Corn margin analysis in Takalar, South Sulawesi

Andi Faisal Suddin¹, Muslimin¹, Sarintang¹
¹Assessment Institute for Agricultural Technology in South Indonesia

Email: andifaisals@yahoo.co.id

Abstract. Corn is the main crop commodity in terms of business aspects and the use of the results as raw material for food and animal feed. In Takalar district there are several patterns of corn marketing channels. This study aims to determine the pattern of corn marketing channels and the efficiency of corn marketing using margin analysis and farmers share methods. The analysis shows that there are 2 patterns of marketing channels, the first channel (farmers - village collectors - sub-district collectors - large traders - end consumers) with a total margin of Rp. 800 / kg and farmers share 78.9%, while in the second channel pattern (farmers - village collectors - large traders - end consumers) get a total margin of Rp. 750 / kg and farmers share 80.3%. The difference in margins and farmers share in the pattern of the first channel with the second channel shows that the longer the market chain, the greater the total marketing margin and the smaller the value of farmers share. For stakeholders, the results of this research can be information material for more efficient implementation of corn marketing.

1. Introduction
Corn is the main commodity in Indonesia because in addition to being the raw material of human food is also a source of animal feed and other industrial materials [1]. Corn is a puller for upstream industrial growth and drivers of downstream industry growth in agribusiness systems and enterprises [2]. The need for corn for feed industry every year continues to increase in line with the rapid development of the livestock industry [3]. During 2001 – 2006, the need for corn for feed, food, and beverages industry continued to increase by about 10 – 15% per year [4]. The need for corn in Indonesia is now large enough to be more than 10 million tons of dried shelled per year [5]. Meanwhile, domestic corn production has not been able to meet all needs, so its shortcomings are fulfilled from imported corn [6]. For 2020, predictable feed needs are estimated based on the livestock population approach of 13.36 million tons and projected feed production from the factory reached 18.64 million tons [7]. Based on [8], corn productivity in Indonesia reached 4.9 tons/ha on average. If corn productivity is assessed by province there are nine provinces which are able to achieve productivity above the national average. The nine provinces are North Sumatera, West Sumatera, Lampung, West Java, Center Java, South Kalimantan, Gorontalo, South Sulawesi, and West Sulawesi. For example, South Sulawesi’s average corn productivity reaches 5.42 tons/ha per year.

The development efforts of corn farming are always related to the network of agribusiness activities, so that the success of the growth of farming is not separated from the commodity agribusiness system itself [9]. One important factor in the development of agricultural outcomes (including corn) is marketing [10]. The marketing of agricultural products has always been a fundamental problem for farmers. Therefore, marketing becomes very important when producers/farmers will sell the harvest (corn shelled) and the price is determined by the trader or entrepreneur, while the bargaining position of the farmer is weak [11].
According to [12] competitiveness influenced by the effectiveness and efficiency of marketing channels, it can be concluded that the marketing channel plays an important role in winning the competition to market corn. To win the corn marketing competition is needed optimization of corn marketing. That is why the research about corn marketing needs to be done. This research conducted to knowing the various patterns of corn marketing, knowing the margin and farmers share from corn marketing, knowing the efficiency of various channels of corn marketing.

2. Method

2.1. Basic method
This research was conducted using survey technique, which is the way of data collection by taking a number of samples from the population and using questionnaires that contains the list of questions as a tool to collect the basic data [13]. The type of data collected was primary data by the survey of 30 corn farmer respondents. For a marketing agency respondents were selected 10 respondents of corn traders consisting of 5 village collectors, 3 subdistrict collectors and 2 large traders. The recruitment of marketing agencies is determined by the snow ball sampling method. With this method the corn commodity flow from farmers to consumers can be known so that the chain of corn marketing that formed can be identified in real time [14]. Secondary Data was obtained from the literature study and BPS.

2.2. Location Determination Method
The research location was conducted with purposive, based on certain considerations in accordance with research objectives [15]. Takalar district was chosen as research location because it is one of the production centers in Sulawesi Selatan. Data collection starts from April to May 2019.

2.3. Data Analysis
The obtained data were tabulated first last manually process, then described and analyzed with suitable analysis method.

2.4. Marketing margin analysis. The marketing margin can be formulated as [16]:
\[ M_i = P_{ji} - P_{bi} \]
\[ M_i = C_i + \pi_i \]
\[ P_{ji} - P_{bi} = C_i + \pi_i \]
From the equation, acquired a new equation that formulates the profit of the marketing agency in level-i like the following:
\[ \pi_i = P_{ji} - P_{bi} - C_i \]
while the total marketing margin is:
\[ MT = \Sigma M_i \]

Descriptions:
- \( M_i \) = Marketing margin at agency level-i
- \( P_{ji} \) = Sales price for marketing agency at level-i
- \( P_{bi} \) = Purchase price for marketing agency at-i
- \( C_i \) = Cost of marketing agency at level-i
- \( \pi_i \) = Profit of marketing agency at level-i
- \( MT \) = Total Margin
  \[ i = 1, 2, 3, \ldots, n \]

2.5. Farmers share analysis. Farmer’s share can be formulated as [17]:
\[ Fs = \frac{\Sigma \pi_i}{\Sigma \pi_i} \times 100\% \]

Descriptions:
- \( Fs \) = Farmer’s share
- \( Pf \) = Price at farmer level
- \( Pr \) = Price paid by end consumer
3. Results and Discussion

3.1. Marketing channels.
The marketing channel system is a group of specific marketing channels used by the company and decisions about this system is one of the most important decisions faced by management. The main role of marketing channels is turning potential buyers into profitable customers, not only serving the market but must form a market. The corn marketing process up to the end consumer involves several marketing agencies, i.e. the person or institution involved in the corn marketing. In this marketing process corn is marketed as a shelled corn. From the research conducted in Takalar district there are two marketing channels done by the marketing agency. It is similar to the research of [18] in Donggala with just two marketing channels dan research found three marketing channels also [19] even found five marketing channels. More details, the marketing channel pattern in Takalar can be seen in Figure 1.

![Figure 1](image_url)

**Figure 1.** Corn marketing channel in Takalar Regency

Figure 1 showed that the first channel consists of Farmer – Village Collector – Big Trader – End Consumer, the second channel involves farmer – village collector – district collector – big trader – end consumer. During research found there are 20% of farmers use the first channel type to supply corn, 80% of farmers use the second one. So farmers still tend to use a marketing channel involving PPD and PB as marketing agencies to be distributed to the end consumer.

3.2. Marketing cost
Marketing costs are derived from the marketing activities of each marketing institution. The number of marketing costs differs from one another due to the marketing location, the wide range of marketing institutions and marketing effectiveness. The components of marketing costs include transportation costs, storage cost, processing cost. Marketing cost is presented in Table 1.
Table 1. Marketing cost of corn marketing in Takalar

| No | Marketing Cost   | Cost of Each Agent |   |   |   |
|----|-----------------|--------------------|---|---|---|
|    |                 | PPD                | PPK| PB|   |
| 1  | Transport       | - Transport personnel 30 | 10 | 10 |
|    |                 | - Bag              | 30 | 30 | 30 |
|    |                 | - Transportation   | 70 | 90 | 90 |
| 2  | Storage         | - Warehouse Fee    | 5  | 10 | 10 |
| 3  | Process         | - Drying           | 15 | 20 | 20 |
|    |                 | - Sorting          | -  | -  | 5  |
|    |                 | - Shrinkage        | 15 | 15 | 15 |
|    |                 | Total              | 165| 175| 180|
|    | Source: Primary Data |

3.3. Marketing margin

The indicator marketing margin was analyzed to find out the difference in income received by each marketing agent in distributing the product to the end customer, also to find out the product price different received by the end customer and price received by the producers. The amount of total marketing margin obtained from total marketing margin on each marketing channel. [20] said that the marketing margin is the difference between the price paid by the consumer (purchase price) with prices received by farmers (selling price). The marketing margin reflects the costs incurred by each marketing channel and the profits that each marketing channel gains in response to the contributions given. The amount of marketing margin differs between each marketing institution because every marketing institution performs different marketing activities or functions. The recapitulation of the marketing margin of corn in Takalar can be seen in Table 2.

Table 2 shows that the biggest total marketing margin is on the first channel, namely Rp. 800/Kg. The channel has a longer chain or marketing channel in distributing corn from farmers to consumers. While the channel with the smallest total marketing margin is in the second channel is Rp. 750Kg. The second channel only involves farmers, village collectors and large traders before the corn to the end consumer i.e. livestock feed companies, so the second channel has shorter channels and smaller marketing margins Compared to the first channel. According to a study conducted by [21], indicating that the longer the marketing channel is the greater the marketing margin.

The highest Total marketing cost on corn marketing channels is borne by the first channel. This is because in the distribution process involves many marketing institutions, so that the resulting channel is quite long. The smallest Total cost of marketing on the second channel is Rp. 345/Kg. Low marketing costs are due to close distribution distances and not through many marketing institutes (short marketing channels).
Table 2. Marketing margin of corn marketing channels in Takalar

| No | Participants | Marketing Channel | 1   | 2   |
|----|--------------|-------------------|-----|-----|
|    |              |                   | 3,000 | 3,050 |
| 1  | Farmer       | Selling Price     | 3250 | 3,400 |
| 2  | PPD          | Purchase Price    | 165  | 165  |
|    |              | Selling Price     | 95   | 185  |
|    |              | Profit            | 250  | 350  |
| 3  | PPK          | Purchase Price    | 3250 | 3,500 |
|    |              | Selling Price     | 175  | 400  |
|    |              | Cost (Rp/Kg)      | 75   | 220  |
|    |              | Profit            | 250  | 400  |
| 4  | PB           | Purchase Price    | 3500 | 3,400 |
|    |              | Selling Price     | 3800 | 3,800 |
|    |              | Cost (Rp/Kg)      | 180  | 180  |
|    |              | Profit            | 120  | 220  |
|    |              | Margin            | 300  | 400  |
|    |              | Total Marketing Cost | 520 | 435 |
|    |              | Total Profit      | 280  | 405  |
|    |              | Total Margin      | 800  | 750  |

Source: Primary Data

The biggest marketing advantage is on the second marketing channel is Rp405/Kg. The amount of profit is caused by in the second marketing channel, the big traders buy directly to farmers without passing through the collector.

3.4. Farmer's Share

Farmer’s share is a marketing indicator other than the marketing margin. This indicator measures how large the corn farmer receives in response to the contributions made to the end of the corn sale price on a marketing channel. The value of the farmer's share that increasingly reflects the increasingly efficient marketing channels. The value of farmer's share is contrary to the value of marketing margins. The greater the value of the farmer's share, the smaller the value of the marketing margin. [22] Explain if any of the marketing actors involved in the marketing of corn can result in the price of corn at the farmer level is lower. Farmer share in this study calculated based on the final selling price of corn and its divisions are equal to channel division in the analysis of the marketing margin. Farmer's share received by corn farmers on the marketing channels of corn in Takalar can be seen in Table 3.
Table 3. Farmer’s share of corn marketing channel in Takalar

| No | Channel | Farmer’s Selling Price | Selling Price | Farmer Share |
|----|---------|------------------------|---------------|--------------|
|    |         | (Rp/Kg)                | (Rp/Kg)       | (%)          |
| 1  | Channel 1 | 3000                  | 3800          | 78.9         |
| 2  | Channel 2 | 3050                  | 3800          | 80.3         |

Source: Primary Data

According to Table 3 it appears that the second marketing channel has the highest efficiency value compared to the first channel because the second channel has the highest share (80.3%). Farmers on the second channel only passed two traders to distribute their products to livestock feed company so the marketing costs will be lower than the first channel. The lowest Farmer share is on the first channel (78.9%), since the channel engages many intermediaries. Farmers share value earned on both marketing channels (channel I and 2) in Takalar is high (78.9% and 80.3%). This value is above the value obtained by Corn farmer in West Pasaman district which only reaches 69% [23]. According to [24] When in marketing channels the part received by farmers from the price paid by consumers (farmers share) is high and marketing channels with low marketing costs and marketing margins, it will be the most efficient marketing channel. [25] stated that the marketing of corn walked quite efficiently seen from the share of the price received by farmers relatively large (76.92%) and each marketing agency acquires a logical benefit in accordance with its role.

4. Conclusion
Based on the results of studies that have been done then it can be taken several conclusions as follows:
1. There are two patterns of corn marketing channels in Takalar, The first marketing channel is from Farmer – Village Collector – District Collector - Big Trader – End Consume (feed manufacture). The second one is form farmer to village collector – big trader – end consumer.
2. The greater the total marketing margin, the less efficient marketing because many parties involved.
3. The second marketing channel is more efficient than the first channel because the second channel has a higher farmer's share where the higher the farmer share value the smaller the marketing margin.

References
[1] Kurniati, D. 2012. Analisis risiko produksi dan faktor-faktor yang mempengaruhiya pada usahatani jagung (Zea Mays L.) di Kecamatan Mempawah Hulu Kabupaten Landak. Jurnal Sosial Ekonomi Pertanian. Vol. 1(3): 60 – 68, Desember 2012.
[2] Dirjen Tanaman Pangan. 2012. Laporan Akuntabilitas Kinerja Instansi Dirjen Tanaman Pangan Tahun 2012. Jakarta (ID).
[3] Rachman, B. 2003. Perdagangan internasional Komoditas Jagung dalam Kasrino et al. (Eds). Ekonomi Jagung Indonesia. Badan Litbang Pertanian. Jakarta.
[4] Zubachtirodin, Pabbage MS, Subandi. 2007. Wilayah produksi dan potensi pengembangan jagung. Dalam: Dalam: Sumarno, Suyamto, Widjono A, Hermanto, Kasim H, editors. Jagung: Teknik Produksi dan Pengembangan. Bogor (ID): Pusat Penelitian dan Pengembangan Tanaman Pangan. hlm. 462–473.
[5] Khalik, R. S. 2010. Diservikasi konsumsi pangan di indonesia:antar harapan dan kenyataan. Pusat analisis sosial ekonomi dan kebijakan pertanian. Bogor
[6] Tamburian, Yenny 2010. Kajian Usahatani Jagung Di Lahan Sawah Setelah Padi Melalui Pendekatan PTT Di Kabupaten Bolmong Sulawesi Utara. Jurnal. Balai Pengkajian Teknologi Pertanian Sulawesi Utara.

[7] Swastika DKS, Agustian A, Sudaryanto T. 2011. Analisis senjang penawaran dan permintaan jagung pakan dengan pendekatan sinkronisasi sentra produksi, pabrik pakan dan populasi ternak di Indonesia. Informatika Pertanian. 20(2): 65–75.

[8] [BPS] Badan Pusat Statistik. 2017. Statistik Indonesia 2016. Jakarta (ID): Badan Pusat Statistik.

[9] Winarso, B. 2012. Prospek dan kendala pengembangan agribisnis jagung di Provinsi Nusa Tenggara Barat. Jurnal Penelitian Pertanian Terapan. Vol. 12(2): 103 – 114.

[10] Kotler P, Armstrong G. 2006. Prinsip-prinsip pemasaran. Jakarta (ID): Erlangga

[11] Widiastuti N, Harisudin M. 2013. Saluran dan marjin pemasaran jagung di Kabupaten Grobogan. SEPA. 9(2): 231–240.

[12] Morgan, W.S., dan Lestari A.S. 2004. Improving Indonesian VegeTable Supply Chains. Denpasar: ACIAR.

[13] Singarimbun, M. dan Efendi, S. 2006. Metode Penelitian Survei. LP3ES, Jakarta

[14] Irianto, H dan Mardikanto, T. 2011. Metoda Penelitian dan Evaluasi Agribisnis. Jurusan/Program Studi Agribisnis Fakultas Pertanian UNS.

[15] Asmarantaka R.W, 2012. Pemasaran Agribisnis (Agrimarketing). Bogor (ID) : Institut Pertanian Bogor.

[16] Sudiyono. 2002. Pemasaran Pertanian. UMM Press. Malang.

[17] Cristoporus, Sulaeman. 2009. Analisis produksi dan pemasaran jagung di Desa Labuan Toposo, Kecamatan Tawaeli, Kabupaten Donggala. J Agroland. 16(2): 141–147.

[18] Hadjiah A.D. 2009. Identifikasi Kinerja Usahatani Dan Pemasaran Jagung di Nusa Tenggara Barat. Prosiding Seminar Nasional Serealia 2009 ISBN: 978-979-8940-27-9.

[19] Bakar, A dan Jamilah. 2007. Analisis Kinerja Pasar pada Pemasaran Jagung. Jurnal Eksekutif. Volume 4, Nomor 3, Desember 2007;

[20] Swastha, B., 2002. Manajemen Pemasaran Modern; Yogyakarta: BPFE.

[21] Sujarwo, Anindita, R., Pratiwi, T.I., 2011. Analisis Efisiensi Pemasaran Jagung (Zea mays L.) (Studi Kasus di Desa Segunung, Kecamatan Dlanggu, Kabupaten Mojokerto). Jurnal Agrise. Vol. XI. No. 1. Hal: 56-64.

[22] Sunanto, Sahardti. 2008. Analisis pemasaran jagung dan daya beli petani di Kabupaten Takalar Sulawesi Selatan. JPPTP. 11(1):1–10.

[23] Ali, M. 2009. Pemasaran Jagung di Kabupaten Pasaman. Jurnal Ilmiah Tambua. Vol VIII No 3, September-Desember 2009, hal 408-412

[24] Ramkumar. 2001. Costs and Margin in Coconut Marketing: Some Evidence from Kerala. Indian Journal of Agriculture Economic 56 (4): 668-682.

[25] Sudrajat J, Mulyo JH, Hartono S, Subejo. 2014. Analisis efisiensi dan kelembagaan pemasaran jagung di Kabupaten Bengkayang. J Soc Econ Agr. 3(1):14–23.