



# Modernization of Lumbung Pangan Program in the Pandemic

Metin Dyah Artanti<sup>1</sup>(✉), Didik G. Suharto<sup>2</sup>, and Rina Herlina Haryanti<sup>2</sup>

<sup>1</sup> Master of Public Administration, Faculty of Social and Political Sciences, Sebelas Maret University, Surakarta, Indonesia  
dyahmetin@gmail.com

<sup>2</sup> Public of Administration, Faculty of Social and Political Sciences, Sebelas Maret University, Surakarta, Indonesia

**Abstract.** The purpose of this study is to identified the innovation of “*Lumbung Pangan*” program in East Java. Covid-19 has given a major impact on various sector, one of them is in the agricultural sector. The impacts were caused by several things, such as; restrictions on the mobility, market and restaurants’ working hours, a decrease in income, a reduction in purchasing power the unpredictability in distribution and production of agricultural products. The regulation established by the Indonesian Government is by implementing Large-Scale Social Restrictions or PSBB (*Pembatasan Sosial Berskala Besar*) throughout the whole country. The implementation of the PSBB is also followed by the East Java government to limit the public’s mobility to prevent the spread of the coronavirus. Before the pandemic, East Java’s economy from 2017 to 2019 experienced an increase up to 5%. However, in 2020 it decreased to 2.39%. The economic deterioration was caused by many business fields facing negative growths and a lot of companies terminated their employee’s contract. It causes the number of poverties is escalating by 0.89%. To overcome this problem, the East Java government created an innovation to save food security by optimizing an online-based program named “*Lumbung Pangan Jatim*” by collaborating with private companies. This research used literature-study approach by looking for sources that can support the research. The results in this study shows that *lumbung pangan* can be recommended to the stakeholders as an alternative strategy for dealing with unexpected environment situations and conditions.

**Keywords:** Implementation Program · Innovation Program · Lumbung Pangan Jatim · Covid-19

## 1 Introduction

Corona Virus came in the midst of people’s peaceful life in 2019 and had an impact on the lives of Indonesian people. The impact does not only affect public health, but also affects the life of the country [1]. Even the Covid-19 pandemic has caused instability in every economic sector, including the agricultural sector. The agricultural sector is a

sector that can withstand any shocks but Covid-19 has had a significant impact [2]. The impact is felt on the production, distribution and consumption of food products.

This is due to the implementation of the Large-Scale Social Restriction Policy (*PSBB*), which is a form of Central Government Regulation. The implementation of the *PSBB* policy is implemented in all parts of Indonesia, including East Java. The *PSBB* policy is used to limit the space for people to move to prevent the spread of the corona virus.

The East Java economy throughout 2017 to 2019 undergone an increase of up to 5% [3]. However, in 2020, this figure has decreased to 2.39% due to the covid-19 pandemic [4]. This economic downturn has caused many business fields to experience negative growth and companies to lay off employees. This causes an increase in the poverty rate by 0.89%.

The impact of these layoffs is that many people are no longer working, as many as 55% of men and 57% of women in every sector and various educational backgrounds. With the increase in unemployment that has occurred since the pandemic and the increase in the number of workforce reductions, 23% of the community have higher consumption levels and the 36% have lowered their consumption levels due to a decline in financial conditions [5]. Therefore, the agricultural sector is a necessity that must be prioritized in the COVID-19 pandemic in Indonesia.

As the core sector, then the agricultural sector must be strong and stable in facing the COVID-19 pandemic because it is directly related to basic human needs. In a situation like this, it is necessary to guarantee access to food which is affordable for the community [6]. The strategy to ensure food security in pandemic situation is determined by the ability of the community to meet periodic and sustainable food needs because the basis of agricultural development is primarily based on the vast natural resources, labour and agricultural institutions [7].

The *Lumbung Pangan* (Foodbarn) is a special system that organizes a series of actions that have a structured and stable pattern in meeting the food reserve needs of rural communities. *Lumbung Pangan* institutions are basically regulated in Government Regulation of the Republic of Indonesia Number 68 of 2002 which also mentions equitable distribution of food availability throughout the region and food distribution by making efforts to develop an efficient food distribution system, able to maintain food safety, quality and nutrition and ensure the security of food distribution [8].

To make food security in this Covid-19 era realized, it is essential to develop human resources consisting of training and education, dissemination of agricultural science and technology and counselling in the food sector. Additionally, inter-regional cooperation needs to be carried out in fulfilling the fields of production, food distribution, and food reserves. *Lumbung Pangan* have the potential to be developed in a sustainable manner with a systematic, sustainable and integrated empowerment process that involves all interrelated elements [7]. Therefore, it is necessary to have a strategy to innovate the food institution.

The innovation made in aiding the East Java *Lumbung Pangan* Program is to provide online services. As a result of the implementation of the *PSBB* Policy. East Java Province is a producer with a surplus position in several products. This can help supply food for other needing areas.

The purpose of this study is to identify the East Java *Lumbung Pangan* Program as already mentioned that the COVID-19 pandemic affects all existing sectors and has a socio-economic impact on the community. Thus, the innovations carried out by the East Java Provincial Government through the online-based *Lumbung Pangan* Program make it easier for the community to meet their food needs.

The East Java *Lumbung Pangan* Program which is the part of *CETTAR* work service section of the East Java Provincial Government. *CETTAR* (Fast, Effective, Responsive, Transparent and Responsive) is a program from Nawa Bhakti Satya which is the agenda of the first 99 working days of the Governor of East Java Province [9]. One of the *CETTAR* work services is reducing the socio-economic impact of the East Java community. The East Java *Lumbung Pangan* Program (*LUPAJA*) is expected to make a significant contribution to the realization of food security and food affordability in East Java Province.

## 2 Methods

The method used in this research is quantitative research methods. According to Sugiyono, quantitative research methods are research based on the philosophy of positivism that is used to examine certain populations or samples, collect and use research instruments, analyze quantitative or statistical data with the aim of testing predetermined hypotheses [10]. This research uses quantitative research methods because the data to be collected is data from the light period and also the focus of the research, namely identifying the East Java *Lumbung Pangan* program as one of the East Java Provincial Government's efforts to reduce the socio-economic impact of the implementation of the Large-Scale Social Restriction Policy (*LSSR*).

Meanwhile, the research method used in this research is descriptive, comparative, and verification research methods [11].

### 2.1 Data Collecting

The authors in this study employed secondary data. Secondary data is data obtained from notes, books and also magazines, journals, and scientific publications [12]. In obtaining the secondary data, the researcher used library research data collection techniques by seeking out sources that could support the research. In addition, researchers conduct research through the internet as a means of information gathering in the form of theory or data to support research. The researchers also applied documentation techniques, namely by collecting data through recording data, connecting with the problems to be studied and documents owned by agencies related to research.

### 2.2 Analytical Analysis

The analysis of quantitative research conducted by the authors used descriptive statistical analysis. Whereas the statistics were used to analyse data by describing or describing the data that has been collected as it has been obtained. Not accompanied by conclusions to

make generalizations. The analysis was carried out in a descriptive form to explain the East Java *Lumbung Pangan* Program (*LUPAJA*).

In addition to using descriptive analysis in this paper, the authors also used comparative research, which is to compare the same two data with different samples. In this paper the author wants to compare the Lumbung Pangan in East Java with the Lumbung Pangan in other areas.

### 3 Result and Discussions

Food is an important sector in the midst of the COVID-19 pandemic that is hitting the world, including the State of Indonesia and even the world food agency Food Agriculture Organization (FAO) has warned that the world is on the verge of food crisis. Thus, it is natural that the warning from FAO has been in the spotlight and there needs to be an anticipatory, cooperative, responsive and participatory responses. Hence, the central or regional government needs to carry out efforts to maintain food security [13].

One of the impacts requiring anticipations from the impact of COVID-19 is the availability of food for the entire community. One of the ways needed to achieve food security in the midst of the COVID-19 pandemic is through a local food diversification program. Local food diversification connotes the choice of local food ingredients as an alternative to reduce dependence on one dominant type of food. So that food diversification is one of the strategies to achieve food security in pandemic [14].

Meanwhile, Bahuadi's research stated that *Lumbung Pangan* act as socio-economic institutions that possess great potential for rural and urban communities. In this case, the strategy offered to improve the *Lumbung Pangan* consists of the following actions:

- a. Increasing the role of central and local government,
- b. Increasing the potential of farmers' resources through training and counselling,
- c. Strengthening agricultural business with capital.
- d. Building partnerships between village barns and the Logistics Affairs Agency (*Bulog*) [15].

East Java Province as the second province in Indonesia and as a province that has the largest potential for *Lumbung Pangans* has felt the prominent socio-economic impact of the COVID-19 pandemic. Various efforts have been made by the East Java Provincial Government to deal with the socio-economic impacts that befall the community. In accordance with the *CETTAR* Performance and Service (Fast, Effective, Responsive, Transparent and Responsive) from the East Java Provincial Government, many efforts have been made to help the community affected by COVID-19. One of the innovations carried out was establishing the East Java *Lumbung Pangan* (*LUPAJA*).

The *LUPAJA* program was held for the first time at JX International Surabaya. This program is a new innovation in the modern market that was designed during the COVID-19 pandemic and the implementation of the Large-Scale Social Restriction Policy (*PSBB*). The *LUPAJA* program is carried out online and offline. The implementation of the *LUPAJA* program offline is carried out in accordance with COVID-19 standard health protocols [16].

The *LUPAJA* program was established because East Java Province is a national foodshed. For example, rice commodities have a surplus of 1.9 million tons, eggs and chickens also have a surplus. In addition, *LUPAJA* can be a place for the people of East Java to access their food needs at a price that is far cheaper than the market price. Affordable prices will attract people to buy so they don't have to worry about running out of food stocks during the COVID-19 pandemic.

### 3.1 The Implementation of Innovation Policy for the East Java Lumbung Pangan Program in East Java Province

There are various implementation models that are used to analyse the process of implementing an effective policy. One of the implementation models used in this research is the implementation model according to George C. Edward III [17] where there are four important factors in the policy implementation process.

- (1) The First Factor, Communication as a process of delivering information from policy makers to policy implementers (implementors) which consists of several dimensions, transformation, clarity and consistency. The communication factor in the implementation of the *LUPAJA* Program on the food security of its people during the covid-19 pandemic are namely the East Java Provincial Government, the Agriculture and Food Security Service, PT. Panca Wira Usaha (PWU), and the Gapoktan in East Java. External parties involved are namely PT. Pos Indonesia and Online-based transportation.
- (2) The Second Factor, resources are factors that play an important and vital role in the implementation of a public policy. Resources can be divided into several aspects, including human, financial, and equipment resources. Resources in implementing the *LUPAJA* Program are as follows:
  - a. Human Resources
 

The *LUPAJA* Program service system is carried out from PT Panca Wira Usaha (PWU), Farmers (*Gapoktan*), PT POS Indonesia and private parties such as Ojek Online (Online-based transportation) [18].
  - b. Financial Resources
 

The financial resources obtained are from the East Java Provincial Government through the *CETTAR* work service with the implementation of the *LUPAJA* Program to reduce the socio-economic impact due to COVID-19, with a budget of 23.3 trillion.
  - c. Facility Resources
 

Facility resources in the implementation of the *LUPAJA* Program are carried out in two ways, namely online and offline. In the online implementation, people can go shopping by accessing [www.lumbungpanganjatim.com](http://www.lumbungpanganjatim.com). Online users can also pre-order purchases which are then picked up online drive-thru via the "Meeber" app. There is also a free shipping facility with a maximum radius of 20 km from the *Lumbung Pangan Jatim* Outlet Expo Surabaya [19].

- (3) The Third Factor is Disposition. The disposition of the *LUPAJA* program is categorized into two, which are the attitude and response of program implementers to the program or policy and decision making if there are issues or problems in the *LUPAJA* program.
- a. The first is the attitude and response of the *LUPAJA* program implementers based on the results of researchers, namely:
    1. East Java *Lumbung Pangan* offline, located at JX International Surabaya, resulted in transactions reaching 1.96 billion [20]. Thus, with such large funds, it is evident that the public's interest is so great.
    2. The total number of visitors who came directly to the location since the opening was almost 15,304 people or an average of about 1,777 people per day.
    3. The affordability of the East Java *Lumbung Pangan* Program which previously only covered 28 areas, it is hoped that in the future this service can reach all regions in East Java Province [21].
  - b. The second is the attitude of decision making. The decision-making process in the *LUPAJA* program is to redevelop the affordability of services in the distribution of food stocks in *LUPAJA*.
- (4) The Bureaucratic Structure in the implementation of the *LUPAJA* program is the mechanism Standard Operating Procedures (SOP) and bureaucratic structure in the implementation of the *LUPAJA* program. The mechanism for the *LUPAJA* program services is quite clear. The implementation of the *LUPAJA* Program is clear and uncomplicated. PT Panca Wira Usaha (PWU), *BUMDES* East Java Province, Farmers (*Gapoktan*) as top-level implementers. PT POS Indonesia and Ojek Online Private Parties as lower-level implementers, namely working partners.
- (5) The Fifth Factor is that the targets in the *LUPAJA* program are categorized namely community attitudes and responses. The *LUPAJA* program, which is an innovation from the Governor and the Provincial Government of East Java Province, can be used to control inflation and become part of the regional logistics system. The community response is very big by seeing the results of transactions that reached 1.96 billion since the program was opened.

### 3.2 *LUPAJA* Program as a Means of Public Service Innovation

Innovation is a creative process of creating knowledge to make new inventions that are different or modified from the existing ones, in accordance with the Regulation of the Minister of the Republic of Indonesia for Empowerment of State Apparatus and Bureaucratic Reform of the Republic of Indonesia Number 30 of 2014 [22]. Meanwhile, Public Service Innovation is a service creativity invention or original idea or adaptation that either directly or indirectly benefits the community. Public service innovation does not require new discoveries, it rather can be in the form of a new contextual approach in which innovation is not limited from nothing, then ideas and innovation practices

emerge but can be in the form of innovations resulting from the expansion or quality improvement of existing innovations.

Innovation comes from the word innovate which means “make change or introduce new things or bring in novelties or bring changes” where innovation changes something that has existed for a long time or has not even existed into something new [23]. It can be concluded that the public service innovation in this study is *Lumbung Pangan* East Java (*LUPAJA*) which is a breakthrough type of service that comes from creative and new ideas and provides benefits to the people of Surabaya City or East Java Province.

There are many concepts regarding innovation according to various experts. Some definitions of innovation according to United Nations, 2005 [22] are;

1. Innovation is a series of events that includes the entire process of creating and delivering a product or service with new, better, less expensive terms than previously available.
2. Innovation can be in the form of new products or services, new production of processing technologies, new management structures or systems and new initiatives related to organizational members.
3. Innovation is the actual realization of a unique idea. This realization requires creative solutions. So that innovation is basically a practical activity that is limited by cost, time, materials, available technology, etc. The words creativity and innovation are often used together. Innovation is the successful implementation of creative ideas.

In the public sector, innovation can be categorized according to the typology of innovation, therefore they are innovation category and level of innovation. Based on the results of the research, the researchers categorize the East Java *Lumbung Pangan* (*LUPAJA*) in typology, level and category of innovation. The *LUPAJA* program as a public service innovation is a type of service breakthrough that comes from original and new creative ideas and provides benefits for the people of the City of Surabaya. Judging from the typology, *LUPAJA* innovation is a product or service of the *CETTAR* work service system (Fast, Effective, Responsive, Transparent, and Responsive) which is one of the visions of Nawa Bhakti Satya for the first 99 working days of the Governor of East Java Province.

The *LUPAJA* program is managed by PT Panca Wira Usaha (PWU) East Java whereas the company is a company owned by East Java *BUMD* (Regional-owned corporation). *LUPAJA*'s innovation releases its function in the form of services that will help the community to make it easier for people to get food during the COVID-19 pandemic or as a new innovation for the modern online market. The *LUPAJA* program can facilitate the East Java Provincial Government in distributing the food needs of the community in the East Java area.

In terms of the process, the *LUPAJA* program is included in the category of discontinued innovation, where *LUPAJA* brings new changes in the service system and is not based on the previous conditions. The service change lies in the section of technology. Then when viewed from the level of innovation, *LUPAJA* is included in incremental innovation which brings gradual changes to the existing organizational system even though the changes occur slowly but *LUPAJA* is expected to play an important role in public services towards a better direction.

The programs implemented to improve food security as well as modernization of barns in East Java are as follows [15];

- a. Farmer welfare improvement programs, namely through training of farmers and agribusiness actors, anti-poverty program (APP) in the field of agriculture, jalinkesra (another way to prosperity) holding below poverty line households
- b. The program to improve food security (agriculture/plantation), namely fostering and developing farmer facilities and infrastructure, developing irrigation networks for farming businesses, villages (JITUT, JIDES), developing organic fertilizers, developing agricultural farming businesses, identifying, monitoring and disseminating information on agricultural programs, development of agricultural technology, productive social education in the context of developing food crops
- c. The program to increase agricultural/plantation production is carried out by fostering and developing horticulture, developing horticultural seed production, and developing the rice seed production.
- d. One of the programs for empowering agricultural, animal husbandry and fishery extension is by providing extension facilities and infrastructure.
- e. Office administration service program

### 3.3 Inter-regional Cooperation

This inter-regional cooperation was carried out by the East Java Provincial inflation control team, which stated that if the support for the implementation of inter-regional cooperation was carried out through the signing of a number of Business-to-Business MoUs between business actors in East Java and North Maluku and North Kalimantan. The MoUs implemented were among others carried out with PT. Jatim Graha Utama with PT. Fishindo Lintas Samudra which deals with the supply of fish from North Maluku for fresh fish raw materials in East Java. In addition, the Mou between PT. Jatim Graha Utama with PT. Artha Tani Mina regarding meeting the needs of frozen carcass chicken in East Java for North Sumatra. And then the MoU between CV Lucky Forever and Perumda (Regional Housing) Tarakan Independent Agribusiness relating to the sale and purchase of chicken egg commodities from East Java to Tarakan City [24]. By implementing inter-regional cooperation, it is hoped that it will support economic recovery and inflation stability not only in East Java, but also with other regions in Indonesia [25].

This is in accordance with the theory of Collaborative Governance which states that a series of arrangements in which one or more public institutions directly involve non-state stakeholders in the policy-making process that is formal, consensus-oriented and deliberative or implements public policies or regulates public programs or assets [26].

In composing this study, the authors compare the modernization or *Lumbung Pangan* program with other regions, namely Central Java and also West Java and abroad region as a comparison for the implementation of improving *Lumbung Pangan* Program and becoming a benchmark for the implementation of programs implemented in East Java province, the description of which is as follows:

## 1. Central Java

In Central Java, *Lumbung Pangan* innovates and modernizes by renewing themselves to become regional logistics system (*SILOGDA*) which is an effort to optimize food production in Central Java [27]. In the form of this *SILOGDA*, the background is because the regional logistics system does not yet have a food control system (price, availability, distribution) and thus does not guarantee the availability of basic and strategic food commodities in Central Java at affordable prices. The purpose of the establishment of the *SILOGDA* is to provide food data in real time, reduce transaction costs, facilitate food flows, absorb farmers' grain and increase farmers' income, provide food logistics for the community, stabilize prices and supply of food commodities, especially rice.

*SILOGDA* is a system that integrates into a single unit and is able to provide information regarding the availability, distribution and affordable prices of food, by controlling effectively and efficiently the storage and flow of goods, services and related information from the starting point to the point of consumption, based on information and communication technology the from upstream to downstream, in order to determine the state of the existing in the province of Central Java in a valid and comprehensive manner [23].

Compared to the innovations made by the East Java Provincial Government, the Central Java Provincial Government has made more innovations towards the establishment of a system so that the distribution and monitoring of food data can be easily seen or monitored, thus food distribution can be carried out quickly, accurately and effectively. Meanwhile, East Java has made innovations in the field of food availability and food access to the community during the COVID-19 pandemic.

## 2. MALAYSIA

Malaysia is a neighbouring country to Indonesia whom is also a developed country and a country affected by COVID-19, in this connection the authors will compare the policies carried out by the Malaysian government in maintaining the food security of the Malaysian state and will be used as a comparison with the Indonesian state.

National Agricultural-Food Policy (National Agrofood Policy or NAP) in 2011–2020 has the following objectives [24];

- a. Ensuring adequate food supply and food safety
- b. Develop the food agriculture industry into an industry that is competitive and sustainable
- c. Increase the income level of agricultural entrepreneurs.

The strategic direction of NAP is in accordance with what has been determined by the Ministry of Agriculture and Basic Farming Industry of Malaysia, namely as follows:

- a. Ensuring national food security by focusing on rice, meat, fruit, vegetables and fish commodities in order to achieve self-sufficiency level (SSL).

- b. Increasing the contribution of the agricultural industry which consists of exploring the potential of agricultural commodity products that possess great value, increasing productivity by using agricultural production factors intensively and developing agriculture-based industries.
- c. Strengthening human resources is carried out by providing agricultural workers who have knowledge and training, and form agricultural entrepreneurs with progressive mentality
- d. Strengthening research and development activities, innovation and use of technology, namely by creating a conducive environment to encourage innovation and creativity, intensify research and development of innovative products, increase automation and mechanization and effective technology transfer.
- e. Creating a private sector-led business by providing an integrated and complete infrastructure, simplifying business procedures, providing competitive investment incentives to attract investors, increasing access to finance and sharing risk, strengthening the role of small and medium enterprises engaged in agriculture, rationalization subsidies and reduce market distortion.
- f. Strengthening the service delivery system, namely rationalizing the roles and functions of the ministries and institutions of agriculture, increasing the role of agricultural organizations, forming strategic industry development boards, and strengthening agricultural services by involving stakeholders.

Based on the results of the research above, when compared with the policies carried out by the Province of East Java and the Government of Malaysia, they both have similarities. It lies where the food security innovation in the face of the COVID-19 pandemic by optimizing domestic food production to meet domestic needs. The increase in food production is carried out through various programs, namely extensification, intensification and support with subsidies. Efforts made by the East Java Provincial Government to take the same action by increasing the agricultural food production of farmers as food availability in East Java foodshed to maintain inflation or other actions.

According to the authors, to maintain the stability of national food security, the concept of innovation in the revitalization of *Lumbung Pangan* is the most important. First, modernize the storage of foodshed in terms of managing stored food and managerial aspects of the foodshed management. Second, *Lumbung Pangan* is not only to meet needs in a limited scope so that *Lumbung Pangan* can co-operate or synergize with other regions as mentioned above by collaborating between regions to complement each other to meet food needs in East Java for the means of national demand.

## 4 Conclusions

The results of the study indicate that the Large-Scale Social Restriction Policy in East Java has an effect on various sectors so that various problems arise in society, one of which is in the socio-economic sector. So that the East Java Provincial Government seeks to find solutions for the community in several programs.

One of the programs carried out by the East Java Provincial Government is through the innovation of the East Java *Lumbung Pangan* Program (*LUPAJA*). *LUPAJA* is an

innovation carried out by the East Java Provincial Government in fulfilling food availability and food distribution to the community. In addition, the *LUPAJA* program can be implemented as an inflation control and regional logistics system. The implementation of the *LUPAJA* program can support regional and national food security and can make recommendations to stakeholders as an alternative strategy to deal with unexpected natural situations and conditions such as what is currently happening, namely the COVID-19.

**Author' Contributions.** In this study, the first author contributed the ideas and design for the research framework, collect research data, analyse data from results and write the articles in such a way. For the second and third authors contributed the development of writing and provide the thought development and analysis.

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