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Optimization of governance model of post-food harvest and distribution in MSME centers in five sub districts in Sidoarjo Regency

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A B S T R A C T

The purpose of this research is to formulate the model of post-harvest food commodity governance and its distribution management in 5 districts of Sidoarjo Regency, so that the center of MSMEs can give real contribution to the food commodity resilience program and able to maintain the stability of food commodity availability evenly throughout Sidoarjo regency. The research method used in this research is quantitative descriptive in the form of fact finding with proper interpretation. The results show that food availability is increasingly limited due to increased conversion of paddy fields and other productive agricultural land, low productivity of agricultural products, poor irrigation networks and irrigation infrastructure in production areas has become a serious threat to the sustainability of food self-sufficiency. Similarly, the phenomenon of harvested area and paddy production in 5 sub-districts (Krembung, Tulangan, Balungbendo, Prambon, and Tarik) for the period of 2000s have fluctuated so that in the long term it will greatly disrupt the food security in the region Sidoarjo Regency. Therefore, there is a need for seriously arranging the governance of food commodities (rice) post-harvest and distribution governance.

A B S T R A K

Tujuan penelitian ini adalah memformulasikan model tata kelola komoditi pangan pasca panen dan tata kelola distribusinya di 5 kecamatan Kabupaten Sidoarjo, sehingga sentra UMKM mampu memberi kontribusi riil terhadap program ketahanan komoditi pangan serta mampu menjaga stabilitas ketersediaan komoditi pangan secara merata di seluruh wilayah kabupaten Sidoarjo.Metode penelitian yang digunakan dalam penelitian ini adalah deskriptif kuantitatif berupa pencarian fakta dengan interpretasi yang tepat dan tujuannya adalahuntuk mencari gambaran yang sistematis, fakta yang akurat.Hasil penelitian menunjukkan bahwa ketersediaan pangan semakin terbatas yang disebabkan oleh semakin meningkatnya konversi lahan sawah dan lahan pertanian produktif lainnya, rendahnya peningkatan produktivitas hasil pertanian, buruknya kondisi jaringan irigasi dan prasarana irigasi di lahan produksi telah menjadi salah satu ancaman yang serius terhadap keberlanjutan swasembada pangan. Demikian juga diperoleh fenomena bahwa luasan lahan panen serta produksi padi yang ada di 5 wilayah kecamatan (Krembung, Tulangan, Balungbendo, Prambon, dan Tarik) untuk periode tahun 2010 – 2014 mengalami fluktuatif sehingga dalam jangka panjang akan sangat mengganggu ketahanan pangan yang ada di wilayah Kabupaten Sidoarjo.Oleh karena itu, diperlukan penataan yang serius terhadap tata kelola komoditi pangan (padi) pasca panen dan tata kelola distribusinya.

1. INTRODUCTION

Micro Small Medium Enterprises (MSMEs) are spreading in the region of East Java and currently, there are 4.2 million SMEs, of which 85.09% are micro businesses; 14.19% a small business; 0.57% medium enterprises and only 0.15% of large-scale enterprises. SMEs business sector is spread in various centers of SMEs and proved to have contributed to the economic growth in East Java. They also have contributed to the gross regional domestic product (GRDP) of 53.4% or equivalent to Rp 415.7 trillion. For that reason, the sector UMKM has

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a strategic role for the economy in East Java.

The MSME centers should be paid attention and given assistance by the stakeholders to optimize their activities in leveraging the economy throughout East Java. The MSME centers spread across the remote areas of East Java mostly contribute to the agriculture, plantation, fishery, and livestock sectors. Therefore, this potential should be directed to real efforts for the Government of East Java to realize the resilience of adequate food commodities and economic value-added for the agricultural sector.

During the time of post-harvest handling for food, commodities are still not optimal, this is reflected in the price of commodities that tend to fluctuate and be unfavorable to the farmer group. Often It occurs at the time of harvest in which the price of food commodities tend to fall while farmers cannot do much against this condition. In that case, the governance of post-harvest food commodities is still needed for optimization. Thus, the integrated development for the center of SMEs can be a means of realizing the resilience of food commodities in East Java. Agricultural development faces increasingly complex challenges along with climate change, the limitations and degradation of natural resources and the environment, as well as various issues of global trade.

Development of agriculture is also faced with various problems, among others: (1) reduced fertile land due to switching functions for non-agricultural activities, (2) increasing agricultural needs, especially rice, in line with increasing population, (3) difficulty in increasing wetland productivity due to the use of chemicals such as uncontrolled fertilizer resulting in environmental stress, and (4) the decreasing interest of young people working in agriculture (Achmadi and Las 2006; Purwanto 2006). To meet the increasing food demand, efforts to increase the production capacity of food crops through the printing of new fields and the improvement of irrigation networks have been done. However, these efforts have not had a significant impact on the increase of food production, as they are faced with various technical constraints and budget constraints.

The new paddy fields developed mainly outside Java are less productive due to soil biophysical constraints so that the impact of new area expansion is not significant enough to increase national food production, whereas the required investment cost is very expensive and requires a long period of time to consolidate the new wetland ecosystem agriculture especially rice along with the increase of population.

Sidoarjo regency is one of the food barns in East Java, in addition to Bojonegoro, Lamongan, and Jember. The largest barn area in Sidoarjo district is located in Tarik sub-district, besides Krembung, Tulangan, and Balungbendo and Prambon districts. As one of the granaries in East Java, it is natural for Sidoarjo regency to increase its agricultural productivity. Thus, they can create food security in Sidoarjo regency and even ut can reach the surplus of the food commodity, which in turn, it is expected to be able to supply Sidoarjo food needs that exist in some areas of East Java. Besides that, it can also provide other regions with food stock they need. However, the rapid development of industrialization in the Sidoarjo regency and other environmental changes can certainly threaten the existence of Sidoarjo regency as one of the food granaries in East Java.

2. THEORETICAL FRAMEWORK AND HYPOTHESES

Micro Small Medium Enterprises (MSMEs)

Government program should cope with low investment, unemployment, and poverty, through economic empowerment and support the infrastructure provision. Partisanship in this group is empowering the micro and small enterprises. During the crisis of 1997/1998, micro and small enterprises were regarded as the economic rescue for Indonesia. Banks channel their funds in the form of credit to the micro and small business sectors as there is a large business opportunity in this sector (Ade 2006).

During the economic crisis in 1998, the MSME sector could save the national economy, because many large companies fell. Yet, the MSME sector still exists in the midst of an uncertain economy. They could still exist because this sector has uniqueness holistically. East Java Province is one of the pioneers in the sector of SMEs, Cooperatives Department, access to capital, MSME financing institutions and academics (Regional Research Council).

Food Security

Based on Law Number 18 the Year 2012 on Food, food is defined as anything that comes from biological sources of agricultural products, plantations, forestry, fisheries, livestock, water, and water. All are both processed and unprocessed as said to be food or beverage for consumption including food additives, foodstuffs, and other ingredients used in the process of preparing, processing and or making food or drink. But, for the local food, it is the food

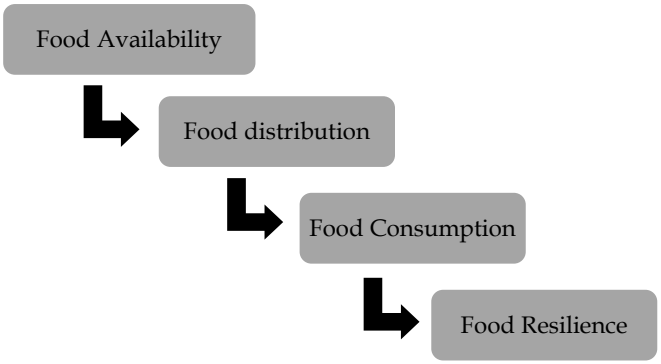


Figure 1
Model of Food Resilience

consumed by local communities in accordance with local potential and wisdom. Furthermore, the processed foods are processed the foods or beverages in a particular manner or method with or without additional ingredients.

Food security is an integrated system consisting of various subsystems (Maleha and Adi Sutanto 2006). The main sources are food availability, food distribution, and food consumption (see Figure 1). Food security is a system consisting of sub-system availability, sub-system distribution, and sub-system consumption. Sub-system availability includes stability and continuity of food provision derived from the production of the Regency, food reserves within the Regency as well as from outside the Regency.

The distribution sub-system includes arrangements to ensure the physical and economic accessibility of the population to interregional food and time and strategic stability of food prices. The consumption of sub-system includes food management at the regional and household levels. All are to ensure each individual for obtaining the food in quantity, nutrition, security, diversity and affordability as needed and optionally.

The aspect of food availability in Sidoarjo Regency has been sufficient until the remote areas, although production is not available enough. Thus, they have to provide adequate food availability from outside the district of Sidoarjo. For the aspect of food quality of all the required elements of carbohydrates, vegetable and animal protein is available and enough to be consumed even though some bring in from outside the region.

A well-functioning distribution aspect can drive food products to consumers in the time, place, shape, and quality desired at minimal cost. Thus, the efficiency of the distribution system will be directly or indirectly related to people's purchasing power and farmer's income. The aspect of food consumption is said to be ideal if the food for the people has fulfilled the rules of diverse, nutritious, balanced, and safe food (B2SA).The condition can be seen from the aspect of quantity and quality. The quantity of food is used to find out whether it is enough or not, in relation to the amount of food consumption for healthy living and being productive. The quality of food is used to determine the nutritional balance of various food consumed by the population.

Food in Indonesia has a very important position, especially staple food because it deals with political, economic, social, and cultural issues. Most of the staple food comes from cereals consisting of rice, corn, and flour, and the largest food staple is rice. Hence, the problem of food security in Indonesia becomes important for political, economic, social and cultural stability.

The agriculture sector is the main leading sector, which should be developed by the Indonesian government. It is based on a number of considerations.

Firstly, Indonesia has natural potential that can be developed as agricultural land; Secondly, most people live in rural livelihoods in the agricultural sector. Third, the need for high-tech induction and science designed to develop agriculture without causing damage. Fourth, the availability of the agricultural workforce is quite abundant. Fifth, the threat of food shortages that can be fulfilled itself from domestic products, so it does not have to depend on foreign agricultural products that once the price becomes expensive. Therefore, the government in the year the last year is very consistent to realize the food security and food self-sufficiency to maintain the stabilization of availability, distribution, and price.

Previous Research

Some studies that have been done by the previous researchers look quite a lot, especially the research related to entrepreneurship, the development of

Table 1
Research Design

Research Objectives		Research Design	
		Unit of Analysis	Time Horizon
T-1	Descriptive Quantitative and qualitative	Individual → MSME practitioners On MSME Centre in 5 Municipalities	Single Cross Sectional Design
T-2	Descriptive Quantitative and qualitative	Individual → MSME practitioners On MSME Centre in 5 Municipalities	Single Cross Sectional Design
T-3	Descriptive Quantitative and qualitative	Individual → MSME practitioners On MSME Centre in 5 Municipalities	Single Cross Sectional Design

Source: Researcher's data 2015.

Table 2
Types of Research Data

Information	Types of Data	Sources
Commodity Governance Post-Harvest Food	Primary	MSME Practitioners in 5 Municipalities
Distribution management Food Commodity	Primary	MSME Practitioners in 5 Municipalities
Governance of Food Resilience	Primary	MSME Practitioners in 5 Municipalities
Research Object Profile	Primary	Biro of Statistics (BPS) Sidoarjo Regency in Figure

Source: Research Results 2015.

small and medium micro enterprises in several other countries.

Li and Matlay 2006, described the Chinese entrepreneurship climate that includes local government policies in developing entrepreneurial activities in cities and villages, the government environment in response to the needs of private companies and cultures affect entrepreneurship.

Hisrich and Drnovsek 2002 study explains the perspective of entrepreneurs affects many aspects such as education, business, government and some communities about life. Increased creativity and development of small companies bring significant changes to the world of education. This study shows that the education system in a country has a significant effect on micro and small enterprises' development.

Research by Gibb 2000 described the issues of transfer of ideas between state and culture of small and medium enterprise development. This study deals with the role of the government in developing the sector of small and medium enterprises. It also deals with the position of academics in the process of change, the relevance of the challenges of change in the future. It explains how and where they should begin to address these issues. Some of these questions provide a signal for the decision makers under government, academia, and related parties.

3. RESEARCH METHOD

The research is descriptive quantitative used for fact-finding with the right interpretation. The purpose is to find a systematic description and accurate facts. The data were collected and arranged accurately according to a problem, which will be discussed. The data deals with the opinion and perception of MSMEs practitioners towards the governance of food commodity after harvest, governance distribution of food commodity, and food security governance at the center of UMKM, which is in 5 districts in Sidoarjo.

Thus, the research design is basically to determine what method will be used in research, among others, data collection methods, analysis method, and hypothesis testing. Qualitative and quantitative descriptive method, in this case, for data collection, is done by collecting data both directly on centers of SMEs located in 5 districts of Sidoarjo in the form of interviews, observations and through a questionnaire (see Table 1).

Types of Sources of the Data

The data were collected from both primary and secondary data qualitatively and quantitatively. The primary data were data obtained directly from the consumers through questionnaire. The secondary data were taken from other parties related to research problems (see Table 2).

Technique of Data Collection

The data were collected using some instruments such as 1) Library study, library, notes, books, literature, and other data sources related to the problem, 2) Field Study. Other data were also taken by

Table 3
Distribution of Food Commodity Resilience in Sidoarjo in 2014

Municipalities	Harvest Area (Acre)			
	Rice	Corn	Green Beans	Beans
Tarik	3.077	7	105	196
Prambon	2.304	7	50	808
Krembung	1.889	0	29	0
Porong	1.207	0	0	0
Jabon	2.338	0	378	0
Tanggulangin	1.683	0	0	0
Candi	1.573	0	286	0
Tulangan	1.688	0	201	0
Wonoayu	2.655	0	477	76
Sukodono	2.750	0	221	0
Sidoarjo	691	0	20	0
Buduran	1.019	0	49	0
Sedati	1.067	0	4	0
Waru	123	0	0	0
Gedangan	1.376	0	0	0
Krian	1.715	0	0	72
Balungbendo	2.105	12	0	132
Total in Sidaorjo Regency	842.446	26	1820	1284

Source: Agriculture Agency 2014, processed data.

using 1) Interview, 2) Observation, and 3) Questionnaires.

4. DATA ANALYSIS AND DISCUSSION

Overview of Research Objects

Sidoarjo Regency is one of the buffer capital of East Java province that is an area experiencing rapid development. This success is achieved because the various potentials that exist in the region such as industry and commerce, tourism, and small and medium enterprises. They can be well-packaged and directed. With the existence of various potential areas and adequate human resources support. This regency's development becomes one of the strategic areas for the development of the regional economy. The area of Sidoarjo Regency is in the lowlands.

Sidoarjo is also known as Delta City, because it is located between two major river rivers of Brantas River, Kali Mas and Kali Porong. In addition, Sidoarjo is located in the south of Surabaya, and geographically these two cities seem to be united. Sidoarjo district is located between 112°5' and 112°9' East Longitude and between 7°3' and 7°5' South Latitude. The northern boundary is Surabaya Municipality and Gresik Regency, south of Pasuruan Regency, east of Madura Strait and west of Mojokerto Regency.

Harvest and Food Commodity in Sidoarjo

General data on the variety of food commodity harvest in Sidoarjo districts is as displayed in Table 3. As presented on Table 3, the center of food barn area located in Sidoarjo regency has been located in Tarik District with the total area of rice about 3,077 Hectares, Sukodono area of 2,750 Hectares, Wonoayu District 2,655 Hectares, Jabon District 2,338 Hectares, Prambon sub-district of 2,304 Hectares, Balungbendo District 2,105 Hectares, Krembung District of 1,889 Ha, Krian District with 1,715 Ha, Tulangan District with 1,688 Ha, Tanggulangin Sub-district of 1.683 Hectares, Candi District 1,573 hectares, Gedangan District with 1,376 hectares, Taman District 1,657 hectares, Porong District with 1,207 hectares, Sedati sub-district of 1.067 hectares, District of Buduran of 1,019 hectares, Sidoarjo Sub-District with 691 hectares, and Waru District with an area of 123 hectares.

Another data as on Table 3, it indicates that in the last few years, there have been some changes of land allotment in some districts, such as Wonoayu, Buduran, Sedati, and Gedangan sub-districts, where the status of many lands converted into industrial centers and warehouses. However, the areas of Tanggulangin and Candi sub-districts many are turning their function into new residential areas with more habitants by the developers. In Jabon and Porong sub-districts, the condition is still stagnant and in the long term, it will be more shrinking for the allocation of agricultural areas, as many of the villages and sub-districts in these two

Table 4
The Area of Harvest and Average Rice Production in 2014

Municipalities	Net Harvest Area (Hectares)	Average Production (Quintal/Hectare)	Production (Quintal)
Sidoarjo	691.00	66.29	45805.00
Buduran	1019.00	66.36	67620.00
Candi	1573.00	66.47	104555.00
Porong	1207.00	66.08	79764.00
Krembung	1889.00	66.90	126370.00
Tulangan	1688.00	66.68	112553.00
Tanggulangin	1683.00	66.24	111478.00
Jabon	2338.00	66.24	159552.00
Krian	1715.00	66.37	113827.00
Balungbendo	2105.00	66.79	140585.00
Wonoayu	2655.00	66.88	177554.00
Tarik	3077.00	66.79	205508.00
Prambon	2304.00	66.86	154048.00
Taman	1365.00	65.99	90081.00
Waru	123.00	62.08	7636.00
Gedangan	1376.00	66.39	91355.00
Sedati	1067.00	66.08	70503.00
Sukodono	2750.00	66.39	182586.00
Total 2014	30625.00	66.33	2041380.00
Total 2013	29980.00	65.80	1979690.00
Total 2012	32296.00	65.41	2112338.00
Total 2011	30201.00	65.06	1972500.38
Total 2010	32374.94	63.73	2061515.20

Source: Agriculture Agency 2014, processed data.

areas are included in the areas affected by Lapindo mud disaster.

As presented on Table 4, it illustrates that the average production volume has fluctuated every year, where in 2010 the total production of 2,061,515.20 quintals and decreased to 1,972,500.20 quintals in 2011. It increased again to 2,112. 338.80 quintals in 2012. Nearing the period of 2013, the production decreased to 1,979,690.00 quintals and increased again to 2,041,380.00 quintal in 2014. Thus, it is so risky if Sidoarjo regency wants to maintain as a barn area food in the coming years given the current national food production is strongly influenced by various factors. The factors are such as the uncertain climate, the reduction and the change of agricultural land into land for settlements and industry, the number of residents who were formerly professions as farmers. They turn to profession to factory workers.

The condition above shows a fluctuating trend of data on the indicators of harvested area from 2010 to 2014 that would greatly threaten food security in the region of Sidoarjo regency in the future if no action is taken through local government policy through various regulations. Therefore, they should do some efforts such as making regulation in the field of land use, irrigation, provision of rice seeds, the availability of adequate fertilizer, cropping patterns of food commodities in the form of rice, handling of post-harvest food commodities, and governance distribution of rice food commodities.

The rapid development of national development covering all sectors greatly influences the use of land. As one of the capital in production, land plays an important role and has strategic value in the economy. Land area in a region did not relatively increase but demand for land for various sectors continues to increase. For example, agricultural land in an area generally has a strategic value, especially its location which is generally located in the lowlands and the topography is relatively flat or sloping. In addition, agricultural land also has a source of water or irrigation channels that are indispensable for industrial activities. Agricultural land in various regions very susceptible to conversion to non-agricultural use. The main reason is the urgency of the public interest that takes precedence. Regional Original Income (PAD) from the agricultural sector is generally lower than other sectors so that development and development of

other sectors take precedence.

Sidoarjo Regency includes megapolitan Gate Kertosusilo. LP2B that is implicitly stipulated through Perda No. 6/2009 on RTRW 2009-2029 (Government of Sidoarjo Regency 2009). In RTRW Regulation stated that LP2B is 13,000 ha with 22,000 ha of land area, consist of sugar cane field 5,000 ha and 17,000 Hectares of rice. Planting area during rainy season and season drought reaches 30,000 ha. Wetland area continues to shrink, i.e. 26,334 ha (2002), 22,460 ha (2010), and estimated 13,544 ha (2009-2029). Typical planting pattern is rice-rice-palawija. Irrigation is widely used is pumps due to many irrigation channels dead due to the construction of houses in the rice fields.

Agricultural land conversion occurs due to the housing construction, industrial complex, railway relocation, and toll relocation (due to LAPINDO mud). The Agriculture Service is a member of the land conversion licensing team (consisting of 9 agencies), but often lost in voting. Official rice drying is done through the following stages: (i) recommendations of BKPR (not LP2B paddy fields), (ii) location permits; and (iii) drying. BKPR members include Satpol Police Pamongpraja, BAPPEDA, Public Works Office, Agriculture Service, Health Office, Sub-district Head, District Government, and Village.

The master plan of agropolitan of Sidoarjo Regency is made for the period of 2009-2024.In this case, the master plan follows the KAPUK (East Java Main Commodity Development Area). KAPUK Agriculture includes Banyuwangi, Jember, Lumajang, Magetan, Nganjuk, Ngawi, Lamongan, Bojonegoro, Blitar, Malang, Pasuruan, and Sidoarjo.KAPUK Brackish Fisheries are centered in Sedati District. KAPUK cane center with sugar industry support is located in Sidoarjo, Madiun, and Kediri.

It is recommendable for incentives for the farmers whose lands are in accordance with their use including paying the UN low, if not according to the UN raised. Conversion of agricultural land by individual farmers continues and local government can not do anything. Other suggested incentives include: (a) the provision of hand tractors; (b) pumps for irrigation; (c) improvement of farmer-level irrigation; (d) paddy dredging (siltation due to mud); (e) family of farmers free of charge of health; and (f) children farmers free of charge tuition to high school because generally young people do not want to farm, the old farmer lives. To minimize the impact caused by the above factors, it is appropriate that farmers and other stakeholders who have a high commitment to food security need to apply the approach of PTT (Integrated Crop Management) Paddy Rice in the future if you have a desire to increase productivity and rice production.

PTT (Integrated Crop Management) of paddy rice is an innovative approach for improving the efficiency of paddy field farming by combining various technological components that support each other and by considering the use of natural resources wisely in order to give a better influence on the growth and productivity of plants. Integrated Crop Management or rice field PTT aims to improve crop productivity in terms of yield and quality through the application of appropriate technology to local conditions (location specific) and preserve the environment. With the increase of production output is expected to increase farmer's income. As one of the efforts and innovation to improve the productivity of plant application of PTT (Integrated Crop Management) paddy rice is based on four principles, namely:

1. Integrated; is neither a technology nor a package of technologies but an approach to which crop, soil and water resources can be managed as well as possible in an integrated manner.
2. Synergistic; utilizing agricultural technology that has been developed and applied with attention to the elements of synergistic interconnection between technologies.
3. Specific location; attention to technological conformity with the physical environment and socio-cultural and local agricultural economy.
4. Participatory; farmers participate in the selection and testing of technologies appropriate to farmers' ability and local conditions through the process of learning in the form of field laboratories.

Data Analysis and Model Formulation

Based on the data gathered by the researchers, it can be illustrated that the post-harvest food commodity governance and distribution of rice food commodities in 5 districts of Sidoarjo can be seen in Table 5 in Appendices.

The food crop development in Sidoarjo Regency is divided into 2 groups, namely: wetland agricultural areas and dry land farming. The objective of the protection of wetland agricultural areas is to develop the paddy fields in appropriate areas, supported by the completeness of irrigation or irrigation infrastructure. Wetland agriculture areas include technical irrigated rice fields and non-technical irrigated rice fields, located in the Sidoarjo, Candi, Porong, Krembung, Tulangan, Jabon, Krian, Ba-

Table 6
Plan of Crop Farming Area of Sidoarjo Regency

No.	Municipalities	Areas (Hectares)
1	Buduran	28.8
2	Sidoarjo	650.58
3	Candi	385.2
4	Tanggulangin	448.2
5	Porong	431.7
6	Taman	619.2
7	Krian	1721.8
8	Balongbendo	2061.76
9	Tarik	3053.1
10	Prambon	2950.7
11	Wonoayu	2556
12	Sukodono	2651.06
13	Tulangan	234.36
14	Krembung	825.98
	Total	18.618.44

Source: RTRW Plan of Sidoarjo Regency.

longbendo, Tarik, Prambon, Wonoayu and Sukodono sub districts. Technical irrigation rice fields are maintained, and no functional switching for non-agricultural activities is allowed. The effort to consolidate irrigated agricultural areas is as follows:

a. It is prohibited to change the use of irrigated rice field land into non-agricultural activities in accordance with the Decree of the Minister of Agrarian Affairs or Head of the National Land Agency, Number: 410-2261 year 1994, on the prevention of the use of irrigated technical irrigated rice for non-agricultural use.
b. To develop irrigation infrastructure.
c. To improve the quality and productivity of agricultural areas, especially in the area by doing appropriate technology along with the necessary supporting facilities and infrastructure so as to increase food carrying capacity.

Some efforts to stabilize rain fed rice fields include:

1. Development of irrigation infrastructure and making a reservoir that can accommodate rain water.
2. Planting plants that do not require much water.
3. Making pump wells.

Other efforts to consolidate dry land farming areas are as follows:

a. Monitoring and protection of shifting cultivation activities.
b. Development of dry land agriculture based on optimal land suitability.

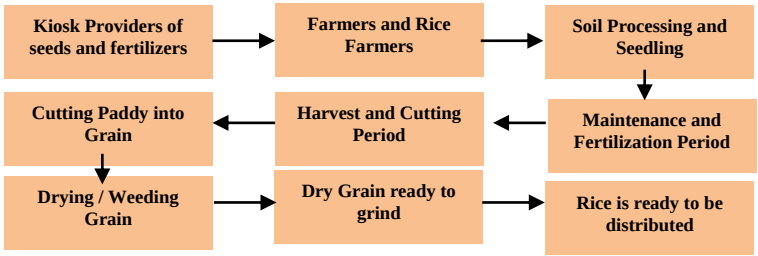
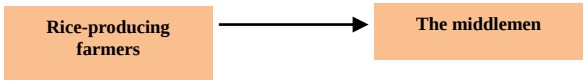
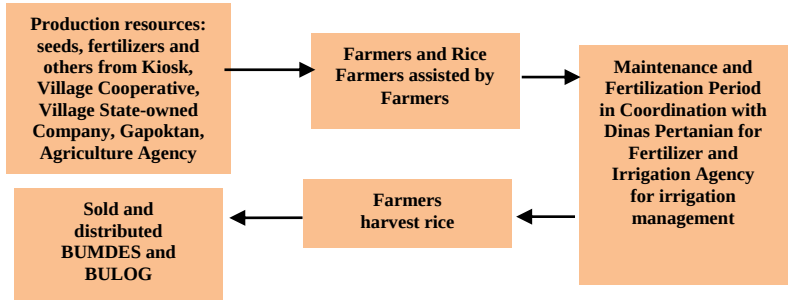
Plan to develop the area of food crops (rice fields in Sidoarjo regency, an area of 18,618.44 Hectares.

As seen in Table 6, the plan and direction on the existing land use in Sidoarjo regencies are such as the districts that are known as a food crops area that has produced a lot of rice in supporting food security residing in Sidoarjo regency. In order they can survive as a buffer zone of existing food commodities in Sidoarjo regency, they are necessary to require greater role of local government in making policy, such as: maintaining or even expanding productive rice field that has been exist in some districts, such as the sub-districts of Balongbendo, Tarik, Prambon, Krembung, and Tulangan. This is necessary because in recent years, quite a lot of productive agricultural land in Balungbendo, Tarik, Krembung and Tulangan sub-districts has been released by farmers to be sold to investors who will be used for industrial purposes.

If the regency government of Sidoarjo does not take action then in the long term productive land that has been there and used for the benefit of agriculture will turn the function into non-productive land, which in the long run will certainly threaten the food security in the region of Sidoarjo as a result of the pattern conservation of productive land into non-productive land. Therefore, the district government of Sidoarjo in this case the Planning and Development Agency of the Regency (BAPPEKAB) must be careful enough in issuing licenses related to changes in the status and/or allotment of the existing land, whether it is as close to the Spatial Detail Plan (RDTRK) as well as the Spatial Plan The existing (RTRW) area, which is principally used to make policy in development planning.

In addition to the role of the bureaucracy, if

Table 7
Food Commodity Post-Harvest Management and Distribution of Food Commodities in 5 Districts in Sidoarjo Regency

Harvest Characteristics	
Harvest Pattern Characteristics	Type of Rice planted in Serang, planting pattern of 2 times a year by doing fertilization 3 times for once planting, seeds and fertilizers obtained through kiosks in the village, irrigation fields very well.
Post-Harvest Characteristics and management	Good quality products, production and harvest products are relatively stable, the harvesting process is carried out by the farmers themselves using cutting machines to produce grain, the drying or weeding time of wet grain to become dry grain, the period of grinding or planting where the farmers use the rice padding service in the villages to produce a ready-to-sell rice
Model of Post-Harvest Management	
Distribution :	
Distribution Characteristics	Distribution of food commodities are generally made directly generally through middlemen. Rice that has been milled directly purchased by the middlemen who generally come and buy at harvest farmers.
Distribution Management Model	
Development style	

Source: Result of Field Data Collection, data is processed by researcher.

they want to cultivate the role of MSMEs and other businesses in the village in an effort to empower the economy of the village community, they should let Village Unit Cooperatives (KUD) and Village Owned Enterprises (BUMDes) get involved in taking a more active role so that SMEs scale businesses in the village become more advanced and growing. Until now, the role of money BUMDes exist in the district of Sidoarjo has not shown their work in assisting efforts undertaken by the villagers themselves.

In the presence of this BUMDes in each village, it has a very strategic position in developing businesses that owned by the village community. This is in accordance with Permendagri 39 of 2010 concerning Village Owned Enterprises, which states that: "To improve the village government's financial capacity in administering government and increasing the income of the community through various economic activities of rural communities, established village-owned enterprises in accordance with the needs and potential village.

Furthermore, the existence of the village both as a government institution and as a unitary entity of customary law community becomes very important and strategic. As government institution, the village is the spearhead of service delivery to the community. As an entity of the legal community, the village is the basis of the system of society of Indonesia, which is so solid that it can be a strong foundation for the development of a stable and dynamic political, economic, socio-cultural and

security system. Therefore, the village is an excellent miniature and sample to closely observe the interaction between the government and its people. And through this village village-owned enterprises can be organized with reference to village regulations based on local regulations.

BUMDes is expected to stimulate and drive the economy in rural areas. The existing economic assets in the village must be fully managed by the villagers. The substance and philosophy of BUMDes must be imbued with the spirit of togetherness and self help as an effort to strengthen the institutional economic aspect. At this stage, BUMDes can move to increase indigenous sources of income, mobilize economic activities of the community and the role of BUMDes as an umbrella institution in shade. This effort is also important in the framework of reducing the role of free-riders that often increase transaction costs in the economic activities of the community through the practice of rent Nurcholis (2011, p. 88).

The position of this village-owned business entity faces a reality of the current, domestic and foreign capital intervention. This now makes the village as the target of business development. Besides that, the company's business entity is only capital if not compared with the big capital, this village-owned enterprise can not be compared. With the natural resources owned by the village. Thus, it is vulnerable to intervene the rural capital and markets. The presence of this village-owned enterprise can deter the power of foreign and national corporations. It is expected that the village-owned enterprise can drive the dynamics of the village economy, and as a village company.

In implementing the primary research of Higher Education, the researchers describe the results based on the location and object of research or field activities such as interviews, information tracking and data collection, conveyed as follows:

1. Recognize the characteristics of harvest patterns of food commodities in 5 districts Balongbendo, Tarik, Prambon, Krembung, and Tulangan Sidoarjo
2. Recognize the characteristics of post-harvest food commodity governance at Sentra UMKM in 5 areas of Balongbendo Subdistrict, Tarik, Prambon, Krembung, and Tulangan Sidoarjo Regency
3. Recognize the model of post-harvest commodity management of food on Sentra UMKM in 5 areas of Balongbendo Subdistrict, Tarik, Prambon, Krembung, and Tulamgan of Sidoarjo Regency
4. Produce an effective post-harvest commodity governance model on SME centers in 5 districts of Balongbendo, Tarik, Prambon, Krembung, and Tulangan Kabupaten Sidoarjo
5. Recognize the characteristics of food commodity distribution governance at the Center of SMEs in 5 districts Balongbendo, Tarik, Prambon, Krembung, and Tulangan Sidoarjo
6. Recognize the model of governance distribution of food commodities at Sentra UMKM in 5 districts Balongbendo, Tarik, Prambon, Krembung, and Tulangan Sidoarjo Regency
7. Produce effective governance model of food commodity distribution at Sentra UMKM in 5 districts of Balongbendo, Tarik, Prambon, Krembung, and Tulangan of Sidoarjo Regency

As shown in Table 7, the researchers can explain that the orientation of rice cultivation by farmers in Sidoarjo regency should begin by applying better patterns in conducting activities in the agricultural sector, especially farming fields that produce rice. This is done in order to support the government program in maintaining and improving food security in Sidoarjo regency, because some of the districts in the administrative area of Sidoarjo regency are known as food granaries.

Principally, the agricultural sector can realize food security, especially rice such as the ease of farmers in gaining access to obtain seeds at the start of planting, the ease of obtaining fertilizer during the fertilization period on the cultivated fields. This access should be supported by existing institutions, among others: the participation of Gapoktan, Village Unit Cooperative (KUD), Village Owned-Enterprises (BUMDes) in each village. The role of institutional aspect is very important in the effort to stabilize the price of seeds and fertilizers in the market, because in fact often the existence of seeds and fertilizers disappear or disappear in the market and if any, the sellers pay a very high price when the farmers start planting.

BUMDes can play their role in serving the sale of seeds or fertilizers through their business units as well as lending (credit) is very cheap for farmers to buy seeds and fertilizers when they need it. Similarly, Village Unit Cooperatives (KUD) should be able to play a more active role in efforts to assist farmers in the village through various loan schemes or provision of means of production factors that are needed by farmers at the start of the planting period until the harvest. Gapoktan and Klompencapir should also play a role in helping each other farmers in their group members who have difficulty. Gapoktan has been an extension of the government

(Agriculture Agency) in an effort to help farmers in the distribution of subsidized fertilizer.

For that reason, it is important to optimize the role of institutional aspect in realizing and realizing the food security that is on the farmer's shoulders, so in the future, the institutional aspects related to the agricultural sector in each village should be able to play a more proactive role in assisting businesses done by farmers. The next aspect that should be the main concern and make consideration in the effort to realize food security in the region of Sidoarjo regency is related to the provision of facilities and infrastructure, which in fact is mostly done by the government or the bureaucracy through the governmental agencies. Interagency coordination is an absolute consideration, between the Dinas Pertanian, Dinas Pengairan, the Land Office, and the Regency or City Planning and Development Board (BAPPEKAB/BAPPEKO). This is important because in reality on the ground, what has been carefully planned can change due to changes in existing policies.

Particularly, in Sidoarjo regency, it is important to have a rapid development and business as well as industrial sectors that exist almost all districts in the administrative area in Sidoarjo regency. The rate of industrial development in Sidoarjo is very high so that this rapid growth rate and development will instead make the agricultural sector into a marginalized and destroyed sector. In some districts in the western part of Sidoarjo regency, the industrial sector is growing rapidly. The fact that there is in the field, now many areas of rice fields located in the western part of Sidoarjo has shifted the function from the original form of productive land for agricultural areas into non-productive land for industrial land and property and human settlements are deliberately built by some property developers as a result of the transfer of property lands formerly eastern part has shifted to the western region. This happens certainly can not be separated from the emergence of mud disaster LAPINDO some time ago and which until now is not over.

Other important aspects of the provision of agricultural facilities and infrastructure are irrigation channels. This policy basically becomes the authority of Dinas Pengairan with the related units in it, which is tasked and obliged to regulate irrigation of irrigation from upstream to downstream through the arrangement of the doors and the existing water. This irrigation aspect is important because the success of the agricultural sector is largely determined by the smoothness and sustainability of the water supply from irrigation drainage channels to paddy fields owned by farmers, especially for paddy fields located in geographical condition lower than the upstream of the river.

It is imperative for the government to control over irrigation arrangements through water gates managed by the Irrigation Agency (Dinas Pengairan) is essential in the effort to maintain water supply to the lower wetlands according to the conditions and geographical location. Because it often occurs in the field, areas that are geographically higher and close to the upper reaches of the river will get more water supply through irrigation channels than the lower regions. This condition occurred in Krembung sub-district, Tulangan, and part of Prambon sub-district getting irrigation water supply in rotation by open water door tutorial 2-3 times in a week.

The efforts to realize food security in Sidoarjo Regency must also be supported. It involves the Land Office of the Regency (BPN) of Sidoarjo. In this case, the Land Office prior to granting and issuing location permits or land conversion (conversion) should ensure that the location petitioned by each applicant does not conflict with the existing Regional Rules (RTRW). Therefore, the Land Office (BPN) should review and screen first of each application for permits in the field of land firmly in accordance with the directives contained in the Spatial Plan as one of the strategies in regional development.

5. CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

In general, food availability is increasingly limited due to the increasing conversion of paddy fields and other productive agricultural land, low productivity of agricultural products, poor irrigation networks and irrigation infrastructure in production areas. The transfer of wetland to other uses has become a serious threat to the sustainability of food self-sufficiency. Various efforts to control the conversion of wetland areas have been widely implemented, but the conversion of land use is still difficult to control. The agricultural sector is a strategic sector and it plays an important role in the economy, people's survival, employment providers and food providers. The conversion of agricultural land, especially rice fields to other uses becomes one of the threats to the sustainability of food security which recently announced by the government.

Factors that can affect the conversion of agricultural land into non-agricultural land that is the development of rural areas into urban areas, social changes and society as well as economic aspects of

the community and the swift flow of industrialization that forced the change of land conversion which formerly very potential for agricultural land to switch functions for land property and industry. As one of the buffer areas of Surabaya, Sidoarjo which is one of the granaries in the region of East Java is certainly very affected by the development of Surabaya area. Finally, it can be concluded as follows:

1. The characteristics of harvest and the pattern of Food Commodity in 5 Sub-Districts of Sidoarjo during the period of 2010 – 2014 has shown a fluctuation. There is, even, a tendency of degradation in 2010 as the base year. It is due to the depreciation of the area of agricultural land as a result of the development of existing industries in the district of Sidoarjo. Here it is the role of the District Planning and Development Agency (BAPPEKAB) and the Land Office (BPN) as the licensing institution which is expected to play a more active role in the control of land use permits that are not in accordance with the Spatial Plan.
2. Post-Harvest Management of Food Commodity at Sentra MSMEs in 5 Subdistricts in Sidoarjo Regency is good enough, because of a good cooperation between farmers and landowners, starting from seeding activity up to harvest time, then continued with grain drying and grinding process (*selep*) is done on average by farmers and landowners themselves.
3. Post-Harvest Food Commodity Governance Model at Sentra UMKM 5 Sub-districts in Sidoarjo Regency has been running well, but it still needs improvement, especially on the problem of supply and smooth distribution of fertilizer to farmers. This is to overcome the difficulties farmers obtain and obtain fertilizer during the maintenance and fertilization of rice crops.
4. The distribution characteristics of food commodity in 5 sub-districts of Sidoarjo regency so far many average done directly by selling it to the middlemen, but there are also sold by the farmers to the grocery stores in the district of Sidoarjo.
5. Food Commodity Distribution Management at Sentra UMKM in 5 Sub-Districts in Sidoarjo Regency should be re-arranged to maintain food security in Sidoarjo regency by way of direct cutting of supply chain of harvest to middlemen.
6. The model of food commodity distribution governance at sentra UMKM in 5 Sub-districts of Sidoarjo Regency should involve the role and function of BUMDes as one of the village-owned enterprises whose function is to assist the existing economic activities in the village by purchasing the crops of the farmers and then sell it to BULOG. Through such a mechanism, the price of food commodity in the form of harvested rice will always be maintained and stable and will not harm the farmers.

The phenomenon of harvested area and paddy production in 5 sub-districts (Krembung, Tulangan, Balungbendo, Prambon, and Tarik) for the period of 2010 - 2014 have fluctuated. There is even a tendency to decrease. The existence of this phenomenon, of course in the long term, will greatly disrupt the existing food security in the region of Sidoarjo regency in particular and East Java in general. Therefore, serious arrangements on the governance of post-harvest food commodities (rice) and distribution governance are required. Through the implementation of the development governance model that researchers generate from this research, it is expected that there will be improvement of post-harvest commodity management of food and governance of food commodity distribution in Sidoarjo regency so that food security in Sidoarjo regency can be maintained and even improved.

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APPENDICES

Table 5
Identification and Characteristics of Post-Harvest Rice Commodity Management and Distribution

Management	Existing Condition	Evaluation and Development of Implementation Model
Post-Harvest:		
1. Land Management 2. Availability of seeds and fertilizers 3. Availability of manpower 4. Land area 5. Irrigation fields 6. Pest Attack 7. Cropping pattern 8. Harvesting 9. Use of Technology 10. The existence of rice milling facilities 11. The role of Gapoktan 12. The role of Klompencapir	Average use of tractor Easily available on kiosks in the village which is a MSME business Laborers both farmers and farm laborers are available and on average worked on by the owner of paddy fields The area of rice fields began to decrease, due to land conversion The irrigation system is very good Less 2 times planting in 1 year Average yields are sufficient (both in quantity and quality) Using the machine during harvest in the fields An average in each village there are rice milling facilities (selep) Each village has Gapoktan Each village has klompencapir	Farmers are encouraged to use and mechanize agriculture in increasing productivity and efficiency The need for the role of KUD and Bumdes and Gapoktan in gaining access to obtain seeds and fertilizers The need to establish standard wages of agricultural laborers to prevent the migration of agricultural laborers into the profession as factory workers The need for a more assertive role of the Bureaucracy (Bappekab, Dinas Pengairan, and the relevant Dinas) in granting and issuing location permits in accordance with existing directives in RDTRK and RTRW The need for a more intense role of Dinas Pengairan to maintain the continuity of water supply on the existing irrigation channels because in recent times the district of Sidoarjo often hit by floods during the rainy season The need for participation from the Agriculture Service in maintaining and sustaining rice crops from pests by providing pesticides The pattern of rice planting is done twice a year for the purpose of maintaining the quality and quantity of crops and maintaining soil fertility. The need to consider the use of more modern agricultural technology and the use of superior seeds to improve crop productivity The need to use a more modern machine to reduce the loss of crops The need for more equitable distribution of rice mill facilities (selep) exist in every village and sub-district Gapoktan's existing role needs to be improved in terms of providing fertilizer, seeds, and counseling Activity kelompencapir need more encouraged to help every farmer who experienced problems
Distribution:		
1. Sale of the harvest 2. Role of KUD 3. The role of BUMDes	The crop is generally purchased directly by the middlemen There are KUDs in each village, but the role is still low in the management of food commodities and rice management There are Bumdes in every village, but less role in effort of farmer economic empowerment	The need for participation from KUD and Bumdes to buy paddy crops in order to maintain price stabilization The Role of KUD should be further enhanced in assisting the difficulties faced by farmers either when farmers get seeds, fertilizer until harvest time The role of BUMDes in the economic empowerment of rural communities needs to be improved in accordance with the Village Law, so that villagers can be more independent in terms of economy

Source: Processed Field data Collection Results.