



THE DECREASE OF PRODUCTION OF INDONESIAN SOYBEAN AND EFFORTS TO ENSURE THE CERTAINTY OF THE VEGETABLE PROTEIN SUPPLY: A LITERATURE REVIEW

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Abstract

Soybean is a vegetable food which is much needed and prospective. However, demand for soybean in Indonesia which has progressively increased is inversely proportional to the availability of soybean. This paper is intended to analyze the decline in soybean production in Indonesia and map out efforts to ensure the supply assurance of the vegetable protein based on a literature review on previous research or study. Based on a review of some literature, some solutions are proposed in order to ensure the supply of vegetable protein, especially soybean in Indonesia, among others by increasing production and substitution power (on soybean imports) of domestic soybeans, through rules and mechanisms of control over the existing trade system, as well as increasing the role of Bulog and/or Cooperative (KOPTI) in the trade system.

Keywords: Soybean Production, Soybean Consumption, Trade System, Role of Cooperative (KOPTI)

I. INTRODUCTION

Food is the primary basic needs for human, so it is important to maintain its availability. The right to receive food is one of human rights, as stated in article 27 of the 1945 Constitution. These considerations underlie the issuance of Law No.7/1996 on food. As the basic needs and human rights, food has a meaning and an important role for the life of a nation. Food availability which is much smaller than the need for it can create economic instability and can lead to a variety of social and political turmoil (Abubakar, 2008 in Dwi, 2009).

Food security is the ability of households to provide food for all household members in the amount, quality, safe, equity and sustainability. Nuts belong to a group of foods that ranks fifth from nine groups of consumed food. Poor

households consuming tubers reach 42.5 percent while those consuming nuts reach 80.8 percent. Thus almost all rural poor households include nuts-grouped food in their food consumption patterns. Therefore, commodity of beans needs to be considered in achieving food security, especially for poor rural households (Hanafie 2004).

However, the development of food industry show that the price volatility happens due to the integration of domestic and international prices as well as Indonesian government policies regarding food today. One of the volatile commodities is soybeans, which is regarded as an important agricultural commodity for Indonesia, because of the high dependence on soybean imports. Besides, fiscal incentives also add this volatility. Soybean is one of the primary agricultural products which is not liable to VAT.



In addition, there is also an adjustment on the import duty rate on soybeans, from originally 0% to 5%.

The demand for soybean in Indonesia progressively increases (Ahahermanto, 2012). It is inversely proportional to the availability of soybean in Indonesia. This suggests that soybean is a vegetable food that is desperately needed and prospective. Of the total supply of soybeans in Indonesia, both imported and domestic, 70% is for tofu and tempeh and 30% for other food needs.

The condition of excess demand for soybean in the soybean market causes Indonesia to rely heavily on imports. Supadi (2009) recorded a growth of Indonesia's dependence on imported soybeans was higher year-over-year from 1978 to 2006, even from 1998 to 2006, reaching the level of dependency of 54.66% and after 2006 more than 60%. The price of imported soybeans is cheaper than local production so that farmers in Indonesia are more reluctant to plant soybeans. Local soybean may not be able to compete with imported soybean, both in price and quality. Thus, there is no incentive for farmers to plant soybeans, mainly because there is no guarantee for the prices during the harvest season.

For this reason, this paper is intended to analyze the decline in soybean production in Indonesia and map out efforts to ensure the certainty of supply of the vegetable protein based on literature review on previous research or study.

II. LITERATURE BACKGROUND

2.1 Policies on Imported Soybean Trade

The objectives of agricultural trade policy may vary depending on the commodity. For example, policy on import duty tariff or on non-tariff barriers aims at protecting import substitution commodities. Instead, tax policy or restrictions on exported goods are intended to fulfill domestic needs or prevent the rise in commodity prices in the country. Domestic trade policy generally aims to facilitate or hinder the marketing of commodities between regions (Simatupang, 1989).

Import of soybean Indonesia each year began to increase and it has increased sharply since 1999. According to the Directorate General of P2HP, Department of Agriculture (2004), from 2000 to 2004 the order of ranks of the countries

as the biggest supplier of soybean imports to Indonesia are the United States (66 percent), Argentina (5 percent), Malaysia (4 percent), Canada and Singapore (1 percent). Indonesia has kept increasing its imports since the radical liberalization due to the pressure from the IMF in 1998.

The import policy includes greatly when the government, through the Minister of Industry and Trade Sector 406/Kep/II/1997 removed soybean trading system which was originally handled by Bulog transferred to the General Importer. This is in accordance with the wishes of the World Trade Organization (WTO) and the International Monetary Fund (IMF) on the grounds to help small and medium entrepreneurs in obtaining raw materials soybean (Hadi and Wiryono, 2005).

Freely importing soybean makes the soybean price in the domestic market under pressure. The increase of soybean imports has an effect on the decline in domestic soybean production. The decline in domestic production has happened since 1993 and the production has declined sharply since 2000. In stabilizing the domestic soybean price, at the beginning of the eighties Bulog implement procurement and distribution of soybean. The aim is to ensure the availability of soybeans for tofu/tempeh, especially for the members of PRIM KOPTI. Procurement of domestic soybean only took place in 1979/80 - 1982/83 in the amount of less than 1 percent of domestic production. Instead, procurement through imports takes place every year in large quantities and at lower prices. Before the economic crisis, the price set by Bulog generally slightly higher than import prices, so as to support the local soybean prices (Amang, 1996).

Since Bulog's role as a government trade agency for soybean was revoked in 1998, all traders in agribusiness can trade soybeans with 0 per cent import duty, VAT of 10 percent and 2.5 percent. Although in Mei 2002 the government established a mechanism of NPIK (Identification Number for Special Importer) to reduce soybean imports, but its effectiveness is still weak to control the imports (P2HP, 2005).

Other international trade policy is an *ad-valorem* tariff for imported soybeans. The rates were applied from 1974 to 1982 by 30 percent. From 1983 to 1993 soybean import tariffs were



lowered to 10 percent and then to 5 percent from 1994 to 1996. In 1997 the rates were lowered again to 2.5 percent and eventually the tariffs were eliminated from 1998 to 2003. In 2004 the government reestablished the tariffs to 5 percent, and from January 1, 2005 through 2010 to 10 percent. Import tariff policy usually will raise the soybean prices in the country including producer prices (P2HP, 2005).

2. 2 Supply and Demand of Imported Soybean

Siregar (2012) stated that based RPJMN 2010-2014, the priority of food security was set through food production growth target per year, ie 3.2% for rice, 10.02% for corn, 20.05% for soybeans, 12.25% for sugar, and 7.3% for beef. Total production of rice, soybean, and corn shows an increase from 2006, and is predicted to increase as well in 2012.

P2HP (2005) stated that domestic soybean production was still far below the number of domestic demand. In 1990, domestic production was able to fill domestic market approximately 83.32 percent, and the remaining 26.68 percent was imported. The capability of domestic production to fill the domestic market increasingly declines; after 2000 more than 50 percent of domestic needs are met by imports, and even in 2004 the imports reached 65 percent. The domestic market share is estimated keep growing by the increase of demand on soybean and soy derivatives. Although the productivity is still low, on the level of prices relatively stable (IRD 3.000/kg) soybean agricultural enterprise is financially quite profitable, at IRD 2.05 million/ha at the B/C 2.14. However, these enterprises have not been able to compete to raise the substitution of imported soybean. Supadi (2009) even stated that the growth of Indonesia's dependence on imported soybean kept higher year-over-year from 1978 to 2006, even from 1998 to 2006, reaching the level of dependency of 54.66% and after 2006 more than 60%.

Therefore, the improvement of productivity is one way to improve the competitiveness of these commodities. Soy-based industries that have grown are the industries of tempeh, tauco, soy sauce, tofu, and milk. However, Indonesian soybean production is only able to meet about 35 percent of the need, and as much as 55 percent of that is still imported.

Fahma (2007) even predicted that there will be a shortfall of soybean supply in 2004, 2007, 2010 and 2013. Accordingly, Soybean development program in the long run is to increase domestic production in order to reduce imports to meet the needs of the industry that has grown nowadays (Fahma, 2007; Supadi. 2009)

III. DISCUSSION AND ANALYSIS

By looking at a large enough imbalances between demand and supply of soybean in Indonesia, some researchers conduct studies by a variety of methods to provide recommendations in order to meet the needs of vegetable protein supply particularly soybean. Some researchers analyzed directly the market (demand and supply) of soybean in Indonesia, among others Rachmawati (1999), Purnamasari (2006), Khusrizal and Jamilah (2007), Fahma (2007), as well as Supadi (2009).

Research conducted by Rachmawati (1999) focuses on the analysis of soybean trade in Indonesia, especially those associated with imported soybean, policy and market opportunities, and soy consumption in Indonesia. The approach taken is to use the Armington model assuming that Indonesian consumers see the soybean from the U.S., Brazil, Argentina and other areas as a product which is different from each other. Racmawati (1999) proposed a solution to the problems of soybean trade in Indonesia, namely the implementation of programs to enhance the substitution power of local soybean such as development of soybean seed preferred by farmers and producers of tofu and tempeh.

The research conducted by Purnamasari (2006) examined factors that affect the production and soybean imports in Indonesia. The method used in this research is the theory of supply and demand and the theory of production as well. By using the methods the study yields that the development of soybean production in 1984-1993 showed an increasing trend. The things that affect the import of soybean in Indonesia include the width planting area, the diminishing of productivity of soybean and soybean real price at the producer level in the domestic market. This study suggests the need for strategies to improve the national soybean production through increased productivity and expansion of planting area. In addition, government intervention is also



necessary to mitigate the negative impact of trade liberalization on the welfare of producers. Strategies for distribution and marketing are also needed to enhance the competitive advantage of soybean commodity in inter-regional trade, import substitution and export promotion.

Furthermore, Khusrizal and Jamilah (2007) conducted research on the import tariff of soybean in Indonesia. This study focused on the performance of the policies of soybean import tariff on the supply and demand of soybean in Indonesia. This study uses secondary data, time series in 1969-2002. The entanglement of import tariff and non tariff on demand, supply, prices, and imports of soybean were analyzed by building a dynamic econometric model in a system of simultaneous equations. The model in this research is used to gain the influence of imports tariff policies on demand, supply, prices, and imports of soybean in Indonesia. Khusrizal and Jamilah (2007) suggested the need for revamping of the management of imported food commodities, including through increasing the domestic soybean production.

Fahma (2007) by using a two stage least square analysis, with demand and supply models projected the supply and demand of soybean over the past ten years (2004 s/d2013) and found that there is the shortage of supply of soybean in 2004, 2007, 2010 and 2013. With case studies on the distribution system of soybean commodity in the district of Grobogan, it is proposed the need for action to deal with the shortage of soybean supply by increasing the number of domestic soybean production and the need to improve the role of KOPTI in order to maintain the price stability.

The research by Supadi (2009) is about the continuing impact of soybean imports to food security. The method used in this research was descriptive analysis. This study examined the impact of soybean import dependence to national food security. Policies to increase soybean production are needed to provide intensive, especially prices for farmers as well as to be efforts to build food security. The results of this study suggest the need to provide protection and security to farmers concerning soybean prices, planting area expansion and increasing productivity, improving infrastructure (physical and institutional), the effectiveness of counseling associated with research, involving the private

sector in partnership with farmers and farmers' groups, and the need to regulate the trade system of soybean and to reposes the role of Bulog through strict control mechanisms.

Based on these studies, it can be seen that the demand for soybean in Indonesia has progressively increased. The increase is inversely proportional to the availability of soybean in Indonesia. Indonesia's soybean market is currently highly dependent on imports; this situation needs to be addressed with integrative strategies. From the supply side, production and the power of substitution (on the imported soybean) of domestic soybean need to be improved. Meanwhile, from the supply chain side, there is a need for rules and control mechanisms over the existing trade system, as well as a need to improve the role of Bulog and/or Cooperative (KOPTI) in the trade system. In this regard, government intervention is necessary.

IV. CONCLUSION

Soybean is a vegetable food which is much needed and prospective. However, demand for soybean in Indonesia which has progressively increased is inversely proportional to the availability of soybean. Based on a review of some literature, some solutions are proposed in order to ensure the supply of vegetable protein, especially soybean in Indonesia, among others by increasing production and substitution power (on soybean imports) of domestic soybeans, through rules and mechanisms of control over the existing trade system, as well as increasing the role of Bulog and/or Cooperative (KOPTI) in the trade system. Institutional integrative solutions in the supply chain become important to follow up.

Furthermore, based on these proposals the role of KOPTI in the supply chain of soybean is quite significant. However, the current condition indicates that the KOPTI has a serious problem which even tends to a crisis, especially on the institutional aspects that need ongoing efforts to restore the continuity of their business or to make it more resilient to market conditions. Further research on the institutional aspects and resilience of businesses of KOPTI is required in order to provide practical solutions for the system and good business management for KOPTI so that the continuity of the business and certainty of



supply of vegetable protein in Indonesia can be guaranteed.

REFERENCES

- Abubakar M. 2008. "Kebijakan Pangan, Peran Perum Bulog dan Kesejahteraan Petani". Dalam: Agnes Aulia Dwi. Analisis Daya Saing dan Strategi Pengembangan Agribisnis Gandum Lokal di Indonesia. *Thesis*. Bogor: Fakultas Ekonomi dan Manajemen, Institut Pertanian Bogor.
- Ahahermanto. 2012. "Analisa Permintaan dan Penawaran Kedelai". Accessed 26 of July 2012: <http://ahahermanto.wordpress.com/2012/05/05/analisa.permintaan.dan.penawaran>
- Amang, B. 1996. "Ekonomi Kedelai di Indonesia". IPB Press. Bogor.
- Directorate General of P2HP, Department of Agriculture [P2HP]. 2004. "Situasi Perdagangan Internasional Kedelai". Ditjen P2HP, Jakarta.
- Directorate General of P2HP, Department of Agriculture [P2HP]. 2005. "Kebijakan Tataniaga Perdagangan Komoditas Kedelai". Ditjen P2HP, Jakarta.
- Hadi, P.U. dan B. Wiryono. 2005. "Dampak Kebijakan Proteksi terhadap Ekonomi Beras di Indonesia". *Jurnal Agro Ekonomi*, Vol. 23. No. 2. Pusat Penelitian dan Pengembangan Sosial Ekonomi Pertanian, Bogor.
- Hanafie, R. 2004. "Tingkat Konsumsi Kacang-kacangan dan Umbi-umbian sebagai Pendukung Ketahanan Pangan". Dalam: Makarim AK. *et.al*, editor: *Kinerja Pelatihan Mendukung Agribisnis Kacang-Kacangan dan Umbi-Umbian*. Bogor: Badan Penelitian dan Pengembangan Pertanian. Pp. 592-602.
- Fahma, Fakhrina, 2007, "Perancangan Model Supply Demand Kedelai sebagai Dasar Pengembangan Industri Berbasis Kedelai di Kabupaten Grobogan Jawa Tengah", *Gema Teknik*, No. 1, Tahun X
- Khuzrizal & Jamilah. 2007. "Kebijakan Tarif Impor Kedelai di Indonesia (Analisis Simulasi Historis Permintaan dan Penawaran Kedelai)", *Manajemen Akuntansi dan Bisnis*, Vol. 5, No. 3.
- Purnamasari, R. 2006. "Analisis faktor-faktor yang mempengaruhi produksi dan impor kedelai di indonesia". *Thesis*. Bogor: Fakultas Pertanian, IPB.
- Rachmawati, M. 1999. "Analisis perdagangan kedelai di indonesia". *Thesis*. Bogor: Fakultas Pertanian, IPB.
- Simatupang, P. 2003. "Analisis Kebijakan: Konsep Dasar dan Prosedur Pelaksanaan". *Jurnal Analisis Kebijakan Pertanian*. Vol. 1. No. 1. Pusat Penelitian dan Pengembangan Sosial Ekonomi Pertanian. Bogor.
- Siregar, Mahendra, 2012, "Connectivity and Infrastructure towards Sustainable Agriculture Development", presented in the National Seminar of "FEED THE WORLD" Jakarta Food Security Summit 2012
- Supadi. 2009. "Dampak Impor Kedelai Berkelanjutan terhadap ketahanan pangan", *Analisis Kebijakan Pertanian*, Vol 7, No 1, pp.87-102.