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## An Exploration on Corn Industry Marketing Channels

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### **ABSTRACT**

This study was focus on the marketing margin analysis to deal with issues in relation to the marketing of corn produce in Terengganu. The price change in corn is the main problem in providing reasonable price to both farmers and consumers of products. The held up payment by the commission agents, rather high transportation cost to middleman and lack of education on definite marketing condition gave problems to the farmers in marketing their produce. The farmer suffered from high cost in corn production, while getting low economic return for their produce when the other members in the channel got higher profit. For this purpose this study had been conducted at all the districts of Terengganu and focusing the main location of corn production which is the Kuala Berang area. The data collected for this study were cost of production and net marketing margin of corn industry. The marketing margin analysis is used to interpret the data. The main factors that affects marketing margin in corn industry were marketing cost and the cost of production faced by the farmers. There were three channels that are involved in corn industry. The extent of price transmission among the different levels of the corn marketing chain in Terengganu had been studied during the survey, which had shown retailers as the main share contributor in the profit margin of corn.

**Keywords:** Marketing margin, marketing channels, corn industry, farmers

### **ABSTRAK**

Kajian ini bertumpu untuk menganalisis margin pemasaran jagung berkaitan dengan isu-isu pemasaran hasil jagung di Terengganu. Perubahan harga jagung ialah masalah utama dalam menentukan harga yang berpatutan kepada kedua-dua pekebun dan pengguna untuk mendapatkan produk. Pembayaran pengangkutan

yang mahal serta kekurangan pengetahuan dalam unsur pemasaran merupakan masalah utama kepada petani untuk memasarkan hasil jagung mereka. Petani mengalami kos tinggi dalam proses pengeluaran jagung serta pulangan ekonomi yang rendah, manakala ahli-ahli yang lain di saluran memperoleh keuntungan yang lebih tinggi berbanding dengan petani. Untuk tujuan ini, kajian telah dijalankan di semua kawasan di Terengganu dengan penumpuan kepada kawasan Kuala Berang yang dikenalpasti sebagai kawasan penanaman utama jagung. Data yang dikumpul untuk kajian ini ialah margin pemasaran serta kos pengeluaran dan margin pemasaran bersih. Analisis margin pemasaran telah digunakan untuk mentafsirkan data. Faktor utama yang menjejaskan margin pemasaran pada industri jagung ialah kos pemasaran dan kos pengeluaran yang dihadapi oleh pekebun. Telah dikenalpasti tiga saluran dalam industri jagung. Takat transmisi harga antara pelbagai tahap rangkaian pemasaran jagung di Terengganu semasa tinjauan, telah menunjukkan peruncit sebagai penyumbang utama saham di dalam margin keuntungan jagung.

**Kata kunci:** Margin pemasaran, saluran pemasaran, industri jagung, petani

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## INTRODUCTION

The corn industry in the state of Terengganu, Malaysia, faces many problems that had led to lower corn production making it difficult to fulfill customers' demands. The main problems faced by the corn farmers in Terengganu are occurrence of disease, high cost of fertilizers and pesticides which are often of substandard quality and also an inefficient marketing system (DOA Officer Personal Communication). Torrential rains during the monsoon season often destroy the production of corn especially in the district of Hulu Terengganu. Furthermore, late payment by commission agents, the high transportation costs and the lack of knowledge in marketing; exist as major constraints for the corn farmers in production and marketing. Huge price fluctuations lead to difficulties in securing reasonable prices for both farmers and consumers. There is thus, a pressing need for the Terengganu corn farmers to sell their produce at a good price as well as improving the efficiency and lowering the cost of distribution in the existing corn marketing system.

The state of Terengganu covers a total area of 1,297,377.00 hectares, out of which about 358,193.00 hectares are deemed suitable for agricultural practices (DOA, 2009). From the data that was gathered from the Terengganu Department of Agriculture (DOA), the total planting area for corn in Terengganu in the year of 2010 was about 407.91 hectares which has the total production area of about 398.59 hectares. Seven districts in Terengganu are involved in the production of corn: these are Hulu Terengganu, Besut, Kemaman, Kuala Terengganu, Setiu, Dungun and Marang. The total corn production area are about 222.00 hectares in

Hulu Terengganu, 36.25 hectares in Kemaman, 30.70 hectares in Dungun, 10.40 hectares in Setiu, 34.80 hectares in Besut, 15.00 hectares in Marang and 11.90 hectares in Kuala Terengganu. Hulu Terengganu is therefore the major corn production area in Terengganu (Table 1).

Table 1. Corn planting and production area in Terengganu.

Area	Year			
	2009		2010	
	Planted	Production	Planted	Production
Hulu Terengganu	116.93	16.00	222.00	215.17
Besut	17.10	1.20	34.80	33.50
Kemaman	30.15	20.93	36.25	35.00
Kuala Terengganu	4.60	1.00	11.90	10.60
Setiu	5.80	5.40	10.40	9.60
Dungun	13.30	6.00	30.70	29.87
Marang	15.00	2.10	66.13	64.85
Total area	202.88	52.63	407.91	398.59

Source: Department of Agriculture (2011).

There is an urgent need for least expensive marketing systems for the corn industry in Terengganu. It is necessary to enable the producers to sell their product at reasonable price and consumers to buy their needs at minimum cost (Maqbool *et al.*, 2005). Mendoza (1995) reported that when there are price variations at all market levels, the marketing margins become larger due to increases in the value-added by the marketing system. Wohlgenant (2005) indicated that the margin is influenced primarily by shifts in retail demand, farm supply and marketing inputs prices, and equal weight given to time lags in supply and demand, market power, risk, technical change, quality and spatial considerations. For decades, many studies looked into marketing channels of vegetables, poultry, meat and eggs and also to estimate their marketing problems (Parkhurst, 1967; Hussain, 1982; Walters *et al.*, 1987; Sugiyama, 1989; Rasool, 1991; Zahid, 1994; Kumar & Mahalati, 2000; Khalid *et al.*, 2001; Emam, 2011).

Marketing margins are important to be studied as they serve as indicators of the trend in cost, profit and services given by the farmers and marketing channels. The margin is the difference between what the consumers paid for the product and what the farmers received. The margin must cover the costs involved during transferring product from one stage to the next stage and provides a reasonable return for those that are doing the marketing. The price that consumers paid for the product is made up of the amount of money paid for the farmers for the product with all the costs involved during the processing and marketing.

This study focused on the marketing margin analysis to deal with issues in relation to the marketing of corn produce in Terengganu. For this purpose, the

study was conducted at the main locations for corn production in Terengganu which are at Kuala Berang in the district of Hulu Terengganu, and Alor Ketitir in Marang district. The data for this study consists of cost distribution and net margins involved during marketing of corn from farmers (producers) to the final consumer.

## **METHODOLOGY**

The data was collected using primary and secondary data. The primary data for this study was from the focus group discussions (FGD) involving interviews with officers from the Department of Agriculture (DOA), Federal Agricultural Marketing Agency (FAMA), Farmer's Organization Authority of Malaysia (LPP) and the Terengganu Agricultural Development Center (TADC). The primary data was collected by conducting face to face interviews with farmers from different locations in Terengganu.

The secondary data were collected by searching the internet, unpublished data, journals, E-books and theses. The marketing margin study focuses on the information and analysis on marketing costs and margins, factors that are giving high influence for price and the state of market competitions for corn in Terengganu.

The data sources include the Department of Agriculture (DOA), Federal Agricultural Marketing Agency (FAMA), Farmer's Organization Authority of Malaysia (LPP) and the Terengganu Agricultural Development Center (TADC). Most of the data and analysis that had been carried out to calculate costs and margins in this study were from direct interviews with DOA and FAMA officials. The total cost of production data of the corn farmers for each one hectare area per one corn planting season was given by DOA. The corn price data were obtained from FAMA for a ten month period in Terengganu. The pricing data was for three marketing channels; which were farmer, middleman 2 and retailer and FAMA as the middleman 1. Corn prices of different marketing channels were collected (producer, wholesalers, retailers and middleman) during the time frame including their cost of production or costs involved during marketing the corn to the customers. Cost of production for corn will be included for the calculation of marketing margin.

For data analysis, the primary price data collected during interviews with the farmers and agriculture officers were used to calculate marketing margin and cost of production involved during the process.

The marketing margin analysis and marketing efficiency analysis used in this study of the Terengganu corn industry was based on the method used by Emam (2011), whereby the marketing margin analysis was used to estimate the margin in terms of revenue and profit in the corn industry.

The Marketing margin can be estimated as Selling Price – Cost Price. The Net marketing margin = Marketing margin – marketing cost. Net Marketing Margin for

Wholesaler = Wholesale marketing margin – Wholesale marketing cost. Net Marketing Margin for Retailer = Retailer marketing margin – Retailer marketing cost.

## RESULTS AND DISCUSSION

In the Terengganu corn industry, there were different chains through which the corn produce move from farmers to the final consumer. The middleman was a person that buys the product in large quantities without any written agreement with the farmers and then sells it to the retailers or directly to the consumers. The retailers were people from different locations that buy the product to sell them to meet the consumer preference. Sometimes farmers sold their corn directly to the consumers. The analyses from this study show the most dominant marketing channel in Terengganu. There were three types of marketing chain for corn in Terengganu, as below:

1. Farmers → consumers
2. Farmers → middleman → retailer → consumers
3. Farmers → middleman 1 → middleman 2 → retailer → consumers

The first channel was where farmers are selling their corn products directly to consumers without going through any intermediaries. By this channel, the farmer obtained higher profit as compared to selling their products through intermediaries. This happened because the farmer can sell their corn at a higher price to the consumer. Through this channel, farmers can get more profit with the same cost of production as compared with selling it to the middleman. The consumer will still get the same price as retailer or maybe less, by getting the product directly from farmers. However, through this channel the farmer will need to cover the cost of transportation. This type of channel can only be practiced when not much corn is produced during that particular season. This is because corn that is harvested need to be sold within a short period of time to avoid weltering and spoilage. As corn is a bulky product, farmers usually need to sell it to middlemen because they cannot manage to sell it on their own within the given time.

The second marketing channel was mostly practiced by farmers in Terengganu. Farmers will sell their corn to the middleman who then sells it to the retailer. The retailer will then sell the corn to the consumer either in raw or processed form. This channel yields for the retailer a higher profit than other parties in the channel because the retailer does not need to pay for any costs during the selling of the corn to the consumer. The majority of retailers have their own stalls to sell their products without any need to hire additional workers to work for them. This channel was also preferred by the farmers themselves because they can get a higher selling price as compared to selling their produce through FAMA (the

third channel), as mentioned by the farmers at Kuala Berang during personal interview with them.

For the third channel, farmers sell their corn to FAMA which acts as the first middleman. FAMA then sells the corn to a second middleman which then sells to the retailer before the produce finally reaches the consumer. Through this channel, both middleman 2 and the retailer got higher margins than the farmer and FAMA itself. FAMA acts as the Government agency that helps the farmer to market their product. However, there was no perceivable difference with the assistance of FAMA to the farmers because farmers still obtain the lowest margin among all parties in this channel. Moreover, the profit obtained by farmers in this channel was lower as compared to the second channel in which only one middleman is involved. Problems also arise when farmers sell their produce to FAMA, such as delays in payment which is one of the main reasons why the Terengganu corn farmers are reluctant to sell their produce to FAMA. The prices in which they sell their corn to FAMA were also lower than the price that other middlemen are willing to pay.

However, FAMA plays an important role to stabilize the market price for corn. Without the interference of FAMA in marketing the produce, the middlemen may suppress the farmers to sell their produce to them at a much lower price; the farmers will then have no choice but to sell their product even though they are not getting a reasonable price.

The survey found that in the Kuala Berang area where the corn production was higher, the price of corn that the farmer sells directly to consumers was based on grade; grade A corn was sold for RM 2.00, grade B for RM 1.50 and grade C for RM 1.00 each. This price is a big difference from the price they obtained from the middleman which was RM 0.80 for grade A, RM 0.60 for grade B and grade C for RM 0.40 each (Table 2).

Table 2. The buying price through the various marketing channels.

Marketing channel	Buying price (RM)		
	Grade of corn		
	A	B	C
F → Consumer	RM2.00	RM1.50	RM1.00
F → Middleman	RM0.80	RM0.60	RM0.40
M → Retailer	RM1.10	RM1.00	RM0.80
R → Consumer	RM1.70	RM1.43	RM1.25

Note: RM = Malaysian ringgit, F = farmers, M = middleman, R = retailer.

From direct interviews with the farmers in Kuala Berang, they sold their corn to a middleman which then resold the corn to small retailers in Pasir Puteh, Marang. The middleman was selling corn to the retailers at net price after deducting the cost involved which is mainly for transportation and labour (Table 3). The cost for transport was RM 60.00 for one trip and each worker was paid RM 50.00. For a single trip in which the total corn bought was about 5,000, the cost for the corn itself would be RM 4,000.00. When taking into account the transportation and labour cost of RM 160.00 (two workers), the price of corn will become RM 4,750.00, whereby each corn would be sold at RM 0.15 more than the buying price. Deducting the cost involved for transportation and labour, the total profit earned by the middleman was RM 590.00 for each trip, where 5,000 corns were bought and sold (Table 4). However, this cost estimation and selling price was not fixed since there will be changes in the cost of transportation and labour when the total corn bought was less than 5,000 in one trip. The middleman will then have to increase the selling price to the retailer to cover the additional cost incurred.

Table 3. Costs involved for the middleman.

Type of expenditure	Cost involved	Total
Labour	RM50.00 × 2	RM100.00
Transport	RM60.00	
Total	RM160.00	RM160.00

Note: RM is Malaysian ringgit.

Table 4. Price transmission.

Type of expenditure	Cost involved	Total
Selling price (5,000 corns)	RM4,750.00	
Price addition on each corn sold	RM0.15 × 5000	RM750.00
Profit	RM750.00 - RM160.00	RM590.00

Note: RM is Malaysian ringgit.

The middleman sold corn to retailers in sacks which are sold at a constant price of RM 100.00 for each sack. However, each sack will have different quantities of corn depending on the corn grade. The sack containing grade A corn will have 90 corns per sack, grade B corn will have 100 corns per sack whereas grade C corn were sold with mixed size and volume. The pricing given for grade A corn was RM 1.11, grade B was RM 1.00 and grade C was RM 0.80 each (Table 2).

The price which retailers sold corn to consumers (Table 2) depended on the way the corn was processed. Fresh corn was sold for about RM 10.00 for 6 to 8 corns, depending on their size. For grade A corn, the price was about RM 1.70

each, grade B was RM 1.43 and grade C was RM 1.25. Stem corn was sold for RM 2.50 each.

The floor price given by FAMA to farmers at Kuala Berang, Terengganu was RM 0.45 for each corn which is 10% to 15% more than cost of production for each corn (Table 5).

Table 5. The price of corn for farmers, middlemen and retailers in Terengganu

Level	Price
Farmers → FAMA	RM 0.45
FAMA → Middleman	RM 0.80
Middleman → Retailer	RM 1.20

The total cost of production was slightly different for different areas of production. In Kuala Berang, Hulu Terengganu, the soil type was peat soil whereas in Alor Ketitir, Marang, the soil type was BRIS (Beach Ridges Interspersed with Swales) soil. The different soil types will lead to differences in fertilizer usage. For the BRIS soil in Alor Ketitir, repeated fertilizer application albeit in small amounts, is needed because this type of soil leaches easily when compared to peat soil found in Kuala Berang. For peat soil, fertilizer application is usually in bulk and less frequently, depending on the growth stage of the crop. However, BRIS soil requires more labour cost due to the requirement of frequent fertilizer application. Thus, the cost of production in BRIS soil did not differ much when comparing with the cost in peat soil.

The cost of production for farmers as given by the DOA officer at Alor Ketitir, Marang, was RM 3,745.00 per hectare for one planting season (three months) such as shown in Table 6.

The floor price given by DOA was RM 0.38 per each corn which was also the cost of production for each corn. This price was to prepare the farmers for any disease outbreaks and also to factor in any advantage-taking by middlemen (Table 6). In addition, the DOA at Alor Ketitir also gave an incentive to the farmer in the form of RM 0.17 for each corn sold, thereby making the lowest price that the farmer will obtain was RM 0.55 for each corn. The usual selling price was between RM 0.60 to RM 0.80 depending on the corn grade.



Table 6. Cost of production in one hectare of one planting season.

Type of cost		Total
<b>Fixed Cost</b>		
a. Germination tray (240)	RM2.50	RM600.00
b. Fertilizer Urea (4 bags of 50kg)	RM85.00	RM340.00
c. 12:12:17+TE (6 bags of 50kg)	RM125.00	RM750.00
d. Seed (7 bags of 3.5kg/ha)	RM130.00	RM455.00
e. Tillage		RM350.00
Total		RM2,495.00
<b>Variable Cost</b>		
a. Labor (30 man/ days) RM25.00/day	RM250.00	RM750.00
b. Diesel		RM500.00
c. Weedicide, Pesticide and Insecticide		(if outbreak; may add 100% or less than this)
Total		RM1,250.00
Total Cost		RM3,745.00

Note: Planting density: 1.5ft x 3ft, one hectare: 23,700 trees, total return: 18,000 corns. RM = Malaysian ringgit.

Source: Department of Agriculture (2011).

## CONCLUSION

This study revealed that there were three main marketing channels for the corn industry in the state of Terengganu. The marketing cost margin was the main factor that affected the marketing margin. Farmers obtained the lowest margin and profit in all three marketing channels whereas the consumers had to pay a higher price for their produce.

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