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A review of food buffer system for urban areas: Case study of Jakarta

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Food is a human basic need and its provision should be secured by the government. In this regard, the government must control the stability of food price particularly in urban areas in which its food demand depends mostly on food supply from surrounding areas as a food buffer. However, the current food buffer system for urban areas has not been able to stabilize food price volatility experienced every year. This is triggered by: *first*, food supply for urban areas tend to be “*business to business*” practices. *Second*, there is no set of regulations that forms the legal framework for cooperation and coordination in the food sector especially between urban and peri-urban areas. The study aims at reviewing and designing food buffer system for urban areas to stabilize food price fluctuation. The study included a case study of food buffer system in Jakarta. Document study and interviews with farmer associations, food traders and local government were conducted. The result shows that institutional innovation for Food Distribution Center could address the challenges of price fluctuation. To do so, a set of legal and policy frameworks on intra-region cooperation between urban and the surrounding areas on food sector is totally required.

Key words: Food buffer system, urban areas, regulation.

INTRODUCTION

Food is a basic necessity for human beings and its demand is rising alongside the increase of population (Adnyana and Rachman, 1991). Provision of sufficient quantity and quality, safe and nutritionally balanced food at all the time evenly throughout all regions with affordable price is a basic right for individuals of which its availability is secured by the government (Food Law, 2012).

The magnitude of the government's attention in stabilizing food price is grounded on the fact that food price spikes will significantly affect food availability, inflation, purchasing power, as well as has further

implication for public trust (Rachman et al., 2016). Moreover, the decline in public trust may result in the reduction of the legitimacy of government.

To address those circumstances, a set of policies has been formulated by Indonesian Government, namely the Government Reference Price, Floor Price, Ceiling Price, and Prosperous Rice Program (Hendriadi and Rachman, 2018), with purpose to: (a) ensure people's purchasing power is enhanced and create political stability; (b) establish better market environment; (c) diminish monopolistic practices (Rachman et al., 2018a; Rachman, 2011).

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However, the fluctuation of food price experienced every year is an inevitability (Rachman and Sudaryanto, 2010). In this regard, food price volatility is still influenced by various factors, such as the domination of market orientation in food policies and unequal distribution of infrastructures (Rachman, 1993).

Furthermore, rapid process of urbanization and increase of service sector development, such as hotel, restaurant and culinary businesses, contribute in creating volatility of food price particularly in an urban area considering food supply from its surrounding cannot easily match with urban food demand (Agency for Food Security, 2015). Food production in peri urban areas tends to vary among seasons. Therefore, food price at producer and consumer level is relatively fluctuated (Kustiari, 2017).

In general, food demand in urban areas depends fully on food supply from the surrounding areas as a food buffer (Rachman et al., 2018b). As illustration, almost 100% of food demand in Jakarta as the capital city and the center of national economic activities is supplied from outside (Industry and Trade Office of Jakarta, 2017). To date, Jakarta is still a barometer and reference for other regions in terms of food price fluctuation (Rachman et al., 2019). Hence, the government pays a great attention in controlling the stability of food price in Jakarta.

The existing food buffer system for urban areas has not been able to stabilize massively food price spikes experienced every year. According to Rachman et al. (2018b), this circumstance is triggered by: *first*, food supply for urban areas tends to be “business to business” practices. *Second*, there is no a set of regulations that become a legal framework for implementation of cooperation on food sector between urban and the surrounding areas.

The aforementioned weaknesses become a basis for reformulating a food buffer system for urban areas through institutional innovation for a robust Food Distribution Center in stabilizing food price fluctuation. Therefore, this study aims at reviewing and designing food buffer system for urban areas. The study included a case study of food buffer system in Jakarta.

Concept of food price stabilization in urban areas

An efficient food distribution is related closely to market arbitrage on the price of an identical commodity in markets (Ravallion, 1986; Sharp and Uebele, 2013). In practice, it is called the Law of One Price in which an identical commodity has relatively the same price in markets regardless of transportation cost (Crucini et al., 2010; Monke and Petzel, 1984).

On the global trade perspective, the world market is a central market while domestic market is branch market (Simatupang et al., 2003). According to this view, market

in an urban area is a central market for the surrounding areas. It means that the price in district markets is determined by market price in cities.

Urban areas generally have low level of food production and almost all of their food demand is supplied from the outside. Hence, food price in urban areas is relatively higher and more volatile than the price in their surrounding areas (Rachman et al., 2018c). Moreover, the price spike in urban areas is transmitted strongly to other markets, so that controlling the fluctuation of food price in urban areas becomes crucial effort in stabilizing national food price (Simatupang et al., 2003).

To stabilize food price at producer scale, Indonesian Government has established both the Floor Price for rice as well as the Reference Price for maize, soybean, chili and onion. While at consumer level, the government has formulated either the Ceiling Price for rice or the Reference Price for maize, soybean, chili, onion, beef, chicken meat and eggs (Suryana et al., 2014). The Ceiling Price and the Reference Price at consumer level have been implemented through regulation enforcement and market operation.

MATERIALS AND METHODS

Research area

Jakarta, the capital city of Indonesia, is one of the Asian megacities. In 1990, the recorded population of Jakarta was less than 10 million people. It increased steadily to more than 10 million in 2014 and is predicted to reach nearly 14 million by 2030 (UNDESA, 2014). Its growth has exceeded the administrative boundary over the last several decades. Furthermore, the interconnection between Jakarta and the surrounding areas has formed a unified region known as Jakarta Metropolitan Area consisting of Jakarta as the core with the vicinity comprising five municipalities (Bogor, Depok, Tangerang, Bekasi, and South Tangerang) and three regencies (Bogor, Tangerang and Bekasi) (Figure 1).

Interviews and document study

The methods for data collection for reviewing and designing food buffer system in Jakarta included interviews and document study. The interviews aimed to collect data about opinions of relevant stakeholders in food buffer system for Jakarta, namely farmer associations, food traders and local government. Interviews were held between January and December, 2018. Furthermore, document study was employed in addition to the interviews in order to collect data about policies and regulation of food buffer system both at national and local level.

RESULTS AND DISCUSSION

Development of food buffer system

Development of food buffer system for urban areas is explained based on a specific periodization. This is

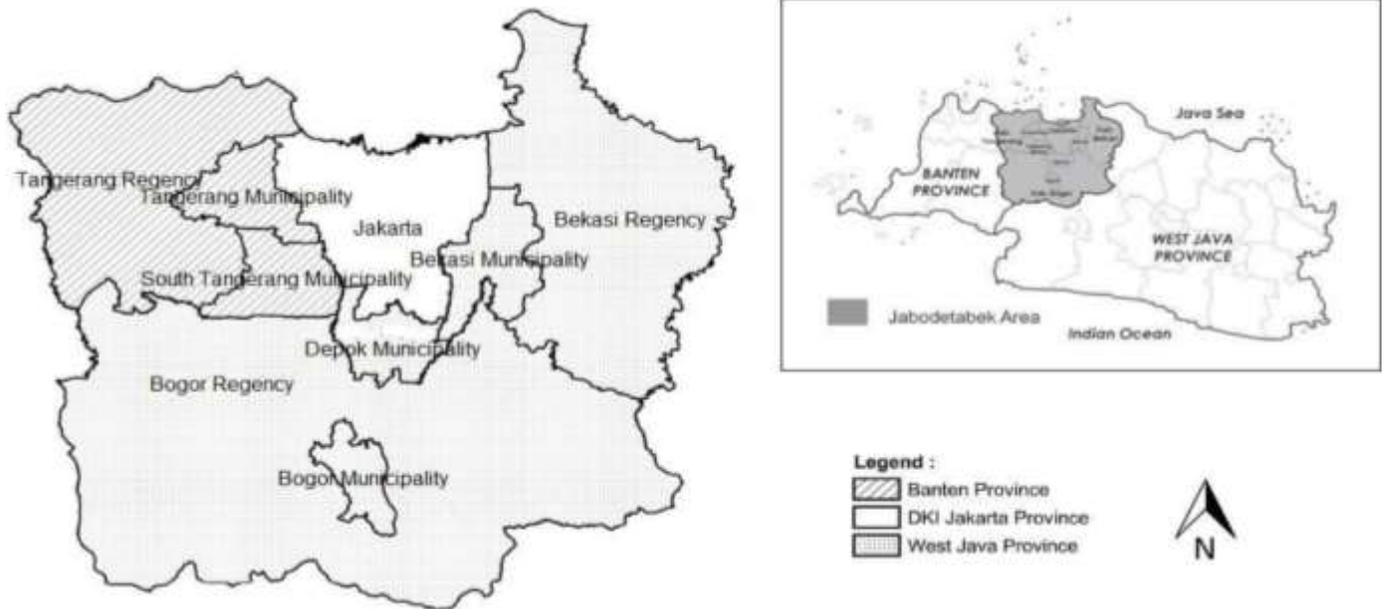


Figure 1. Map of Jakarta metropolitan areas.
Source: Winarso (2011); Pribadi and Pauleit (2015).

grounded on the fact that the government policies related to cooperation on food sector vary depending on a certain period.

Food buffer system in the period of 1976-1998

Cooperation among regions has been growing since 1970s before the decentralization system was introduced in Indonesia in 1998. In this regard, all regions have a high interest in establishing strong coordination across spatial and administrative territory in respond to urban sprawl issues that become more borderless and complex (Pratikno, 2017). An example of the intra-regions cooperation in this period is the establishment of Presidential Instruction 13/1976 on Development of Jakarta - Bogor - Tangerang - Bekasi (Jabotabek) (Jessica, 2013). Furthermore, Ministry of Home Affairs Decree Pem.10/34/16-282 dated 26 August 1976 has been established as a basis of technical operation. This cooperation was executed by Inter-Regional Development Cooperation Agency with focus on issues of infrastructure, settlements, water resources, transportation, tourism, sanitation and environment. In the period of 1998 - 2000, this cooperation was directed to address broader issues with the main concern on Jakarta (Abdurrahman, 2012).

In the context of food buffer system for Jakarta, there has been Governor of Jakarta Decree D.V-a18/1/8/1974 dated 7 March 1974 on Establishment of Pasar Induk

Tjipinang as a Trading Center for Rice, Sugar, Flour and Secondary Crops. Furthermore, the Governor of Jakarta has endorsed Governor of Jakarta Decree D.V-b.8/1/7/1974 dated 14 March 1974 on Appointment of Transportation Company to Distribute Rice, Sugar, Flour and Secondary Crops from Pasar Induk Tjipinang to Other Markets in Jakarta. In 1989, Governor of Jakarta Decree 1539 dated 10 November 1989 on Improvement of Transportation Management Regulation in Pasar Induk Sayur Mayur Kramat Jati and Pasar Induk Tjipinang has been established.

Pasar Induk Beras Cipinang (the new name of Pasar Induk Tjipinang) has a role to improve food storage and distribution, as well as stabilize food price in Jakarta particularly for rice as staple food executed by PT. Food Station Tjipinang Jaya as a single operator in this market. In the period of 1976-1998, it is clear that there was no a set of regulations devoted specifically to set up cooperation on food sector among regions. Therefore, shock of food availability, supply and price occurs frequently in urban areas and has worst impact on inflation, people's purchasing power as well as government credibility.

Food buffer system in the period of 1999-2019

In this period, food price stabilization became important issue and government's priority agenda (Rusastra et al,

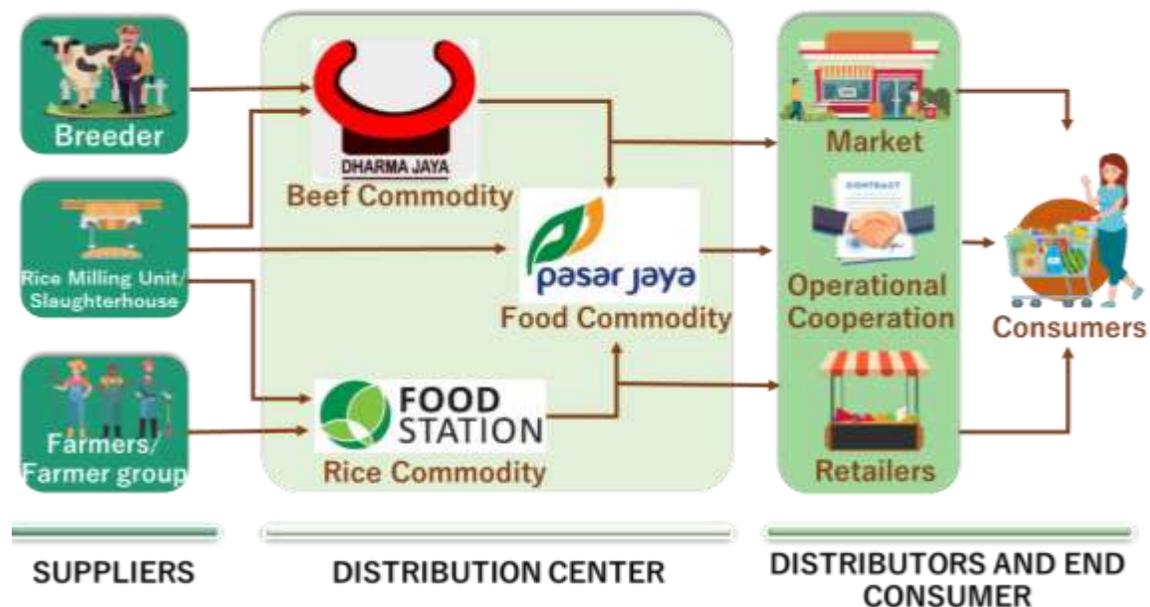


Figure 2. Food buffer system in Jakarta.
Source: Rachman et al. (2018b)

2004). The government tries to ensure food price stability and its supply, especially in urban areas that become a barometer of food price for the surrounding areas.

Inter-Regional Development Cooperation Agency that was established in 1970s to handle cooperation issues in Jakarta keeps evolving. In 2006, the scope of cooperation areas was expanded to include Jakarta, Bogor, Depok, Tangerang, Bekasi, and Cianjur (Jabodetabekjur). In April 2014, PT. Food Station Tjipinang Jaya became Regional Owned Enterprises through Regional People's Representative Assembly of Jakarta Decree 6/2014.

In this period, cooperation conducted by the Government of Jakarta consist of signing of memorandum of understanding (MOU) between: (a) Jakarta dan East Nusa Tenggara on Development of Beef Cattle Agribusiness in 2014, in which Jakarta (through PD. Dharma Jaya) rents a parcel of land in East Nusa Tenggara to nurture beef cattle while the product is supplied to Jakarta and (b) Jakarta and Lampung on Cooperation of Rice Supply in 2016, in which Jakarta buy a parcel of land to grow rice while the product is delivered to Jakarta.

The Government of Jakarta's efforts in stabilizing food price are optimized through the role of Regional Owned Enterprises (Direktori 3 Dasawarsa Jabodetabekjur, 2018). In this regard, Jakarta has three types of Regional Owned Enterprise, namely: (a) PT. Food Station Tjipinang Jaya focused on trading of rice; (b) PD. Dharma Jaya concentrated on trading of beef; and (c) PD. Pasar Jaya employed to trade all commodities (Figure 2).

In practices, those Regional Owned Enterprises play a

role as Food Distribution Center. Therefore, the current food buffer system for Jakarta is a combination of various activities that occur along with food supply chain, ranging from food production, processing, storage, to distribution to end consumer (Figure 3).

Study from Rachman et al. (2018b) found that food buffer system applied by the Government of Jakarta with involving Regional Owned Enterprises has not able to stabilize the fluctuation of food price taken place both in Jakarta and the surrounding areas, such as Depok, Tangerang, Bekasi and Bogor. Moreover, market operation carried out when food prices are soaring, has not been able to reduce the spikes.

In general, the current food buffer system has several weaknesses, namely: (a) food supply for urban areas tends to be "*business to business*" practices and does not involve fully the government as a regulator; (b) food reserve could not be mapped and measured properly because the vast majority of food supply is controlled by traders; (c) food supply chain from farmers to consumers is relatively too long, so that it leads to the increase of food distribution cost; (d) the government's strategies and interventions in the food trade process are weak; and (e) institutional system in managing Food Distribution Center is not integrated spatially or institutionally.

Alternative of food buffer system in the future

An alternative food buffer system offers opportunities to involve the government as a regulator in the

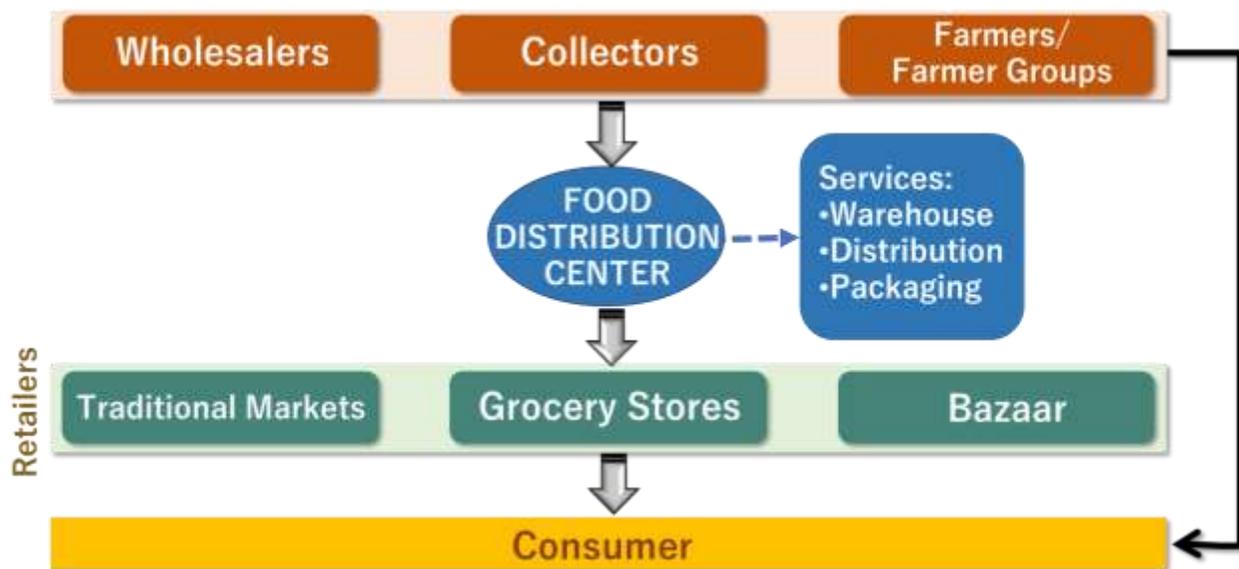


Figure 3. Food distribution center in Jakarta.
Source: Rachman et al. (2018b)

implementation of cooperation on food sector between urban and peri-urban areas. Furthermore, this cooperation is also designed to involve private sectors and/or Regional Owned Enterprises as an operator of government policies, particularly in managing Food Distribution Center.

This type of food buffer system focuses on optimizing the role of Food Distribution Center in supplying, storing and distributing food for retailers by utilizing information technology (e-commerce), so that food supply chain becomes shorter than the existing one.

The future of food buffer system has four benefits, such as: (a) strengthening the role of Food Distribution Center through the support from local government; (b) expanding the scope of cooperation for an urban area with its surrounding areas; (c) increasing the support from private sectors in implementing Food Distribution Center; and (d) offering cooperation opportunities along with food supply chain, including cooperation with new types of retailer, such as Indonesia Farmer Stores, *Rumah Pangan Kita* and *e-Warung*.

Innovation of food buffer system for urban areas

Food supply for urban areas is influenced by uneven harvest period that has further impact on the fluctuation of food price (Rusastra et al., 2002). To address this challenge, strengthening institutional system is required (Rachman, 2018; Rachman et al., 2005). In this regard, establishing of food buffer system is implemented through institutional innovation for Food Distribution

Center integrated spatially and based on corporation.

Institutional innovation for Food Distribution Center is a new form of food buffer system for urban areas with characteristics of: (a) *Business to Consumer* practices with involving the government as a regulator; (b) *end to end process* based-management; (c) short food supply chain and low food distribution cost; (d) large scale business; (e) balance between profits and sustainability of food supply; and (f) volume of food reserves is mapped and measured properly.

Institutional innovation for a corporation based-Food Distribution Center is a consolidation of agribusiness management intended for: (a) enhancing bargaining position of farmers; (b) expanding agribusiness scope either horizontal or vertical direction and increasing added value; (c) establishing farmer institution as a form of agribusiness resulted from, by and for farmers; (d) clustering all types of food commodity based on suitability of agro-ecosystem and market opportunities; (e) increasing capital resources for farmer's agribusiness independently; and (f) managing agricultural resources centered at farmer (Rachman et al., 2019; Adnyana, 2019).

To support the connectivity between farmers in peri-urban and consumers in urban areas, several efforts must be undertaken, such as: (a) establishment of an efficient food distribution system, including guarantee for food quality and safety; (b) development of food information system to link between food production and demand; (c) development of equal and mutually beneficial business partnership; and (d) development of food logistic system at local level to support in ensuring



Figure 4. Regulation framework of food buffer system.
Source: Rachman et al. (2018b)

food availability.

To implement those notions, there are two kinds of agenda that need to be accomplished immediately, namely: (a) regulation framework for cooperation on food sector between urban and the surrounding areas; and (b) structure of the future food buffer system for urban areas.

Regulation framework of food buffer system for urban areas

At this moment, there are no specific laws regulating the management of food supply through food buffer system for urban areas. Law 23/2014 on Regional Government, especially Article 9, government affairs are classified into three groups, namely absolute government affairs, concurrent government affairs and general government affairs (Figure 4).

In Article 16 of the Law, it is stated that the Central Government in conducting the concurrent government affairs has authority to establish Norms, Standards, Procedures and Criteria (NSPC). Establishment of the NSPC for food can be used as a basis for formulating Government or Ministerial Regulations on cooperation between urban and peri urban areas, particularly related

to food availability and distribution.

The scope of this cooperation encompasses five tiers of cooperation, namely: (a) among provinces; (b) between provinces and districts/municipalities within their territory; (c) between provinces and districts/municipalities in different provinces; (d) between districts/municipalities within a province; and (e) between districts/municipalities in different provinces.

In this context, urban and the surrounding areas can expand the scope of cooperation on food sector through the existing cooperation agency. As an alternative, the government can establish a new institution with certain tasks, such as Food Development Cooperation Agency (Figure 5).

Food Development Cooperation Agency is an institution for conducting cooperation on food sector among regions. It has the main duty for formulating cooperation policies focused on food sector. To implement this duty, Food Development Cooperation Agency has several functions, such as: (a) coordinating the formulation of development programs for food sector; (b) implementing the joint development programs for food sector; (c) monitoring the joint development program for food sector; and (d) evaluating the joint development program for food sector.

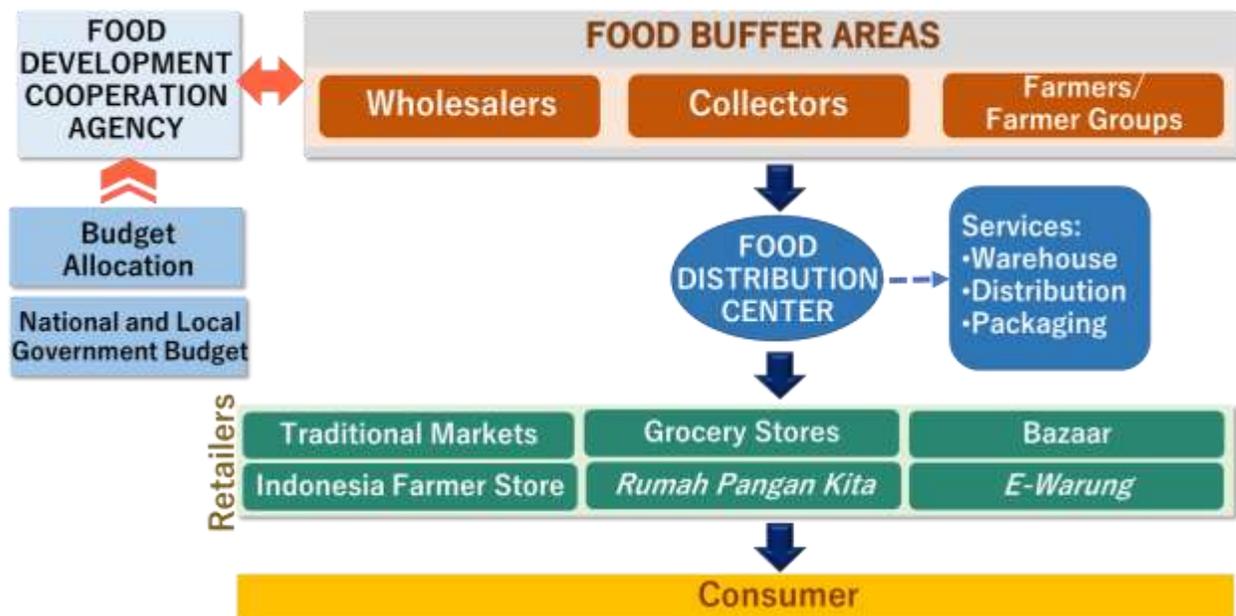


Figure 5. Alternative food buffer system for urban areas.
Source: Rachman et al. (2018b)

Structures of food buffer system for urban areas

Food buffer system for urban areas in the future calls for local government's actions in implementing cooperation on food sector between an urban and its peri urban areas under coordination of Food Development Cooperation Agency (Figure 6).

The future food buffer system has five fields of actions as the main function of Food Distribution Center, namely:

(1) Food supply management which plays a role in managing and ensuring the sustainability of food supply from its sources, such as farmers, traders, collectors and others. In this regards, Food Distribution Center contributes in selecting the type of food, as well as its quantity, volume, price and quality.

(2) Food reserve management that has a role in managing food reserve that will be stored in warehouse and distributed according to the demands and needs of each commodity. In addition, this field also plays a role in setting up technical management and storage procedures in warehouse based on the characteristic of food as well as the capacity and condition of warehouse.

(3) Food distribution management which contributes in determining the system and procedure of food distribution, including the process of order and delivery in order to be right time, right quantity and right quality.

(4) Management of food cooperation institution that plays a role in supporting the achievement of sustainable food security. In this regards, establishment of Food

Distribution Center needs to involve various types of government office, such as Trade Office, Agriculture Office, Food Security Office, Regional Owned Enterprise, Indonesia Logistics Bureau and cooperative institutions both at province and district level.

According to their duties and function, each office becomes a leading sector in supporting the work of Food Distribution Center, such as: (a) Agriculture Office and Food Security Office at district level contribute in empowering farmers and traders to increase food production; (b) Trade Office and Food Security Office at provincial level has a role in fostering food business actors; and (c) Agriculture Office, Bulog, and cooperative institutions.

E commerce based-information technology

Disruption cases occurred along food supply chain that could affect food price needs an immediate response from the government. If this problem is not addressed properly, it leads to social unrest and could threaten national political situation (Eriyatno, 2019; Rifkin, 2014). Therefore, an early warning system to detect preliminary condition of food price and supply precisely and accurately is fully needed as preparedness to anticipate and respond to shock. Information technology plays crucial role in providing information about: (a) food price precisely and accurately; (b) quantity and quality of food;

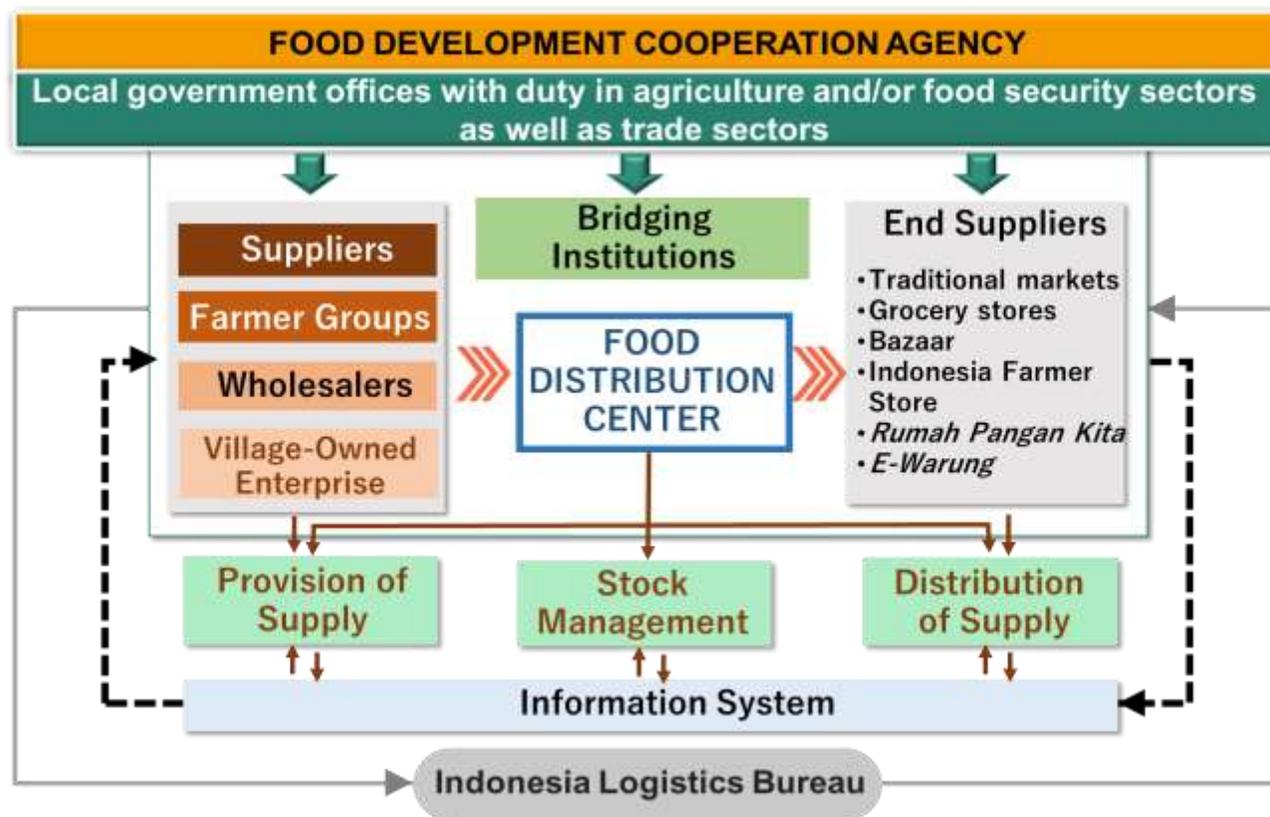


Figure 6. Structures of food buffer system for urban areas.
Source: Rachman et al. (2018b).

(c) location of food storage; and (d) shelf life and shrinkage during storage period.

Potencies, challenges and opportunities for developing

Potencies

Several potencies in the process of formulating food buffer system for urban areas are: (a) strengthening the role of Food Distribution Center; (b) expanding cooperation between urban and the surrounding areas by establishing Food Development Cooperation Agency; (c) strengthening supporting system by donor for Food Distribution Center; (d) expanding distribution channel by conducting cooperation with food supplier, such as Indonesia Farmer Store, *Rumah Pangan Kita* and *E-Warung*; and (e) institutional infrastructures are available.

Challenges

Challenges faced in the implementation of food buffer

system for urban areas are: (a) there have not been a legal standing for intra-region cooperation on food sector; (b) trading system in the process of food distribution among regions has not been established; (c) cooperation for development is merely focused on physical issues; and (d) budget allocation in offices whose responsible for intra-region cooperation is limited.

Opportunities

There is a large opportunity to establish food buffer system for urban areas considering: (a) raising the awareness of local government in ensuring the stability of food price and supply, in which it encourages the establishment of regional regulation on Regional Owned Enterprises focusing on food sector; (b) increasing the necessity of food information system to support food buffer system; and (c) there are Ministry of Agriculture Regulation 56/2016 on Guideline for Development of Agricultural Areas as well as Ministry of Agriculture Decree 830/2016 on Location of National Agricultural Area Development that can be used for clustering food distribution.

Direction, targets and strategies for development

Direction

To create an effective and sustainable food buffer system for urban areas, several phases of strategic policies are directed to: (a) formulation of regulation on intra-region development cooperation on food sector; (b) ensuring budget allocation for establishing and strengthening Regional Owned Enterprises focused on food sector; (c) establishing Food Development Cooperation Agency for urban and the surrounding areas; and (d) enhancing the capacity of farmer groups in peri-urban areas.

Targets

Targets of food buffer system are: (a) stabilization of food price and supply in urban areas in order to support national and regional food security; (b) increase income and the level of farmer's welfare through ensuring food supply and price; (c) increase regional economic growth by increasing Regional Original Income generated from Regional Owned Enterprises focused on food sector; and (d) optimize the role of local government in sustaining food security, particularly stabilization of food price and supply.

Development strategies

Several development strategies to achieve the targets consist of: (a) strengthening regulations or policies in encouraging intra-regions cooperation through establishment of Ministry of Agriculture Decree on Food Development Cooperation; (b) provide a map of food supply and demand in urban and peri-urban areas; (c) establishment and/or strengthening Regional Owned Enterprises focused on food sector for urban and the surrounding areas; (d) establishment and/or strengthening Food Development Cooperation Agency focused on food sector; and (e) synergize programs of food price and supply stabilization between the government, private sectors and other types of stakeholder.

Conclusion

The results of this study contribute to an improved understanding on food buffer system for urban areas. From the study, it can be concluded that development of food buffer system for urban areas through institutional innovation could address the challenges of food supply and price fluctuation. Institution of Food Development Cooperation Agency and Food Distribution Center plays important role in creating a robust food buffer system for

urban areas. Therefore, a set of legal and policy frameworks on intra-region cooperation (between urban and the surrounding areas) is totally required.

The implementation of intra-region cooperation on food sector could not be only undertaken by related offices, but also need to involve various groups of stakeholders. Hence, involvement of various ministries is fully needed for smoothing food supply. Furthermore, to increase the status of farmer's welfare and create equity, it is important to prioritize the provision of agricultural input subsidies for farmer groups in peri-urban areas.

CONFLICT OF INTERESTS

The authors have not declared any conflict of interests.

REFERENCES

- Abdurrahman B (2012). Urgensi Revitalisasi Jabodetabekjur. Available at: http://www.lekad.org/sites/default/files/Urgensi%20Revitalisasi%20JABODETABEKJUR_0.pdf
- Adnyana OM, Rachman B (1991). Food Expansion Policy and The Nutritional Status in Indonesia. Indonesian Food Journal No. 4, Vol. II. Food Nutrition. The Indonesia Logistics Agency.
- Adnyana OM (2019). Lintasan dan Peta Jalan Pengembangan Serasi (Selamatkan Rawa Sejahterakan Petani) Sebagai Lumbung Pangan Nasional. Agency for Agricultural Research and Development, Ministry of Agriculture.
- Agency for Food Security (2015). Kebijakan Strategis Pangan dan Gizi 2015 – 2019. Agency for Food Security, Ministry of Agriculture.
- Crucini MJ, Shintani M, Suruga T (2010). The Law of Distance versus Sticky Prices. Economic Journal 120:462-480.
- Eriyatno (2019). Sistem 4.0 Menjawab Tantangan Kejutan Teknologi Agro Indo Mandiri.
- Food Law (2012). Indonesian Food Law Number 18 Year 2012. State Gazette of the Republic of Indonesia of 2012 Number 227, Supplement to the State Gazette of the Republic of Indonesia Number 5360.
- Hendriadi A, Rachman B (2018). Challenges, Potency and Policy Direction of Food and Nutrition Security Development in Indonesia. Agency for Food Security, Ministry of Agriculture.
- Industry and Trade Office of Jakarta (2017). Data Penyediaan dan Distribusi Beras DKI Jakarta. Industry and Trade Office of Jakarta.
- Kustiari R (2017). Perilaku Harga dan Integrasi Pasar Bawang Merah di Indonesia. Jurnal Agro Ekonomi Vol.35, No.2. Center for Socio-Economic and Agricultural Policy, Ministry of Agriculture.
- Monke E, Petzel T (1984). Market Integration: An Application to International Trade in Cotton. American Journal Agriculture Economic 66(4):481-487.
- Pratikno (2017). Kerjasama Antar Daerah: Kompleksitas dan Tawaran Format Kelembagaan. Yogyakarta: JIP FISIPOL, Gadjah Mada University.
- Pribadi DO, Pauleit S (2015). The dynamics of peri-urban agriculture during rapid urbanization of Jabodetabek Metropolitan Area. Land Use Policy 48:13-24.
- Rachman B (2018). Agribusiness Corporation Development in Food Vulnerable Region. Center for Food Availability and Vulnerability, Agency for Food Security, Ministry of Agriculture.
- Rachman B (2011). Harga Pembelian Pemerintah (HPP) Gabah Tahun 2010: Efektivitas dan Implikasinya Terhadap Kualitas dan Pengadaan oleh Dolog. Center for Socio-Economic and Agricultural Policy, Ministry of Agriculture. Jurnal Analisis Kebijakan Pertanian 9:4.
- Rachman B (1993). Analisis Keterkaitan Antar Sektor Dalam Perekonomian Wilayah Jawa Barat. Center for Socio-Economic and

- Agricultural Policy, Ministry of Agriculture. *Jurnal Agro Ekonomi* 12:2.
- Rachman B, Agustian A, Syaifudin A (2019). Kebijakan Harga Eceran Tertinggi (HET) Beras: Implikasinya Terhadap Profitabilitas Usahatani Padi, Harga Beras, Serapan Gabah-Beras, dan Kualitas Beras. Center for Socio-Economic and Agricultural Policy, Ministry of Agriculture. *Jurnal Analisis Kebijakan Pertanian* 17:1.
- Rachman B, Agustian A, Wahyudi (2018a). Efektivitas dan Perspektif Pelaksanaan Program Beras Sejahtera (Rastra) dan Bantuan Pangan Non Tunai (BPNT). *Jurnal Analisis Kebijakan Pertanian* 16:1.
- Rachman B, Agustian A, Wahyudi (2018b). Kajian Sistem Penyangga DKI Jakarta. Agency for Food Security, Ministry of Agriculture.
- Rachman B, Khudori, Irianti L, Sandyatma YH (2016). Kiprah Toko Tani Indonesia untuk Kesejahteraan Petani dan Masyarakat. Agency for Food Security, Ministry of Agriculture.
- Rachman B, Wahyudi D, Utami R (2018c). Kajian Responsif dan Antisipatif: Sistem Penyangga Pangan Banten, Lampung, dan Jawa Barat. Agency for Food Security, Ministry of Agriculture.
- Rachman B, Supriyati S, Supena S (2005). Ekonomi Kelembagaan Sistem Usahatani Padi di Indonesia. *Jurnal Sosial Ekonomi Pertanian dan Agribisnis* P 5.
- Rachman B, Sudaryanto T (2010). Analisis Dampak Penetapan Harga Pembelian Pemerintah (HPP) Gabah dan Beras. *Jurnal Analisis Kebijakan Pertanian* 8(3):193-205.
- Ravallion M (1986). Testing Market Integration. *American Journal Agriculture Economic* 68(1):102-109.
- Rifkin J (2014). *The Zero Marginal Cost Society. The Internet of Things, the Collaborative Commons, and the Eclipse of Capitalism*. New York City; NY (US); Palgrave Macmillan.
- Rusastra IW, Rachman B, Sumedi, Sudaryanto T (2004). Struktur Pasar dan Pemasaran Gabah-Beras dan Komoditas Kompetitor Utama. http://pse.litbang.pertanian.go.id/ind/pdf/files/pros-09_2004.pdf.
- Rusastra IW, Simatupang P, Rachman B (2002). *Pembangunan Ekonomi Pedesaan Berlandaskan Agribisnis*.
- Sharp P, Uebele (2013). *Rural Infrastructure and Agricultural Market Integration in The United State: A Long Run Perspective*. Discussion Paper on Business and Economics. University of Southern Denmark.
- Simatupang P, Nizwar S, Satyanu KD (2003). *Model Proyeksi Harga Jangka Pendek Beberapa Komoditas Pangan dan Perkebunan di Indonesia*. Center for Socio-Economic and Agricultural Policy, Ministry of Agriculture.
- Suryana A, Rachman B, Hartono MD (2014). *Dinamika Kebijakan Harga Gabah dan Beras Dalam Mendukung Ketahanan Pangan Nasional*. *Jurnal Pengembangan Inovasi Pertanian* Vol.7 (3). Agency for Agricultural Research and Development, Ministry of Agriculture.
- United Nations Department of Economic and Social Affairs (UNDESA) (2014). *World Urbanization Prospects: The 2014 Revision*.
- Winarso H (2011). Urban dualism in the Jakarta metropolitan area. In *Megacities* (pp. 163-191). Springer, Tokyo.