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MEASURING THE EFFICIENCY AND THE MARKETING MARGINS WITHIN THE VALUE CHAIN OF THE POTATO CROP OF THE SPRING SEASON OF 2018

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Abstract

The margins and marketing efficiency are the most important indicators of the performance of the marketing process within the production and marketing loops of the value chain of the potato crop in the province of Baghdad the study area. So the study included estimating and measuring each of them, and calculating and identifying some other indicators associated with them. The study found that the share of intermediaries (Wholesale and retail) reached (60.423%), and the share of the producer of consumer dinars reached (39.577%). The players in the production and marketing loops within the value chain of this crop achieved higher profits compared to the profits achieved by the potato producers. The profits of the producer, the wholesaler and the retailer reached about (150.029, 45.794, 221.377) dinars /kg respectively. The absolute marketing margin between the retail price and the producer price reached (584.367) dinars /kg, and the relative marketing margin between the retail price and the producer price is high and has reached (60.423%). This means that the (60.423%) of the consumer dinars that paid to get one kilogram of potatoes go as a profit to the intermediaries. The marketing efficiency was also measured the poor performance of the marketing system of potato crop has been shown along the marketing loop which pass by. The marketing efficiency was measured according to the first formula, which includes marketing and productivity costs about (35.360%), while the marketing efficiency according to the second formula which includes marketing margin and production costs about (24.974%). The marketing efficiency of the potato crop is generally low according to the two formulas mentioned. The study showed that the farm prices of the potato crop are low, especially during peak production times due to the lack of accurate marketing services and information. The players and the stakeholders of the marketing loop within the value chain of the potato crop are multiple under different titles and names, and various task and there is a weakness in achieving the linkage between the producer and the consumer. The study recommended the activation of the role of cooperative organization to help reduce the marketing margin between the producer and the retailer, and to reduce the number of intermediaries in order to compress costs and marketing profits, and determine the marketing margin, to raise marketing efficiency and improve the performance of the marketing.

Key words: marketing efficiency, marketing margins, value chain, production costs, marketing costs.

Introduction

Potato is economically important tubers crops, and it is the fourth best food crop grown after wheat, rice and maize in the world (Khan & Akhtar, 2006). Today, it has become a major food staple, where some have called it the second bread, making many food products, such as potato chips and others (Moussalli, 2000). Fresh tubers contain a percentage of water and dry matter, which contain a percentage of protein, starch, sugar, ash, fat and fiber. As for vitamins, potato is poor in vitamins such as vitamin A, B1, B2 and rich in vitamin C (Al-Mohammadi & Al-Mishal, 1989). FAO estimates that the world produced about 314.38 million tons of potatoes and consumed 218.13 million tons as food in 2005. Asia alone consumes about half of the world's potato supply (FAO, 2008). Potato is grown in Iraq with spring and autumn seasons and are concentrated in the provinces (Baghdad, Nineveh and Anbar). The potato crop in Iraq suffers from severe fluctuations in the cultivated area and a decrease in its productivity (Al- Sunbol, 2014).

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According to a report by the Central Bureau of Statistics (CBS), the average yield per *dunum of potato crop for the spring and autumn seasons of 2018 was (6744.4) kg /dunum on the basis of planted area, a decrease of (2.8%) for the season of 2017. The total production of potato for the tow seasons in 2018 was (165.6) thousand tons, a decrease of (37.9%) compared to the year 2017, which is (266.8) thousand tons. The total cultivated area of the crop for the tow seasons was (24.6) thousand dunums, a decline of (36.1%) compared to the year 2017, which cultivated area was estimated at (38.4) thousand dunums (Ministry of Planning, CSO, 2018). Production and marketing costs are important and essential issue for producers in general. As their production and marketing decisions depend largely on these costs levels. The study of production and marketing costs is an important indicator that can be relied on in developing realistic and studied prices for both the producer and the final consumer (Al-Saidi & Ahmed, 2015). The marketing loop is important and represents the connection loop between the production loop of potato growers and the consumption loop. The marketing loop which is one of the value chain loops, is represented in two loops (the wholesalers loop and the retail loop), which are sub-loops in the value chain, The importance of the study in terms of food and economic importance of the potato crop locally and internationally, as well as finding a balance in the distribution of marketing shares of the players in the production and marketing loops for the potato crop from the consumer dinars according to the maturity of each and also highlights its importance in improving the marketing efficiency of the potato crop and the development of price policies to reduce marketing margins by reducing marketing costs and /or reducing the profits of intermediaries. The problem of the study is the decrease in marketing efficiency and the high marketing margin of the potato crop, due to the increase in marketing costs and the profits of the intermediaries players within the marketing loop for this crop, which negatively affects both the producer and the final consumer by decreasing the share of the first and the higher price paid by the second. The study aimed at estimating the production costs of the spring potato crop, calculating the marketing costs of each level of marketing of the potato crop, calculating the marketing shares of the producer, the wholesaler and the retailer of the consumer dinars, calculating the profits achieved by each of them, estimating the marketing margins between the various marketing stages and measuring the marketing efficiency of the spring potato crop in the province of Baghdad, and to identify the most important problems and obstacles to the production and marketing loops. The study is based on the assumption that the share of the producer is lower than the consumer dinars, compared to the high marketing shares of the intermediaries players within the marketing loop of the spring potato crop.

* Dunum = quarter of hectare

Data sources:

The data were obtained from various sources through questionnaire forms that were designed for different levels (the producer, the wholesaler and the retailer) in accordance with this study. The preliminary data were obtained through field visits and personal interviews to the players in the production marketing loops for the spring potato crops, and the information were collected from the sample selected according to the random sampling method of the producers of spring potato in Baghdad governorate and with 182 forms, as well as questionnaires collected from the wholesale markets with 28 forms between the markets of central and subsidiary wholesale markets in Baghdad, and the retail stores distributed in residential areas in the governorate with 74 forms.

Materials and methods

The focus of this study is on the commodity approach, which is considered a suitable approach to the nature of this study, and focuses on the marketing study of each commodity from the point of view of its own in terms of its problems, methods and stages of marketing and tracking the commodity from the producer to reach the consumer, and using the equations and the appropriate mathematical relations in calculating, estimating and measuring marketing shares, marketing margins, marketing efficiency and other relationships required in the study.

Production costs:

The modern definition of costs refers to the amount of sacrifice in resources without reference for a benefit, where the depletions cost when it is versus by revenue is called an expense for obtaining a benefit. If it is not versus by revenue it will called a loss, so the loss is also a cost although no benefit is achieved (Al- Gebaly & Al-Samarraay, 2000.). The costs term is the sum of the value paid for all economic resource services used in the production process. The total production costs for any agricultural project depend on the productive functions of the project and the prevailing price levels for the use of the productive materials (Naji, 2016). The cost term in its general sense also means that the sum of the payments the producer incurs to the factors of production for their contribution in the production process and varies

according to the quantity of production, increases production and decreases its production by decreasing the quantities produced of goods and services, and vary in their values according to the production quantities. They increase with increasing of production and their values decrease with decreasing of the production quantities from commodities and services (Al- Maksousi, 2007). Agricultural costs can be defined as the total amount that is paid from the agricultural producer for the use of economic resources in the production of agricultural crops.

Marketing costs:

Marketing costs are important part of the total cost of the final product and are of no less importance than the cost of production, As most production units do not achieve their objectives only by production, but through the marketing of their products in the correct and required manner (Khalil, 2017). The marketing costs can be defined as the costs spent on the marketing services necessary to deliver the commodity to the consumer in the way they wish, and they are usually limited to the services provided after the production of the crop and borne by all players in the market starting from the producer and through all intermediaries sharing these costs (Al- Zuaaby, 2006). They also define as the costs incurred by the marketing system to facilitate the delivery of the commodity from the producer to the consumer. The value of the marketing costs differs from the marketing margins, where the second containing the profits of the intermediaries, and the first does not contain such profits (Fayyad, & Amin 2009). The term marketing costs is different from the term marketing margins. Where Thompson say "The term marketing costs should be used only to indicate the constant and actual variable costs spent by production units and marketing agencies to purchase the necessary supplies while doing marketing activities to deliver the goods from producers to consumers".

Types of marketing costs:- It could be distinguished between two types of marketing costs (Khalil, 2017).

First type/Fixed Costs: These are the costs that do not change with the change in sales volume within available marketing power and are often associated with time rather than sales volume such as employee salaries, rental of shops, depreciation of buildings and the equipment used .... etc.

Second type/ Variable marketing costs: These are the costs that change immediately with the change in sales volume (increasing with increased marketable production) such as expenses such as packaging costs, transportation, warehousing, commission of sales agents … etc.

The main objectives of the study of marketing costs:

The main objectives of the study of marketing costs can be illustrated in the following (Al- feel, 1970):

1- Try to improve and raise the marketing efficiency that one of the marketing tasks or a set of them are done by them for a particular crop or a set of crops by obtaining information that reduce the costs of these marketing tasks and improve the methods of conducting them.

2- Study the distribution of marketing costs between the various intermediaries and bodies engaged in crop marketing and the various marketing tasks.

3- Comparing the marketing costs of the crops with its production costs and the prices that can be obtained.

4- Drawing up economic marketing, storage, mobility, processing, financing policies and others, leading the various bodies assigned to reach the stage of economic equilibrium.

Marketing margins:

The study of marketing margins is important because it is essential to understand the marketing problems on the one hand, and also the success of economic planning at the level of individual economic units or at the national level depends on the availability of sufficient information on the marketing margins (Al-Hadithi, 1993). The marketing margin is defined as the difference between what the consumer pays for the commodity and what the producer (farmer) receives (Kohls & Uhl, 1980). Dahl and Harnmond define marketing margins as the difference between prices at different levels of the marketing system (Al- Zuaaby, 2006). Both Tomek and Robinson showed that the upward trend of the marketing margin depends on the total cost of marketing functions and services, which reflect changes in the volume, type and cost of marketed quantity, as well as changes in jobs and services provided (Tomek & Robinson , 1977).

Marketing Efficiency:

Marketing efficiency is one of the most important economic measures used to measure market performance. Improving marketing efficiency is a common goal for producers, consumers, food marketing units and for the society generally. As many of the changes proposed in various agricultural marketing policies are aimed at improving agricultural marketing efficiency, It is obvious that the most efficient marketing is the best performance, and the weakest efficiency is the less efficient (Al-Hadithi, 1994). Kriesberg and Steele

defined marketing efficiency as "maximizing the benefit of input and output ratio", which means that any change that reduces the costs of any activity without reducing the satisfaction of the consumer with the service or commodity is an improvement in efficiency (Kriesberg & Steele, 1972). Kotler defined marketing efficiency as completing the marketing activities with more efficiency (Kotler, 2000). As Arnold and others have defined it as an increase in productive output units with cost stability (Arnold, *et al.*, 2002). Wolday noted that marketing efficiency is measured by price integration between markets (Wolday, 1994). Marketing efficiency is an input and output component based on the consumer's estimate of the goods, and the input costs, which are mainly estimated by alternatives to production capacities (Cramer & Jensen, 1982). Based on this rule, the market is efficient when the ratio of the value of outputs to the value of inputs through the marketing system is higher.

Results and discussion

Structure of Production Costs of Potato Crop in Baghdad Governorate for the Spring season of 2018:

One of the indicators needed for the study is the production costs of the spring potato crop, in order to measure the marketing efficiency, there for the cost items in the production loop, which are divided into variable and fixed production costs, were identified through the information collected from farmers in the questionnaire that are designed for this purpose, and the production costs include the items shown in table 1.

Estimation of the marketing costs of the potato crop in Baghdad governorate for spring season of 2018.

The marketing costs in the marketing of agricultural products area have three levels generally, and we will address these levels with regard to the marketing costs of the potato crop and follow this crop, according to the commodity approach from the producer to the final consumer by details of the following marketing cost levels:

First Level / Marketing costs between farm and wholesale market:

Is the marketing costs borne by the farmer until the sale of his products in the wholesale market and includes the marketing costs shown in the items as in Table 2.

Second Level / Marketing costs between the wholesale and retail markets:

Is the marketing costs borne by the wholesaler in their offices (wholesale markets), which were obtained through the questionnaire form, and includes the marketing costs indicated in the items as in Table 3.

Third level/ marketing costs between the wholesale market and the consumer:

Which are the costs borne by the retailer who purchases from the wholesale markets and selling to the consumer. These costs include the following items obtained through the questionnaire form, and table 4 shows that.

Development of economic indicators of the marketing efficiency of the potato crop in Baghdad governorate for spring season of 2018

It is difficult to separate the concept of production from the concept of marketing in the broad sense of the marketing concept where marketing as well as market variables direct production in terms of the quantity and quality of produced commodities, prices, cost and different market variables such as supply and demand for the commodity are items that provide the farmer with the indicators of any crops more profitable, the areas to be cultivated and the methods to be followed in marketing their crops. Marketing in the limited sense is the process that leads to the transfer of the commodity produced from the places of production to the places of consumption. Therefore, the marketing system includes the marketing bodies of intermediaries of various forms, as well as markets and consumers. The relations between producers, wholesalers, retailers and consumers are the basic components of the marketing system.

First:-The evolution of prices for potato crop in the province of Baghdad for spring season of 2018

Through the questionnaire form for the production loop, the wholesalers and retailers loop, the following are shown:

Prices at the farm level:

The average price of potato sold by farmers in wholesale markets over three months (June, July, August) of 2018 was amounted to (382.949) dinars/kg during the spring season of 2018 as shown in Table 5. The lowest price sells by the farmer in the wholesale markets amounted to (347.376) dinars/kg, and the highest price amounted to (400) dinars/kg.

Prices at the wholesale level:

It was found that the average price of potatoes sold by wholesalers was about (460.430) dinars/kg during the period mentioned above, as shown in the table. The lowest price at the wholesale level amounted to (423.200) dinars/kg, while the highest price at the wholesale level amounted to (480.000) dinars/kg.

Prices at the retail level:

The average price of potato was about (967.316) dinars/kg during the three month price restriction period as we mentioned and as shown in the table, where the lowest retail price was about (940.667) dinars/kg. As for the highest price at the retail level was amounted to (990) dinars/kg.

Second:- Distribution of marketing shares of the producer, wholesaler and retailer of consumer dinars.

To calculate the share of the producer, the wholesaler and the retailer of the consumer dinars, this is done by following the mathematical formulas described for each of them as follows (Jassim & Thamer, 2016):

Producer share of consumer dinars:

The share of the producer of the consumer dinars for the potato crop has reached an average during the period of price restriction for three months up to (39.577%), as shown in Table 5. It was calculated through the following formula:

Producer share 4= (Producer Price dinars/kg 1 / Retail price dinars/kg 3) *100

Wholesaler share of the consumer dinars:

As for the share of the wholesaler of the consumer dinars for the potato crop, the average during the period of tracking prices was about (8.018%), as shown in table 5. It was calculated through the following formula:

Wholesale share 5 = [(Wholesale Price dinars/kg 2 -- Producer Price dinars/kg 1) / (retail price dinars/kg 3)] * 100

Retailer share of the consumer dinars:

It was found that the average share of the retailer of the consumer dinars for the potato crop amounted to (52.405%) during the period mentioned above, as shown in Table 5. It was calculated through the following formula:

Retailer share 6 = [(Retail price dinars/kg 3 -- wholesale price dinars/kg 2) / (retail price dinars/kg 3)] * 100

Share of intermediaries of the consumer dinars:

As for the share of intermediaries of the consumer dinars for the crop, it amounted to an average of about (60.423%). This indicates the increase in the share of wholesalers and retailers, which represented a high percentage of the consumer dinars. As shown in table 5. It was calculated through the following formula:

Share of intermediaries of the consumer dinars 7 = Wholesale share 5 + Retail share 6

In general, the distribution of the consumer dinars is not fair because both the wholesalers and the retailer together get (60.423%) of consumer dinars, as well as the producer share of the consumer dinars is low, and the high share of the retailer, which is paid by the consumer, as amounted to (52.405%) Compared to the producer share and wholesaler. This is an indication of the rise in the power of consensus and impose their prices on consumers as a result of the lack of government control of prices and the control of retailers at prices and they decide the rate of profit they see fit. While wholesale prices are determined according to the supply and demand base and crops are usually sold in wholesale markets by auction, which is the basis for price fixing. If this continues, its effect will be reflected on all value chain loops of the potato crop, including the production loop, through a low cultivated area of this important crop, and low producer income, and thus affect agricultural development in general due to low incomes of farmers.

Third: - Estimating the marketing margins between the different marketing stages of the potato crop in Baghdad governorate for the spring season of 2018

The evaluation of the marketing margin, and comparing it with the production costs and the prices that can be obtained, and studying the structure of the marketing margin from different paragraphs of costs and profits to intermediaries and marketing bodies, are all of interest to producers, consumers and the society in general in its quest to properly link its resources and region in the primary agricultural production areas and in the fields of marketing production (Ismail & Alqneibt, 1995). The margin of marketing can be expressed either in absolute terms, which is defined as the difference between the selling and buying prices in two different stages, expressed in monetary units or relative differences (percentage), which is the absolute difference divided by the selling price multiplied by 100 (Al- Tarawneh, 2010). The study of marketing margin is one of the main criteria for identifying the marketing differences and the factors influencing them to identify marketing problems, as well as to judge the efficiency of marketing activity, the marketing margin or the spread of price is the difference between the price paid by the final consumer and the price received by the producer (Thamer, 2013). The marketing margins can be calculated based on their absolute value or on the basis of their relative. In the first case, the marketing margins are calculated by subtracting the value of the sale from the value of the purchase at each stage with the interest of calculating the different costs of transfer, storage, different fees, value of change, damage, etc. between each stage.

Table 1: Variable, fixed and total costs for the productions loop of the potato crop for the spring season of 2018.

Cultivated area	production quantity	Type of costs	Sequence	The items of costs for Productions loop of the Potato crop	The Costs of sample in dinars	the cost of one dunam per dinar	The cost per ton produced in dinars	Cost per kilogram produced in dinars	Relative impor-tance % ce
1408 dunum	12502 ton	Variable costs	1	Costs of automation	167,655,500	119,073.509	13,410.294	13.410	7.973
			2	Labor costs	216,867,000	154,024.858	17,346.585	17.347	10.313
			3	Costs of seed purchase	1,322,030,750	938,942.294	105,745.541	105.746	62.87
			4	Costs of seed transportation	20,748,000	14,735.795	1659.574	1.660	0.987
			5	DAP fertilizer costs	197,161,250	140,029.297	15,770.377	15.770	9.376
				urea fertilizer costs	58,025,000	41,210.938	4,641.257	4.641	2.759
			6	pesticides Costs	38,905,500	27,631.747	3,111.942	3.112	1.85
				Doping costs	10,251,250	7,280.717	819.969	0.820	0.488
			7	Fuel and oil costs	35,510,000	25,220.170	2,840.346	2.840	1.689
			8	Water and electricity costs	11,759,000	8,351.563	940.570	0.941	0.559
			9	Maintenance and repair costs	23,893,500	16,969.815	1,911.174	1.911	1.136
				Total	2,102,806,750	1,493,470.703	168,197.628	168.198	100%
		Fixed costs	1	Family labor costs	283,224,000	201,153.409	22,654.295	22.654	86.06
			2	*Depreciations costs	10,403,000	7,388.494	832.107	0.832	3.161
			3	Rental costs	12,949,000	9,196.733	1,035.754	1.036	3.935
			4	Opportunity costs	22,525,250	15,998.047	1,801.732	1.802	6.844
				Total	329,101,250	233,736.683	26,323.888	26.324	100%
				Total gross production costs	2,431,908,000	1,727,207.386	194,521.516	194.522	----

Source: from Prepared by the researcher by Depending on the questionnaire.
* Depreciations were calculated in the straight line method as in the following equation:
Di = (OC - SV) / L, Di = represents the Depreciation for the year i., OC = The original cost of the purchased commodity.
SV = Selling value after depreciation for the period L., L = Term of use in years.

Marketing margin = Buying price - selling price

If calculated on the basis of relative value, the difference between the purchase price and the selling price is divided by the purchase price and multiplied by 100 (Fayyad & Amin, 2009). In order to calculate the margins of the different stakeholders (players), we will use the following formula (Jamil& Ashfaq, 2016):

MM = (PS / SP) * 100

Where:

MM = Marketing Margin

PS = Price Spread

SP = Sales Price

For price Spread it is the result of subtract the sale price from the purchase price as shown in the following formula:

PS = SP - PP

where:

PS = Price Spread

SP = Sales Price

pp = Purchase Price

We can write the final version of the margin as in the following formula:

MM = (SP - PP) / SP * 100

Through the above formula, marketing margins can be calculated between marketing stages along the value chain loops as described below (Jassim & Thamer, 2016):

The marketing margin between the wholesaler and the producer: Through Table 6 With regard to the absolute marketing margin between the wholesaler and producer of the potato crop for the spring season of 2018, the average was about (77.481) dinars/kg. As for the relative marketing margin in this case, it reached an average of (16.863%) during the price tracking period for three months. It was calculated using table 5 through the following formula:

The absolute marketing margin between the wholesale price and producer Price (dinars/ kg) 1 = wholesale price - producer Price

The relative marketing margin between the wholesale price and producer Price 2 = [(wholesale price dinars/kg - producer price dinars/kg) / (wholesale price dinars/kg)] * 100

Table 2: The marketing costs for the productions loop for the potato crop for the spring season for 2018.

Cultivated area	Production quantity	Sequence	Items of marketing costs for the productions loop for potatoes crop	The marketing costs for the sample in dinars	Marketing costs per ton in dinars	Marketing costs per kilogram in dinars	Relative importance %
1408 dunum	12502 ton	1	Cleaning, sorting and the Scaling	92,189,000	7,373.940	7.374	19.204
		2	Costs wages of packing	38,415,500	3,072,748	3.073	8.002
		3	The price of packing bags	75,874,000	6,068.949	6.069	15.806
		4	Costs of loading	61,807,000	4,943.769	4.944	12.875
		5	Transport costs to the market	124,194,000	9,934.011	9.934	25.871
		6	Discharge costs	62,711,500	5,016.117	5.016	13.064
		7	Market entry fees	24,855,500	1,988.122	1.988	5.178
		Total		480,047,500	38,397.656	38.398	100%

Source: from Prepared by the researcher by Depending on the questionnaire.

Table 3: The costs of marketing variable, fixed and total for the wholesalers loop and its relative importance.

Quantity purchased	Type of costs	Sequence	The items of costs of the wholesalers loop	The Costs of the sample in dinars	The cost per ton in dinars	The cost per kilogram in dinars	Relative importance of variable and fixed costs %	Relative importance from total costs %
2,481,000 kg	Variable costs	1	Costs of temporary leased labor	12,405,000	5,000	5,000	78.483	15.779
		2	Energy costs (electricity + generator)	2,195,000	884.725	0.885	13.887	2.792
		3	Maintenance costs	875,000	352.68	0.353	5.536	1.113
		4	*Other costs	331,000	133.414	0.133	2.094	0.421
		Total		15,806,000	6,370.819	6.371	100%	20.106
	Fixed costs	1	Labor costs (the permanent)	20,100,000	8,101.572	8.102	32.002	25.568
		2	Rental costs	33,800,000	13,623.539	13.624	53.814	42.994
		3	Depreciations costs	3,199,000	1,289.399	1.289	5.093	4,069
		4	Interest on capital	5,709,900	2,301.451	2.301	9.091	7.263
		Total		62,808,900	25,315.961	25.316	100%	79.894
Total gross costs				78,614,9000	31,686.780	31.687	----	100%

Source: from Prepared by the researcher by Depending on the questionnaire.
* Other costs: include water costs, waste removal and joint guarding.

Marketing margin between the retailer and the wholesaler: As for the absolute marketing margin between the retailer and the wholesaler of the potato crop of the spring season has an average of about (506.886) dinars/kg, and the relative marketing margin in this case was an average of about (52.405%) Within a period of three months. Table 6 shows this and was calculated using table 5 through the following formula:

The absolute marketing margin between the retail price and wholesale price (dinars/ kg) 3 = retail price - wholesale price

The relative marketing margin between the retail price and wholesale price 4 = [(retail price dinars/kg - wholesale Price dinars/kg) / (retail price dinars/kg)] * 100

The marketing margin between the retailer and the producer: It is clear from Table 6 The absolute marketing margin of the potato crop between the retailer and the producer has an average of about (584.367) dinars/kg. As for the relative marketing margin in this case, it reached an average of (60.423%) during the price tracking period of the potato crop of the spring season. It was calculated using table 5 through the following formula:

The absolute marketing margin between the retail price and producer Price (dinars/ kg) 5 = retail price - producer Price

The relative marketing margin between the retail price and producer Price 6 = [(retail price dinars/kg - producer price dinars/kg) / (retail price dinars/kg)] * 100

Fourth:- Marketing Profit calculation:

The marketing profits are calculated by the following formula (Letson, *et al.*, 2013):

Marketing profit = Sale price - [Purchase price + Marketing costs]

Table 4: The costs of marketing variable, fixed and total for the retailers loop and its relative importance.

Quantity purchased	Type of costs	Sequence	The items of costs of the Retailers loop	The Costs of the sample in dinars	The cost per ton in dinars	The cost per kilogram in dinars	Relative importance of variable and fixed costs %	Relative importance from total costs %
340,400 kg	Variable costs	1	The costs of transportation	10,892,800	32,000	32,000	55.378	11.208
		2	Energy costs (electricity + generator)	2,916,000	8,566.392	8.566	14.825	3.000
		3	the costs bags of selling to the consumer	2,680,500	7,874.559	7.875	13.627	2.758
		4	Costs of damaged quantities	2,546,653	7,481.354	7.481	12.947	2.620
		5	*Other costs	634,000	1,862.515	1.863	3.223	0.652
			Total	19,669,953	57,784.821	57.785	100%	20.239
	Fixed costs	1	Labor costs (the permanent)	53,220,000	156,345.476	156.345	68.656	54.760
		2	Rental costs	16,900,000	49,647.474	49.647	21.802	17.389
		3	Depreciations costs	350,165	1,028.687	1.029	0.452	0.360
		4	Interest on capital	7,047,016.500	20,702.164	20.702	9.091	7.251
Total				77,517,181.500	227,723.800	227.724	100%	79.761
Total gross costs				97,187,134.500	285,508.621	285.509	----	100%

Source: from Prepared by the researcher by Depending on the questionnaire.
* Other costs: include water costs, waste removal and joint guarding.

where:

Marketing profit = MP

Sale price = SP

Purchase price = PP

Marketing costs = MC

Through the above formula it is possible to extract the profits of both the wholesaler and the retailer through the following mathematical formulas (Jassim, 2015):

1- wholesaler's profit = wholesale price - (producer price + total marketing processes costs of wholesaler)

2. Retailer's profit = the selling price to the consumer - (wholesaler price + total marketing processes costs of the retailer)

Through tables 3, 4 and 5 we can find the profit rate for both the wholesaler and the retailer as follows:

Wholesaler profits = 460.430 - (382.949 + 31.687) = 45.794 dinars/kg

Retailer profits = 967.316 - (460.430 + 285.509) = 221.377 dinars/kg

The producer profit can also be found in the following formula:

Producer profits = Return per kilogram - (Production costs per kilogram + marketing costs per kilogram)

= 382.949 - (194.522 + 38.398)

= 150.029 dinars/kg

The above results show that intermediaries (wholesalers and retailers) have achieved higher profits than the potato producers, despite the effort they make, and the production and marketing costs producers spend during the long potato production period compared to the costs and effort the intermediaries spend.

Fifth:- Measuring the marketing efficiency of the potato crop in the province of Baghdad for the spring season of 2018

The measurement of marketing efficiency is a necessary step to improve it. The measurement of marketing efficiency is very difficult considering the problem of measuring the consumer utility of the final outcomes of marketing processing, which is the main obstacle to defining and measuring marketing efficiency. If marketing costs can be measured, it is difficult to measure the level of performance of marketing services. However, it is possible for some economists to develop approximate measures of agricultural marketing efficiency, which will be applied one of these formulas, which reflects the ratio between the total marketing costs and the total costs (productivity and marketing) of the marketed product using the following scale (Ismail & Alqneibt, 1995):

Marketing Efficiency 1 =

$$100 - \left\{ \frac{total\ marketing\ costs}{total\ costs (marketing\ and\ produtivity)\ of\ marketed\ commodity} * 100 \right\}$$

The marketing efficiency of the potato crop producers

Table 5: Distribution of marketing shares between the producer and the wholesaler and the retailer from dinars of consumer for the potato crop in the province of Baghdad of the spring season of 2018.

The month	The week	The Prices dinars/ kg			Distribution Dinars of Consumer %			
		Producer price 1	Wholesaler price 2	Retailer price 3	Producer share 4	Wholesaler share 5	The retailer Share 6	The intermediaries share 7
June	1	400.000	480.000	950.500	42.083	8.417	49.500	57.920
	2	398.333	472.800	970.167	41.058	7.676	51.266	58.940
	3	394.345	468.634	980.832	40.205	7.574	52.221	59.790
	4	381.667	460.120	972.667	39.239	8.066	52.695	60.760
July	1	347.376	423.200	960.447	36.168	7.895	55.937	63.830
	2	348.333	424.548	940.667	37.030	8.102	54.867	62.970
	3	350.000	456.163	954.167	36.681	11.126	52.193	63.320
	4	381.667	462.350	960.429	39.739	8.401	51.860	60.260
August	1	396.667	466.097	968.667	40.950	7.168	51.883	59.050
	2	397.667	468.763	970.714	40.966	7.324	51.709	59.030
	3	399.333	469.687	988.533	40.397	7.117	52.486	59.600
	4	400.000	472.800	990.000	40.404	7.354	52.242	59.600
Total		4,595.388	5,525.162	11,607.790	474.920	96.220	628.859	725.070
Average		382.949	460.430	967.316	39.577	8.018	52.405	60.423

Source: from Prepared by the researcher by Depending on the questionnaire.

of the spring season of 2018 was obtained using formula 1 above. Table 7 shows the production costs and total marketing costs of the producer, wholesaler and retailer. By applying the formula 1 mathematically we obtained the marketing efficiency 1 as shown below:

Marketing Efficiency 1 =

$$100-\left\{\frac{355{,}593.057\,dinars/ton}{355{,}593.057\,dinars/ton+194{,}521.516\,dinars/ton}*100\right\}$$

Marketing Efficiency 1 = 35.360%

From this estimated result of marketing efficiency according to formula 1 it turns out to be low. This means that the marketing costs of the potato crop in Baghdad governorate exceed the production costs during the study period, which reflects the increase in the profits obtained by the intermediaries during the different marketing stages. Marketing efficiency was measured by using mathematical formula 2, which includes absolute marketing margin and production costs using the following scale (Al -Dabbagh, 2007):

Marketing Efficiency 2 =

$$100-\left\{\frac{marketing\ margin}{marketing\ margin+total\ productivity\ costs}*100\right\}$$

By applying the formula to mathematically we obtained the marketing efficiency 2 as a shown below:

Marketing Efficiency 2 =

$$100-\left\{\frac{584.367\,dinars/kg}{584.367\,dinars/kg+194{,}522\,dinars/kg}*100\right\}$$

Marketing Efficiency 2 = 24.974%

By measuring marketing efficiency according to the formula 2 was found to be low (24.974%). The reason for this is the increase in marketing margins due to the increase in marketing costs and the increase in the profits of intermediaries, which is less than the marketing efficiency in Formula 1 because in formula 2 the profits of intermediaries was entered and it is high, especially the profits of the retailer, which contributed to make the margins of marketing high, where the average share of intermediaries is a large proportion of what the consumer pay about (60.423), and as a result reduced the marketing efficiency of the potato crop. The increase in the marketing margin of the potato crop is one of the most important problems facing the marketing of this crop, which leads to a decline in the share of farms from the price paid by the consumer, so the increase in the share of intermediaries of marketing processes and getting a large return compared to their marketing costs, resulting in reduced marketing efficiency as a result of a high marketing costs and consumer prices on the one hand, and a low farm prices for producers on the other.

The increase in marketing efficiency may not be an indicator of the improvement of marketing systems

Table 6: marketing margins between the various marketing stages of the potato crop for the spring season for 2018.

The month	The week	Marketing margins					
		Producer price 1	Wholesaler price 2	Retailer price 3	Producer share 4	Wholesaler share 5	The retailer Share 6
June	1	80.000	16.667	470.500	49.500	550.500	57.917
	2	74.467	15.750	497.367	51.266	571.834	58.942
	3	74.289	15.852	512.198	52.221	586.487	59.795
	4	78.453	17.051	512.547	52.695	591.000	60.761
July	1	75.824	17.917	537.247	55.937	613.071	63.832
	2	76.215	17.952	516.119	54.867	592.334	62.970
	3	106.163	23.273	498.004	52.193	604.167	63.319
	4	80.683	17.451	498.079	51.860	578.762	60.261
August	1	69.430	14.896	502.570	51.883	572.000	59.050
	2	71.096	15.167	501.951	51.709	573.047	59.034
	3	70.354	14.979	518.846	52.486	589.200	59.603
	4	72.800	15.398	517.200	52.242	590.000	59.596
Total		929.774	202.352	6,082.628	628.860	7,012.402	725.079
Average		77.481	16.863 %	506.886	52.405 %	584.367	60.423 %

Source: It was calculated by the researcher depending on the table 5

through the improvement of services and marketing functions, and this increase in marketing efficiency may be due to lower marketing costs, such as transport because the farmer may be marketed his crop to the nearest wholesale market or may not do any expensive marketing process and may limited to transport and packaging only, so it is clear that the most important components of marketing efficiency are the level of performance of marketing services and the costs of performance of these services. If the marketing system includes appropriate level for the service but expensive, it does not necessarily mean an improvement in marketing efficiency. Marketing efficiency may also not be achieved when marketing costs are low but the level of performance of marketing services is poor or ineffective. This implies that any changes that lead to a reduction in the costs of conducting one of the marketing tasks without accompanying a decrease in the satisfaction of the consumer will increase the marketing efficiency, but if these changes reduce the marketing costs in addition to reduce the satisfaction of the consumer, that lead to reduce the marketing efficiency, and it is therefore not enough to look at the costs of one of the marketing task alone, whether high or low, to know the efficiency that this marketing task is done with through the definition of marketing efficiency that is the transfer of commodities from the producer to the consumer in the manner desired by the consumer in the lowest costs possible, so the marketing institutions perform some functions and marketing services during the transfer of commodities from the producer to the consumer at low costs without prejudice to the services required by the consumer is a clear improvement in marketing efficiency. At the same time, any increase in marketing services with high marketing costs may also represent an improvement in marketing efficiency, if the consumers' assessment of these services is higher than their estimate of the increase in the price of the product. In general, the marketing system aims to achieve many objectives such as increasing the share of the producer of consumer payments by reducing marketing costs and profits of intermediaries in various marketing processes, as well as directing products to the most profitable markets and thus get a higher return. A high share of the producer

Table 7: Productive costs and total marketing costs of the product, wholesalers and retailers.

Type of costs	Per tons	Per kilogram
Production costs	194,521.52	194.522
Marketing costs of the producer	38,397.66	38.398
The marketing costs for the wholesaler	31,686.78	31.687
Marketing costs for the retailer	285,508.62	285.509
gross the marketing costs	355,593.06	355.594
gross the production and marketing costs	550,114.57	550.116
Absolute marketing margin	584,367	584.367
Marketing Efficiency According to Formula 1	35.360 %	35.360 %
Marketing efficiency According to formula 2	24.974 %	24.974 %

source: from Prepared by the researcher depending on the tables 1, 2, 3, 4 and 6.

from what the consumer bay will not be achieved unless marketing efficiency is achieved and the marketing costs and the profit margins of the intermediaries are reduced. However, the reduction in marketing costs alone is not evidence of the high efficiency of marketing or achieving the producer for a high share of consumer dinars, where the marketing costs could increase, but versus by increasing in the value of the marketed unit as a result of increased consumer demand for some additional marketing services and willingness to pay a higher price per unit of the commodity.

Conclusions

Based on the findings that has been reached, we can conclude the following:

1- The players and stakeholders of the value chain of potato crop are multiple and under different titles and names, and various task and the intermediaries are not organized in defining the tasks and responsibilities in each loop of the chain loops and there is a weakness in achieving the linkage between the producer and the consumer.

2- The absence of a clear price policy. There is a difference in the level of prices for the same crop in the same market, regardless of the fact that the crop is local or imported and the decline in agricultural price, especially during times of peak production because of lack of marketing services and the lack of accurate marketing information.

3- Intermediaries (wholesalers and retailers) achieved higher profits than the potato producers achieved despite the effort, production and marketing costs that producers make and spend during the long production period of the potato crop compared to the costs and effort borne by the intermediaries. The profits of each the producer, the wholesaler and the retailer is amounted to (150.029 , 45.794 , 221.377) dinars/kg, respectively.

4- The decrease in marketing efficiency as it amounted to (35.360%) according to formula 1. This means that the marketing costs of potato crop in Baghdad governorate exceed the cost of production during the study period. This reflects the increase in profits obtained by intermediaries during the various stages of marketing, while the marketing efficiency according to formula 2, which includes marketing margin and production costs amounted to (24.974%), which is also low. This is due to the increase in marketing margins due to the increase in marketing costs and the increase in the profits of the intermediaries, especially the profits of the retailer, which contributed to making the marketing margins high. As a result decreased marketing efficiency for the potato crop.

5- The absolute marketing margin between the retailer price and the producer price represents a high proportion of what the consumer pay, which amounted to an average of about (584.367) dinars /kg, which means that about (584.367) dinars of the amount paid by the consumer to get a kilogram of potatoes goes as a profit for intermediaries and other marketing costs. As for the importance of the relative marketing margin between the producer price and the retail price, it represents a high proportion of what the consumer pay, which amounted to about (60.423%). This means that (60.423%) of the consumer dinars paid for one kilogram of potato goes to the intermediaries and other marketing costs.

6- The share of intermediaries (wholesalers and retailers), which represented a high proportion of consumer dinars, reached an average of about (60.423%). The proportion of retailers (52.405%) and wholesaler (8.018%), due to their ability to bargain without providing marketing services parallel to the marketing services provided by the producer, which weakened the motivation of producers to develop their production and to do some marketing activities. Where the share of the producer of consumer dinars amounted to (39.577%) and this decline in the share of the producer of the consumer dinars will lead to a decline in his income and the impact on the process of production and thus affect the development of agriculture in general.

Recommendations

The study recommends the following:

1- Activating the role of cooperative organizations to perform their tasks in marketing the potato crop to try to reduce the marketing margin between the producer and the retailer, and to overcome the oligopolistic phenomenon in the wholesale markets, as this leads to increasing the share of the producer from the consumer dinar and thus increase the production and increase the agricultural income.

2- Work to reduce the number of intermediaries and traders in the marketing process because they are the main reason for increasing costs and marketing profits, and limiting the marketing margin for all intermediaries involved in the marketing process.

3- Work on organizing the opening of markets for the wholesale in a way that ensures a wider distribution

and takes into consideration the proximity of production centers, and develop the infrastructures that are already exist and provide the necessary services such as cold stores and other service facilities, and encourage the establishment of typical retail markets for the application of all the functions and marketing processes of sorting and gradual, and taking into consideration the conditions of hygienic hygiene and the need for price tags that facilitate consumers to do shopping easily according to their potential and tastes in terms of type, shape, size and price, and the need to provide home delivery services at appropriate prices.

4- The necessity of regulating the import from abroad through the use of agricultural calendar, and determine the period of prevention of import in accordance with the size of local production during the season, and study the possibility of reducing the import of this crop to the impact of imports on the prices of the local product.

5- Raising the marketing efficiency of potato crop by reducing marketing costs without accompanied by a decrease in the level of satisfaction of the consumer, and also can raise the marketing efficiency of the crop by increasing the efficiency of shopping performance of jobs and marketing services, and follow modern marketing methods, such as sorting, gradual, packing and others.

6- Increasing the producer share of consumer payments by reducing marketing costs and profits of intermediaries in various marketing processes, as well as directing products to the most profitable markets and thus obtaining a higher return, by activating the role of cooperative organizations and encouraging making formations groups or groups of farmers in each region to study ways of modern marketing and linking them with agricultural extension services.

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