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Food Diversification to Anticipate the Economic Factor Changes in Indonesia

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Abstract:

The agricultural sector is a sector that has a strategic role in the structure of national development, agriculture is the most endpoints sector's defined as critical success to build a prosperous nation. Indonesia's agricultural potential effect on the reciprocation of agriculture and economic development, but in fact to date the majority of farmers in the countryside are still categorized as the poor this indicated that the government in the past has less empowering farmers to venture into independent business and pay attention to the land owned by farmers not to sell to another party. In connection with the above problems, the purpose of this paper is to review research results, information and experience in the field, with some segments discussed are shown through quantitative disikriptif and tables, to determine the potential of agricultural development and diversification in order to anticipate changes in the economic factors in Indonesia, which can be developed through subsequent policy. The average retail prices of goods that are affected by consumers' demand. In the period of 2011-2015, along with the improvement of people's welfare, some commodity price increases is quite striking in each year, such as: rice (medium), with the growth rate of 10.20%, chicken meat of 8.71%, eggs of 9.30% , and corn of 9.67%. Some commodity strategy experiencing growth rates above 10% are: beef (12.04%), onions (21.75%), groundnut (15.65%), and cassava (14.12%).

Keywords: agricultural potential, diversification, anticipate economic changes

1. Introduction

Agriculture is a sector that has a strategic role for the Indonesian economy, accounting of 35.9% of the total labor in Indonesia and contributed 14.7% to the Indonesia GNP (BPS, 2012). These facts strengthen agriculture as the sector that is vital to the economy of Indonesia. Indonesia's agricultural sector is the backbone of the national economy and development, it can be seen in the gross domestic product (GDP), foreign exchange earnings, employment, food supply, and the supply of industrial raw materials. The agricultural sector also plays a role in distributing development through poverty alleviation and the improvement of people's income. In addition, the agricultural sector has also become one of the nation's cultural formation and balancing the ecosystem.

The success of the Indonesian nation depends on the success of agricultural development, since 99% of the population in Indonesia are dependent on agriculture. Ismail (2013) argues that the journey of agricultural development in Indonesia is still yet to show the maximum results when viewed from the level of welfare of farmers and their contribution to national income, agricultural development in Indonesia is considered important from the overall national development, among other things because of the potential for natural resources large and diverse, the market share is still large, and national income is still lacking or not maximized.

Agricultural development in the past has several weaknesses, which only focused on farming, lack of macros policy support, as well as the centralistic approach of government, as a result the farming in Indonesia is still dominated of small-scale business, limited capital, the use of simple technology, seasonal influenced, locally market, family labor work, thus causing agricultural involution (hidden unemployment), very low access to credit and technology, the agricultural commodity markets that are mono / oligopsony controlled by wholesalers so that the exploitation of prices hurt farmers.

Therefore the government has to be more serious in solving the problem of agriculture in Indonesia for the realization of advanced agricultural development, and the achievement of public welfare, by using the strategy of accelerating innovation system of agricultural processing. In order to improve the economic added value for farmers, it is needed a technological innovation that appropriate to environmental conditions, as well as supporting good cooperation between farmers, government and private sector roles.

Aspects of the application of agro-processing technology, and infrastructure, which is sufficient to facilitate the calculation method of agriculture input-output marketing and other dairy products. Rosganda and Rusdiana (2011) suggested that the dynamics of the economic crisis always choke the life of the poor communities in both rural and urban areas, spurred by rising prices on global food production, which resulted in economic turmoil in Indonesia. It is becoming more complicated especially for people with relatively small incomes. The polemic will continue, if economic conditions remained difficult, particularly for the middle to the poor (Elizabeth, 2007).

The dynamics of the difficult economic conditions, will change the pattern of life toward a simple lifestyle, among other things that households or communities are using firewood or dried tree branches to cook (Elizabeth, 2008). In connection with the problems, this paper aims to review the results of several previous studies, both in the form of information, ideas and experience in the field.

2. Potential of Agriculture to Anticipating Changes in Economic Factors

2.1. Agricultural Potential in Indonesia

Indonesia has the potential of natural resources, including germplasm, which is abundant in available (mega biodiversity). Biodiversity land Indonesian is the second largest in the world after Brazil, whereas if including marine biodiversity, Indonesia is the largest number in the world. This refers to the various types of agricultural commodity crops, horticulture, plantations and farms that have long been cultivated as a source of food and income.

Biodiversity that is supported by the distribution of geographical conditions such as lowland and high land abundance with sunshine and highly intensity of rainfall that are almost evenly distributed throughout the year in most regions, as well as the diversity of soils allows to cultivate various species of plants and animals native to tropical regions, as well as introducing commodity is from the sub-tropical evenly throughout the year. But in fact most farmers in the countryside categories of low-income groups and less prosperous. This situation indicates that there are lack of effort to empower farmers to be able to contribute independently, and focus more to the potential of productivity of his farm (Goddess and Haris, 2007). Besides, there are some more problems that impede agricultural development in Indonesia such as land agrarian reform (conversion of agricultural land into non-agricultural), which grown out of control, the lack of supply of quality seed for farmers, shortages of fertilizer during the planting season, rice self-sufficiency which did not improve the farmers welfare.

One of the indicators that can be assessed to improve the welfare of farmers is to increase the agricultural and livestock products. In 2011, rice production increased 15.74 percent compared with 2010, but the increase due to increased of the harvested area. The harvested area in 2011 increased by 941 hectares or about 20.05 percent compared to the harvested area in 2010 (BPS, 2012).

2.2. The potential of Natural Resources

Strategic geographical location shows how rich is Indonesia on natural resources of flora, fauna and potential hydrographic and deposits on natural resources abundantly, Indonesia's natural resources come from agriculture, forestry, marine and fisheries, livestock, plantation and mining and energy (Annon, 2012). As an agricultural country, agriculture is the most important livelihood for the majority of the Indonesian, agricultural land area of approximately 82.71% of the total land area, mostly used for rice cultivation. However, the spread of rice production is still concentrated in Java due to the high productivity and harvested area compared with other islands (Tikupandang *et al.*, 1995)

Livestock development in the future will still be faced with the problem of natural resources in the form of feed, due to increasing demands and needs of economic development that is more complicated. Challenges that often faced by livestock farming is the ability to meet the needs of feed by production and quality improvement of fodder crops through guidance to farmers, and directing to areas which is less potential for cultivation of agricultural crops (Rusdiana and Dwi, 2009). Other agricultural production are corn, sweet potatoes, peanuts and soybeans, as well as the production of horticultural varieties of vegetables include large onion, leek, potatoes, cabbage and carrots, while the production of fruits include mangoes, durian, orange, banana, papaya and barking.

Based on the age of the plantations in Indonesia, those plantation are divided into two major groups, namely seasonal crops (sugar cane, tobacco, cotton, castor, lemongrass, patchouli and hemp) and perennial crops (rubber, coconut, coffee, palm oil, cloves, nutmeg, cinnamon, vanilla, hazelnut, tamarind, palm, coconut, and sago palm). Most of the plantations are in the form of annual crop cultivation.

2.3. Potency of Animal Husbandry in Indonesia

Livestock commodities are divided into large livestock such as dairy cows, beef cattle, buffaloes and horses. Whereas small livestock consists of goats, sheep, and pigs. Poultry comprises layer chicken, broiler chickens, and ducks. Of these types of livestock, which have an export prospects are goats and sheep. However, in relation to the population that is relatively small, so until now that can not meet the quota of exports, especially to Islamic countries, such as Brunei Darussalam, Malaysia and Saudi Arabia. For the development of the livestock sector, it is necessary to change the vision, mission and strategy in the animal husbandry farming in order to become a supportive element for national food security and be able to improve the of society's welfare.

In support the diversification of animal origin food-related to economic analysis is an investment activity in beef cattle breeding of household level with their own capital. Relating to the availability of labor, especially in orage provision, then the level of animal holding is routed through the number of ownership between 1-5 heads per household. In the case of the development of the animal husbandry sector, the most important cost is the purchase of breed and labor costs. Beef cattle population in 2011 about 14, 824 million heads, and increased to 16, 034 million in 2012, or an increase of approximately 32% (CBS, 2012). While the goat population reached 17,862,203 heads. Goat population increase began in 2005, approximately 629 thousand or 5% of its growth, during the period of 2006 to 2012 the number of goat population continues to increase. Likewise for other livestock population does not indicate the occurrence of decreasing just a little on the population of buffaloes and horses.

Farm animals, especially ruminants is considered to be very suitable for development, for conformity with the conditions of the fertile agricultural land, because ruminants known to easily adapted to the various conditions of countryside agroecosistem as well as an effort of complementary system of crop and livestock farming (Saenab *et al.*, 2005). Kusnadi. (2006), argues that one of the deciding

factors in the success of the ruminant farming is a guarantee the availability of quality crops so they can be sustained between food crops and livestock. One of the critical success of integrated farming, if it can be diversified both the integrated farm, because each sub-sector has high enough prospects to be developed in the future, especially in the food sufficiency of vegetable and animal, as a measure of social welfare.

2.4. Anticipate in the Economy Changes in Indonesia

Based on physical fact of nature, that two-thirds of Indonesia in the form of the sea, the natural resources in the sea has huge potential, in addition to containing the oil, gas, mineral and marine non-conventional energy content. Mining and energy are expected to be excellent sources of foreign exchange earnings, particularly from oil and gas export revenues, apart from agricultural products. Agricultural production and mining are still very dominant in influencing the economic conditions in Indonesia, so that its productivity is often used as a basic assumption in the budget planning. Then, to strengthen the economy, the government has also begun to explore alternative energy sources, with the aim to reduce the dependence on fuel. While the source of alternatif energy owned in large quantities is gas, coal, hydro, geothermal, and solar power.

Alternative energy at this time, which is wrought by the government is energy based from vegetable sources or biofuels with the basic material of the crop and of the results of plantation crops such as palm oil, sugarcane, cassava and castor oil that have the potential to produce energy, as an effort to anticipate the shortages of fuel oil which will simultaneously reduce expenditure, and is expected to reduce the burden of the poor. Development and utilization of biogas, will obtain the benefits either directly or indirectly, the immediate benefits can be felt is getting the alternative energy sources such as bio-gas that can be used as fuel for household purposes, such as cooking, lighting and as fuel for diesel engines (Harahap *et al.*, 1978). In addition, other benefits that can be enjoyed directly from the development of biogas is provision of use organic fertilizer.

The main product of biogas development are bio-gas and organic fertilizer, it will indirectly affect the environment positively, including helping forest conservation program, soil and water, reduce air pollution, improve environmental sanitation and support government policy in reducing fuel subsidies fuel. Ismail (2012) suggested that the development of agriculture in the future not only confronted to solve the problems that exist, but also challenged to face the political changes in Indonesia that led to the democratization such as demands for autonomy and empowerment of farmers, also faced with the challenge to anticipate changes in the world order that leads to globalization.

Agricultural development in Indonesia is not only required to produce agricultural products that are highly competitive but also able to develop the regional growth and empowerment of the communities, the challenge becomes a hard work for the farm community, so that the agricultural sector be encouraged in order to achieve increased prosperity, and can be used as the driving force of development (Annon., 2011). Problems in agricultural development in Indonesia and its relation in the effort in improving standard of lives and farmers' welfare has not maximized. There are some recommendations in determining policies and successes and to anticipate any changes in economic factors :

1. To optimize the overall agricultural program in Indonesia, the utilization of idle land for productive agricultural and environmentally favorable the regulation of land conversion to the enactment of the land area of eternal existence that is protected by law and empowering institutional systems of farmer and education to farmers, in the form of an incentive farming program, education, agriculture banking program, market development and marketing network in favor for the farmers, the development of industrialization based on agriculture, rural areas, and facilitate the access-access to sources of science and technology information that can be reach well to faster economic in the countryside.
2. Indonesia should be able to prepare for competitiveness in the era of free trade (WTO) and all other forms of free trade in 2014 which will encompass the incompetency in the management of global world trade, improvement of agricultural infrastructure and improvement of appropriate technology, effective sound on context of the local wisdom as well as the maximum utilization of research results, local scientists, which is utilized by the user, especially the farmers and all parties
3. Can achieve food sovereignty in Indonesia, as it should have been stipulated in the Constitution of 45, that the Indonesian economy, improving the quality and welfare of agricultural extension, create and enforce law on the protection of Farmers' Rights, immediaterealization on agrarian reformation and equalization charge of information related to the agriculture sector.
4. Preparation of the concept of special airtime for publication agriculture sector throughout the existing mass media, so it can be accessed easily for their own interests and life skills oriented, entrepreneurial skills and independence sought, education and training programs where the agricultural sector has developed advanced, improving the quality of agricultural aims to explore the potentiality.

Lots of things to do in developing agriculture in the future, the welfare of farmers and their families is the main purpose of which is a top priority in conducting the program, of course it should not be the only benefit for one group only but are directed to achieve a strong foundation in national development. As stated by Andriati and Sudan (2007) that development is the creation of a better system and values until justice and a high level of welfare occurs. Agricultural development should anticipate the challenges of democratization and globalization in order to create a fair system, besides it should be directed to aimed target so that it bring into reality a prosperous society, especially farmers through agricultural development system in the strong agricultural business coordinating institution.

3. Diversification Agriculture and Economic Feasibility

3.1. Diversification of Crop-livestock in Economic Analysis

Diversification of agriculture development, particularly rice and corn integrated with livestock (ruminants and poultry), has long been done by farmers in a simple shape, but the condition of our current agriculture land area is narrowed, encourage the agricultural development intensively and integrated (Kamaruddin, 2008). The condition is re-emphasize the Asian Regional Maize Workshop 10th, 2008 in Makassar, which recommends the implementation of Farming System Model, Crops-Livestock System (CLS), and Organic and Un-Organic Farming. Farmers' welfare is the primary objective in the development, as well as agriculture and livestock sector really have a very big role, especially in improving the economy of the farming community (Suharto, 2000).

The development of agriculture and livestock in the role of business must be supported by the marketing of agricultural products, the marketing of livestock, the application of science and technology to benefit greatly to the development of human resources especially the farming communities in increasing revenues for the welfare of farmers, so the economic built up, especially purchasing power of the society. Human resource development is a process to improve the knowledge, creativity and skills, and the ability of the farmers (Demitria *et al.*, 2006). Human resource development is an effective process of investment in the economic gross development product (GDP) of the various sectors.

Along with those, the Indonesian economy showed a trending of shift from agriculture to non-agricultural sector and international trade shift from oil to non-oil. The role of the services sector has increased while the agricultural sector the relatively decline in the contribution of national gross domestic product. Through empowerment farmers will have greater confidence in the self ability, in addition to solve the problem of poverty agriculture, will also bring people into a new era into the modern farming system (Stephen 2010). Murtiyeni *et al.* (2007) reported that the need for information of innovation is high (85%) to increase farmers' income.

The farmers will abandon the old habit of traditional (subsistence) that is irrelevant and impede the progress of life, instill the value of modern agriculture (commercial) such as hard work, thrift, discipline, transparency, accountability and that the ability to face global competition is a fundamental part of efforts to empower farmers. Empowering farmers is a great opportunity in the process of acculturation turnover values of the new from the old that describes the identity in a changing economy. Indonesia as a developing countries, there are many determinants factor of economic success, judging by the national food needs that come from farms product (crop and livestock product). In fact the average retail price fluctuate each year, as presented in Table 1.

| No | Commodity | Unit | price (Rp) | | | | | Average Growth (%) |
|----|--------------------------|--------|------------|--------|--------|--------|---------|--------------------|
| | | | 2011 | 2012 | 2013 | 2014 | 2015 | |
| 1 | Rice Medium | kg | 7.372 | 8.057 | 8.409 | 9.340 | 10.142 | 10.20 |
| 2 | Sugar | kg | 10.665 | 12.007 | 12.242 | 11.326 | 12.317 | 5.99 |
| 3 | Edible Oils Packaging | 620 ml | 15.248 | 15.433 | 13.418 | 14.605 | 15.164 | 0.99 |
| 4 | Oil Bulk | kg | 10.822 | 11.190 | 11.997 | 11.526 | 11.070 | -0.35 |
| 5 | Beef | kg | 69.732 | 76.925 | 90.401 | 99.332 | 104.955 | 12.04 |
| 6 | Chicken Broiler | kg | 24.823 | 25.320 | 28.143 | 28.976 | 29.862 | 5.53 |
| 7 | Native Chicken | kg | 45.496 | 48.950 | 53.633 | 58.764 | 61.400 | 8.71 |
| 8 | Chicken Egg (Exotic) | kg | 16.844 | 17.613 | 19.013 | 20.063 | 22.014 | 9.30 |
| 9 | Kampong Chicken Eggs | kg | 35.899 | 36.833 | 36.182 | 40.416 | 41.059 | 3.62 |
| 10 | Sweetened Condensed Milk | 397 gr | 8.596 | 8.790 | 8.867 | 9.839 | 10.254 | 5.36 |
| 11 | Milk Powder | kg | 25.554 | 7.889 | 30.273 | 37.546 | 40.568 | 62.96 |
| 12 | Flour | kg | 7.592 | 7.646 | 8.045 | 8.733 | 8.916 | 4.50 |
| 13 | Soybean Imports | kg | 8.310 | 8.788 | 9.819 | 11.135 | 11.094 | 7.14 |
| 14 | Local Soybean | kg | 8.814 | 9.228 | 10.049 | 10.643 | 11.161 | 7.23 |
| 15 | Red Chillies Curly | kg | 23.952 | 23.247 | 29.800 | 30.354 | 30.638 | 7.24 |
| 16 | Red Chillies Ordinary | kg | 22.995 | 22.502 | 30.131 | 30.189 | 29.154 | 6.87 |
| 17 | Shallots | kg | 18.955 | 14.177 | 34.313 | 22.635 | 25.096 | 21.75 |
| 18 | Corn | kg | 4.885 | 5.258 | 7.815 | 6.194 | 6.460 | 9.67 |
| 19 | Green Beans | kg | 16.621 | 14.000 | 15.385 | 18.925 | 20.494 | 7.35 |
| 20 | Peanut | kg | 16.368 | 16.886 | 18.847 | 18.495 | 23.094 | 15.65 |
| 21 | Cassava | kg | 3.121 | 3.837 | 4.601 | 5.167 | 5.236 | 14.12 |

Table 1: The development of the average retail prices of agricultural commodities in the provincial capital of Indonesia in 2011-2015

Source: Ministry of Commerce Processed By Media Centre, Ministry of Agriculture (2015)

While the average retail prices of goods strongly influenced by the needs of consumers, besides that is influenced by the increase in revenues, which boosted purchasing power. Increased purchasing power will affect consumption patterns, and generally the most visible is the increase in the consumption of goods and products from cattle as a protein source. In the period of 2011-2015, along with the improvement of people's welfare, some commodity price increases steadily every year, such as: rice medium (10.20%),

kampongchicken meat (8.71 %), eggs (9.30), and corn (9.67%). Some other strategic commodity above 10%, such as: beef (12.04%), onions (21.75%, groundnut (15.65%), and cassava (14.12%).

The deciding factor of food prices fluctuation in the world depends on the needs and the amount of the stock of existing production, analysis of market needs, market influence would occur if the demand greater than the supply of goods, consequently lack of demand and supply is not balance, the price will be increase that were not balanced with revenue of the community.

4. Conclusion

Indonesian agricultural potential affectsthe economic development in Indonesia, but in fact until now most farmers in the countryside are still categorised as the poor segments of society. This indicates a lack of attention by the government in efforts to empower farmers to venture into business independently and less attention on farmer land as a means of production. Besides changes in economic factors, as well as inhibiting the development of agriculture in Indonesia such as agrarian reform (conversion of agricultural land into non-agricultural land) is getting out of control, the lack of supply of quality seed for farmers, shortages of fertilizer during the planting season.

Therefore, through the empowerment of farmers, and improving the quality of farmers' resources in the management of production assets is expected to increase conviction and self confidence that farmers are having a very great role in the greater of economic factors changing, in a new era of the modern farming system.

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