Analysis of regional government food reserves in West Java Province

A Agustian*, V Darwis, C Muslim, Sunarsih, K S Septanti, R Aldillah, D K S Swastika and A Suryana

Indonesian Center for Agricultural Socio Economic and Policy Studies, Jln. Tentara Pelajar No.3B, Bogor, West Java, Indonesia

*agustian08@gmail.com

Abstract. The Law No. 18/2012 concerning food mentions that local governments determine the types and amounts of certain food reserves. Currently, the existence of regional government food reserve (RGFR) is still relatively varied, according to the capacity of local governments. This study aims to analyze management policies, the amount of RGFR, management problems and strengthening strategies. The research was conducted in March-April 2021 in Cianjur and Garut Districts, West Java Province. The analysis was carried out quantitatively and descriptive qualitatively. The results of the analysis show that the RGFR management policy in West Java is stipulated by Governor Regulation No. 37/2017 concerning the provision and distribution of RGFR, while in the study location the stipulation is through a Regent Regulation. In West Java, RGFR management collaborates with BULOG, with a RGFR amount target of around 1,200 tons (2020). At the study locations in Garut and Cianjur Districts, the amount of district government food reserves (DGFR) in 2020 was 50 tons and 33 tons, respectively. In Garut District, food procurement through third party partners and the district government already has a food storage warehouse, while in Cianjur District the management is in collaboration with BULOG. The problems in RGFR management, among others, are related to the capacity of the budget for food procurement, and the seriousness of local governments to increase it. To strengthen RGFR and DGFR, government policy support is needed to increase food production according to regional production potential, and continuously increase the amount and continue to improve the management system.

1. Introduction
According to the Law No. 18 of 2012 concerning food, it is stated that in realizing food sovereignty, food independence and food security, the government establishes the national food reserve (NFR). National food reserves consist of government food reserves (GFR), regional government food reserves (RGFR) and community food reserves (CFR) [1]. The development of national food reserves is intended to anticipate food shortages, excess food availability, food price fluctuations and or emergencies. The provincial government, district/city government, and/or village government determine the type and amount of certain food reserves in accordance with the consumption needs of the local community. Food reserves of the provincial government, district/city government, and village government are sourced from domestic production. According to Rachman et al. [2] in an effort to meet the food needs of the community, both
physically and economically, it requires management of food reserves in all lines of government and all elements of society.

Furthermore, based on PP 17/2015 concerning food security and nutrition in Article 3, it is also regulated about GFR and RGFR [3]. Government food reserves (GFR) in the form of certain staple foods are determined based on the type and amount. As for the staple food, it is determined by the president as GFR. A further derivative of the regulation from PP 17/2015 concerning food security and nutrition, is Minister of Agriculture 11/2018 which regulates the determination of the amount of rice reserves for regional governments. This regulation states that the National Rice Reserve (NRR), is a supply of rice throughout the territory of the Unitary State of the Republic of Indonesia for human consumption, and to deal with rice shortages, supply and price disruptions, and emergencies. Government Rice Reserves (GRR) are rice supplies controlled and managed by the government. Provincial Government Rice Reserves (PGRR) are rice supplies controlled and managed by the provincial government. District/city government rice reserves (DGRR), are rice stocks controlled and managed by the district/municipal government.

Calculation of the number of PGRR and DGRR is based on the following criteria: (1) population; (2) rice consumption per capita per year; and (3) the proportion of national rice reserves. The calculation of the amount of PGRR and DGRR as well as the village government rice reserve is determined in accordance to the provisions of the legislation. According to Indonesian Agency of Food Security [4], the current total of 34 provinces, only 31 provinces have food reserves at the provincial level. Based on a total of 502 districts/cities in Indonesia, only about 269 districts/cities (53%) have food reserves and the remaining 239 districts/cities (47%) do not yet have food reserves. Meanwhile, in terms of supply, during the period 1998-2006 the national rice supply always exceeded the minimum stock requirement [5].

In the context of this discussion, we will focus on the analysis of RGFR in the District. District/city government food reserves are food supplies controlled and managed by the district/city governments. In districts/cities, it covers food reserves for villages and communities. Furthermore, village government food reserves are food supplies controlled and managed by the village government, while community food reserves (CFR) are food supplies controlled and managed by the community at the merchant, community, and household levels.

In general, the problems in terms of regional food reserves include (1) the existence of RGFR is still varied, which includes the volume, the role of food distribution institutions is not yet optimal in supporting the development of RGFR, the existence of CFR is not yet developed; and (2) the performance of RGFR management is still varied, among others in the form of regulatory support regarding management policies.

Based on the description above, this study aims to analyze management policies, the amount of RGFR, management problems and strategies for strengthening them.

2. Materials and Methods

2.1. Materials

This research was conducted in March-April 2021. The data included primary and secondary data. Primary data was collected through interviews with officials who handle food reserves at the Food Security Service of West Java Province, Cianjur District and Garut District. In addition, primary information was also collected from farm households of the Community Food Barn Program with a total of 25 farmers in the research location. Farmer households were selected randomly from the participating farmer households. Secondary data were collected from the Food Security Agency-Jakarta, and the Food Security Service at the research site.
2.2. Methods
In this study, data collection was carried out using a survey method, and in-depth discussions with several parties related to the research of the Food Security Service at the research location of Cianjur and Garut Districts, West Java Province. The primary and secondary data collected were then analyzed quantitatively by calculating the trend and the percentage of utilization and also equipped with qualitative descriptive analysis.

3. Results and discussion

3.1. RGFR management policy in West Java Province, in Cianjur and Garut Districts
RGFR management policies in West Java are set through Governor Regulation No. 37/2017 concerning the provision and distribution of RGFR. Based on the regulation, it is mentioned that the provision of regional staple food reserves is intended to provide food reserves for rice commodities as regional staple food reserves, to prevent and overcome the occurrence of food insecurity after natural disasters and/or emergencies.

The mechanism for providing regional staple food reserves in West Java is carried out through a cooperation agreement between the Food Security Service and the Regional Division of Logistics Affairs. The distribution of rice assistance as food reserves is carried out for the target group of beneficiaries. The cost of distributing rice aid as a regional staple food reserve from the West Java Regional Logistics Agency (Bulog) warehouse to the distribution target group is the responsibility of the provincial government. The amount of rice aid distributed to the target group is adjusted to the needs and an index of 300 grams per person per day, with a maximum period of 60 days and/or according to the results of the investigation.

Procurement of food reserve of rice is carried out by the Logistics Affairs Agency with a per kilogram price of IDR 10,000. This price is the package price consisting of the purchase price, maintenance price, insurance, and transportation costs from third party warehouses to trucks prepared by the West Java Provincial Food Security Service. The policy for the implementation of food reserves procurement by the Logistics Affairs Agency has been carried out from 2010 to 2020. In the context of the rice procurement, in 2021 a partnership with AgroJabar Regional Owned Enterprises has also been planned. This change is carried out at the suggestion of stakeholders and is a mandate from the article in the national food reserve. However, in practice, it turns out to be carried out again by the Logistics Affairs Agency. This is due to the fact that AgroJabar does not have enough warehouses spread across several areas in West Java province, and currently only has 1 warehouse. Meanwhile, the Logistics Affairs Agency already has 9 large warehouses in West Java.

Regional government food reserves in the province of West Java are in the form of rice, while reserves in the form of grain are at the farmer group association level. The pattern of reserves in the form of grain is found in the districts of Cirebon, Sukabumi and Majalengka, but it is still distributed in the form of rice. Currently, almost all districts/cities in West Java have food reserves (rice).

At the research location in Cianjur District, the RGFR management policy is regulated by Regent Regulation No. 27 of 2017. The form of commodity to meet food reserves is local rice, with sources from production centers in the southern region such as from Pagelaran, Sindang Barang, and Geger Bitung Districts. The implementation of food reserves in Cianjur District is carried out in partnership with the Logistics Affairs Agency of the Cianjur Regional Subdivision.

Currently, the contract is carried out for a maximum period of 2 years, which means that if there is rice in the Bulog warehouse and it has not been used, the rice will be added to the supply of rice in the following year (accumulative). If within 2 years the rice is still in the Bulog warehouse, the Food Security Service will be charged an additional storage fee. However, if there is a rice refresh, the costs will be borne by the Logistics Affairs Agency. The selling price of rice from Bulog is IDR 10,769/kg.
Furthermore, related to food reserve management policies in Garut District, it is also stipulated by the Regent's Regulation in 2018. In its implementation, the food procurement mechanism carried out by the Garut District Food Security Service is by means of an umbrella contract system through job auctions. This mechanism is implemented with the hope that the rice distributed is local medium rice. The selling price of rice for the procurement of food reserves (rice) is IDR 11,800/kg. The auction has been prepared since January, then in February the auction begins. Companies that win the auction will prepare their rice in March to April. The rice is stored in the warehouse of the company that won the tender until the end of the year. When rice is needed, the Food Security Service will instruct the company to send the rice to the warehouse of the District Food Security Service which is located next to the office.

The existing warehouse is not a warehouse specially prepared to store rice. In fact, the warehouse is a multipurpose warehouse that can be used for anything. Therefore, rice stored in the warehouse should not be more than one month. The goal is that the rice does not decrease in quality. The rice that will be distributed to the target locations, for example, is already in the form of a certain size plastic packaging. The purpose of distributing plastic is to be more efficient in distributing it to families affected by natural disasters. Meanwhile, transportation costs are borne by the local district and sub-district offices. Rice is given to disaster locations, which is given after the disaster upon request (proposal) from the village which is forwarded to the sub-district and finally to the district. Furthermore, the district will conduct verification to see the level of damage and how many people were affected by the disaster.

According to Khotimah [6] revealed that foreign exchange reserves and food will have a positive effect on the volume of rice imports in the same period. This is also in line with the results of Naufal [7] which shows that rice imports are partially influenced by domestic rice production and foreign exchange reserves. The results of research by Suryana et al. [8] revealed that the amount of government food reserves that the government have to maintain rice price stabilization depends on the large volume of rice managed by the government for food assistance programs for certain groups of people. Meanwhile, based on the research results of Ahmed et al. [9] it is noted that most governments in Africa implement policies aimed at stabilizing the prices of staple foods, which often include increasing grain stocks, in addition to other trade measures that isolate their domestic markets from the world markets. Meanwhile, according to research Bezuneh and Yiheyis [10] that in developing countries, trade policies such as tariffs, import permit quotas, and other trade instruments will affect the availability of food in the country. In the current COVID-19 pandemic condition, the global food producers, must be vigilant because they have the potential for disruption to their supply, due to the COVID-19 pandemic [11-15]. For this reason, it is necessary to have cooperation and mutual assistance between various parties, including between countries [16].

3.2. Volume and problems faced in determining RGFR

In the regulation of the Governor of West Java No. 37/2017 it is stated that the amount of regional staple food reserves, includes: the remaining regional staple food reserves from procurement allocations sourced from the regional budget managed by the office, regional staple food reserves resulting from the current year's supply sourced from the regional budget managed by the Food Security Agency.

The formula for the amount of RGFR in West Java ideally refers to the Minister of Agriculture Regulation No.11/2018 concerning the determination of the amount of regional government rice reserves. This is because the local government's food reserves in West Java are rice commodities, and there is also unhulled rice. However, the determination of RGFR in West Java and in the district is very dependent on the budget capacity of the local government.

Regional food reserves are in principle similar to national food reserves which were created with the aim of overcoming food shortages due to an emergency and stabilizing supply distribution between plus and minus regions in order to overcome price fluctuations. Especially in West Java Province, NFR or RGFR is
more defined in terms of food availability which is intended for areas experiencing food insecurity due to disasters.

Ideally the amount of food reserves in West Java is in accordance with Minister of Agriculture Regulation No.11/2018 and in accordance with Governor Regulation No. 23/2017 at least 200 thousand tons. However, the reserve is highly dependent on the ability of the supply budget. In 2021, the food reserves prepared by the West Java Provincial Office are targeted at 1,200 tons. In 2020, RGFR stock initially reached 692.36 tons and with a distribution of 19.29 tons, the reserve stock was 673.07 tons. Furthermore, in 2021, the initial stock of food reserves in West Java Province (Jan-Mar) is 1,726.66 tons. Then there was a distribution of 161.07 tons and the reserve stock was 1,565.59 tons (Table 1).

| No. | Initial stock (tons) | Distribution (tons) | Reserve stock (tons) |
|-----|---------------------|---------------------|---------------------|
| 1.  | 692.36              | 19.29               | 673.07              |
| 2.  | 1,726.66            | 161.07              | 1,565.59            |

Note: year 2020= Jan-Dec data; and year 2021= Jan-Mar data.

In Cianjur District, the tendency for large volumes of food reserves has decreased to -30.67%/year. In 2018, food reserves provided were around 100 tons, and remained 100 tons in 2019, but decreased in 2020 to 33 tons. Furthermore, in 2021 it is targeted to provide food reserves of 50 tons. Meanwhile, in Garut District in 2018, food reserves provided in Garut District were around 25 tons, then increased to 28 tons in 2019, in 2020 increased again to 50 tons. Furthermore, in 2021 it is targeted to provide food reserves of 500 tons (Table 2).

In Garut District, the availability of food reserves in 2021 will increase 10 times compared to the previous year. This increase is solely to address families affected by the COVID-19 attack, but do not enter or have not received food assistance. The rest is needed for food assistance for families affected by natural disasters. This is important because Garut District is an area prone to natural disasters.

| Number | Year | Cianjur (tons) | Garut (tons) |
|--------|------|---------------|--------------|
| 1.     | 2018 | 100           | 25           |
| 2.     | 2019 | 100           | 28           |
| 3.     | 2020 | 33            | 50           |
| 4.     | 2021 | 50            | 500          |
| r (%/year) | -30.67 | 95.99        |

Based on the management policy and the amount of food reserves at the research site, it can be seen that the determination of the amount of district food reserves is strongly influenced by the availability of the budget. In addition, in terms of the seriousness of the local government to increase food reserves, it is also an important matter in determining the amount of food reserves in a district area. This food reserve is very important for the region to meet the target community, especially in the postdisaster period. The importance of food reserves in a region and even at the farmer level as seen from the results of research by Zakaria [18] which revealed that farmers in Lampung province have reserves of dry milled unhulled rice of around 1.9 tons which is equivalent to 1.23 tons of rice/year and used for the consumption of 4 family members. Likewise for food reserves at the national level [19].

According to Sumarno [22], food reserves controlled by the private sector/traders generally function to anticipate a surge in demand and anticipating the occurrence of food supply delays. Meanwhile, food
reserves controlled by households, both individually and collectively, function to anticipate the occurrence of food shortages during the lean season and anticipating the threat of crop failure due to natural disasters such as pest and disease attacks, climate anomalies and floods. The occurrence of extreme drought and climate change will disrupt food supplies [23-26].

3.3. RGFR management strengthening strategy
To strengthen food reserves, regional and district governments need support from government policies to continue to increase food production according to regional production potential, and continuously increase the amount and continue to improve the management system. Management policies can be pursued by synergistic cooperation between various agencies that are not only related to the food sector, but also with domestic government, transportation, the Logistics Affairs Agency, trade and State or Regional Owned Enterprises.

Furthermore, according to the research results of Kurnia et al. [27], the implementation of the national food reserve policy has been carried out in coordination with several ministries and institutions authorized for the affairs of food reserves. However, the implementation of the national food reserve policy has not been able to realize the fulfillment of national food reserves throughout Indonesia. Not all districts/cities and villages have adequate food reserves, and still need to increase resources.

4. Conclusions
RGFR management policies in West Java are set through Governor Regulation no. 37/2017 concerning the provision and distribution of RGFR, while at the study location the determination is through a Regent's Regulation. Regional government food reserves in West Java province are determined in the form of rice and the procurement is in collaboration with the West Java Logistics Affairs Agency, while reserves in the form of grain are carried out by the gapoktan. The pattern of reserves in the form of grain is found in the districts of Cirebon, Sukabumi and Majalengka, but it is still distributed in the form of rice. Almost all districts/cities in West Java have food reserves (rice).

In Cianjur District, the commodity to meet food reserves is in the form of local rice, with sources from production centers in the southern region such as from Pagelaran, Sindang Barang, and Geger Bitung Districts. The implementation of food reserves in Cianjur District is carried out in partnership between the Food Security Service and the Cianjur Regional Subdivision Logistics Affairs Agency. In Garut District, the food procurement mechanism is also carried out by the Food Security Service by way of an umbrella contract system through job auctions. This mechanism is implemented with the hope that the rice distributed is local medium rice. The rice is stored in the warehouse of the company that won the tender until the end of the year. When needed, the Food Security Service will order the company to send the rice to the Food Security Office's warehouse. As for the study locations in Garut and Cianjur Districts, the DGFR in 2020 are 50 tons and 33 tons, respectively, while in 2021 they are 500 and 50 tons.

Problems in the management of RGFR, among others, are related to the ability of the budget to procure food, and the seriousness of the local government to increase it. To strengthen RGFR and DGFR, government policy support is needed to continue to increase food production according to regional production potential, and to continuously increase the amount and continue to improve its management system.

References
[1] Kementerian Hukum dan Hak Asasi Manusia 2000 UU Nomor 18 tahun 2012 tentang Pangan (Jakarta: Kementerian Hukum dan Hak Asasi Manusia)
[2] Rachman H P S and Purwoto A 2005 Era otonomi daerah dan Perum Bulog Forum Penelit. Agro Ekon. 23 73–83
[3] Kementerian Hukum dan Hak dan Asasi Manusia 2020 Peraturan Pemerintah No. 17 tahun 2015 tentang Ketahanan Pangan dan Gizi (Jakarta: Kementerian Hukum dan Hak Asasi Manusia)

[4] Badan Ketahanan Pangan 2021 Bahan Rakornas Ketahanan Pangan (Jakarta: Badan Ketahanan Pangan)

[5] Wijayanti S, Candra S and Sarjono H 2011 Analisis persediaan beras nasional dalam memenuhi kebutuhan beras nasional pada Perusahaan Umum Bulog The Winners 12 82–96

[6] Khotimah A K 2018 Analisis faktor-faktor yang mempengaruhi impor beras di Indonesia (skripsi) (Surakarta: Universitas Islam Negeri Raden Intan Lampung)

[7] Suryana A, Kariyasa I K and Hermanto 2015 Keberadaan Surplus dan Kebutuhan Menjaga Stabilitas Harga Beras Ragam Pemikiran Menjawab Isu Aktual Pertanian (Jakarta: IAARD Press) pp 159–87

[8] Ahmed A E, Abdelsalam S M and Siddig K H A 2012 Do grain reserves necessarily contribute to prices stability and food security in Sudan? an assessment J. Saudi Soc. Agric. Sci. 11 143–8

[9] Bezuneh M and Yiheyis Z 2014 Hastrade liberalization improved food availability in developing countries? an empirical analysis J. Econ. Dev. 39 63–78

[10] Udmale P, Pal I, Szabo S, Pramanik M and Large A 2020 Global food security in the context of COVID-19: a scenario-based exploratory analysis Prog. Disaster Sci. 7 1–7

[11] Yudhatama P, Nurjanah F, Dianaranityas C and Revindo M D 2021 Food security, agricultural sector resilience, and economic integration: case study of ASEAN+3 J. Ekon. Stud. Pembang. 22 89–109

[12] Galanakis C M 2017 The food systems in the era of the Coronavirus (COVID-19) pandemic crisis Foods 9 1–10

[13] Belesky P 2014 Regional governance, food security and rice reserves in East Asia Glob. Food Sec. 3 167–73

[14] Dinas Ketahanan Pangan dan Peternakan Jawa Barat 2021 Data Cadangan Pangan Pemerintah Daerah Jawa Barat (Bandung: Dinas Ketahanan Pangan dan Peternakan Jawa Barat)

[15] Zakaria W A 2009 Analisis cadangan beras masyarakat di Provinsi Lampung SOCA 9 178–85

[16] Teng P P S, Anthony M C, Tian G and Lassa J A 2015 Impact of climate change on food production: options for importing countries (policy brief) Unpublished 1–15

[17] Lassa J A, Teng P, Caballero-Anthony M and Shrestha M 2019 Revisiting emergency food reserve policy and practice under disaster and extreme climate events Int. J. Disaster Risk Sci. 10 1–13

[18] Baum S D, Denkenberger D C, Pearce J M, Robock A and Winkler R 2015 Resilience to global food supply catastrophes Environ. Syst. Decis. 35 301–13
[26] Dorosh P, Rashid S, Childs A and Asselt J 2015 *IFPRI Discussion Paper* 01482 (Washington DC: IFPRI) 56 p

[27] Kurnia A W, Sundari S and Purwanto D A 2020 Implementasi kebijakan cadangan pangan nasional dalam kondisi keadaan darurat di Badan Ketahanan Pangan guna mendukung pertahanan negara *Manaj. Pertahanan* 6 73–99