

URBAN FARMING: ALTERNATIVE SUSTAINABLE FOOD SYSTEMS AFTER THE COVID-19 PANDEMIC

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ABSTRACT

The Covid-19 pandemic that has occurred in Indonesia has brought many significant impacts on human life in various aspects of people's lives. Policies during the pandemic such as Work from Home (WFH) and Large-Scale Social Restrictions (PSBB) have also had a socioeconomic impact on the community, including the most basic needs, namely food. On the other hand, agricultural land that continues to be eroded for the benefit of development and the age of farmers who are on average old whose ability to grow them is declining also play a role in the decline in food. The threat of a food crisis is now gradually beginning to haunt the entire society. Based on Global Hunger Indonesia (GHI) data, the hunger rate of people in Indonesia is in the serious category even though it has decreased from 24.9% (2010) to 20.1% in 2019. Indonesia must remain vigilant against the threat of famine that can trigger various kinds of major issues such as health, social and security. Urban farming is a gardening concept by utilizing the space in the house or settlement. Based on the foregoing, urban farming is very supportive and gives positive appreciation because it has proven to provide more benefits for the community in the midst of a pandemic. A number of studies also mention that urban farming can be an ideal agricultural concept in the future. In addition to the considerable benefits of urban farming, the main challenges in urban farming are determining how to monitor, regulate, and minimize risks in environmental, economic, and socio-environmental forms and understanding how urban farming can be sustainable in urban food systems globally. Urban agriculture can increase the value of food locality and reduce the energy spent in the fruit and vegetable production process. Therefore, the city government has an important role in providing specific regulations to support the implementation of sustainable urban farming.

Keywords: Covid 19, Farming, Food system, Pandemic.

INTRODUCTION

The agricultural sector is often regarded by the wider community as a job in a rural area with vacant and large tracts of land. However, in recent decades it is undeniable that the agricultural sector can also develop in urban areas through urban farming programs (Abu, G.A., & Soom, A, 2016). This program is a movement started by the United States as a form of solution to the deterioration of the economic situation and conditions due to the impact of the world war on the increasing price of fruit and vegetable food supply (Ali, Shahjahan, et.al., 2016). The existence of urban farming has increased recently, this is a response to the threat of a food crisis due to the continued impact of the COVID-19 pandemic. The presence of the pandemic has made urban farming a new lifestyle trend for urban communities (Andini, et.al., 2021). The amount of free time increases people's interest in urban farming (Ashari, et.al., 2012). The threat of a food crisis occurs due to the implementation of regional quarantine, then followed by restrictions on trade routes by producing countries that act as exporters to consumer countries that are importers (Adenegan, et, al., 2015). One form of the government's response in dealing with the pandemic is by launching a food estate program. Based on (Amaliyah, N. & S. Sarwoprasodjo,2018), this government program can be a form of food security strategy and encourage other aspects of agriculture to remain sustainable. The government is also looking for ways to maintain food security with several strategies such as providing assistance to affected communities, ensuring food distribution, monitoring and maintaining inflation rates, efforts to increase food production, and diversifying food commodities (Amelia, S., & Nawangsari, E.R, 2021). Urban communities have also played a role in responding to the COVID-19 pandemic. Urban farming is one way and form of community support to support national

food security. The presence of the pandemic changed the mindset and habits of the Indonesian people regarding the trend of urban farming programs (Andini, et, al., 2021). The implementation of urban farming will be different in each region depending on environmental conditions, economy, and infrastructure (Atik, & Jones, 2017). Some examples of the push to implement urban farming such as in São Paulo, Brazil, have resulted in new paradigms in urban food systems such as the emergence of cooperatives with fresh produce, pesticide-free, organic, and self-managed by the community (Azunre, G.A., et, al., 2019). In Mexico applying urban farming with vertical farming technology for sustainable food production in urban areas (Belinda, N., & Rahmawati, D, 2017). Another example in the United Arab Emirates is promoting urban farming with hydroponic systems that have a significant effect on the economy, economy, and society (Chandra, A., & J.A. Diehl, 2019). The emergence of urban farming activities by community-based communities will represent different perspectives and goals depending on the characteristics of each individual, which can include differences in occupation, gender, and age. The concept of community-based urban farming adapts from the modern concept of farming movement by Carr & Dreby (Clintock, M.N, 2010). Which emphasizes local and community-based production where children and adolescents can be involved in agricultural activities. A similar study by Oliveira & Ahmed (Fauzi, A. R., et, al., 2016) also mentioned several obstacles in urban farming in Accra, Ghana such as land competition, lack of government directives and policies, unfair land use planning, and land ownership conflicts. Based on several previous studies, there are still obstacles found in the implementation of urban farming, further research needs to be carried out to reveal the latest findings related to the relationship between the presence of the pandemic and the existence of urban

farming today. This article aims to conduct a critical reflection study and determine what factors determine the success of urban farming implementation in supporting food security.

RESEARCH METHODS

This research uses a research design with a qualitative approach through reflective studies. Reflective studies in Mertens (Haletky, N., et, al., 2006) examine and reevaluate what has been produced based on previous or unsuccessful studies. The location that is determined as the object of research is the reason why researchers choose to conduct research at that location because they have enthusiasm for doing massive urban farming, both in doing urban farming independently and in groups. The data sources in this study consist of primary and secondary data. Data collection techniques were carried out using observation, interviews, and documentation. The data collection method is carried out with blended interviews, namely online and offline. The collection of informants is carried out through the purposive sampling method with the following criteria: applying urban farming, so that the data obtained is more accurate and considered to be representative of the existing population of urban farming activists. Data analysis techniques refer to an interactive model by Miles & Huberman (Kang, Y., A. B, et, al., , 2021) which consists of data collection, data reduction, data presentation, and drawing conclusions. Data analysis according to Miles & Huberman takes place through three stages, namely the data condensation stage, data presentation (data display), and conclusion drawing or verification of the results obtained. The data condensation stage includes the process of collecting data obtained from observations and interviews, as well as reliable reviews of relevant literature. The stage of presenting data is the result of reducing information that has been compacted and will be

presented in the article. The last stage, namely drawing conclusions/verification, is an interpretation process carried out by researchers by recording various patterns, explanations, and gaps found based on the data sources obtained.

RESULTS AND DISCUSSION

Urban farming conditions in the community. The emergence of the COVID-19 pandemic has caused many changes in all sectors, one of which is in agriculture. The disruption of food and mobility aspects further increases productivity efforts carried out in urban communities, reflective studies have produced several findings, including: (a) Counseling carried out by the government related to urban farming is increasing, (b) The trend of urban farming is increasingly massively carried out by the community, (c) The enthusiasm of the community has increased in order to fill free time and strive for productive activities during the pandemic, (d) The consumptive mindset in urban communities has decreased due to limited mobility and in order to reduce the spread of COVID-19 cases, so people prefer to plant their own to reduce costs and mobility. Basically, government intervention is very necessary so that agriculture in cities can be sustainable both from ecological, economic, and social aspects (Krisnawati, Atika, and M Farid Ma'ruf, 2016). The importance of communities or farmer groups is also an important factor in the success of urban farming in urban areas. The development of strategies for conducting urban farming can be carried out with the support of technical, organizational, as well as policy and institutional (Kruijswijk, et, al., 2015). In addition, based on the results of informant interviews, it was found that the activities of providing assistance by the city government to help people who want to do urban farming (the government provides a driving forum for the community). This is in line with the results of research by (Krisnawati, et al., 2016), which states that government intervention is very crucial in increasing counseling on urban farming to urban communities and

in line with the need to make efforts to provide facilities needed by the community in the implementation of urban farming. In line with the advice conveyed by Yulianti (Maconachie, R., et. al., 2012). In her research, namely to improve urban farming activities, it is also necessary to cohesively the local community, for people who do not do urban farming, it is hoped that it will not affect other communities who want to contribute and are very enthusiastic in urban farming activities. The role of farmer groups in providing a gathering place for urban farming activists to interact with each other other

Linkages of COVID-19 pandemic, urban farming, and food security

Urban farming activities during the COVID-19 pandemic have increased. This is in line with regional restrictions to stop the spread of positive cases of COVID19. During the pandemic, many work activities were diverted to WFH (work from home) due to government policies to reduce community mobility. The existence of the WFH policy has an impact on most people spending time at home. This is widely used by urban people in urban farming (Mertens, D. M, 2015). mentioned that urban agriculture can be used as a forum in utilizing free time for productive activities. The COVID-19 pandemic changed all orders of people's lives. The impact of the pandemic has almost changed all sectors, including food security. The COVID-19 pandemic has an impact on the difficulty of the food supply chain, especially from conventional agriculture produced by rural farmers to be marketed in cities. In Kang's research (Miles, & Huberman, 2014), there are four pillars in maintaining food security, namely food availability, access, utilization and stability. This is an indicator of the success of urban farming in an area. Most of the informants based on the results of observations and interviews had the availability of food in the form of sufficient vegetables and fruits for the family, even to the point of being distributed to neighbors. The utilization of the yard is maximized into a place for

hydroponics, aquaponics, and plants in polybags. This maintains food stability so that urban farming is included in the category of supporting people's food security. Urban farming in urban communities is a solution to overcome the impact of food insecurity.

Community-based urban farming in communities

The massive implementation of urban farming will not only have an impact on household food security but also on urban food systems. This is influenced by the production of urban farming products carried out by the community will support food access on a community scale. Based on the findings in the field, it was found that the results of urban farming production are used to meet food needs and if there is anything left, it will be marketed. One of the successes of community-based urban farming is also influenced by the conditions that exist in the community. Cohesiveness and togetherness are important things that they want to realize. In addition to being influenced by culture, another thing that is the reason why people do urban farming is as an escape. Escape from stress and boredom due to the pandemic. In line with the statement of Yi Lu (Nzimande, et. al., 2017) that humans will tend to have the instinct of fleeing to green spaces (urban farming) when there is pressure (plague). Based on the results of interviews with informants, it was found that the existence of urban farming can run optimally if carried out on a communal scale and is inseparable from the mixture of local cultural elements that exist in the community.

People's perspectives on urban farming.

The informant's work background is about 23% being housewives, 27% of informants are retirees, 20% are working as laborers, and as many as 30% are working miscellaneously. The type of work greatly influences the knowledge and reasons for informants in doing urban farming. Stated that by mixing various types of people

with different backgrounds in a community in gardening can have a positive impact on soft skills and increase their experience. The perspective of informants in urban farming activities based on gender obtained 12 male informants and 18 female informants in all three sub-districts. It was found that 60% of urban farming activists are women (Oberholtzer, L., et al., 2014). The contribution of women is very prominent compared to that of men in urban farming. In accordance with the statement (Kruijswijk, et al., 2015), which mention that men are less intensive when it comes to caring for plants and tend to focus on 'male' jobs such as repairing houses and gardening that expend a lot of energy. With the role of men and women, urban farming can run more effectively. The community's perspective on urban farming based on the age range is known that informants by the community with an age range of 40-50 years as many as 13 informants and the age of >60 years. According to the results of the interviews conducted, age affects a person's perspective in responding to something new. It can be seen from informants aged 20-30 years and 31-40 years have implemented urban farming with a combination of digital technology. This is in accordance with the statement Prasetyo (Pasha, et al., 2014), the age that belongs to the productive category is more receptive to a new innovation and more open to advances in science and technology.

Based on the Implementation Time of Urban farming it can be seen that 60% of informants have done urban farming before the pandemic. A number of 40% of informants have been urban farming since the pandemic with the aim of filling free time and saving expenses. In accordance with the statement of (Hagey, et al., 2012) the importance of involving independent production in each family by participating through urban farming is able to help as much as 30-40 percent of food needs in one family. The work, gender, age, and implementation time greatly influence the

cultivation of urban farming. In the research of (Ragasa et al, 2019), these indicators correlate with the level of intellectuality, needs, and goals of each individual in carrying out urban farming. Based on the results of the community's perspective with indicators of occupational background, gender, age, and time of urban farming implementation, it was found that women with a range of 20-40 years with housewives' jobs are more active in carrying out urban farming activities. This is influenced by no work tied so that it is more free to carry out urban farming activities.

Urban farming program in supporting food security.

Ashari stated that yard land is very effective and efficient for urban farming (Robertson, Carolyn. 2013). The result of urban farming carried out in the yard is more efficient, environmentally friendly, and not easy to damage the soil. So that urban farming can be one of the solutions to overcome the limitations of agricultural land in urban areas due to the rate of population growth by (Specht et al. 2014) . People's food needs during the COVID-19 pandemic have become important to maintain health and the economy. Therefore, the use of urban farming can support the fulfillment of family needs for vegetables or fruits and can also be used as income addition with the existence of additional household-scale income, the probability of household food security also increase (Sisodia, G.S., et al., 2020). The contribution of urban farming is proven in terms of the availability, accessibility, utilization, and stability of the food system by (Andini et al., 2021). In terms of availability, urban farming is not fully able to meet food needs, but still has the potential to meet perishable food production such as horticultural crops by (Spiker et al., 2023). Food accessibility in urban areas also improves access to local food production, saving transportation time and costs. Finally, the affordability and stability of urban agriculture generates incentives for urban farming activists (Wang, D., & Glicksman, A. 2013), as well as allowing people to buy other types of food to meet other food needs. Although urban farming does not produce as much

food output as conventional agriculture, its contribution to urban society is quite high, especially during the pandemic.

CONCLUSION

Urban farming activists are dominated by people who are productive, have free time, and have tied jobs. The presence of urban farming trends is to support food security in urban areas. The condition of urban farming has increased when viewed from the factors that were obstacles in previous studies. This research found a significant change in the success factors of urban farming both externally in the form of government intervention through counseling, providing assistance, and procuring urban farming competitions. Then from the internal community of urban farming activists who fill their spare time and remain productive during the pandemic, a consumptive mindset that decreases due to limited community mobility, and cost savings. The role of the agricultural community is also very crucial in supporting the success of urban farming. It is underlined that urban farming is able to support the food security of urban areas, but cannot replace the position of conventional agriculture.

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