

Food security policy innovation in Bandung City

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Abstract

During the COVID-19 pandemic, food security is a major concern, there are rapid changes and uncertainty in the situation. The pandemic has a negative impact on national food security, Indonesia's food security index was 61.4 percent in 2020, but it drops to 59.2 percent in 2021. Meanwhile, Bandung is not a food production location based on regional features, as 96 percent of food is obtained from areas beyond the city limits. Furthermore, the lack of agricultural land makes food availability in Bandung vulnerable, posing a threat to the city's food security. This study aims to analyze policy innovations used by the government to address food security issues. This study is used the policy innovation approach to assess the policies implemented by the Bandung City Government in the food sector. A case study technique is used to analyze this phenomenon utilizing qualitative approaches. Interviews, observations, and literature reviews is used to gather data. The results show that although there are still shortcomings, the Bandung City government has implemented innovations in maintaining food security. Food and Agriculture Security Department of Bandung still must make improvements in the areas of training and development for the community to support food security in Bandung.

Keywords: Agricultural, Policy innovation, Food security

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1. Introduction

The Covid-19 pandemic, which broke out internationally towards the end of 2019, brought up several new issues, including issues with health, education, the economy, politics, and society. The COVID-19 pandemic has increased food

security risks in Asia and the Pacific as strict quarantine measures and export bans on basic food items have affected all stages of food supply chains (Asian Development Bank, 2020). The COVID-19 pandemic increased global food insecurity in almost every country by reducing incomes and disrupting food supply chains conditions worsened

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worldwide by Russia invasion of Ukraine. The pandemic continues to create devastating effects on global hunger and poverty, especially on the poorest and most vulnerable populations. Today, the number of severely food-insecure people has doubled from before the pandemic to 276 million people. By the end of 2022, due to the compounding effects of continued social, political, and economic crises around the world, the World Food Program (WFP) estimates this total to rise to 323 million people (USGLC, 2022).

The twenty-first century is replete with uncertainty and complexity: game-changing trends are transforming the world. Indeed, uncertainty will be a key feature of the 21st century. Global trends affect regions, countries, industries, and even firms in heterogeneous ways. These trends entail both challenges and opportunities (Guillén & Ontiveros, 2012). Food security remains a major concern in the developing countries, and that national governments employ various policies to address food security concerns of their citizens. To the extent that ensuring food security also involves measures that stimulate adequate levels of effective demand through “entitlements”, governments have also employed income diversification strategies and cash transfers to achieve food security goals (Boratyńska & Huseynov, 2016).

The Republic of Indonesia Law Number 2012 concerning food specifically states that Indonesia must ensure the security, independence, and self-sufficiency of its food supply. However, Indonesia itself still offers a variety of foreign foods. This is because there is less agricultural land available due to population increase and rising needs, and there are fewer people available to handle agriculture (Ministry of Defense of the Republic of Indonesia, 2015). Based on the Global Food Security Index, Indonesia’s Food Security Index score in 2020 was 61.4; in 2021, it dropped to 59.2, which dropped Indonesia to 69th place globally. In 2021, Indonesia’s Food Security Index data placed 12th among Pacific countries with a score of 59.2, which is quite low when compared to other Pacific nations (Direktorat Jenderal Pertanian, 2021). Due to rising poverty rates

brought on by the pandemic, people’s purchasing power has decreased, which would result in a drop in Indonesia’s Food Security Index rating in 2021. One of the most pressing issues is the food crisis, which has an impact on global food security. Food distribution issues, the consequences of climate change, natural catastrophes, the environment, societal unrest, and wars are the main causes of food crises. Farmers’ changing occupations make it challenging to obtain food for the community, which has led to rising food prices, greater food loss, and a shortage of food to meet public nutrition needs during the pandemic (FAO, 2020).

Meanwhile, the issue of food security also arises at the regional level, with Bandung as one example. Because it is not a food-producing region and 96% of its food comes from elsewhere, the city of Bandung is particularly sensitive to food crisis. This dependence on outside sources for food results from the city’s lack of food production. (*Dinas Ketahanan Pangan Dan Pertanian Kota Bandung*, 2022). This is obviously highly concerning because Bandung has a high rate of food consumption for a large city with a population of 2.44 million. Ideally, the city of Bandung which is labeled a big city can be a model in maintaining food security at the urban level in Indonesia.

Inflation in the city of Bandung itself is also the highest in West Java. As of December 2022, Bandung City’s inflation is recorded at 7.45 percent. The impact of this high inflation is the increase in prices of basic goods, and the decline in people’s purchasing power. This illustrates the fragility of the food security system in Bandung City, which is not a production area, and has a high inflation rate. The government needs to innovate in this strong disruption period. Government innovation is crucial for adjusting to a world that is changing quickly. With collaboration, inspiration, and tactical action, innovation can be run. Additionally, this calls for management and organizational reforms, as well as changes in organizational structure, human resources, governance supports, and administrative hurdles that hinder the development of innovation in local government.

Several studies related to food security in the city of Bandung itself have been carried out and provide an overview regarding the condition of food security in the city of Bandung. At least related to food conditions in the city of Bandung, research has been carried out regarding local food initiatives in the city of Bandung (Dwiartama et al., 2020), then related to the adaptation of food security programs related to the pandemic in the city of Bandung (Rizkhy et al., 2022), and related to urban food security and poverty in the city of Bandung (Heryanto & Nugraha, 2022). Of the three studies, in-depth studies have not been carried out regarding the innovations that have been carried out, so this research will further analyze the policy innovations that have been carried out by the Government of the City of Bandung in supporting the city's food security.

As a result, it is necessary to study innovations from many angles in relation to innovation in local government. Therefore, considering the concept of policy innovation, study on innovations generated by local government is particularly pertinent. The writers performed research on how the government of Bandung City handled difficulties with food security based on the concerns that had been previously highlighted, and this study aims to analyze policy innovations used by the government to address food security issues.

2. Literature Review

Public Policy Innovation

Innovation is an idea, implementation, or object created by individuals as something new (Rogers, 2003). Referring to Schumpeter (Edler & Fagerberg, 2017), there are two aspects of innovation, namely: 1) novelty and 2) implementation. Novelty may not necessarily mean 'new to the world', it can also refer to something that is new to those that produce or use the innovation. Implementation related to how the innovation can be implemented properly. According to Albury (Sururi, 2017), conceptually, innovation consists

of three types, namely: first, policy innovation: new policy direction and initiatives. A new policy must have something since policy innovation is an effort to develop a new policy direction. Second, innovations in the policy-making process. In this case, innovation is made to influence the policy-making process. Third, policy to foster innovation and its diffusion. The policy here is a specific policy created to encourage and develop, spread innovation in various sectors.

There are 5 success factors for an innovation, namely: 1) leadership, the main function of the executive leadership team is to create policies and procedures to facilitate innovation, provide the learning facilities both internal and external, and encourage leadership and innovation at all levels in an organization. Good leadership and innovation have the dimensions of a top-down, bottom-up and horizontal; 2) management or organizations, organizations should also be able to appreciate and realize the ideas generated. Building an innovative organization should have a set of human resource development, information technology, policy development and program of implementation strategies; 3) risk management, risk management is a fundamental feature of the innovation process. Risk is measured by a combination of consequences and likelihood; the risk is characterized by uncertainty. To facilitate innovation, it is necessary to identify risk management, policies and procedures taken under consideration and the information available; 4) human capital, in conducting the innovation, the potential of human resources qualified and competent in their field is necessary to be able to respond the market competition, not only the information technological necessary but also the encouragement and commitment of all organizational personnel; 5) technology, the use of highly developed information technology in society, so by utilizing these technological advancements simplify company management in the process of diffusion of innovation to society.

The study of public administration uses policy innovation as a tool to re-actualize government, particularly in the service sector (Sururi,

2017). Policy innovation is described as a new policy that is developed without minimizing the originality of innovation already implemented by a nation or other nations (Sururi, 2017). To solve the issues, innovations developed expressly for the public sector are employed as a tool. The development of novel policies is a result of innovations aimed at solving issues with public policy. Innovation in public sector management is the creation of new standard operating procedures and new policy designs by public organizations to address issues with public policy.

In the perspective of Public Administration, there are several criteria for innovation (Sururi, 2017), including: first, policy innovation based on science and technology. Completion of numerous challenges the organization faced, including organizational structure, apparatus, and apparatus skills, including innovation in science and technology. These problems result from the organization's attempt to advance in a society that is becoming more and more dynamic. Second, policy innovation in human resource development. The success of other innovations is influenced by human resource innovation. To create and implement innovations, organizations are expected to give internal programs a high priority when developing their people resources. Innovation in public administration is an effective, creative, and unique answer to new problems or new answers to old issue (United Nations Department of Economic and Social Affairs, 2006).

Food Security

Food security exists when all people, always, have physical and economic access to sufficient, safe, nutritious food to meet their dietary needs and food preferences for an active life (FAO, 2020). It has been recognized as a universal human right for its central role in human development. Referring to (Law of the Republic of Indonesia Number 18 of 2012 Concerning Food, n.d.), food security is a condition of fulfilling state and individual food, which is available from sufficient quantity and quantity of food, whether it is qual-

ity, safe, diverse, nutritious, equitable and affordable and does not conflict with religion, belief, and community culture, to be able to live a healthy, active, and productive life in a sustainable manner.

Carolan (2012) provides a broader definition of food security. Food security is the development of community resilience (in terms of health, security, and welfare) through food, which in this case also refers to community food security. The four dimensions of availability, access, choice and utilization, and stability are used by FAO to categorize the conversation on food security. First, the supply of food is related to availability and is influenced by trade, stock availability, and production levels. Second, access: a sufficient supply of food is related to access on a national and worldwide level. How each household can get food is discussed in relation to pricing under the heading of access. Third, choice & Utilization: Connected to dietary diversity and food processing options. Fourth, stability: Long-term intake, or how a household or individual may receive food in the long run, is related to stability.

Regarding the issue of food security, governments in developing countries use a variety of short-term and long-term policy options to promote food security. Some measures affect the availability of food in local markets, others the right of individuals to obtain food, while others tend to affect food utilization, i.e., how much of a nutrient an individual obtains from a given food supply (Boratyńska & Huseynov, 2016).

3. Research Method

The research methodology used is a qualitative method using a case study approach. The case study approach is a method for examine circumstances, events, and developments as well as crucial components that affect and support these circumstances and developments (Hardani et al, 2020), meanwhile, program implementation case study is to learn what implementation has been achieved, understand unexpected aspects; under-

stand reasons why implementation looks the way it does (GAO, in (Baškarada, 2014)). This research uses a qualitative method with a case study approach, the reason for choosing this method is because with a case study approach, researchers can fully and accurately describe the situation of food security and policy innovations implemented in the city of Bandung.

Both primary and secondary data were gathered and utilized in the writing of this article. Primary data in the form of deep inter-views and observations. Interview informants were determined based on the purposive sampling method. The informants consisted of 2 informants from the Bandung City Agriculture and Food Security Service, and 15 informants from the community who were related to "Buruan Sae" and Minilab Security. Secondary data in the form of books, articles from scientific journals, research reports and other data related to the theme of the article. In collecting the necessary information and data, we use literature research data collection techniques. The data analysis technique used is the data analysis technique model of Yin (2016), which consists of: 1) compiling; 2) disassembling; 3) reassembling and arraying); 4) interpreting; 5) concluding

4. Results and Discussion

Food Security Policy or Program Innovations in Bandung

This study focuses on two food security policies and programs that Bandung City Government's Food and Agriculture Security Department has implemented. The two programs/policies are: "Buruan Sae" Program and Minilab Security Program. These two programs were analyzed by focusing on the two success factors of innovation proposed by Cook et al (Anggadwita, 2013), namely: technology and human capital. The following will be the explanation and analysis. The "Buruan Sae" program is an integrated urban farming initiative that uses land for gardening to reduce food inequality in Bandung. Through the utilization of existing yards

or land for gardening, this initiative seeks to address the disparity in food issues in the city of Bandung so that participants can provide for their own families.

There are 360 "Buruan Sae" groups in Bandung City, which are dispersed throughout 151 urban villages. Within these urban farming groups, there are communities that were set up on their own to educate or inform the locals about food security. "Buruan Sae" sectors consist of: 1) fish; 2) farm; 3) nursery; 4) composting Process; 5) fruit; 6) toga plant. The Bandung City Government hopes that the initiative will teach the locals how to grow their own food so that the food they consume will be more affordable, natural, and healthy.

The "Buruan Sae" program is an excellent innovation to support food security in the city of Bandung, by inviting people to start raising livestock, gardening, and growing their own food crops. In many cities and villages around the world. Alternative or local food systems grow in many forms. Some examples of these local food activities include farmers markets, community-supported agriculture, community gardens, urban farming, vegetable box schemes, permaculture, organic farming, and others (Dwiartama et al., 2020).

As previously mentioned, it turns out that 96% of the food items, such as rice, meat, cereals, seafood, vegetables, and fruits, come from outside of the city of Bandung. Therefore, it is a prudent move to start producing city food items on one's own through the "Buruan Sae". The local food system itself is one solution to mitigate the impact of the global food system.

Technology Aspect of Buruan Sae

Information technology use fosters the growth of service and product creation. Technology serves as a tool between service providers and customers, making it simple for customers to obtain product information. Based on the findings, the development of social media apps, websites, and games as a form of technological

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innovation used by the government to promote food security has resulted from the use of technology in the food sector. Technological advancements are being made the agricultural industry itself in the form of apps that can support agricultural activities, machine-based agricultural tools, and creative ways to use confined spaces for agriculture, such as aquaponics methods.

In addition to agricultural activities, Food and Agriculture Security Department of Bandung uses technology to interact with the public through websites, games, and films posted on social media. Because not everyone has access to or the skills to use technology, there are still challenges in its use. These impediments prevent the government from fostering the innovation and collaboration it desires. To support the Buruan Sae program's implementation in the communication system, the government must combine technological and conventional techniques, such as outreach and counseling.

Human Capital Aspect of "Buruan Sae"

The success of innovation is supported by the Human Capital factor. Based on the findings, the problems faced related to the human resource factor are the lack of development for the community regarding activities that can be carried out to achieve food security. The "Buruan Sae" program itself prioritizes community participation in its implementation. In this regard, one major obstacle was found, namely that not all urban communities such as Bandung City know and are able to carry out agricultural activities.

The initiatives implemented thus far have only been concerned with enhancing natural resources to achieve food security, such as creating hydroponic greenhouses and organic tower gardens in community settings so that people can become self-sufficient in terms of their food supply. However, focus and development are still missing for the development of human resources, which is a necessary component for the success of innovations in food security.

Human resource development is crucial because it is the human resource factor itself that

must be taken into consideration to execute programs or innovations. If the human resources who make up the program's goal and emphasis do not comprehend the program or innovation being used, how can the program be carried out? Quality human resources will make it easier to expand current programs, making human resource development another type of long-term investment. Human resource development has the potential to spur innovation.

The Sustainability of "Buruan Sae"

Economically, the current "Buruan Sae" initiative has had a favorable effect by generating income for the management community through the sale of the produced goods. Even though they are still sold on a limited basis food product. Although not yet widely advertised, the food items from "Buruan Sae" are nevertheless available for purchase in the neighborhood.

The "Buruan Sae" harvest's outcomes have also decreased community food consumption costs for various items like vegetables, especially for those who are a part of the managing community. Aside from the many great effects that this program has, there is one thing to note: the program's sustainability. Because many programs are just transitory and then expire without a trace, this program is essential to be able to continue and maintain the city's food security. According to (Prasetyo, Sugeng. et al., 2022), the "Buruan Sae" program needs to create three things to support its sustainability component. These three things are institutional administration, financial assistance, and collaboration and networking.

Regarding institutions, it is necessary to have a clear management institution or organization function, and not only voluntary. So, that long-term management can become clearer and not temporary, and at any time it can be abandoned by the managing community that has not been clearly institutionalized. Financial support is also required in addition to managerial institutions. It is evident that the financial aspect is crucial to supporting the management of "Buruan

Sae” in the future, as it will be extremely challenging to manage “Buruan Sae” sustainably without a stable and strong financial situation. Therefore, the challenge moving forward is the requirement to create a sound financial structure in the management of “Buruan Sae” so that it can survive and continue.

The final point relates to collaboration and networking. Collaboration with outside parties can be used to support the development, marketing, and sales of “Buruan Sae”, and it is crucial for the management of “Buruan Sae” since these external supports can create a sustainable management system. Networks and collaborations can be extremely effective capital to promote “Buruan Sae” sustainability. The “Buruan Sae” program is a commendable innovation, and the Bandung City Government has implemented a commendable intervention to lessen food insecurity in the city, which has been heavily dependent on neighboring cities as suppliers. The program itself may be an alternative for the current food system in Bandung City, but as was already said, development measures must be adopted to ensure the program’s long-term sustainability.

Minilab Security Program

The Department of Food Security and Agriculture of the City of Bandung implements innovations in the field of food safety in the form of Minilab Security. Minilab Security aims to guarantee the quality of the food being distributed in the community. The goal of this minilab is to provide solutions to issues including the widespread

use of dangerous chemicals in fresh food, the presence of pesticide residues in food, and the adulteration of beef with wild boar meat.

In general, Minilab Security serves as a location for doing small-scale, swiftly, and easily accomplished fresh food safety inspection tasks that call for specialized equipment (rapid tests). The food products under examination are livestock products, such as meat, milk, and eggs; food crops and horticulture products: rice, fruits, and vegetables; fishery products: salted and fresh fish. The types of inspections carried out will be described in the table below:

Technology Aspect of Minilab Security Program

Every innovation benefit from the use of information technology, which is a key component of the implementation of a novel product. Information and communication technology use can hasten decision-making, information sharing, and the creation of innovative products themselves. From a technological standpoint, the minilab security initiative has utilized technology in its implementation. The e-Wasmut application is one of the systems created; it was created to inform the public about the findings of food safety inspections. The e-Wasmut application has been integrated so that users can access data from barcodes and full information about whether food is safe to purchase.

Apart from the positive aspects already present, this application has a limitation: it is only

Table 1. Types of minilab security checks

Commodity Category	Inspection Method	Test Kit
Rice	Chlorine Test	Chlorine Kit
Vegetables and Fruit	Pesticide Residue	Pesticide Kit
Beef	Borax, Pork Specification	Turmeric paper, Halal Test
Chicken Meat	Ph, Complete blood loss test, Borax, Formalin	Durante Test, Turmeric paper, Formaldehyde Kit
Offal and Cow’s trotters	H2O2/ Hydrogen Peroxide	Hydrogen Peroxide
Fresh Fish	Ph, Formalin	Formaldehyde Kit
Salted Fish	Formalin and Borax	Formaldehyde Kit

Source: Food and Agriculture Security Department of Bandung (2022)

currently accessible via a website and has not yet been made available as a mobile application. Additionally, there has not been a significant amount of promotion activity regarding this application's existence, making it less well-known among the public. For the e-Wasmut application to be recognized by a larger community, it will be crucial to socialize and promote more widely in the future.

Human Capital Aspect of Minilab Security Program

Support from human resources is crucial to determining whether the innovation initiative being implemented will be successful or unsuccessful. The process of accomplishing the objectives of the issued innovations will be hampered in the absence of the assistance of qualified human resources. Based on the findings, it was learned that traditional markets still lacked field officers to oversee and check fresh food as part of the minilab security program. This is one of the things preventing the program's execution.

As there are 60 modern markets and about 34 traditional markets in the city of Bandung, it will be crucial to prepare supporting human resources in the future to execute this minilab security program. Due to changes in how problems are resolved, Minilab Security's innovation can be deemed to be a reasonably excellent one. This innovation is also a good practice. These types of policy and program changes are unquestionably required if we are to make progress against complex issues.

The issue of food safety itself is not a simple issue. This issue is an issue that often comes to the fore. People always demand that the food they buy in the market is guaranteed, and it is not uncommon for cases to occur where food ingredients circulating in the market are contaminated with hazardous materials or food ingredients that are not in accordance with their specifications. Therefore, the decision to release the Minilab Security program was a wise and creative one.

From a policy standpoint, this program is novel and offers a fresh approach to tackling

Bandung's food issues. Just a few aspects of this ground-breaking initiative still require improvement, particularly those that pertain to its execution. For a policy or program to be implemented successfully and achieve its goals, it is vital to keep in mind that the implementation process is a crucial part of the process. This means that no matter how effective a program is, the implementation process must be carried out correctly. The following issues were discovered in relation to the Minilab Security program's implementation, 1) it is essential to expand the responsibilities of the officials in charge of overseeing and inspecting fresh food in traditional marketplaces; 2) it is necessary to broaden the scope of inspections, including traditional mobile sellers operating in residential areas; 3) it is necessary to improve the e-Wasmut application so that it can be utilized by the wider community. To enhance the Minilab Security program's implementation, these two issues must be addressed. In general, this program is novel and has the potential to keep the city's food security.

Building Food Security with Policy Innovation

As was previously mentioned, to maintain the city's food security, the City of Bandung has adopted program innovations through Food and Agriculture Security Department of Bandung. These applications can be regarded as excellent and inventive. However, according to the analysis's findings, there is one aspect where Food and Agriculture Security Department of Bandung has yet to come across a creative program, namely training and development innovation for the community. Given the circumstances and diverse back-grounds of urban communities that are not based on agriculture, community development and training are crucial in and of themselves.

The "Buruan Sae" program's intention is to encourage urban communities to produce food on their own, however not all urban communities are familiar with farming or livestock-raising methods, therefore the lack of training programs and development for the community also raises

concerns. To ensure food security in the city of Bandung, measures to develop new policy directions are therefore required. As also stated by Anderson (Stewart et al, 2015), training interventions aim to support and facilitate people engaged in agricultural production to solve problems and to obtain information, skills, and technologies. Based on this, the researchers offer suggestions for policy improvements that might be implement, including training innovations and community development based on technology. The following is a description of these innovations.

“Beraksi” Innovation

The potential of community in the city of Bandung is something that is important, because it is the basis for developing food security. Community is needed to develop and maintain food security, during the potential of natural resources such as narrow land causing large agricultural activities cannot be carried out in the city of Bandung. Community in Bandung City can be roughly divided into two groups: 1) the upper middle-aged population, which is consistent in food issues and actively involved in putting government-sponsored food innovations into practice but has limited knowledge and expertise in the application of science and technology in the food sector.; 2) the second group is the lower-middle age group, sometimes known as the millennials, who lack interest in and consistency in management in the food sector but have a good understanding of how to use technology.

These community groups become the basis used to develop food security, based on the problems faced both in the use of science and technology as well as interest in the field. Food security is a crucial issue that requires our collective attention, but not everyone in Bandung, especially the young, who have enormous potential for support, has the same focus. Therefore, based on food security innovations that have been implemented or that can be established, government action is required to motivate young people to join community groups with a focus on establishing food

security in the city of Bandung. Policy innovations or programs that can be offered based on problems related to human resources are “Beraksi” which is an acronym for “Belajar/Learn” and “Aksi/Action”.

The goals of the “Beraksi” innovation are, the first increasing knowledge and awareness creasing knowledge and awareness of vulnerable food security in every neighborhood in Bandung City. Additionally, expertise is required to manage food-related potential through training and development initiatives. Second, providing experiences and opportunities: Giving each community in Bandung City the chance to apply the knowledge they have learned from food-related training and development activities. Moreover, giving individuals in Bandung City experiences that will help them become food self-sufficient.

Online learning or training, along with offline actions or practices, are the types of activities that make up the “Beraksi” program innovation. Learning activities cover topics including hydroponic self-cultivation, smart farming, and agricultural digitization. Small land management is also covered. The training is conducted by outlining the issues with food security and the steps that can be taken to resolve them. All offered learning and training exercises are anticipated to support prior program innovations created by Food and Agriculture Security Department of Bandung, such Buruan Sae. Participants have the chance to put their prior knowledge and training into effect through action. For instance, the Buruan Sae community, whose activities center on independent food production, might be used to practice independent food learning. Participants are also introduced to food security initiatives through practical activities, such as the usage of simple technologies and secondhand items.

The “Beraksi” Innovation that is formed can work if there is collaboration or collaboration with various related parties that can encourage the creation of food security in the city of Bandung. The “Beraksi” innovation is aimed at all Bandung City residents who participate in food security train-

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ing so that they can put it into effect in their daily life. Public organizations, including Food and Agriculture Security Department of Bandung, educational institutions, non-governmental organizations, and Bandung City residents are among the entities that have contributed to this idea. This innovation cannot be implemented if there is no community participation which is the main target, and collaboration from all parties is needed to support food security and create a food-smart city of Bandung.

5. Conclusion

Based on the findings of the study, it can be said that, despite some limitations, the Bandung City Government has adopted several

innovations through Food and Agriculture Security Department of Bandung to maintain the city's food security. Food and Agriculture Security Department of Bandung still must make improvements in the areas of training and development for the human capital/community. This is significant because community will play a significant role in ensuring future food security, as currently being developed through the "Buruan Sae" program. The Bandung City Government is advised to improve food security in Bandung City by developing novel policies or programs for the advancement of human resources. This invention is crucial in addressing issues with food, particularly those relating to the utilization of technology and the development of community.

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