state agricultural policy (Lockie et al. 2006; Tovey 1997), while later studies focus more on the codification of the principles of the OF movement into national or supranational organic standards and how this process has affected the goals of the OF movement (Michelsen 2001a; Lynggaard 2001). The institutionalization process entails a process of institutional change within OF that can be manifested by the formulation and adherence to new sets of rules and regulations (Lynggaard 2001). In addition, the emergence of new organizations or mergers of existing organizations can be treated as an approximation to institutional change (ibid.). For example, Kaltoft (1999) argues that the creation of national certification and financial subsidies in Denmark led to the dilution of value-laden principles that had underpinned the development of OF as a social movement, and their reduction in OF to a set of technical and quantitative definitions and rules. However, Edwards (2013) argues that the formulation of national standards for OF is part of an institutionalization process that does not necessarily undermine the values of OF as a social movement in Indonesia. Within the OF movement, actors have devised different strategies for adapting to regulatory change without

abandoning the values that underpin OF as a social movement (ibid.). Therefore, the introduction of OF regulations does not predetermine subsequent trajectories in the institutionalization of OF. However, regulations do have consequences, as discussed in Sections 6 and 7.

3.4. Institutional Analysis and SNA

SNA is an analysis based on the dyadic relationships between actors in a network. Numerous studies in OF apply SNA in order to examine the network characteristics associated with phenomena such as the commercialization of OF, the participation of individuals in policy-making, adoption of organic practices, the process of knowledge and information production and circulation among OF actors, and OF policy development (Thiers 2002; Mutersbaugh 2004; Bellon and de Abreu 2006; Tomlinson 2010; Wollni and Andersson 2014; Poerting 2015; Slavova et al. 2017). In our research, we used Data Muse to calculate the values for two indices, degree of centrality and betweenness centrality, in order to analyze the relationships and different kinds of flow among the network of OF actors. The actors with high degree of centrality have more links with other actors in the network, while actors with high values of betweenness centrality facilitate flows in the network (Krebs 2004). From these two indices, we can derive a general understanding on structural determinants of influence, the roles of actors, and how the positions of actors in the network relate to their influence (Schiffer and Hauck 2010).

In the abovementioned studies, SNA is usually based on information obtained in semi-structured interviews and surveys where interviewees describe their interactions with other individuals, while the interpretation of the networks is predominantly conducted by analysts. By contrast, in our study, Net-Map was employed to visualize the networks of OF actors and, as further explained in Section 5, this approach enabled us to explore the actors' emic perceptions of the networks that structure their interactions and their own positionalities within these networks. In Section 7, we highlight the influence of the historical coevolution of civil society and government in the area of conventional farming on current OF institutions. Our analysis identifies and characterizes the links among OF actors and shows how these are related to their past positionalities, particularly in relation to the government, and their visions of the sustainability and future development of OF.

4. Research Methodology and Limitations

This section describes the study participants, Net-Map method, and our reflection on the research methodology's limitation. We implemented Net-Map

in a participatory workshop held in Yogyakarta in 2017. Out of the 46 people we invited, 28 participated in the workshop. They were mainly from West and Central Java, which are both the primary agricultural production areas in Indonesia and areas which have played an essential role in the historical development of OF, as mentioned in Section 3. The participants came from diverse backgrounds (Table 1). They were identified based on academic papers and grey literature on Indonesian OF and an explorative study conducted in the two study areas before the workshop. Besides, they were selected based on their various forms of involvement in OF. For example, we invited extension workers and staff of the department of agriculture as they monitor and implement OF programs. We also invited NGOs and activists who conduct OF training, thus, are involved in spreading OF knowledge and values. To understand the trade and marketing aspect of OF, we invited organic traders. These categories are based on self-identification.

Table 1. The participants of the workshop from Central and West Java.

Origin Affiliation	Academic	Government Official	Activist	Organic Farmer	NGO	Organic Traders	Total
Central Java	3	2	3	2	3	2	15
West Java	7	2		1	2	1	13

Net-Map is an interview-based mapping tool for visualizing networks that can help people understand, discuss, and improve situations in which different actors can influence outcomes (Schiffer 2007). This method is based on SNA and was developed to address some of the shortcomings of SNA data collection, particularly the interviewees’ lack of learning opportunities (Schiffer and Hauck 2010). The Net-Map method encourages participants in the process to discuss and interpret the networks among themselves (ibid.). This method is suitable for application in a variety of intercultural settings and different purposes because of the use of low-tech and low-cost materials and the discussion on the properties of the networks in concrete terms (Birner et al. 2010; Schiffer and Hauck 2010; Campbell et al. 2013; Schöley and Padmanabhan 2016). However, the limitations of the method are the numbers of links can become unmanageably large when working with a large or not very well-defined group of actors and the influence of more powerful actors is a potential source of bias as actors perceived as non-influential might be excluded from expressing their views (Schiffer and Hauck 2010). To overcome the power dynamics among workshop participants, we assigned two facilitators, who can interfere when some participants dominated the discussion, for each group.

The procedure of the workshop is as follows. First, two facilitators familiar with the method divided the participants into two equally sized groups. Each group worked on a large table around which they moved freely. Second, we asked participants, “Who are the important players that can influence organic farming?”. We asked the participants to list influential actors and assign them, based on their interpretation, to one of four categories of actors: Non-Governmental Organization (NGO), private sector, government, and community. The names of actors were written on colored cards and placed on the tables. The colors of the cards indicate different categories. Third, we explained to the participants how to describe the links and the direction of the links between actors. We specified four types of links: information or knowledge, marketing channel, agricultural inputs (fertilizer, pesticide, and financial support), and seeds or animals. Participants drew arrows that indicated the links and direction of the links using markers of different colors to connect pairs of actors. Fourth, participants built ‘influence towers’ by placing plastic cups on the card representing each actor. The height of the tower corresponds to the actor’s degree of influence in the networks. Due to time constraints and mental fatigue among the participants, we did not implement the last step of the Net-Map method, which deals with strategizing. In the strategizing step, interviewees are asked to provide actors’ perceived goals, which can assist them in deciding on potential collaborations or conflicts that might arise from interacting with particular actors. Finally, Net-Map visualizations of Figures 2–4 were created using Data Muse, open-source software for network visualization and network data analysis⁶. We inputted data for network visualization based on the photographs of the two networks produced at the workshop. The degree of centrality is calculated by Data Muse according to the number of links of an actor divided by the number of links of an actor with the greatest number of links in the network (Freeman 1978). The maximum value is 1, which indicates the greatest number of links an actor has, and the minimum value is 0, which stipulates no link an actor has in a network. Betweenness centrality is calculated according to the sum of the fraction of all-pairs’ shortest paths that pass through a node. The betweenness centrality of a node v , for example, follows this formula:

$$C_B(v) = \sum_{s,t \in V} \frac{\sigma(s,t|v)}{\sigma(s,t)}$$

⁶ <https://www.datamuse.io/network/login.php#>.

where V is the set of nodes, $\sigma(s,t)$ is the number of shortest (s,t) -paths, and $\sigma(s,t|v)$ is the number of those paths passing through node v (Brandes 2008). The maximum value is 1, and the minimum value is 0. An actor with the highest degree of betweenness is on the closest links between other actors, so that the actor can control flows in a network. The visualized social networks were supplemented with qualitative analysis of audio recording of the group discussions and information obtained from organizations' websites, booklets, publications, and policy documents.

The Net-Map method assisted us discover nuanced interpretations of the social networks constructed by the workshop participants, which would otherwise not be revealed by the survey method. For instance, the local organic market community is connected to other actors mostly through knowledge/information transfer, since the term market is not limited to a place for selling organic products but also for exchange of ideas, as one participant explained (Section 5). Despite this advantage, there were some problems and limitations in implementating the research method, out of which are related to the points elaborated by Schiffer and Hauck (2010). First, the way the workshop was organized was a potential source of bias in the results. We selected and invited the workshop participants based on our judgment of their knowledge of OF and influence in OF. This selection may have favored certain forms of knowledge or opinions and excluded others. Moreover, the two groups were also formed based on self-selection by participants. To the extent that group formation was based on familiarity among the participants, this could have influenced the discussions' dynamic. In any case, it should be borne in mind that the workshop results provide a snapshot of interactions among a selected group of actors at a particular point in time. As elaborated in Section 6, OF situation in Indonesia is not static, and both actors and the institutional framework are changing and evolving.

Some possibly more fundamental limitations of the method were identified by the participants, who did not merely follow the Net-Map instructions but actively engaged in critical discussions and meaning-making as we proceeded. In particular, crucial discussions took place on the notion of "influence", which was considered ambiguous by the participants. They queried whether it was possible to assign values to the actors' influence based on their actions in the network and pointed out that "influence" was a shorthand term for a set of sometimes incomparable characteristics. For example, how could one compare the influence of organic farmers with that of the MoA? Besides, they maintained that a distinction should be made between "positive" and "negative" influence; however, an actor's judgment in this regard would depend on their positionality concerning the presence of other actors in the network. In other words, both the quantity and the quality of influence reflect the normative stances

of actors. For instance, extension workers are influential as they provide technical knowledge and information on the government's programs for farmers. However, they may not be equally influential (quantity of influence) across different actors in the network. Moreover, different actors have different opinions about the standard and usefulness (quality of influence) of the advice they provide. This interpretation implies that, from individual actors' perspective, working closely with "influential" actors does not always help them achieve their goals. As mentioned by Schiffer and Hauck (2010), this issue arose from working with a not so well-defined group of participants, where each individual can have conflicting goals.

However, these critical discussions among participants illustrate one of the strengths of Net-Map. They show the advantages of encouraging participants' active engagement in critically reflecting on and analyzing their positionality concerning other stakeholders in the networks, instead of leaving this analysis to the researchers alone.

5. Results—OF Actors and Links

Based on the two social networks produced during the workshop, we propose three categories of OF actors based on their different degree of engagement with the government, their positionalities in the network, and the interactions among them. We call these disengaged, partially engaged, and fully engaged groups.

5.1. The Disengaged Group

The disengaged group is characterized by the rejection of interaction with the government. This group is dominated by activists who were inspired by the early pioneers in Indonesian OF. For members of this group, the introduction of organic certification as specified by SNI 01-6729-2002 in 2002 was a decisive moment that altered the aims and the actions of OF as a social movement. In the discussions at the workshop, they expressed the view that the prohibitive cost of organic certificates perpetuates the injustice that prevails in conventional agriculture. This view is aligned with another study that argues for the democratization of third-party certification (Konefal and Hatanaka 2011). As mentioned in Section 1, OF was promoted by BSB and SPTN-HPS as a means of achieving both greater independence of farmers and environmental sustainability in farming. More recently, the introduction of OF certification, envisaged as a way to protect consumers, has raised awareness within the OF movement of the need to take consumers into account, a viewpoint supported

by Joko⁷, an organic activist, in the discussions at the workshop. However, one initial aim of the OF movement, that to a certain extent is still pursued by activists today, was to create a community. Community in this sense can be understood as a group of people with shared causes or interests, where the roles of those who identify with this group can be quite flexible and interchangeable. The actors in the disengaged group, including Joko, are (also) concerned that the development OF that seems to be following the blueprint of conventional farming towards greater engagement with agri-business:

So I think it is important to be aware of the State's interpretation of OF, when we talk about Go Organic 2010 program. In the end the aim [of the government] is to develop organic fertilizer industry. (Interview, 9 December 2017)

According to this group, at first, the OF movement was primarily supported by NGOs, whereas it is now mainly driven by market demand. Actors in this group have to adjust to this recent development. They have to either submit to the demands of the market, setting their sights on organic certification and carving out a niche in the market, or to create an alternative system that focuses on the creation of community. This group is exemplified by the local organic market communities (*komunitas pasar organik lokal*), which are connected to private sector organizations (traders and distributors of organic products), NGOs, and other communities in the network. The term 'local organic market community' reflects the dual purpose of these organizations. As Joko, who was one of the initiators of the local organic market community in Central Java, explains:

Actually this [local organic market community] can be considered as a community. It's called a market because it's a place where they [people] meet. I try to define them [local organic market community] so that there is an encounter [where people meet to exchange ideas]. (Interview, 9 December 2017)

Figure 2 shows the network connections of the organic market community in Central Java. This actor not only offers a physical space where transactions can take place, for example, as a place where non-corporate farmers (*petani non-korporasi*) can sell their produce, but also serves as a networking platform for other actors

⁷ All names in this paper are pseudonyms.

with shared concerns about OF (Figure 2). For instance, this actor shares knowledge on nutrition and healthy lifestyle to local consumers, transmits knowledge about agricultural technology to private sector actors, and participates in OF-related research with NGO actors.

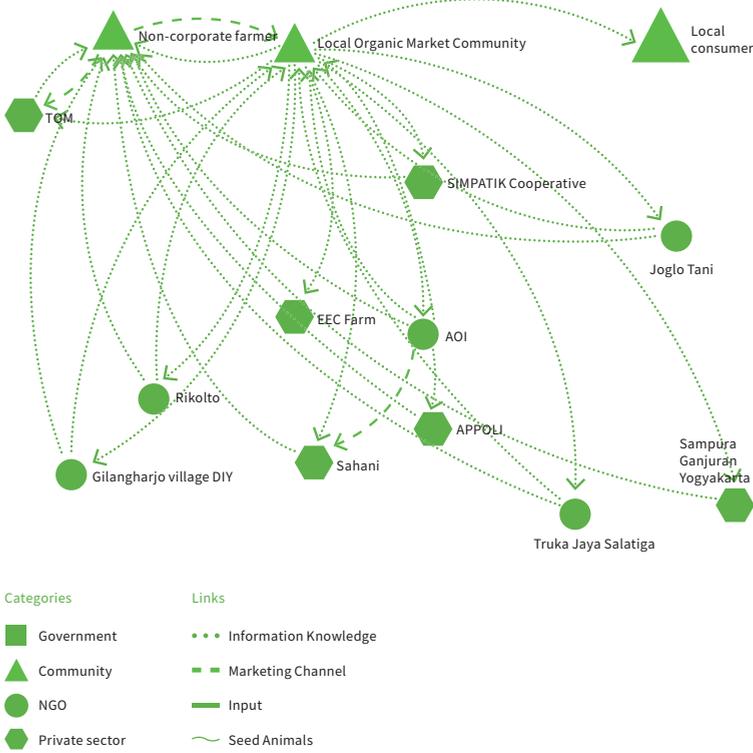


Figure 2. The network of the local organic market community in Central Java. The size of the sphere corresponds to the height of the influence tower (see the text for further explanation). Source: original data by authors.

As shown in Figure 2, this actor has no links with government actors, but numerous links to NGO actors as well as with private sector organizations (degree of centrality score 0.55). In most cases, the links consist of exchanges of information. Apart from providing a market for goods produced by non-corporate farmers, there are no physical exchanges (e.g., of seeds or other inputs) in this network. Another notable feature of the network is the low degree of betweenness centrality (with a score of 0.01); thus, this actor does not facilitate the flow of information between other, otherwise unconnected actors. According to the workshop participants, in

this particular network, local consumers have the most influence and non-corporate farmers together with the local organic market community have the least.

5.2. The Partially Engaged Group

The actors who belong to this group are characterized by their strategic adaptation to the government regulations, while retaining certain aspects of OF as a social movement, especially regarding the issue of farmers' independence from the current system of conventional agriculture. They interact with government actors, for example, by accepting government support, as long as this helps them to advance their goals. However, participants at the workshop commented that they are wary of accepting financial support, as this tends to provoke conflict, whereas technological support can be useful. One member of this group, SPTN-HPS, one of the early pioneers of OF in Java (see Section 3), has the degree of centrality score 1.0, with links to all four categories of actors (Figure 3). The majority of links are for knowledge and information transfer, but SPTN-HPS is also connected to other actors through the exchange of agricultural and/or financial inputs and seeds. In these relationships, SPTN-HPS tends to be the provider of information and knowledge to other actors, including other NGOs working on OF-related issues, retailers, village officials, and communities. In addition, SPTN-HPS distributes or sells seeds and animals to both community-based seed banks and distributors of organic products. SPTN-HPS also works directly with village officials to promote the benefits and importance of OF for village development. It, thus, collaborates with government at the level of the administrative units that have direct interactions with farmers as farmlands are predominantly located in rural Indonesia. As a result of decentralization, village governors control significant resources (the so-called village funds) and can influence the direction of agricultural development of the areas they represent. Among the NGOs and communities in Central Java with links to SPTN-HPS are the Young Farmers School (Seki Muda) and Mursyidul Hadi Islamic boarding school. These two platforms are used by some farmer activists, for example, those who are part of the Indonesian Peasant Union (SPI), to promote OF as part of a strategy to develop young activists and as the starting point for building a grassroots agrarian movement. Totok, who is a former extension worker and is a representative of SPI in Central Java, further explains:

The Village government is more important [than provincial government], especially after the Village Law was passed, they can use village funds to empower [the villagers]. I have observed several places where OF was developed together with the village governments, because they can take

decisions on their own. In this situation the position of village government is more important than the district government. (Interview, 9 December 2017)

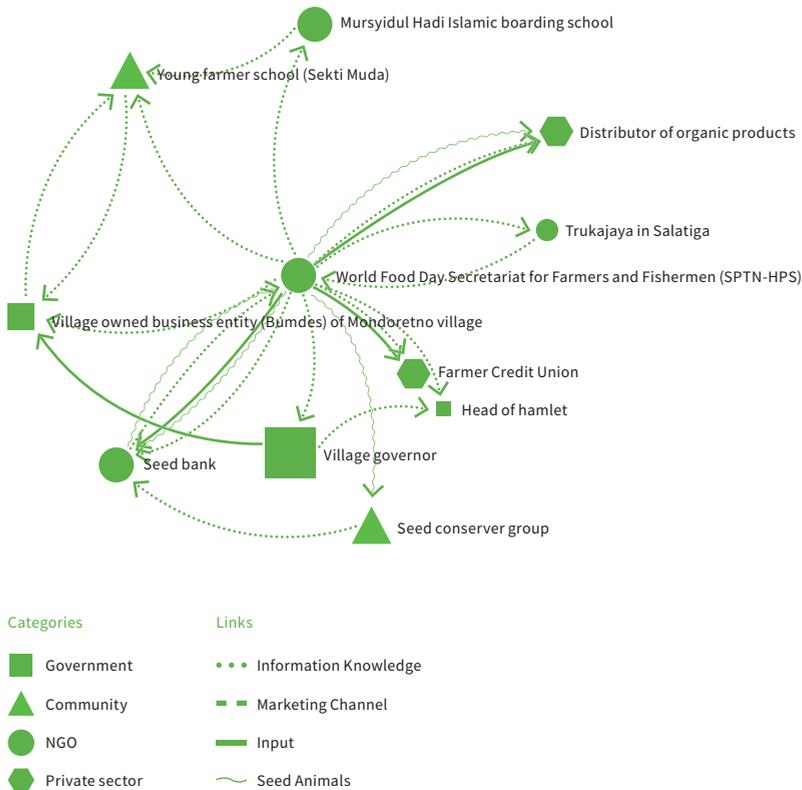


Figure 3. The network of the World Food Day Secretariat for Farmers and Fishermen (SPTN-HPS). The size of the sphere corresponds to the height of the influence tower. Source: original data by authors.

The above statement is illustrated in Figure 3 by the fact that participants in the workshop considered that the village governor had the highest degree of influence in this network. SPTN-HPS has the highest degree of betweenness centrality (score 0.36) in the network, which indicates its important role in the network as a facilitator of information flows between actors that otherwise would not be connected. Due to their influence and centrality in the network, partially engaged actors have the opportunity to disseminate the holistic principles of the OF movement while simultaneously promoting alternative OF systems that are distinct from the government’s approach to

OF. Therefore, they are able to operate on two fronts, cooperating with government to promote OF and simultaneously creating an alternative system where they disagree with the government's actions. In this sense, they can influence the government's approach by exchanging information with government actors who share their interest in promoting OF.

5.3. *The Fully Engaged Group*

In this group, OF actors are characterized by their adaption to the current OF regulations. They generally have links with government agencies, other communities, and actors in the private sector, but no links with NGO actors. They adhere to the status quo and, to the extent that they are successful, provide a justification for the government approach to OF that focuses on building consumer–producer relationships. The creation of a legal framework for OF, with definitions and standards, has allowed actors who do not necessarily identify themselves as belonging to the organic movement to partake in the OF system. In this context, the OF system can be understood as a mechanism for the trade of organic products as premium agricultural products, which protects both consumers and producers from misinformation or fraud through third-party certification as set out in SNI 2016 (BSN 2016). One example of an actor in this group is the farmers' association Gapoktan (Gabungan Kelompok Tani). This is a federation of farmer groups in hamlets that operates at the village level (see Figure 1). In Indonesian agriculture, farmer groups are an official channel for the distribution and dissemination of agricultural subsidies and technical support. Therefore, only farmers who join farmer groups can access government support, though exceptions might exist.

Gapoktan maintains connections with government agencies and other government-sponsored groups with connections to agriculture. Government officials, for instance, public sector employees, often source organic products from farmers, either through formal channels as part of a policy or informally through personal contacts. In Figure 4, these links are observed in the form of inflows of knowledge and information from government actors, such as the regency-level department of agriculture and MoA extension workers. In addition, Gapoktan has a trading relation with the regency-level department of trade, which acts as a trading channel between farmers and customers. Totok, a former extension worker, explains how this works:

So usually farmer groups [in hamlets] focus more on the technical aspect on the field. Meanwhile, Gapoktan focuses more on administrative issues, for example in connecting them [farmers in farmer groups] with the

government which is one administrative level above [hamlet]. (Interview, 9 December 2017)

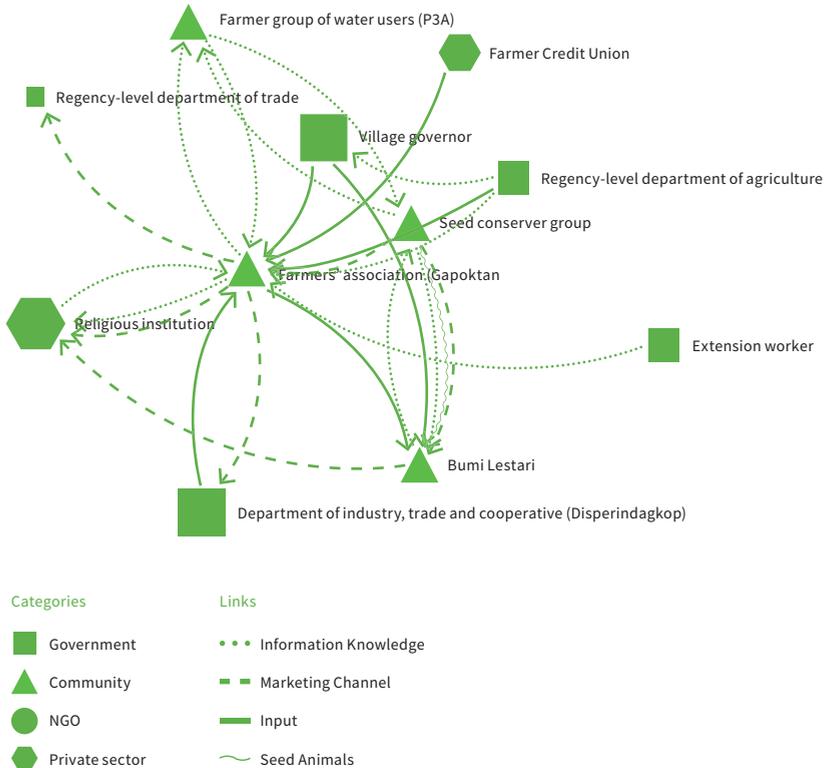


Figure 4. The network of the association of farmers group (Gapoktan). The size of the sphere corresponds to the height of influence tower. Source: original data by authors.

In the network, Gapoktan is connected to other government-sponsored groups, such as Bumi Lestari which is a women’s farmer group (KWT) and a farmers’ group of water users (P3A) that is responsible for the construction of irrigation channels and drains in and around agricultural fields. These links take the form of exchange of information about government programs and/or distribution of agricultural inputs and financial support. Gapoktan has the second highest score for the degree of centrality (0.89) and a relatively equal number of outflow and inflow links, reflecting its influence in the OF network. It was perceived as influential in the network by the participants, though with a lower degree of influence than village

governor. This is probably an indication of Gapoktan's dependence on support from government agencies, as mentioned above. However, Gapoktan's relatively low value of betweenness centrality (0.14) indicates that it does not play an important role as a bridge between actors which otherwise are not connected.

6. Discussion—OF Institutions in Indonesia and Future Implications

In this section, we argue that understanding the emergence of OF institutions, through an analysis of the characteristics of the social networks of OF actors and their relations with the historical development of conventional agriculture, can assist in understanding how the future development and sustainability of OF are perceived and constructed by the related actors. Understanding the interplay between OF as a state policy and as a social movement is crucial for projecting the future trajectory of OF (Michelsen 2001a; Lynggaard 2001).

As mentioned above, since the early 2000s, the MoA has introduced a number of regulations and programs that define, standardize, and set the agenda for Indonesian OF. The Indonesian Standard SNI 6729:2016 on organic farming systems states that one of the aims of OF is to create agriculture that is socially, ecologically, economically, and ethically sustainable (BSN 2016). In addition, organic farming is framed as a strategy for environmental conservation. This approach by the MoA seems to adhere to the OF principles set out by IFOAM and, in Indonesia, the Ganjuran Declaration. Simultaneously, the aim of this national standard to protect consumers and producers of organic products from misinformation (BSN 2016), in a sense, defines OF as a market relationship, distinguishing the different roles of consumers, producers and distributors. This market-based approach has transformed Indonesian OF, which is rooted in the social movements that operated at the grassroots level and emphasized community building. Moreover, closer scrutiny of this policy document reveals that the majority of the information it contains is related to technical aspects in OF, such as the requirement for barriers around organic farms, lists of permitted and prohibited inputs, the conversion period from conventional to organic farming, and other technical measures (BSN 2002; BSN 2016). Therefore, the state has been developing OF following the narrative of sustainable development as ecological modernization, where the invention of environmentally benign technology in OF goes hand-in-hand with economic growth (Nightingale et al. 2019b). Despite the state's recognition of the importance of social, economic, and ethical aspects in OF, they receive much less attention.

Furthermore, the focus on national programs to promote OF recalls the productivist, top-down approach of policies for conventional agriculture, which leads

to farmers' dependence on the state. For instance, the targets of the "1000 Organic Village" program are to be achieved through the top-down distribution of agricultural inputs, knowledge transfer, and financial and institutional support for organic certification (Plantation General Directorate of the Ministry of Agriculture 2016). This program views OF as part of the national food sovereignty agenda that leads to food security, an overarching strategic aim of agricultural policy in Indonesia (Neilson and Wright 2017; Schreer and Padmanabhan 2019). On the one hand, the state's orientation in developing OF is technically measurable, for example, through the number of certified organic farms, size of market share, and consumption and production of organic products. In principal, these indicators can be used to assess the sustainability of OF. On the other hand, the diversity of strategies, values, and goals upheld by various OF actors question the extent in which the state's approach contributes to the future sustainability of OF. Moreover, OF is still embedded within the governance of conventional farming (see Figure 1), whereby government agencies take dual roles in developing both organic and conventional farming. Contrary to the European case, where the EU as a supranational entity pushed for the formulation of national OF policies (Slavova et al. 2017), in Indonesia, OF policies emerged from the dominant role played by a national government that views conventional farming and OF as two systems that are not necessarily contradictory, but should be able to exist in parallel and operate side by side.

The need to respond to these inconsistencies in government policy has led to the emergence of three categories of actors within OF social networks. The disengaged group is characterized by its association with the organic movement and its critical attitude towards the government; members of this group have no links with any government actors, as shown in the example of the local organic market community. In particular, they criticize the dilution of OF principles through the focus on standardization and technical definitions, the realignment of OF from community building towards market relationships, and justice issues related to the industrialization of OF, for example, through mechanization and the focus on input substitution (Goodman et al. 1987). They believe that in all these respects, the government's approach to OF perpetuates the existing shortcomings of conventional agriculture. These limitations restrict farmers' initiatives when selecting which farming practices to adopt. They increase the dependency of organic farmers on the state and on policies adapted to the needs of industrialized agriculture—despite the fact that almost two-thirds of farmers in Indonesia are smallholders (Aji et al. 2019; BPS 2018). Therefore, actors in this group consider sustainability in OF should constitute a justice dimension where means of production are not controlled by those

who are not directly involved in farming, but rather more independence among farmers in deciding how and what to grow and where to sell. However, actors in the disengaged group do not express their criticisms by advocating for policy changes — as does the Soil Association in the UK, for example (Conford 2001). Instead, they adapt to the policy environment by engaging with retailers directly, while maintaining connections with the NGOs that pioneered OF in Indonesia as a way of upholding the foundational principles of the organic movement. The actors in this group operate in a close-knit network characterized by a large number of links with other actors and low values of betweenness centrality. It should be noted that, in the context of national regulations, which were created to facilitate the trade of organic products, these alternative community-based organic markets are, in principal, illegal (Aistara 2015). While at present, this remains largely a technicality, this legal issue might become a serious problem in the near future if the government increases the monitoring of trade in organic products, or if the definition of ‘organic’ is made even stricter.

The second group that we identify is the partially engaged group, which is connected both to the OF movement and the conventional agricultural sector, and strategically adapts to the ongoing changes in state policies by maintaining links with government actors. One example is SPTN-HPS, which is one of the organic pioneers in Central Java and was originally supported by the Catholic Church. In the social network, they still maintain this connection with religious institutions, with whom, they exchange information on the philosophy and technical aspects of OF. They also play a supporting role in government-sponsored OF projects, for instance, by offering advice and training to farmers and village governors. The role of SPTN-HPS in promoting OF in government projects might reflect its credibility among government actors, derived from its status as a pioneer of the organic movement. In the network, SPTN-HPS is a central actor given by its high degree of centrality and its links with all four categories of actors. Nevertheless, after their funding from Catholic social and development organizations ended in 2009, SPTN-HPS has been struggling to adapt to changes in OF, as the priorities of organic farmers have shifted, to a certain extent at least, from building a social movement to obtaining certification and markets for their products (Tamtomo forthcoming). The challenge that SPTN-HPS has been facing, could be argued, is connected to the radical aspect of the OF movement that insists on the independence of OF practice from the state and market (Tovey 1997).

One issue on which SPTN-HPS and other members of the partially engaged group, for instance, Sekti Muda and Mursyidul Hadi Islamic boarding school, takes a firm stance is food sovereignty, particularly seed sovereignty, which is defined as

farmers' rights to access, reproduce, and save seeds (Kloppenburg 2010). There is insufficient clarity in OF regulations on the issue of what constitutes organic seeds (BSN 2016), while Law No.12/1992, the Plant Cultivation System in Indonesia, makes it illegal for farmers to use non-state-registered seeds (President of the Republic of Indonesia 1992). Thus, organic farmers are liable to be prosecuted for attempting to become more independent by storing and using their own seeds, even though, simultaneously, the state encourages the use of local resources in OF (BSN 2016). Similar to the actors in the disengaged group, the justice aspect in OF is paramount for the sustainability of OF according to them. To address this problem, actors who belong to the partially engaged group consider OF as an entry point for engaging in the critical discussion of the current agricultural system with the young people. They also attempt to take advantage of current decentralized governance structures, using village funds as a resource for developing OF from the bottom-up in a way that engages with the aspirations of farmers.

Decentralization was a significant milestone in the governance of agriculture following the fall of President Suharto in 1998, as mentioned in Section 2. The shift in political power and control over budgets allowed government officials to pursue regional interests (Nordholt 2012; Mietzner 2013; Nasution 2016). In a conversation with Eka Herdiana, a government official at the department of agriculture of Tasikmalaya regency, on December 8 2017, he stated that the regency of Tasikmalaya in West Java decided to emphasize the production of organic rice and this is reflected in the provincial government's budget and active support provided for marketing. In addition, the enactment of Village Law (No 6/2014) gave villages a voice in how village funds were used, and thereby increasing their participation in influencing agricultural development at the village level (Vel and Bedner 2015). Therefore, village-level governance could be a platform where farmers, local grassroots OF movements, and the government meet. Nevertheless, a large proportion of the village development budget originates and requires approval from the central government, and this limits the autonomy that villages have for bottom-up agricultural development (Green 2005). In addition, continuation in village development priorities could also be an issue, as village head is a political position, so that the agenda between village head candidates might differ. Despite competition between government officials at different administrative levels for the exploitation of natural resources and the cases of funds mismanagement in the decentralization process in Indonesia (Tsing 2003; Fox et al. 2005), according to the actors in the partially engaged group, village governments remain important potential cooperation partners, since agricultural areas are mostly located in rural areas. Therefore, on the one hand,

the current technocratic and market-driven government policy restricts local OF initiatives; on the other hand, the decision-making process in decentralization offers OF actors the opportunity to influence policy-making and its implementation at local level.

As described above, the disengaged and partially engaged groups adopt different strategies to reconcile the convictions of OF pioneers with government policies and, it could be argued, to overcome the negative stigma previously attached to OF movements (Lähdesmäki et al. 2019). By contrast, there are some actors who make use of the legal framework for OF (i.e., third-party certification and OF standards) as an entry point into the organic market, but do not consider themselves to be part of the organic movement. These actors belong to what we identify as the fully engaged group. In principal, their notion of sustainability is similar to the national government, where OF provides better economic opportunity for farmers in the future. Within the group, the farmers' association Gapoktan is influential in terms of the number of network links to other actors, with whom it exchanges information, agricultural inputs, and seeds. However, similar to the local organic market community, Gapoktan exhibits a low degree of betweenness centrality, which suggests limitations to its influence in the network. Unlike many members of the partially engaged group and all members of the disengaged group, members of the fully engaged group do not consider OF as being opposed to conventional farming, and thereby maintain their dependence on government support for both the production and marketing of organic food products.

7. Policy Implications

We agree that sustainability as a concept loses its analytical rigor when it is used uncritically. The explicit accounts on actors who define it and its definition are prerequisites to address the sustainability of OF. Institutional analysis at the meso level that focuses on the governance of OF highlights the contradiction between centralized governance structures in the agricultural sector and the government's stance that OF should prioritize the use of locally available resources and knowledge. This characteristic can compromise the potential of OF to address the shortcomings in the current agricultural sector, as described above. Institutional analysis at the micro level that focuses on the social networks of organic actors elaborates the multiplicity of perceptions, positionalities, and rationales enacted by different actors. In the context of the pervasive influence of the Indonesian state in regulating OF, our analysis showcases the different strategies based on different degrees and types of interactions between non- and governmental actors. According to this two-level analysis, different

notions of sustainability of OF are enacted by different actors. Particular narratives refer to either the justice aspect in sustainability related to the access and control over OF practices promoted by OF activists or on the ecological modernization promoted by the state. Given the influence of non-governmental actors in the networks, the social justice narrative cannot simply be subsumed under the market creation and technological fix narratives. Therefore, the institutionalization of OF in Indonesia, which is illustrated by the creation of OF policies and standards as we argued above, does not completely push the practices and views of OF as social movement to the margin as also pointed out by Edwards (2013). Our findings support the argument that to make progress in SDGs, the implementation and formulation of policies in sustainable agriculture depend on "societal debates and social movements that apply pressure to governments and institutions" (Eyhorn et al. 2019, p. 254).

Despite the existing tensions, we argue there are spaces for negotiation between the civil society and government, which could potentially lead to the formulation of more coherent OF policies that can accommodate the diversity of goals and strategies among OF actors. One option would be to explore the alternative decision-making mechanisms available in the context of decentralization. The aim should be, for each type of decision, to identify the appropriate decision-making administrative level, so that decisions take account of the interests and perspectives of individual actors and help them achieve their goals. Secondly, as farmlands are predominantly located in rural Indonesia, cooperation and coordination between the MoA and the Ministry of Village could help facilitate OF development in a way that captures the aspirations of farmers. Further study of the relation between village governance and OF institutions could contribute to the future development of OF in a form that is not only more inclusive and locally-driven, but also in alignment with current government OF policy, wider sustainable development goals, and the commitment to decentralization.

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Appendix A



Figure A1. The social network that was drawn by participants of group 1 in the workshop.

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