











Community Participation in Urban Agriculture in the Greater Bandung Area, Indonesia: A Political Ecology Perspective

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<https://doi.org/10.18280/ijdsdp.190819>

ABSTRACT

Received: 5 January 2024

Revised: 25 July 2024

Accepted: 5 August 2024

Available online: 29 August 2024

Keywords:

community participation, farmer groups, political ecology, sustainable agriculture

Urban agriculture has become an essential component in fulfilling food needs. Community participation in subsistence and commercial urban agriculture was found to be related to each actor's goals and interests. Joining the next urban agriculture group does not guarantee that the community has complete control over the farm, so this study aims to understand community participation in urban agriculture through a political ecology perspective to understand the involvement and interrelationships between actors. In this study, the level of community participation is measured using Arnstein's degree of participation. The method used in this research is a mixed method and a t-test. The results obtained in this study show differences in the motivation of commercial and subsistence farmers in joining farmer groups and urban agriculture. The level of community participation shows that subsistence and commercial agriculture have reached a degree of citizen power, although at different levels, namely subsistence agriculture at the partnership level and commercial agriculture at the citizen control level. This difference is influenced by various dynamics faced, including subsistence agriculture, which still has limited knowledge, lack of human resources, and depends on program administrators and commercial agriculture, which still pays less attention to environmental aspects, which is a factor that makes realizing the sustainability of urban agriculture still a challenge.

1. INTRODUCTION

The presence of urban agriculture is an alternative to protecting the environment in urban areas with productive value through the practice of alternative food movements [1]. Agriculture implemented in urban areas directly fulfills the food needs of the surrounding population, there by reducing the carbon footprint of urban communities [2, 3]. The initiation of urban agriculture practices can be done individually or in groups as a form of community participation. In the Greater Bandung area, the government has established many farmer groups. The formation of farmer groups still tends to be top-down rather than bottom-up. A top-down system complicates the development and innovation that comes from the community, which can lead to the cessation of urban agriculture activities [4-6].

In its development, community participation in farmer groups was often used for various actors interests. The allocation of assistance that is off target due to the uneven

guidance given to farmer groups then becomes one of the obstacles to the development of urban agriculture. These obstacles led to discovering various farmer groups that stopped halfway and still need to develop [7]. Urban agriculture in its production is then found to have a close correlation with subsistence or commercial purposes that have different goals and benefits [8, 9]. The other objectives and advantages obtained from the two agriculture allow the community participation to also differ in various aspects [10-12].

The participation of farmer groups in urban agriculture was found to be inseparable from the struggle for power or control. Through the concept of political ecology, this can be seen beyond local communities in explaining resource use and power dynamics in everyday interactions and formal policy arenas at various scales. Political ecology articulates different actors' motivations, interests, and actions competing for access to and control over resource management [13]. The problem experienced by farmer groups is the absence of constant

security for their survival. Often, farmer groups that are not independent face this because existing policies greatly affect the urban agriculture activities they carry out. Farmers' unfamiliarity with bureaucratic processes related to their rights makes it difficult for people to be involved in public policy decision-making [14-16]. Forms of participation, especially those related to nature, must be understood as political projects in the context of neoliberal accumulation regimes because, basically, the practice of community participation in resource management, such as urban agriculture, is inseparable from the influence of stakeholders who provide investment in it [15, 17].

The influence and involvement of various parties make knowing the level of community participation owned by urban agriculture actors and the factors that influence the dynamics in it then becomes an important thing to be able to understand

the amount of control and power that the community has as an actor in urban agriculture activities. Arnstein's "A Ladder of Citizen Participation" (1969) is one model that can be used to measure farmers participation level based on their contribution. Based on the contribution made, Arnstein divides the ladder of participation into degrees of nonparticipation (no power), degrees of tokenism (false power), and degrees of citizen control (actual power) and into 8 levels, which are accompanied by a descriptive continuum of participatory power. This division of participation levels is needed to show whether the community has taken on the required role in urban agriculture management or is involved without having full control [18]. In order to adapt Arnstein's ladder of participation theory to farmer groups, we define the eight levels detail in Table 1.

Table 1. Community participation in subsistence and commercial agriculture in degree of nonparticipation

Variable	Definition	Degree of Participation
Manipulation	The lowest stage of participation, where group members are only invited to join in order to support a particular interest.	Non-participation
Therapy	Farmer group members are beginning to have an understanding of the purpose and benefits of being involved in urban agriculture activities.	
Placation	Farmer group members are included in joint discussions and their opinions are considered.	Tokenism
Informing	Farmer group members have realized their rights and responsibilities. They have a better understanding of the purpose of their participation.	
Consultation	Farmer group members have been given the opportunity to express their opinions, although it is not certain that they will be followed up and considered by decision makers.	
Variable	Definition	Degree of Participation
Partnership	There has been a distribution of power as negotiations have been able to take place between group members and power holders.	Citizen Power
Delegated Power	Farmer group members already have the ability to ascertain the importance and accountability of the program to them and there have been initiative from power holders to initiate discussions.	
Citizen Control	Decisions are prioritized and dominated by inputs from farmer group members and ensure follow up.	

Several studies related to urban agriculture and the factors that influence its success have been conducted, which state that maintaining public interest in participating in urban agriculture is ultimately challenging. The active participation of the community further becomes a factor that influences and supports the success and development of urban agriculture to achieve goals in various aspects [4, 5, 19, 20]. Particularly in the research on community participation, it was found that in reality, not all communities can be confirmed to be at the stage of having actual power in their contribution to urban agriculture. This shows that participating in groups does not guarantee that they have complete control over the urban farms they manage and have equal power, but participating in groups can increase social capital [18, 21]. Farmer groups are an important element that plays a role in agricultural development, so it is important to know the factors that affect the success and causes of failure of farmer groups [22, 23].

Based on previous research on urban agriculture, it was found that urban agriculture faces various challenges, both subsistence and commercial agriculture. Challenges that are often found include limited land, lack of knowledge that leads to lack of independence and demands to follow market standards [24]. The various challenges found to be problems of urban agriculture actors are aspects that cause the main objectives of urban agriculture not to be achieved to realize community welfare and further affect the level of community participation in urban agriculture [25-27]. In relation to political ecology, it basically refers to interdependent

interactions. These interdependent interactions occur between individuals, communities, society and nature [14]. In practice, political ecology research conducted in the context of urban agriculture will increasingly be conducted because it also has a role in maintaining farmers livelihoods while showing that the presence of urban agriculture is closely related to the fulfillment of food security for urban communities such as food provision, distribution and consumption [28, 29].

Although many studies have been related to community participation in urban agriculture, studies that discuss the level of community participation in farmer groups and its relation to the success of running sustainable urban agriculture have yet to be found. The influence of various parties and the motives of each actor involved show that community participation in farmer groups is inseparable from power struggles and control. Joining an urban agriculture group does not necessarily guarantee that the community has full control or access to the farm. This means understanding community participation in urban agriculture needs to be reviewed through the perspective of political ecology to understand the involvement and interrelationships between actors and the efficiency of the program approach that is carried out and knowing the level of participation is needed to show whether the community has taken the role as required for the management of urban agriculture or is just a follower without any authority. This study aims to determine the level of community participation in urban agriculture based on the perspective of political ecology, understand the factors that influence community

occupation of subsistence agriculture is dominated by housewives with a total of 30.36% while commercial farmers are dominated by farmers with an average value of 33.93%.

Most subsistence agriculture actors utilize public facility land, with a total of 38.93%, while most commercial agriculture uses private land, with a total of 38.21%.

Table 2. Characteristics of farmer group members

Characteristic	Subsistence		Commercial		Characteristic	Subsistence		Commercial	
	Amount	%	Amount	%		Amount	%	Amount	%
Gender					Occupation				
Male	96	34.29%	45	16.07%	Farmer	16	5.71%	95	33.93%
Female	44	15.71%	95	33.93%	Housewife	85	30.36%	27	9.64%
Age					Entrepreneur	10	3.57%	1	0.36%
0 – 14 years	0	0%	0	0%	Farm worker	2	0.71%	9	3.21%
15 – 35 years	5	1.79%	21	7.5%	Coolie	2	0.71%	1	0.36%
36 – 64 years	122	43.57%	92	32.86%	Teacher/Lecturer	5	1.79%	1	0.36%
≥ 65 years	13	4.64%	27	9.64%	Driver	2	0.71%	0	0%
Education					Civil servant	5	1.79%	0	0%
None	1	0.36%	10	3.57%	Private employee	0	0%	1	0.36%
Elementary school	25	8.93%	74	26.43%	Architect	0	0%	1	0.36%
Junior high school	13	4.64%	21	7.5%	Retired	13	4.64%	4	1.43%
Senior high school	56	20%	27	9.64%	Land Ownership				
College	45	16.07%	8	2.86%	Public facilities	109	38.93%	18	6.43%
Farming Experience					Grant	11	3.93%	0	0%
0 – 4 years	129	46.07%	34	12.14%	Rent	2	0.71%	6	2.14%
5 – 9 years	10	3.57%	77	27.5%	Personal	16	5.71%	107	38.21%
10 – 14 years	1	0.36%	25	8.93%	Managing other people's land	2	0.71%	9	3.21%
15 – 20 years	0	0%	2	0.71%					
>20 years	0	0%	2	0.71%					

3.2 Community participation in urban agriculture

Table 3 shows the results of research on the level of community participation. Both subsistence and commercial farmers have an average value that is included in the high category and is above 3.51, each worth 3.53 and 3.81, as in Table 4. The research results on subsistence and commercial urban agriculture shows significant results in community participation in general.

Table 3. Community participation in subsistence and commercial urban agriculture activities

Variable	Types of Agriculture	Mean	St. Dev
Participation	Subsistence	3.53	0.54
	Commercial	3.81	0.56

Table 4. Difference of participation in subsistence and commercial agriculture

Variable	Diff. Value	Standard Error	T-Value	P-Value	Sig.
Participation	-0.273	0.066	-4.142	0.000	sig.

3.3 Degrees of participation based on Arnstein's ladder of participation

3.3.1 Degree of nonparticipation

The research results are in Table 5. The average found in subsistence and commercial agriculture at the manipulation level is 3.74 and 3.94, then at the therapy level, the average found in subsistence and commercial agriculture is 3.97 and 3.56. Based on the t-test in Table 6, there is no significant result at the manipulation level between subsistence and commercial agriculture types. This indicates equality in subsistence and commercial agriculture at this level, but significant results were found at the therapy level in both types of agriculture.

Table 5. Community participation in subsistence and commercial agriculture in degree of nonparticipation

Variable	Types of Agriculture	Mean	St. Dev
Manipulation	Subsistence	3.74	1.10
	Commercial	3.94	0.98
Therapy	Subsistence	3.97	0.66
	Commercial	3.56	0.79

Table 6. Difference of participation in subsistence and commercial agriculture in degree of nonparticipation

Variable	Diff. Value	Standard Error	T-Value	P-Value	Sig.
Manipulation	-0.193	0.124	-1.550	0.122	insig.
Therapy	-0.404	0.087	4.643	0.000	sig.

3.3.2 Degree of tokenism

Table 7. Community participation in subsistence and commercial agriculture in degree of tokenism

Variable	Types of Agriculture	Mean	St. Dev
Informing	Subsistence	3.75	0.69
	Commercial	3.53	0.76
Consultation	Subsistence	3.86	0.79
	Commercial	3.58	0.91
Placation	Subsistence	3.54	0.95
	Commercial	3.35	0.95

The results of the study in Table 7 show that the average values of subsistence and commercial farms at the level of informing are 3.75 and 3.53, at the level of consultation are 3.86 and 3.58, and at the level of placation are 3.54 and 3.35. Based on the t-test in Table 8, it was found that there were significant results between subsistence and commercial farms at the informing and consultation levels. However, there were insignificant results for both types of farms at the placation level.

Table 8. Difference of participation in subsistence and commercial agriculture in degree of tokenism

Variable	Diff. Value	Standard Error	T-Value	P-Value	Sig.
Informing	0.214	0.086	2.477	0.014	sig.
Consultation	0.279	0.102	2.732	0.007	sig.
Placation	0.186	0.113	1.636	0.103	insig.

3.3.3 Degree of citizen power

The results of the study in Table 9 show that the average values for subsistence and commercial agriculture at the partnership level are 3.54 and 3.41, at the delegation power level the average are 3.13 and 4.05, and at the citizen control level are 2.99 and 3.98. Based on the t-test in Table 10, it was found that subsistence and commercial agriculture showed insignificant results at the partnership level. However, significant results were found for both types of agriculture at the level of delegated power and citizen control.

Table 9. Community participation in subsistence and commercial agriculture in degree of citizen power

Variable	Types of Agriculture	Mean	St. Dev
Partnership	Subsistence	3.54	0.99
	Commercial	3.41	0.98
Delegated power	Subsistence	3.13	1.00
	Commercial	4.05	0.70
Citizen control	Subsistence	2.99	0.92
	Commercial	3.98	0.68

Table 10. Difference of participation in subsistence and commercial agriculture in degree of citizen power

Variable	Diff. Value	Standard Error	T-Value	P-Value	Sig.
Partnership	0.129	0.118	1.089	0.277	insig.
Delegated power	-0.921	0.103	-8.924	0.000	sig.
Citizen control	-0.991	0.097	-10.252	0.000	sig.

3.3.4 Level of community participation in subsistence and commercial agriculture

To show the level of community participation, the highest level achieved was taken. If the value is above 3.51, it indicates that the value above the average level has been achieved as follows. The results in Figure 2 show that community participation in subsistence agriculture is at the partnership level, while Figure 3 shows that commercial agriculture is at the community control level.

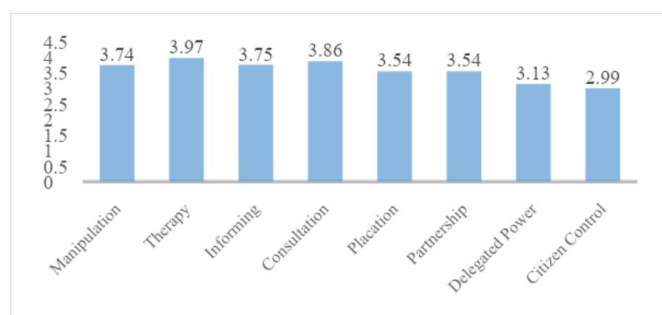


Figure 2. Level of community participation based on Arnstein's ladder in subsistence agriculture

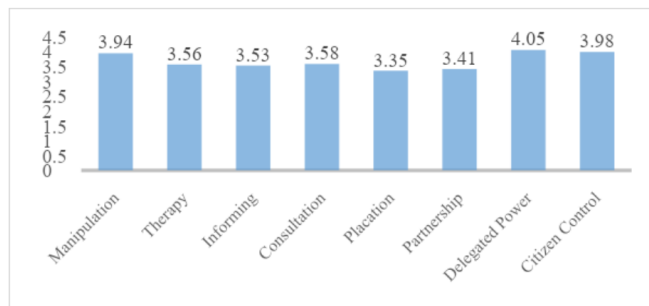


Figure 3. Level of community participation based on Arnstein's ladder in commercial agriculture

4. DISCUSSION

4.1 Characteristics of urban agriculture group members

The characteristics of actors involved as members of urban agriculture groups are one of the benchmarks in understanding community participation, basically in a group allowing interpersonal communication between members. The involvement of various actors and differences in the characteristics of each individual will be routinely encountered so that it is possible to influence matters relating to the group and the managed urban agriculture [32]. Based on the research, it was found that many members of the subsistence farmer group are also members of the posyandu cadre and members of the family welfare empowerment (PKK), where this group is dominated by women, because the aim is to make it easier to coordinate and support stunting prevention programs through the consumption of urban agricultural products that are more guaranteed in quality.

A commercialized agricultural system basically leads to a greater market orientation in agricultural production [33]. As in this study, it was found that the number of men in commercial agriculture is related to the source of livelihood and the role of men as heads of families, so participating in urban agriculture aims to fulfill household needs and increase the income of the perpetrators through the sale of urban agricultural products. In this study, it was then found that most members of subsistence and commercial farmer groups are aged 15-64 years and are included in the productive age range where people can still carry out activities effectively and efficiently daily [34]. In the level of education, differences between subsistence and commercial farmers were found due to various factors, including those who do not have the economic ability to pay for education, so they choose to work directly. Another factor is the family's hereditary in agriculture, so they decide to continue this rather than continue their education. However, the results found in this research show that the number of farmers aged under 35 years or the younger generation is small. The decreasing interest in agriculture in the eyes of the younger generation is due to the assumption that being a farmer does not promise to increase income and is not a prestigious job and changes in the perspective of the younger generation due to historical trends when agricultural management is seen as a job that does not require high cognitive skills [35-37].

The difference found in the length of time farming, and the type of main job is because one of the motivations of people in subsistence agriculture is to find additional activities to increase productivity and start urban agriculture activities after

the farmer group formation program. In contrast to subsistence agriculture, commercial agriculture actors were found to have been involved in the world of agriculture since a long time ago, and even farmers were found who had been hereditary because they made urban agriculture a source of livelihood to fulfill their daily needs.

This study found that most of the land utilized by subsistence agriculture actors is public facility land because the location of subsistence farms is in densely populated areas, and other infrastructure buildings with yards tend to be narrow. The conversion of land use for non-agricultural aspects in urban areas is inseparable from the urbanization process, which causes the city population to increase, accompanied by increased land requirements for housing and other infrastructure [38]. In contrast to subsistence agriculture, commercial agriculture mainly utilizes private land because commercial agriculture aims to meet the fulfillment of food supply and market demand, which requires more extensive land.

4.2 Community participation in urban agriculture

Community participation in general in this study shows how the basic involvement of the actors, which includes mutual recognition, respect, and knowledge, so that the results that are above average show that the majority of farmer group members are found to know each other well, respect each other, and have sufficient knowledge. The existence of a knowing relationship that researchers found was shown by the closeness of group members who were not only related to urban agriculture but also outside urban agriculture activities. Group members often gathered to eat together or travel together. The closeness is supported by the people who join one group living in adjacent areas, so they already know each other.

One form of community participation in urban agriculture activities is the involvement of the community in the decision-making process, implementation, receiving benefits, and evaluation [39]. At this general level of participation, researchers found that the involvement of group members in all these aspects made them feel valued because their opinions were considered important. The closeness established since the beginning is also one of the aspects that makes group members more free to express their opinions and be valued by other members.

However, from the perspective of political ecology, it is possible to find a link between power differences in groups and resource management and a tendency to support the most powerful party [40, 41]. In this study, this researcher found that the influence of each actor refers to their active participation and contribution in terms of knowledge and experience.

4.3 Degrees of participation based on Arnstein's ladder of participation

4.3.1 Degree of nonparticipation

In this study, community participation at the manipulation level shows the intensity with which group members are invited to engage in urban agriculture activities. Thus, based on the results obtained in the research at the manipulation level, it shows that the value of both types of agriculture is above average. This means that farmer group members are often invited to be involved in urban agriculture activities.

Meanwhile, the therapy level shows the understanding received by group members regarding the goals and benefits of urban agriculture activities, so based on the results obtained at the therapy level, which are above average, it shows that at this level, both subsistence and commercial group members have gained an understanding of the goals and benefits of good urban agriculture activities from group managers.

However, the results showed that subsistence agriculture has significant results with commercial agriculture at the therapy level. This is supported by the fact that many subsistence agriculture farmer group members initially did not have any understanding of urban agriculture before joining the farmer group. Researchers found in subsistence agriculture that there are still people who become mere objects, and all initiations still come from the program organizers. Looking from the political ecology perspective, the discovery of the community as an object shows that community participation in urban agriculture activities is inseparable from the influence of stakeholders who invest in it and utilize the community with certain intentions [15, 17, 42, 43]. Thus, the discovery of this in the field shows that there are still people who take advantage of the urban agriculture program for other purposes, such as groups that are formed without the full benefits given to their members. This is certainly influenced by farmer group members who do not understand the purpose and benefits of their involvement in urban agriculture activities and are still dependent on the program organizers, so they are still easy to influence and not fully able to take steps independently.

4.3.2 Degree of tokenism

In this study, community participation at the level of informing shows the level of understanding of the rights and obligations of group members, along with the freedom to determine activities that can be carried out. The level of consultation shows the intensity of group members being given the opportunity to express their opinions, while the level of placation shows the intensity of acceptance of the opinions expressed. Thus, the provision of informing and consultation results that are above average in both types of agriculture indicate that each group member in both subsistence and commercial agriculture has understood their rights and obligations in the group, given the freedom to choose the activities they want to do in urban agriculture activities, and allowed to express and give opinions. Meanwhile, based on the results obtained on placation, it shows that commercial agriculture is still at a moderate stage while subsistence agriculture has a higher value, which means that the intensity of receiving opinions in the form of criticism and suggestions from commercial farmers is lower than that of subsistence farmers.

The overall results show that subsistence agriculture has a higher degree of tokenism participation than commercial agriculture. This is influenced by subsistence agriculture, which started its involvement in urban agriculture activities dominated by the existence of urban agriculture programs from the government so that good relationships with program organizers make it easier for subsistence agriculture actors to convey and seek criticism and suggestions they have and negotiate with program organizers. The results obtained do not necessarily indicate that commercial farmers do not have full access to express opinions within the group and to program organizers, it is just that commercial farmers who tend to manage their own land make these agricultural actors found to make many decisions themselves in the management of urban

agricultural land, in contrast to subsistence agriculture which manages shared land so that everything must be discussed.

The differences found in these two farmer groups are a concern because they show the inequality of their relationships with external parties. The phenomenon of inequality, when viewed based on the idea of political ecology, is basically the existence of unequal power relations. The power and control actors possess can be seen in how they can take steps and influence other parties to achieve their goals [44]. In this study, the close social relationship that subsistence farmers have with the program organizers clearly provides ease in expressing opinions and influencing the ease of achieving the desired goals compared to commercial farmers. According to Arnstein [18], in reality, there is no guarantee that groups will achieve equality of power and access. Therefore, it is common to find differences in the ease with which the two types of farms have access express their opinions. However, if we look further, this is actually one of the gaps in the urban agriculture program.

4.3.3 Degree of citizen power

In this study, community participation at the partnership level shows group members' intensity in planning and decision-making. Then, the level of delegated power and citizen control shows the level of role and authority held in managing urban agricultural land. Thus, based on the results at the partnership level, which show that subsistence agriculture has an above-average score while commercial agriculture is at a moderate stage, in contrast the results at the level of delegated power and citizen control show the opposite. This is because commercial farmer members are not all active in the group. After all, they are already busy taking care of their respective lands, so when something has been discussed and a quick decision is needed, it can be decided by the group manager. However, commercial farmers have full control over land management because everything is decided by themselves, unlike subsistence farmers, who still have to do discussions.

At the partnership level, negotiations between the internal and external actors in the group begin. Better communication and relationships between farmers and program organizer made it easier for subsistence farmers to negotiate, especially with external parties, than commercial farmers. The phenomenon of inequality and its relation to negotiation in political ecology refers to Nygren [45], who states that negotiation is seen as a power-laden process through which people ultimately re-establish unequal relationships alternately governed by broader socio-economic and political conditions [45, 46]. Thus, at the level of appeasement, the researcher sees that there is still inequality in acceptance and negotiation at this level.

Participation must be fair, which means representation of all stakeholders involved and equitable power [47]. The researcher found that the definition of fairness in the decision-making of subsistence and commercial agriculture actors certainly cannot be defined in the same way because of their differences. In this study, it was found that every farmer group, both subsistence and commercial, strives for all to feel that they are given the same rights fairly, for subsistence agriculture, making decisions together is one form of effort to provide justice in the group, while for commercial farmers one form of the justice supplied is by ensuring that jointly owned tools can be utilized by all members with the same portion.

Referring to research related to political ecology, namely that power can be found in everyday life and the actors will

influence changes involved [48]. At this level, the power found in commercial agriculture is certainly influenced by the actors involved, namely farmers.

4.3.4 Level of community participation in subsistence and commercial agriculture

Subsistence agriculture was found to be at the partnership level, which falls within the degree of citizen power. Unfortunately, this group is not yet at the highest level of the ladder. Many subsistence agriculture actors were found to have less than 5 years of experience, which is one of the factors that many subsistence agriculture actors still need to develop. In the case of the field, it was found that the lower levels owned by these farms were also influenced by internal factors, where several groups with very few active members were found. The reduction in the number of members involved is certainly a trigger for a reduced rate in the development of farmer group improvement in managing urban agriculture activities because subsistence agriculture manages shared land. Reviewing this phenomenon based on political ecology is a possible thing to happen, where in the management of natural resources, the actors involved in it can compete, one of which is inseparable from the interests of each actor [13, 15].

Of course, members of the subsistence agriculture group are still trying to develop urban agriculture through various strategies and innovations, the first of which is land optimization. The lack of freedom for the community to determine the size of the land they want to manage shows that the power is not completely in the hands of the community. Then, in addition to collaborating with the government, subsistence agriculture also cooperates with other parties, such as making the garden built as a tour for kindergarten students. The aim is to educate children to understand the importance of urban agriculture activities and to sell agricultural products that have been processed to increase the selling price of agricultural products. Furthermore, to improve and attract the involvement of more actors, collaboration is carried out with young people who are members of local communities, such as youth organizations. This is also one of the aspects that shows that bottom-up urban agriculture is starting to be created through innovations carried out on personal awareness by group members.

The farmer groups met saw that urban agriculture activities were related to an increase in agricultural waste; this phenomenon would then become a tragedy where urban agriculture, which was expected to be an alternative to fulfill foodstuffs while preserving the environment with all its positive impacts, had to have the opposite effect if agricultural waste management was not carried out. Therefore, environment-based management is one of the aspects upheld by subsistence farmers. Most subsistence farmers were found to have realized the importance of protecting the environment. In addition to implementing organic urban agriculture, agricultural actors also subsist on managing agricultural waste and innovating by utilizing magot to accelerate waste decomposition. The existence of various strategies that are trying to be applied to maintain the city's sustainability is one of the factors that allow subsistence farmer groups in the Greater Bandung Area to reach a higher level of participation.

Commercial agriculture was found to be at the highest level that is citizen control, which means it belongs to the highest degree of participation. Based on Blaikie and Brookfield [49], political ecology perspective, social, environmental, and economic relations are interconnected [49, 50]. We found that

the highest level of participation by commercial farmers in this study is also related to the relationship between these three aspects. Commercial agriculture actors were found to be dominated by people whose main livelihood is farming, so the fulfillment of their family's needs depends on urban agriculture activities, which is a form of natural resource utilization. The pressure to make ends meet and the longer time spent on urban agriculture activities further puts participation in commercial agriculture at the level of citizen control. Based on this, we will see that the persistence of commercial farmers is not only for the sake of pursuing economic fulfillment, but there are social factors where commercial farmers get demands to achieve a decent standard of living and are also supported by the desire to maintain control over the farm that has been built. It was also found that establishing social relations as members of the group facilitates the distribution of assistance from external parties, and the utilization of limited goods can be shared fairly.

In this study, the role of agricultural commercialization is indeed a very important factor to achieve, especially for low-income communities. Furthermore, independent land management by commercial farmers is an aspect that influences the power that each individual has to be equitable in managing the land owned. Unfortunately, this study found that not so many commercial farmers are aware of the importance of preserving the environment. The existence of this can certainly threaten the sustainability of managed urban agriculture. Marx [51] stated that the progress that occurs in agriculture is mere artistic progress in which land robbery also occurs. This is a criticism of the application of political ecology, which only prioritizes the profits and interests of actors without paying attention to ecological aspects, as found in most commercial agriculture in this study.

The pressure to fulfill the needs of the next life makes commercial agricultural actors choose to continue using pesticides rather than face crop failure. So, to maintain the interest of ecological aspects in preserving the environment, what was found to be done was to protect the environment through other means, such as managing agricultural waste into compost. Composting benefits the environment and has economic value because it reduces production costs used to buy fertilizers [52-54]. Basically, the wise use of natural resources and the willingness to preserve the environment are important steps to achieve the sustainability of urban agriculture communities and activities.

The sustainability of urban agriculture also requires assistance from external parties. This is to maximize the development of managed urban agriculture. This study found that help from the urban agriculture program was very useful for them. The assistance provided varied, including seeds, seedlings, and agricultural tools. It's just that there are things that make people dissatisfied, for example, seeds provided that differ from what is needed. Commercial farmers often face obstacles, namely feelings of dissatisfaction with the function of the farmer card, a program widely known and utilized by urban agricultural actors.

The existence of the farmer card should certainly provide satisfaction to its holders because one of the functions of the farmer card is that it can be used to purchase subsidized fertilizer [55, 56]. Unfortunately, in this study, it was found that when asked about the function of the farmer card, many commercial farmers felt that what they got was not as expected due to limitations in use. Some farmers complained that their farmer cards could not be used. Detailed explanations and

periodic guidance are needed to maximize the use of the program and avoid disappointment for either party. In response, to achieve sustainable urban agriculture, the program organizers have a major role in the success of the urban agriculture program and the community's survival in urban agriculture activities through regular and consistent supervision and monitoring. However, the challenges are faced not only by farmer group members but also by extension workers who are tasked with monitoring and guidance. The findings in the field show that the number of extension workers is not proportional to the number of farmer groups, which makes the monitoring and guidance that can be given to each group not optimal and evenly distributed.

The limited number of extension workers in the field can affect the effectiveness of counseling and providing information to farmers [57]. This was found in this study where the extension workers who are the link to convey criticism and suggestions from the community do not have an adequate number. Farmer group members in this study are included as grass root actors who have knowledge related to problems that occur in the field and have a lot of information that needs to be accommodated so that the mismatch in the number of extension workers and farmer groups further causes inefficiency in the implementation of urban agriculture programs and becomes a form of inequality in power relations owned. Although there are still many shortcomings faced, the extension workers have been active in holding regular meetings to listen to the opinions of farmer group members, with the aim that group members' opinions can be used in making further policies. The reason is that many agricultural programs have been implemented in the Greater Bandung Area, showing that urban agriculture has been highlighted.

The ability of actors to determine and control other actors or parties is a form of power [44, 58, 59]. This study found that commercial farmers' freedom in choosing the steps to achieve economic benefits is one form of control possessed by commercial farmers. The research conducted showed the cooperation carried out by commercial farmers and the program manager in maintaining profits in the economic aspect, namely with the middlemen. Each farmer is very selective in selling their agricultural products through middlemen so as to avoid getting a disadvantageous price and ensure that the price given is in accordance with the market price. In addition, some commercial farmers work together as food suppliers for hotels to increase their income.

5. CONCLUSION

Community participation is complex because of the many factors involved and influences. This research found differences in the participation levels of subsistence and commercial communities. Although both have reached the level of citizen power, unfortunately, it was found that there are still aspects of dependency that affect the sustainability of farmer groups. In this research, it was found that subsistence farmers still tend to have a dependence on the program organizers, lack of knowledge, and human resources that make this group not fully independent, so there is still no guarantee of the sustainability of urban agriculture. Therefore, the existence of various innovations carried out by the community in a bottom-up manner was a counterweight to the success of urban agriculture programs that tend to be top-down.

Meanwhile, commercial farmers were found to still depend on pesticide use to achieve economic maximization, thus forgetting the environmental aspect. If we look further, the lack of awareness of the environment can be one of the forms that cause the unsustainability of urban agriculture programs, so it becomes a matter of concern to be able to balance social, economic and environmental aspects because leaning towards one aspect alone can destroy other aspects. Community participation in urban agriculture activities is then found to be not only about individuals, groups, extension workers, and programs running separately but also the continuity of all those involved in it.

The number of samples in this study has been determined to be appropriate to represent farmer groups in the Great Bandung area, however, taking a larger number and location of samples can certainly provide better results, this can be a development for future research.

ACKNOWLEDGMENT

This research was supported by funding from Academic Leadership Grants (ALG) Universitas Padjadjaran (Grant No.: 1549/UN6.3.1/PT.00/2023) and INSUAH Projects of VW Foundations application number A137588. The research process was supported by the respondents, informants, local communities, and local agencies and governments in the research locations.

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