

## Maintaining Good Health and Well Being through Urban Farming

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### ABSTRACT

This paper tries to explore the benefits and the potential of urban farming activities in improving health and the quality of life. This paper will also raise the role of the community in achieving environmental sustainability, improving the economy and a healthy lifestyle through the active participation of the community in providing food, nutrition and utilizing limited space in the city. The data source for this paper based on a field study in Bandung city conducted by a team from BRIN and BPS in 2022. The characteristics of the Bandung city with high density are suitable for urban farming studies. Using a qualitative approach, this study explores how 'Buruan Sae', which is an urban farming program from the Bandung City government, is implemented at the sub-district level. The research findings reveal that urban farming activities not only offer opportunities to supply fresh and healthy food to urban communities, but the community also can earn income from selling urban farming products. Urban agricultural activities have the potential to act as a safety net when the Covid 19 pandemic occurs, many people lose their livelihood. This research information is expected to be useful for promoting urban farming, especially cities that have high population density.

**Keywords:** urban farming, healthy, quality life, Bandung

### INTRODUCTION

Urban farming in several cities in Indonesia has begun to be developed, such as in Palembang, Bandung, Denpasar, DKI Jakarta. The development of urban farming is also often associated with urbanization which has an impact on the transition of agricultural land into settlements and other urban infrastructure which can have a negative impact on local food security (Akaeze & Nandwani, 2020). Global data also shows that urban expansion will reduce agricultural land globally by around 1.8-2.4% in 2030 which will result in a reduction in agricultural production by 3-4%. Ironically, this incident is said to have occurred in Asian and African countries (Wang, et al., 2021). Facing this situation, cities that are experiencing rapid urbanization apply urban farming to accommodate the increasing need for several agricultural products for urban residents. Other studies shows that a reduction in agricultural land, as well as a decrease in the number of workers in the agricultural sector, results in a decrease in the amount of food available in urban areas which is often followed by an increase in food prices with the poor being the most affected (Zezza & Tasciotti, 2010).

Some writings such as Wang et al (2021), Fillippini et al. (2018), Tadesse & Imana (2017) focus more on the use of largescale farming in peri-urban areas in dealing with urban expansion as a result of urbanization. This paper specifically focusses on urban farming practices developed in the city of Bandung, where these activities are more focused on yards with limited area or on unproductive lands. Through an urban farming program called Buruan Sae, the Bandung City Government hopes to help reduce the city's dependence on food supplies from outside the city of Bandung, reaching approximately 97% (Bandung City Government, 2021). In addition, based on the results of a study conducted by the BRIN Research Team and the BPS (2022) shows that the

implementation of Buruan Sae which has been carried out in several areas in the city of Bandung also has a social function, apart from the economy and the environment. Even in several Buruan Sae locations, their social function is more prominent than other functions. This finding is in line with what was stated by Yoshida (2020) that the concept of urban farming has the potential to be developed in urban areas by considering its various functions, including environmental quality and cultural landscapes, leisure and recreation, and regional food supply. In other words, urban farming activities offer opportunities not only to improve the economy from selling the urban farming products, but it is able to improve the quality of life of the people who do the farming activities. However relatively limited studies that raised these issues (Yoshida, 2020). In connection with this, the aim of this paper: 1). Analyzing the benefits and the potential of urban farming activities in improving health and the quality of life; 2). Exploring the role of the community in achieving environmental sustainability, improving the economy and a healthy lifestyle.

## **MATERIAL & METHODS**

The data source for this paper based on a field study in Bandung city conducted by a research team from BRIN and BPS in 2022. Using a qualitative approach, this study explores how 'Buruan Sae', which is an urban farming program from the Bandung City government, is implemented at the sub-district level. The information was collected from about 15 urban farming actors. The majority of urban farming actors are female and most of them are senior residents, however there are also youth actors involved in urban farming activities. The focus group discussion with stakeholders was conducted to collect information about the policy, the urban farming management and also the challenges of urban farming based on their perspective. The qualitative data was analyzed by organizing, summarizing and interpreting the data collected in the form of narrative.

## **URBAN FARMING IN BANDUNG CITY**

### **A. The Concept of Urban Farming**

The majority of people think that agriculture is an activity that occurs in rural areas. However, nowadays many agricultural activities are being developed in urban areas. The implementation of urban agriculture is motivated by the problems of poverty in urban areas. Actually, agricultural activities are considered only carried out in rural areas. So, agriculture in rural areas and around cities is expected to meet the food needs of urban residents. However, it appears that these efforts have failed in many countries due to the lack of infrastructure and the lack of purchasing power of the urban poor.

Urban agriculture is currently growing as a solution to overcoming urban poverty and has an impact on overcoming the food crisis. Urban agriculture is the practice of cultivating, processing and marketing food and food products around urban areas. Urban agriculture also involves animal husbandry, aquaculture, animal husbandry and horticulture. Urban farming is not just vegetable production or gardening. Urban and suburban agriculture is described as an integrated system of agricultural activities. Urban agriculture refers not only to the food crops and fruit trees that grow in cities but also

includes livestock and fisheries which are part of the food system in many tropical cities (Nikologianni et al., 2020; Indraprahasta and Imas, 2012; Bath and Paschapur, 2020)

Providing food for city dwellers means making food production systems closer to cities. Urban agriculture has been advocated around the world as a strategy to meet food needs and has many benefits for urban populations, especially as we all face climate change, loss of biodiversity and pollution. The potential of urban agriculture seeks to overcome this challenge. Urban agriculture can be a nature-based solution to support sustainable food, as well as improve the economy of urban residents (International Resource Panel Think Piece, 2021). Urban farms continue to be built to increase healthy food in certain communities or can continue traditional culinary cultivation. So that urban agriculture will get economic benefits for people who are economically disadvantaged. Urban agriculture also has an important role in maintaining the shared environment to improve human health (Bhat and Paschapur, 2020).

Based on the Green Open Space (RTH) category in Law no. 26 of 2007 stated that Urban Farming is an agricultural activity carried out in urban areas, in practice utilizing private land or yards, balconies, rooftops, and the vertical space of buildings. Urban Farming can also utilize land in commercial or office buildings, and can also utilize abandoned land in urban areas. For this category, urban farming is an activity for the provision of green open space in the private green open space classification. Types of urban agriculture include city parks, recreational parks, parks in residential areas, offices and commercial buildings, sports fields, river or beach borders, building land/house yards, rooftop gardens, road medians, and railroads.

The city of Bandung is one of the cities that has made efforts to urban agriculture as a program to tackle the problem of food inequality. In 2020 the Bandung City government has developed urban farming called Buruan Sae, by utilizing yards or land around residential areas. The results from gardening are expected to meet food needs for their own families. Buruan Sae strives for family resilience through the provision of healthy food. The urban farming program in the city of Bandung before the existence of Buruan Sae had actually existed, namely the Gardening Village program. Gardening Village activities remain an important part of SAE's Hunt program. Through various developments, *Kampung Berkebun* has now been developed and transformed into Buruan Sae with more and more integrative activities.

At first glance, the Buruan Sae program is similar to urban farming, namely growing vegetables and fruits in urban areas with limited land, but Buruan Sae has differences from urban farming. The Buruan Sae (Healthy, Natural and Economical) is a development of urban farming. So Buruan Sae is actually an integrated and more complete development of urban farming. The Buruan Sae Group does not only grow certain commodities such as vegetables but is more integrated with various elements ranging from medicinal plants, vegetables, fruits, in addition to developing animal husbandry and fisheries. Buruan Sae is also starting plant nurseries, planting and processing planted and farmed food products. Another advantage is doing waste processing. Organic waste is converted into compost for planting media, fertilizer, and animal feed, all of which are used to produce better yields of animals or livestock while maintaining a clean environment. Through Buruan Sae, the community is invited to be able to manage their waste to be used as compost or animal feed, so that it doesn't leave

any residue. *Buruan Sae* in processing this waste is integrated with the *Kang Pisman* Program (Reduce Separation Use Waste)

In addition to urban farming "*Buruan Sae*", in the city of Bandung there are other urban farming groups such as the 1000 Gardens community. This group has actually been established since 2015 with members from various backgrounds. This group has a goal to live healthier in a natural way, respect farmers, and make peace with nature. The *1000 Kebun* community utilizes unproductive land around the community to become an edible garden, also socializes a healthy lifestyle to the surrounding community through workshops, social media, and so on. The existence of the *1000 Kebun* community itself facilitates public access to healthy and environmentally friendly products. The existence of the *1000 Kebun* Healthy Market is used by its members to sell their gardening products. So, it not only makes life healthier but also helps people prosper economically.

### **B. Experience from urban farming actors**

Urban Farming has become a trend for urban communities today, including for residents in the city of Bandung. Apart from being suitable for urban residents who do not have large areas of land to grow crops, urban farming is considered capable of being one of the strategies for the welfare of people's lives and establishing food security. The *Buruan Sae* Program is carried out to meet the food needs of residents independently, because 96 percent of the food needs of Bandung City residents come from outside the city. The people of Bandung city can utilize limited land in residential areas to become gardens. During the Covid-19 pandemic, urban farming played an important role in realizing food security in the local area, so that as much as possible it did not always rely on food from other regions.

In the city of Bandung there are 151 sub-districts, so far there are 355 *Buruan Sae* groups. The *Buruan Sae* Group utilizes the land around the house. This group consists of various groups, not only from among the older women and old man but includes young people who are also interested in *Buruan Sae*. Many youths are involved in farmer groups although it is still very rare, mostly done by the older generation. Farmer groups, farmer women's groups (KWT), PKK women's groups, youth groups as actors of urban farming in the city of Bandung. In general, they carry out urban farming activities in groups, group members are usually in an RW environment, or a housing complex environment. Many urban farming actors use their yards in their homes for gardening, but many of the *Buruan Sae* groups also use existing land such as public facilities to carry out group farming activities. There are also those who use vacant land around their environment or former landfills. There are even those who farm on the river that flows in the *Buruan Sae* group's territory. All land that was initially unproductive was then utilized and processed into agricultural gardens.

The *Buruan Sae* group in farming on limited land grows various types of vegetables or horticultural crops, fruits and is usually also integrated with chicken or catfish livestock. This cultivated farming is to support family food security, a healthy environment and also economic benefits. Communities can use limited land to be more productive. How to grow crops on limited land is very easy and more practical. The *Buruan Sae* group carried out farming in several ways on limited land but the results were sufficient for the group's needs. They farm using the aquaponic method combining

hydroponic plants with aquaculture, kale, pakcoy, lettuce and also types of fish such as catfish, tilapia, and carp. The Buruan Sae Group is familiar with bukdidamber, fish farming in buckets. In addition, it also uses the hydroponic method by using water as a planting medium because of limited water, the plants commonly grown are vegetables such as slada, kangkung, pakcoy. Due to the limited land they also plant using the verticulture method, utilizing the vertical plane as a place for farming which is done in stages. There is also an organic tower garden or OTG, using several used buckets arranged vertically, which can produce quite a lot of red onion and cayenne pepper. Usually they plant in pots, polybags, pralon pipes, or places that are no longer used, such as used bottles, used tires and others. There are also those who use walls as a planting medium, not much different from verticulture, usually they also plant ornamental plants to make narrow yards greener.

Part of the harvest from the farmer group in the form of vegetables is for their own consumption. Some of Buruan Sae's group are now able to sell their vegetables. Initially, the results of the harvest were distributed to neighbors. But now they can sell them to their neighbors, food vendors and markets around them. Thus, they can make money from this crop, besides they can also consume their own vegetable crops. Economically, the farmer can increase income.

In the end the Buruan Sae group can benefit from the vegetable seeds planted. For local residents, especially those with low incomes, it is very beneficial, because they can get vegetables for free. It is hoped that families at home, especially children, can get good nutrition from the vegetables from Buruan Sae. After harvesting, some of the crops are given to the residents, some are processed to be sold and the money goes to the RW treasury. The phenomenon of sharing food in the Buruan Sae is common. Especially during the COVID-19 pandemic, during a pandemic, the urban farming community often shared the results they got with each other. Bandung city residents maintain unneighborly relations, thereby reducing food shortages. This is useful in maintaining social relations. Moreover, all of this was carried out under abnormal conditions, during a pandemic that many economic activities were restricted.

Urban farming in the Buruan Sae group besides having food security, also has an economic function that can provide additional income for farmer groups. Apart from that, Buruan Sae is very important because it also has a social function. The Buruan Sae can be a place for people to gather, exchange ideas, work together and help each other. Cohesiveness among members has a positive impact on health, especially experienced by the elderly group who are members. They become passionate about farming they have activities so that they still feel capable in their old age. Gatherings are usually accompanied by eating healthy food from the group's farmer. Buruan Sae to become an alternative media to increase the frequency of interaction between communities through activities of maintaining various types of food sources and processing their results. A number of healthy processed products are also produced, ice cream made from pakcoy vegetables at Buruan Sae Sauyunan. The existence of city community initiatives to socialize and share in the cultivation stage as well as presenting a variety of processed food products from Buruan Sae is also clear evidence that the food security strategy through Buruan Sae not only talk about cultivation techniques but also how to manage the community at the same time.



### **C. How is the urban farming sustainability?**

Globally, much attention has been paid to efforts to shape a vision for a sustainable city through green spaces, particularly urban farming practice as a nature-based solution (Mabon et al., 2022). Experiences from several developing countries show a tendency to explore urban farming for the following matters: mitigating surface runoff, reducing urban heat, increasing biodiversity, alleviating urban poverty and inequality, increasing social cohesion and increasing community resilience. It is understandable if in Yoshida's writing (2020) it is said that urban agriculture has attracted the attention of urban planners and researchers because of the multifunctional nature of urban agriculture. This means that the function and use of land is not only limited to the function of producing traditional food, but also includes functions related to leisure and recreation, nature conservation or hydrological balance. Although in Yoshida's writing it is said that the multifunctionality paradigm is very suitable for the development of peri-urban agriculture, this study reveals that urban farming carried out in the middle of urban settlements (inner urban) is also able to provide various functions such as leisure, recreation, including maintaining environmental quality and become a cultural landscape.

The practice of Buruan Sae which is applied in several locations in the inner city of Bandung shows that this activity is not only able to provide various benefits to the community. In line with Yoshida's writing (2020), the practice of Buruan Sae brings social, recreational and economic benefits. Even though at the beginning of the Buruan Sae activity was launched, there were some people who felt pessimistic about the sustainability of this urban farming activity, but it turns out that this activity can exist and even collaborate with various activities in the community.

In some urban farming communities, they have been able to combine economic, social and health needs (stunting programs). The experiences of Buruan Sae actors from the Kurdi Asri Women Farmers Group (KWT), in Karasak Village, Astanaanyar District, & KWT Kebun Sauyunan in RW 3, Sarijadi Village, Sukasari District, show that Buruan Sae's activities provide inner satisfaction for the members by cultivating. Meeting Buruan Sae members regularly not only strengthens the friendship between them, but also strengthens solidarity among community members. Often the vegetables that are harvested are given to the local society. The Buruan Sae yields also benefits the 'Gakin' (Poor Families). For stunted 'Gakin' families, a third of the crop is given free of charge. The rest of the harvest is also sold to local residents, but at a relatively cheap price (Rp. 5,000). Catfish raised through Buruan Sae are also used as additional food for toddlers. The catfish is usually processed before being given to toddlers. Providing this additional food, Buruan Sae also cooperates with the posyandu.

Based on these practices, urban farming activities contribute to social life and health for urban communities. Even though members of Buruan Sae Kurdi Asri has to spend money after every harvest to buy fertilizer, planting media for group garden planting, this did not dampen their enthusiasm to continue working on urban farming because what is important to them is the closer harmony between members and the surrounding community. The same phenomenon is also found in several Buruan Sae, such as Sauyunan, Pajajaran Lestari, Mandiri Youth.

The sustainability of Buruan Sae is inseparable from the assistant figures who play an important role in empowering the community. The existence of the assistant figures is very helpful for urban farming members to carry out urban farming activities optimally. The urban farming members learn how to plant, weed and harvest vegetables properly. The Bandung city government only provides seeds and fertilizers to prepare urban farming, then urban farming members must develop it. It can be said that the bottom-up approach is more effective for increasing public awareness and encouraging them to be actively involved in urban farming activities. Experience from other urban farming communities in Bandung shows that farming activities often do not continue, or sustained. Generally, after the harvest, members do not start planting again. According to an urban farming activist, it is not easy to encourage people to buy seeds or fertilizer. Some still depend on government assistance for seeds and fertilizers. However, through continuous daily assistance, Buruan Sae members began to be socialized with the multi benefits of urban farming. The Buruan Sae member learn how to effectively utilizes their limited or narrow yards through various urban farming techniques such as roof top gardens, organic tower gardens, vertical gardens. Even in some locations in Bandung, the Buruan Sae members developing urban farming above the river. This strategy allows local communities to carry out agricultural activities without the need for complicated and lengthy processes to acquire land or farm land (Middle et al. 2014).

### **CONCLUSION**

Based on the discussion above, it can be concluded that urban farming practices potential to improve the quality of life. Buruan Sae, urban farming in the city of Bandung, not only has the capacity to assist the community to meet their subsistence needs, but also strengthen relationship among members of the Buruan Sae community. Through the multifunction's of Buruan Sae, it is hoped that it will not only be able to ensure the realization of food security at the community level but also be able to improve the quality of life. In this regard, it is important for urban residents to make optimal use of their available yard land. The existence of the assistant actor is also very important to assist urban farming members, most of whom do not have an agricultural background, to gain knowledge about the planting season, harvesting period so that they understand the food production patterns in depth.

In addition, to optimally support urban farming activities, there is a need for collaboration between academies-policies-practices and participation to support the improvement and learning of urban farming practices. It is hoped that through the practice of urban farming, urban areas will have autonomy in terms of agriculture. Through solid relationships between members, urban farming can encourage the existence of strong social capital as well as economic capital that can be directed towards supporting autonomy in agriculture sector.

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