Strengthening Food Security During The Covid-19 Pandemic: Case Study In Temanggung District, Central Java Province, Indonesia

Dede Kurnaedi¹, Eko Priyo Purnomo ¹*, Lubna Salsabila¹, Deni Setiawan¹, Aqil Teguh Fathani¹, Agustiya¹

¹ Department of Government Affairs and Administration, Jusuf Kalla School of Government, Universitas Muhammadiyah Yogyakarta, Indonesia
Corresponding E-mail: eko@umy.ac.id

Abstract. The purpose of this research is to find out what policies are taken by the Temanggung Regency Government in fighting for community food security. The Covid-19 pandemic that hit Indonesia, especially Temanggung Regency, had a significant impact in increasing the unemployment rate, which was not in line with the increased nutritional needs of the community, so the government made efforts so that people could meet their regular food needs or primary needs. The method used is a qualitative research method with a descriptive approach; the data collected are primary data and secondary data obtained from the Food Security, Agriculture and Fisheries Office of Temanggung Regency through in-depth interviews conducted in March 2021. Meanwhile, secondary data were obtained from literature, media and other relevant sources. The results obtained were that the Temanggung Regency Government implemented a community empowerment policy to organize yard farming for the community at the village level targeting low-income families and farmer groups with government funding aimed at making the community at least able to meet their daily food needs. During the Covid-19 pandemic, family needs through the use of the yard or the surrounding environment without having to spend money.

1. Introduction
COVID-19 has affected communities, businesses and organizations globally, inadvertently affecting financial markets and the global economy [1]. In addition, disruption due to the COVID-19 pandemic is now threatening the food security of billions of people [2]. Food Security is a situation that occurs when all people, at all times, have physical, social and economic access to adequate, safe and nutritious food that meets dietary needs and food preferences for an active and healthy life [3]. This definition consists of four main parts: availability, stability, accessibility and usability. A food system is said to be vulnerable when one or more of the four components of food security are uncertain and unsafe [4]. For this reason, the development of food security is very important in the pandemic era, because the development of food security is aimed at ensuring the availability, affordability and consumption of food that is sufficient, safe, quality, nutritious, and balanced for each individual [5]. In Indonesia, the impact of a pandemic is very significant, so the government has implemented a social distancing policy to tackle the Covid-19 pandemic[6][7]. However, social distancing policies create several ways the pandemic of infectious diseases has an impact on the economy and society[8]. The
social distancing policy has a negative impact on production because it reduces the quantity of labor and social isolation, so this has an impact on increasing unemployment which has an impact on decreasing purchasing power of daily needs, especially food needs which ultimately brings Indonesia to be more careful about the condition of national food security[9].

The right policy decisions are necessary actions to prevent more impacts arising from a pandemic situation [10], especially in relation to strengthening community food security. Thus, a policy is something that is produced by the government which is formulated based on all events that occur in society. This incident grows in the practice of social life, and is not an event that is independent, isolated, and foreign to society, the meaning of the implementation of public policy is a relationship that allows the achievement of goals or objectives as the end result of activities carried out by the government [11][12].

The agricultural sector is one of the most strategic sectors to improve the people's economy because the impact of Covid-19 does not affect community agriculture. So that the Temanggung Regency Government, Central Java Province, as the government administrator, is required to play an active role in overcoming the sustainable impact of the Covid-19 Pandemic so that people can sustain their lives properly amid the pandemic. This study aims to determine the Temanggung Regency Government's policies in dealing with the impact of the Covid-19 Pandemic on the economic sector, which affects people's purchasing power. The focus of this research lies in programs run by the government to strengthen community food security.

2. Literature review

Based on Law No. 18/2012 concerning Food, what is meant by Food security is the condition of the fulfillment of food for the state to individuals, which can be seen from the availability of sufficient food in quantity or nutrition and quality, equitable, affordable and does not conflict with the religion, belief and culture of society. Food security at the national level is the ability of a nation to ensure that all its inhabitants obtain food in sufficient quantities, of appropriate quality, safe, and also halal based on optimized utilization and based on diversity of domestic resources In simple terms, regional food security conditions are largely determined by the amount of food production, consumption and distribution. From the aspect of food insecurity, it is divided into 4 groups, namely food availability, access to food and income, health and nutrition, as well as aspects of food vulnerability caused by environmental conditions and natural disasters [13]. So, it is necessary to strengthen food security by government agencies or institutions [14].

The problem of stabilizing food security is related to various aspects, especially issues of increasing population, limited natural resources and human resources, increasing cases of malnutrition, poverty, natural disasters, socio-political instability, quality demands and international trade liberalization, fulfillment of human rights, and so on [14]. So that food security is a government development program that is not a slogan of populist and utopian public policies that are not down to earth. But the program because food security is aimed at starting from the central government level through the willingness and support (political will) of program policies and budgets to the regional level [5]. One of the activities that can be carried out to prevent a food crisis is to diversify food and not rely entirely on the amount of food on the market [15], namely by strengthening household food security in the form of utilizing homestead land as a source of daily food, especially in times of crisis. The government also emphasizes the public to use the home page to support food security [13]. Household food security is a condition in which food is fulfilled for all household members, which is reflected in the availability of sufficient food, both in quantity and quality, safe, diverse, nutritious, equitable and affordable and in accordance with beliefs and culture to be able to live healthy, active, and sustainably productive [16]. Because an adequate food supply nationally does not necessarily guarantee food security, both at the regional and household and individual levels [14].

To strengthen food security, the Kali Upa Village government has developed a yard land use program to improve community knowledge and technology in cultivating home crops, so that each family can strengthen their food [17]. In addition, the development of vocational villages is carried out in the form of the application of simple technology that is easily applied by the community to optimally utilize the village's local potential so that it can increase income and reduce the number of unemployed
[18]. However, in Serang Purbalingga Village as a food security-based agro-tourism location with results especially strawberries, it is still constrained by inadequate management, distance to location and dependence on marketing so that efforts are made to implement an Integrated Marketing Communication Strategy to increase employment opportunities, income and community welfare[19].

3. Research method
This study uses a qualitative research method with a descriptive approach because qualitative research prioritizes excavation, discovery, reading, explanation and delivery of explicit and tangible meanings or data symbols from the data collected [20]. Meanwhile, descriptive research intends to provide an overview of a particular social phenomenon, which previously contained information about these social symptoms but was insufficient [21].

The research was conducted at the Food Security, Agriculture and Fisheries Service Office of Temanggung Regency. Research activities were carried out through interviews conducted in March 2021. Data collected in the form of primary data obtained from interviews with officials of the Food, Agriculture and Fisheries Service of Temanggung Regency and secondary data obtained from the literature obtained from the Food Security, Agriculture and Fisheries Office of Temanggung Regency. Data analysis was performed using an interactive model developed by Huberman and Miles namely data collection, data reduction, data presentation, and conclusion drawing / data verification[22].

4. Results and discussion
The Temanggung district government carries out one of 4 government functions to strengthen food security, namely community empowerment. Based on the provisions of Article 1 paragraph (8) of the Regulation of the Minister of Home Affairs Number 7 of 2007 concerning Community Empowerment Cadres, it states that community empowerment is a strategy used in community development as an effort to realize capability and independence in the life of the community, nation and state. Community empowerment is an effort to increase the dignity and dignity of people in poor condition to escape from the traps of poverty and underdevelopment. Empowerment is an effort to build community capacity by encouraging, motivating, to develop this potential into real action. The concept of empowerment is broader than just an effort to meet basic needs or just a mechanism to prevent further impoverishment processes [23].

Community empowerment that is carried out is through Yard Farming activities. Yard farming is an activity carried out by community groups jointly working on the yard as a source of food in a sustainable manner to meet nutritional needs. Yard has great potential in supporting household food security, because if it is used optimally, it can become a source of family nutrition in terms of fulfilling vitamins and minerals [17]. Yard farming activities are carried out to empower women and community groups to cultivate various types of plants, livestock and fish according to local specialties. This activity is carried out by utilizing the house yard and living environment to create the community itself produces a food source without having to spend money.

4.1. Activity strategy
Figure 1. Describes the strategy to be implemented in yard farming activities for the Temanggung community. The strategy is divided into 3 namely socialization, implementation, and monitoring and evaluation.
The activity begins with a socialization stage which is carried out in stages starting from the district, sub-district, to the village level, accompanied by the stipulation of regulations. The stipulation of regulations became the initial basis for activities, namely through a circular letter from the Regent of Temanggung number P / 541/520/22 / X / 2019 concerning the movement for waste management, food security, and strengthening of village institutions, which explained the plan for home farming activities. Furthermore, the implementation stage, in the form of the implementation of yard farming activities carried out through the agriculture and food security office in collaboration with the local sub-district and village heads coordinating the implementation of yard farming activities, and finally monitoring and evaluating the implementation of activities so that the level of success of the activities is known.

4.2. Implementation
In Figure 2, it can be seen that the yard farming activity is divided into 2 parts, namely the companion yard farmer and the model yard farmer. The two types of home farming are implemented in each village in the Temanggung district with different targets and financing.

4.2.1. Assistance yard farming activities.
Namely, yard farming activities were carried out for 50 poor households in each village. Activities carried out in all villages throughout Temanggung district. The government finances the implementation of assisted yard farming activities through the 2020 village income and expenditure budget, which is given to each poor household with the same nominal value to be used for the provision of plants or fish, which will be a source of food in the yard of every citizen. The main target of this activity is to help strengthen food security in the poor so that during the Covid-19 pandemic, the poor can still meet their nutritional needs without spending money.

| No | Subdistrict | Number of Villages | Number of Homestead Farmers |
|----|-------------|--------------------|-----------------------------|
| 1  | Tretep      | 11                 | 550                         |

Figure 2. Classification of Yard Farming Activities.
Based on the table above, it can be seen that the total number of assisted yard farmers is 1,330 with the status of poor households in 266 villages in Temanggung Regency. In the assistance yard farming program, as many as 1,330 families are classified as poor from a total of 262,643 heads of families throughout Temanggung district are registered by the local village government to get assistance in the form of assistance money for capital for implementing yard farming in their neighborhood. This shows a serious effort from the government to strengthen the food security of the poor in villages, especially during the Covid-19 pandemic, which demands the application of restrictions on community activities that automatically reduce people's income.

4.2.2. **Pilot yard farming activities.**

Namely the use of plant, livestock and fisheries-based yards in the context of poverty alleviation through groups. The target of this activity is each farmer group, women farmer group, and farmer group association.

**Table 2. Number of Pilot Yard Farmers.**

| No | Group                  | Total |
|----|------------------------|-------|
| 1  | Farmer Group           | 6     |
| 2  | Women Farmer Group     | 32    |
| 3  | Farmer Group Association | 2    |
|    | Total                  | 40    |

**Source:** Food Security, Agriculture and Fisheries Service of Temanggung Regency, 2020

Based on the table above, it can be seen that the total number of implementers of pilot yard farming activities is 40 groups scattered throughout the Temanggung district. the implementation of this...
activity is financed by the government through the 2020 Temanggung district revenue and expenditure budget to each group or group combination to be used to supply the materials needed for the activity. The capital participation given to the community is actually to be used in the context of community empowerment, especially for strengthening food security during the Covid-19 pandemic[24]. With this encouragement from the government, community innovation, especially those in the poverty line and farmer groups, can be channeled. Food sources that are produced by themselves are very helpful for the poor, especially in efforts to strengthen food security. Because food security in an area can be assessed by the ratio of supply availability and total consumption [13].

Figure 3 shows several types of plants used in yard farming activities, although the types of plants planted in the community yards adjust to local conditions in order to reduce the risk of failure. The community uses the four types of plants as a source of household food that they produce themselves which is expected to meet the nutritional needs of the family without having to spend money.

Based on this figure, it can be seen that homestead plants consisting of fruit plants, medicinal / biopharmaceutical plants, vegetables and food plants, can help meet people's basic food needs from their own environment. The following are the types of plants that are included in it: (1) Vegetable crops, including green mustard greens, mustard greens, mustard greens, green beans, bitter melon, eggplant, lettuce, spinach, leeks, kale, cabbage, cabbage / cabbage, chilies, tomatoes, moringa, katuk, jeep, broccoli, cauliflower, peanuts long, cucumbers, peas, luffa, radishes, carrots, celery and leucanas. (2) Fruit plants are divided into two; first Potting media, namely water pumpkin, mango, mini jackfruit, longan, orange, kedongdong bangkok, tin fruit, sapodilla, dragon fruit, guava, mini banana, melon, grapes, watermelon, nanam bol guava, pomegranate, sugar apple, cermai, soursop, starfruit wuuh, rambutan, and sweet starfruit. Second Land media, namely all fruit in pots, mangosteen, banana, coconut, durian, avocado, duku, salak, large jackfruit, lychee, and apple. (3) Medicinal / biopharmaceutical plants, including red betel, Moringa leaves, Dewa leaf, bidara leaves, dambiloto, aloe vera, rosella, black cumin, noni, sugar apple, pomegranate, tamulawak, kencur, ginger, fennel, reeds, turmeric, bangle, garlic, thorn spinach, beimbing wuluh, brotowali, white chrysanthemum, ciplukan, beluntas leaves, bay leaves, celery leaves, cardamom, vile glass, and cat whiskers. (4) Food crops include cassava, sweet potato, taro, suweg, ganyong, harut, gambili, peanuts, and green beans. These plants are all plants that have characteristics suitable for planting in the yard. The selection of the type of plant developed in the yard is one of the factors that determines the success of cultivation techniques[25]. But even so, yard farmers can be freely chosen by home farmers to be planted in their yards based on the conditions of their respective environmental wisdom so that they can flourish as expected. The priority of the garden farming program in the short term during the Covid-19 pandemic is directed at fulfilling food security independently, but if the community's food security is maintained,
these community activities are expected to be a means to improve the community’s economy through the production of their own crops that can be marketed both independently and integrated. This shows that the policies of the Temanggung Regency Government are applied to a sustainable program. As an implication of homestead farming, the Temanggung district government also socializes related waste management, especially in the environment around yard farming. Waste management is carried out to produce fertilizers so that it can be distributed to home farmers who will later be able to support the productivity of the home crop yields through a suitable and adequate supply of fertilizers.

5. Conclusion
The Temanggung district government in an effort to strengthen food security implements a community empowerment policy in the form of homegardening farmers financed from the regional and village income and expenditure budgets of the Temanggung district and villages aimed at poor households and farmer groups, women farmer groups, and farmer group associations. The implementation of activities in the form of the use of yards and the environment around the community to be used as agricultural land which is planted with various plants according to regional characteristics to be used as a source of self-produced food to meet nutritional needs during the Covid-19 pandemic. Furthermore, the Temanggung Regency Government has projected that this program will improve the community’s economy by implementing integrated marketing of home farm crops. Yard farming also has implications for the management of waste around the yard farmers’ environment to support crop productivity.

6. References
[1] M. Nicola et al., “The socio-economic implications of the coronavirus pandemic (COVID-19): A review,” Int. J. Surg., vol. 78, no. April, pp. 185–193, 2020.
[2] R. Zarayk, “Pandemic and Food Security: A View from the Global South,” J. Agric. Food Syst. Community Dev., vol. 9, no. 3, pp. 1–5, 2020.
[3] F. O. Sarmiento, “Montology manifesto: echoes towards a transdisciplinary science of mountains,” J. Mt. Sci., vol. 17, no. 10, pp. 2512–2527, 2020.
[4] U. Nations, The state of food and agriculture, 2008.
[5] A. I. Sulaiman, B. Kuncoro, E. D. Sulistyoningsih, H. Nuraeni, and F. S. Djawahir, “Pengembangan Agrowisata Berbasis Ketahanan Pangan,” The Messenger, vol. 9, no. 1, pp. 9–25, 2017.
[6] R. Ramdani, Agustiyara, and E. P. Purnomo, “Big Data Analysis of COVID-19 Mitigation Policy in Indonesia: Democratic, Elitist, and Artificial Intelligence,” IOP Conf. Ser. Earth Environ. Sci., vol. 717, no. 1, p. 012023, 2021.
[7] E. P. Purnomo, M. I. Fadhilurohman, L. Salsabila, A. T. Fathani, S. Sujud, and Y. Widowaty, Analysis of Sustainable Health Development Goals in Improving Public Health, vol. 1352. Cham: Springer International Publishing, 2021.
[8] E. Satispi, R. W. DyasTuti, A. T. Fathani, and P. Kaewhanam, “Local Government Respond to COVID-19 Pandemics: A Study of South Tangerang City,” J. Gov. Public Policy, vol. 8, no. 2, pp. 82–92, Jun. 2021.
[9] A. Setiawana, A. Nurmandi, E. P. Purnomo, and A. Muhammad, “Disinformation and Miscommunication in Government Communication in Handling COVID-19 Pandemic,” Webology, vol. 18, no. 1, pp. 203–218, 2021.
[10] A. Dewi et al., “Global policy responses to the COVID-19 pandemic: proportionate adaptation and policy experimentation: a study of country policy response variation to the COVID-19 pandemic,” Heal. Promot. Perspect., vol. 10, no. 4, pp. 359–365, 2020.
[11] N. R. Yunus and A. Rezki, “Kebijakan Pemberlakuan Lock Down Sebagai Antisipasi Penyebaran Corona Virus Covid-19,” SALAM J. Sos. dan Budaya Syar-i, vol. 7, no. 3, 2020.
[12] H. D. Jovita, A. Nurmandi, D. Mutiarin, and E. P. Purnomo, “Why does network governance fail in managing post-disaster conditions in the Philippines?,” Jamba J. Disaster Risk Stud., vol. 10, no. 1, 2018.
[13] S. Mulyani, A. T. Fathani, and E. P. Purnomo, “Perlindungan Lahan Sawah Dalam Pencapaian
Ketahanan Pangan Nasional,” Rona Tek. Pertan., vol. 13, no. 2, pp. 29–41, 2020.

[14] A. Arifin and S. Bahri, “Penguatan Kelembagaan Ketahanan Pangan di Kota Pare Pare,” J. Pangadereng, 2019.

[15] A. Swardana, “Optimalisasi Lahan Pekarangan Sebagai Salah Satu Upaya Pencegahan Krisis Pangan di Masa Pandemi Covid-19,” vol. 4, no. 2, pp. 246–258, 2020.

[16] Jayaputra, Nurrachman, B. B. Santosono, and I. K. D. Jaya, “Optimalisasi Pemanfaatan Lahan Pekarangan Untuk Mendukung Ketahanan Pangan Rumah tangga Petani Lahan Kering Di Desa Kayangan Lombok Utara,” vol. 1, no. 1, pp. 13–21, 2020.

[17] A. Y. Kastanja, Z. Patty, Z. Dilago, S. Kesehatan, and U. H. Namotemo, “Pemanfaatan Pekarangan Untuk Mendukung Ketahanan Pangan Masyarakat Desa Kali Upa,” vol. 1, no. 1, pp. 173–181, 2019.

[18] P. Aditiniawati, D. Indriani Astuti, G. Suantika, and T. M. Simatupang, “Pengembangan Potensi Lokal Di Desa Panawangan Sebagai Model Desa Vokasi Dalam Pemberdayaan Masyarakat Dan Peningkatan Ketahanan Pangan Nasional,” J. Sosioteknologi, vol. 15, no. 1, pp. 59–67, 2016.

[19] F. Rahmanto, E. P. Purnomo, and A. N. Kasiwi, “Food Diversification: Strengthening Strategic Efforts to Reduce Social Inequality through Sustainable Food Security Development in Indonesia,” Caraka Tani J. Sustain. Agric., vol. 36, no. 1, p. 33, 2020.

[20] E. Paradis, L. Nimmon, D. Wondimagegn, and C. R. Whitehead, “Critical Theory: Broadening Our Thinking to Explore the Structural Factors at Play in Health Professions Education,” Acad. Med., vol. 95, no. 6, pp. 842–845, 2020.

[21] D. Beraldo and S. Milan, “From data politics to the contentious politics of data,” Big Data Soc., vol. 6, no. 2, 2019.

[22] M. B. Miles and M. Huberman, Analisis Data Kualitatif. Jakarta: Universitas Indonesia, 1992.

[23] D. E. Silalahi and R. R. Ginting, “Strategi Kebijakan Fiskal Pemerintah Indonesia Untuk Mengatur Penerimaan dan Pengeluaran Negara Dalam Menghadapi Pandemi Covid-19,” Jesya (Jurnal Ekon. Ekon. Syariah), vol. 3, no. 2, pp. 156–167, 2020.

[24] E. Purnomo, A. Agustiyara, R. Ramdani, D. W. Trisnawati, P. . Anand, and A. T. Fathani, “Developing the Assessment and Indicators for Local Institutions in Dealing with Forest Fire Dilemmas,” Forests, vol. 12, no. 6, p. 704, May 2021.

[25] A. H. Ibrahim, E. P. Purnomo, and A. D. Malawani, “The Most Important Agricultural Products that Sudan Exports and the Mechanisms to Develop,” Asian J. Agric. Extension, Econ. Sociol., vol. 38, no. 8, pp. 121–133, 2020.