

MUNG BEAN SUPPLY CHAIN IN DEMAK REGENCY, CENTRAL JAVA

Sri Suhartini¹, Iwan Aminudin², and Elpawati³

^{1,2,3} Department of Magister of Agribusiness, Faculty of Science and Technology, UIN Syarif Hidayatullah Jakarta

Email: tini_srisuhar@yahoo.co.id

Corresponding Author

DOI: 10.15408/aj.v16i2.32128

Abstract

Mung bean production in Demak Regency is an export commodity to the Asian region, which began to be developed more than ten years ago; demand for exports is open as much as possible. Efforts to meet the demand required accuracy of quality and competitive production. For this reason, knowing the green bean supply chain is necessary. This research analyzes green beans' product, money, and information flow in the Demak Regency. Using a descriptive research method using Purpose Sampling, research respondents in 3 districts had the most significant harvest area in the last 3 (three) years. The results showed that product flow consisted of 3 streams, namely 1) P – PP – PP/D – PB and K; 2) P - PP - PB - SE and 3) P - PP - SE, financial flows, namely consumers to production input shops and Exporter Suppliers to production input shops, while the flow of information runs from downstream to upstream and from upstream to downstream from farmers to exporters and vice versa as well as from farmers to consumers.

Keywords: Supply Chain, Mung Beans, Demak District

INTRODUCTION

Green beans are agricultural products in the form of seeds and source commodity habitat value with mineral content, vitamin A, carbohydrates 62.90% and die dietary fiber, protein around 22% and f, at. The food industry needs green beans to be processed into various types of food such as bean sprouts, mung bean porridge, baby food, bakpia, drinks, tofu, snacks, and others (Purwono and Hartono, 2005). Mung bean production in Indonesia in 2012 – 2021 averaged 234.866 tons which showed a decrease of 3.57 %; the average harvest area of 201.894 ha decreased by 2.30 % and the average productivity of 11.63 ku/ha increased by 0.02 %. Along with the increase in population w, which has an impact on increasing the need for mung bean consumption, it can be seen from the Food Ingredient Balance (BKP, 2021) where domestic use of green beans during 2012 – 2021 increased by 3.57 % in average of 249,835 tons, while per capita availability (kg/year) increased by 1,66 % on average by 0.94 kg/year (Table 1). On the other hand, Indonesian green beans are in demand by foreign markets in this town, with an increase in average exports during 2012-2021 of 12.12% (Figure 1).

Table 1. Balance of Green Bean Food Stuffs

No	Year	Domestic Use (Groceries)	%	Availability per capita (kg/year)	%	Total Consumption (Thousand Tonnes/Year)	%
1	2012	257.359		1.05		257.359	
2	2013	184.908	-28.15	0.74	-29.13	184.908	(28.15)
3	2014	221.168	19,61	0.88	18.02	221.168	19,61
4	2015	245.486	11,00	0,96	9.56	245.486	11,00
5	2016	228.702	-6,84	0,88	-7,93	228.702	(6,84)
6	2017	291.529	27,47	1,12	26.08	291.529	27,47
7	2018	245.197	-15,89	0,93	-16.79	245.197	(15,86)
8	2019	240.000	-2,12	0,84	-9,50	224.206	(8,56)
9	2020	276.000	15,00	0,95	13,10	256.123	14,24
10	2021	308.000	12,06	1,06	11,58	273.526	6,79
Average		249,835	3,57	0,94	1,66	242.820	2,18

Source: BKP, Ministry of Agriculture, 2022

Demak Regency, which is the main mung bean production center in Indonesia, with an average production during 2012-2022 of 32,119 tons which experienced an increase in production of 8.90% per year, an increase in production due to an increase in average harvest area of 4,32% with an average harvest area of 24,351 ha, but this was not accompanied by an increase in productivity which decreased by 2.30 %. According to Soekartawi (2003), production factors greatly determine the size of the production obtained. According to Daniel (2011) that production factors consist of four components, namely: capital, land (agricultural land), labor, and expertise or management (management). The fulfillment of the demand for green beans is needed by managing the supply chain of agricultural products, starting from processing, distribution, and marketing to consumers (Maghfiroh and Marimin, 2011). Green bean cultivation in Demak Regency is carried out on rice fields in the Dry Season (MK) II, which starts from May to July and is harvested from August to October, so production is available for only 3 (three) months. In addition to meeting the needs in districts, between districts, and provinces, the marketing of green beans is also for export purposes to Asian countries, namely Taiwan, Cambodia, Thailand, Vietnam, Myanmar, and China. Exporters have not met foreign market demand until now. Implementing supply chain management that can provide optimal solutions for product accuracy, place accuracy, and market needs is expected to increase competitiveness for all mung bean supply chain parties. Based on this, the study aims to analyze the flow of products, money, and information flow of mung beans in Demak Regency.

RESEARCH METHODOLOGY

Location and Time of Research

The research was conducted in Demak District. Central Java. Research is limited to cultivation to marketing in the form of dry seeds. The location determination was carried out *purposively* because Demak Regency is Indonesia's largest mung bean production center, even in Central Java Province. The research time is September – November 2022. The number of supply chain actors studied was 12 people.

Data Types and Sources

The types of data collected include qualitative data. The research was conducted using primary data sources and secondary data. Primary data is data obtained directly in the form of direct observations and interviews with related parties. At the same time, secondary data are research reports, journals, the Central Statistics Agency (BPS), the Demak Regency Agriculture Office, and the Central Java Provincial Food Crop Agriculture Office.

Data Analysis

The survey method is conducting direct observations in the field and completing questionnaires through direct interviews with *stakeholders* in 3 locations, sub-districts A, B, and C. It aims to determine the distribution pattern of mung bean supply chains from producers, collecting traders, wholesalers, market traders, and exporters. Data is collected by questionnaire-guided interviews, where the questionnaire is not given directly to respondents, but researchers make questionnaires as guide questions more well-structured. The method used analyzes the mechanism of product flow, money flow, and information flow in the mung bean supply value chain of Demak Regency.

RESULTS AND DISCUSSION

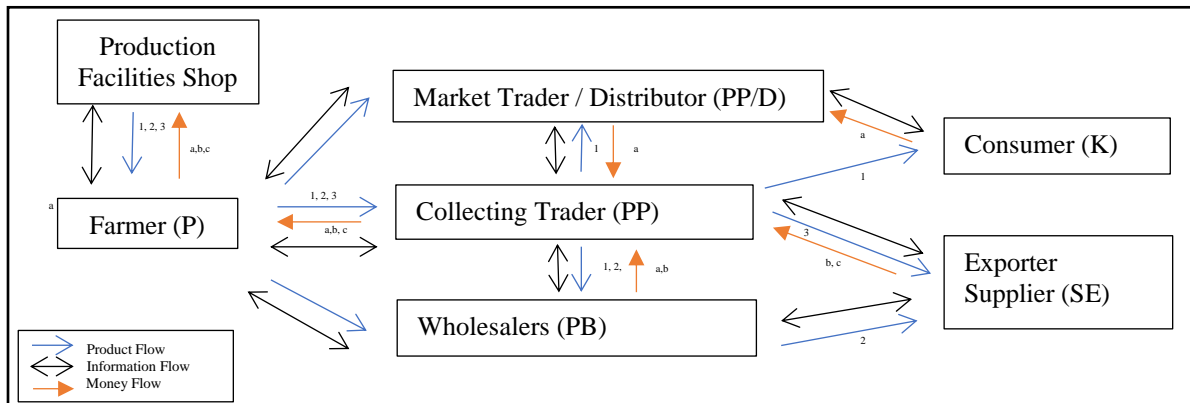


Figure 1. Supply Chain Flow Mung Bean in Demak Regency.

Supply Chain Flow in Demak Regency

A. Product Flow

The results showed that there are three networks in the product flow, namely:

- 1) Farmer – Collecting Trader – Market Trader/distributor – Wholesaler and Consumer
- 2) Farmer – Collecting Trader – Wholesaler – *Exporter Supplier*
- 3) Farmer – Collecting Trader – *Exporter Supplier*

Information:

Farmer (P); Collecting Merchant (PP); Market Trader/Distributor (PP/D); Wholesaler (PB); Consumer (K) and *Exporter Supplier (SE)*.

Hidayat (2017) that the flow of products from upstream to downstream. Collecting traders buy from mung bean farmers for IDR. 12,000 / kg, as much as 500 – 1,000 kg, is then dried in the sun and sorted to be sold to market traders/distributors for Rp. 13,000 / kg as much as 3 – 4 tons with minimal time. Collectors sell to wholesalers as much as 5 – 7 tons every three days. Collectors can also sell to exporters every two days for IDR. 13,000 – IDR. 13,300, -. Staple food traders in 3 sub-districts, namely Dempet Market, Elephant Market, and Wanasallam Market, almost no one sells mung beans, while mung beans are only in rice shops with grocery store types. Consumers who buy mung beans are generally porridge traders, vegetable traders for bean sprouts, and cottage industries for cakes. Storage for consumption at risk of spoiling quickly and easily in the sale of crops is why farmers sell all crops and only store enough for seeds. Mung bean farmers generally also do not consume mung beans every day. Bean sprouts / mung bean sprouts are processed vegetables bought at markets or vegetable vendors for consumption 2-3 times a week, while mung bean porridge is sometimes once every two weeks. During celebrations and holidays, green beans are processed into tempered.

B. Money Flow

- a) Consumers and Wholesalers – Market Traders – Collecting Traders – Farmers – Production Facilities Shops.
- b) *Supplier Exporter* – Wholesaler – Merchant Collector – Farmer – Production Facilities Shop.
- c) *Supplier Exporter* – Merchant Collector – Farmer – Production Facilities Shop.

Information:

Consumer (K) and *Exporter Supplier (SE)*. Wholesaler (PB); Market Trader/Distributor (PP/D); Collecting Traders (PP), Farmers (P); Production Facilities Shop (TS)

By Suliyanto (2010), financial flow is the movement of money from downstream to upstream. Consumers buy green beans as raw materials for making mung bean porridge, vegetables, peek, and cakes. Wholesalers also buy from market traders who buy from gatherers buy from farmers. Farmers acquire capital that is used for the purchase of means of production. Farmers of Kedondong Village, Gajah District, buy seeds at the Vima 1 variety production facilities kiosk for IDR. 32,000,-/kg.

Fertilizers and pesticides are purchased directly from the Production Facilities shop for cash. Labor costs, fertilization, maintenance, and harvesting are carried out on a direct pay basis. After agreeing on the price with the farmer, the collecting trader immediately makes a direct payment or a due payment of 1 – 3 days then paid which is preceded by a down payment. The absence of agreements in written form shows the high level of trust of farmers and collecting traders. Collecting traders sell to wholesalers, market traders, or exporters at favorable prices by paying cash directly.

C. Information Flow

Information flow is the flow from two directions: upstream to downstream and downstream to upstream. In line with Suliyanto (2010) that the flow of information in all channels runs in two directions, from downstream to upstream and upstream to downstream, which includes information on price, type of mung beans, quality (dryness, cleanliness, and size of beans), the amount of demand for mung beans, the availability of mung beans, the situation of picking and shipping mung beans. Farmers need the latest information about climatic conditions from field extension officers who obtain information from the nearest BMKG station about the upcoming mung bean cultivation weather and the right time to plant. Land conditions are from 0 m to 100 m above sea level and are generally lowland soil so that rainwater that falls is not quickly wasted. The available dams may experience silting, and official information for dam normalization is not optimal. Market mechanisms determine the development of selling prices and marketing; sometimes, selling prices change a day to 3 time (three times), generally experiencing a decrease in prices during the harvest. Information on production facilities, agricultural machinery tools, and sources of capital are also needed by farmers. Collecting traders look for information on the locations of farmers who will harvest mung beans, price developments, agricultural machinery for harvesting, means of transportation, fuel, and labor. Consideration of capital, profits, and quickly obtaining money determines marketing alternatives, among others, to market traders, wholesalers, or exporters. Market traders generally look for volume, type, and price information from collectors who have subscribed and paid after the goods are sent to the shop/stall. Wholesalers provide the latest information on the selling price of mung beans, generally seen from incoming goods (quality and volume), price developments in districts, between districts, provinces, and international prices. *Exporter suppliers* get information from *buyers* in China who demand mung beans. *Exporter suppliers* seek information and go directly to green beans to collectors, wholesalers, and even farmers to meet export demand. The criteria for exporting green beans are large size, foam skin, moisture content/dryness of < seeds 12%, and cleanness. Packaging of plain plastic bags volume 25 kg and stacked while waiting for the ship's scheduled departure contracted by the *buyer*. Shipping using containers with a capacity of 25 tons.

CONCLUSIONS AND SUGGESTIONS

The analysis shows that the mung bean supply chain in Demak Regency has product, financial, and information flows. The product flow consists of 3 streams, namely 1) P – PP – PP / D – PB and K; 2) P – PP – PB – SE and 3) P – PP – SE, financial flow, namely consumers to production facilities shops and *exporter suppliers* to stores, while information flows from downstream to upstream and from upstream to downstream from farmers to exporters and vice versa and from farmers to consumers.

The flow of mung bean products starting from farmers for cultivation during the wet-dry season (*la-Nina*) hits with the condition of rice fields that are between 0 – 100 deal can be normalized the function of water sewerage and cultivation with a surjan system using beds and planting methods tugal so that green beans successfully grow until harvest. The flow of information about prices that change every day can be managed by government agencies so that prices are stable.

REFERENCES

Anatan, Lina, Elitan, Lena, 2015. Supply Chain Management Theory and Applications. Alfabeta. Bandung.

-
- Food Security Agency. 2012 – 2019. Analysis of Food Availability of Indonesia's Food Balance, Ministry of Agriculture.
- National Standardization Agency, SNI 01-3923-1995 Green Beans.
- Central Bureau of Statistics and Pusdatin Ministry of Agriculture, 2021. Strengthening Strategic Food Data. Jakarta.
- Balitkabi R&D Ministry. 2012. <<http://balitkabi.litbang.deptan.go.id/kilas-litbang/848-petani-kacang-hijau-indonesia-tidak-kalah-dengan-petani-australia.html>.
- Balitkabi R&D 2010. Green bean production technology. <https://balitkabi.litbang.pertanian.go.id/infotek/teknologiproduksikacanghijau/>
- Demak Regency Agriculture Office. 2021. Agricultural Data Report.
- Fadhullah, AD, et al. 2018. Soybean Supply Chain Analysis at UD Adem Ayem, Pulokulon District, Grobogan Regency. Department of Agriculture, Faculty of Animal Husbandry and Agriculture UDIP Semarang. BISE: Journal of Business and Economic Education. <https://jurnal.uns.ac.id/bise>. p-ISSN 2548-8961 I e-ISSN 2548-7175 I Volume 4 Number 2 (2018).
- Marimin and Maghfiroh, N. 2010. Application of Decision-Making Techniques in Supply Chain Management. IPB Press. Bogor
- Mustakim, 2012. Intensive cultivation of green beans. New Library Press. Yogyakarta
- Purwono and Hartono, R, 2005. Green Bean Agribusiness Series. Self-help Spreader
- Rahman et al., 2019. Peanut commodity supply chain in Muna Regency. Postgraduate Halu Oleo University. Journal of Socio Agribusiness (JSA). E-ISSN:2502-3293, Volume 4, Number 1 (April 2019), Pages 33-40. <http://ojs.uho.ac.id/index.php/JSA>.