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An Economic Study of Marketing Some of the Egyptian Agricultural Crops

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Abstract : The study aims at identifying the main reasons behind the low efficiency of the storage process of the goods under study. It is found that the problems encountered by the crops under study by different storage means (refrigerators, loom packages, cooling), the high cost of the storage processes, the increase of the losses ratio of those crops and environmental problems caused by the damaged ratios of those crops are among the main reasons behind the decline of the storage efficiency operations of goods under study. Through calculating the rate of return to costs after performing the storage process, it becomes obviously clear that the rate of return / costs for each of (potatoes, vegetables, and fruit) reaches about 1.2, 1.4 and 1.1 for each of them, respectively. Thus, this means that the increase of the price through performing the marketing service may become equivalent to the cost of this performance. With another meaning, the performance of the marketing role was highly active and achieved profits. Therefore, this study recommends that it is significantly important to concern storage through proper ways, provide appropriate storage means and preserve the appropriate storage periods because all of these factors help to raise the efficiency of the storage process and overcome the obstacles they face.

Keywords : Marketing Efficiency - Storage Operations - The Rate of Return / Cost - Marketing Problems.

Introduction

There is no doubt that the association of the production of agricultural crops with the possibility of marketing it logically leads to raising the efficiency of the economic resources use through the vertical integration between production and marketing. Also, the raising of the marketing efficiency increases the total revenue of the production process and reduces the amount of wastage.

Besides, the marketing information is considered as the basis of the production process where the demand for agricultural commodities becomes an indication and a guide of the product in directing its economic resources¹. Additionally, it reflects the needs of the market. Since the majority of agricultural products are characterized by the seasonality of its production, there are many marketing operations that performed on goods. The marketing costs differ from one crop to another due to the different marketing operations of each commodity (selection, staging, packing, weight and transport). Also, the storage process is considered one of the most important marketing functions performed on the commodity since it adds time benefits. Finally, the storage efficiency means to keep goods from different forms of damage with minimal costs.

Problem of the Study:

The problem of the study is embodied in the decline of the efficiency of marketing services generally for all crops of fruit and vegetable and practical storage in particular, which increases the amount of waste and decreases the return.

Objective of the Study

The study aims at identifying the main reasons behind the decline of the storage efficiency of goods under study in order to promote it due to its importance to improve the quality of the product and decrease its price. Also, this study aims at studying the marketing differences of the storage process since it is the main tool to acknowledge the efficiency of the marketing process.

Research Method and Data Sources:

The study depends on the use of the sample approach in addition to the internet data from the International Information Network. Besides, a random sample of several companies has been selected. These companies are specialized in the storage process from various governorates (Cairo, Alexandria and Fayoum) along with the senior traders from Al-Obour market-Masr al-Gadedda-Al-Mohandesen-6 October–the 10th of Ramadan-Haddaiq AlQoba). Moreover, the size of the sample reached 120 forms by 40 forms per crop.

Findings of the Study

The storage of agricultural commodities is considered one of the most important marketing solutions, although it as a relatively recent commercial economic act. Besides, commodities are characterized by seasonality in production. Its importance is due to ensure a continuous display of goods throughout the year which leads to added time the benefit of the commodity throughout the whole year. This issue leads to adding time benefits on the commodity. The storage ways are different according to the nature of the commodity and the purpose of its storage. There are many reasons for the storage, among them are:

1. seasonality of the production and consumption
2. speculative
3. improving the characteristics of the commodity
4. achieving balance between supply and demand

Marketing Costs of the Crops under Study:

The marketing costs mean the amounts of money bared by the marketing institutions in the possession of the necessary production during doing its economic activity to deliver goods and services of products to the final consumers. Besides, marketing costs include wages and salaries of workers and employees and to the benefit's price on the borrowed funds along with the benefits on the invested capital owned by the marketing institutions in addition to rent and insurance against crisis.

Marketing costs can be classified into two types:

The first type is the fixed costs that include static costs that do not vary with the change of the output amount; such as, the costs of establishing marketing institutions and marketing equipment's. The second type is the variable costs that include items of marketing costs, which value varies according to the marketed quantity. It is represented in the money paid for the raw material items or work among other things. This differs from one harvest to another due to the different marketing operations for each commodity. Including the marketing costs of those crops under study (selecting costs, distinguishing, staging, packaging, weight, transport and storage), in addition to cooling costs for vegetables.

Also, the study considers the storage costs since it is considered one of the most important means through which the marketing efficiency can be improved. Additionally, it keeps the commodity with its quality throughout the whole year. Also, it limits the price fluctuations. Traders and marketing companies are proved to the ones who make the storage process by about 100% of the crops under study.

Additionally, the crops under study are selected because they have various storage methods. For example, potatoes are chosen to be stored in refrigerators and its storage period range from 3 to 4 months. Potatoes are stored either until its price increases or to be used as seeds. It becomes clear from this study that the storage costs of potatoes occupied the first place among the crops of the study since the costs of each ton reach about 562.3 pounds.

As for the vegetables crops (peas, beans and lady's fingers) are frozen and stored to be used in its off-season. Besides, it has been shown that the storage costs of only one ton is about 253.2 pounds. Also, the storage period ranges between 2-4 months. As for fruits, they are stored and refrigerated. The storage costs per ton are about 325 pounds and the storage period ranges between 3-4 months. Finally, it becomes clear that the proportion of losses in crops (such as potatoes, vegetables and fruit) is about 10%, 15%, and 10% for each of them, respectively.

Table (1) Storage Prices, Stored Quantities and the Loss of Crops under Study.

Statement	Nwalat storage Packaging Potatoes	Frozen Vegetables	Cooling Fruits
The price per ton at the beginning of the storage-pound	1500	4000	9000
The price per ton at the end of the storage-pound	2500	6000	11000
Stored quantity (tons)	150	300	200
The sold quantity (tons)	135	255	180
Storage Costs by pound	84345	75960	65000
The return rate / Costs	1.2	1.4	1.1

Source: Data collected and calculated from the field study forms.

As for the return obtained from the storage process, it has been shown from the study that the frozen vegetables have achieved the highest return among the crops under study being considered since the storage return reaches about 18.4% of the total revenue before the storage process. Also, it reaches about 17.3% of the net revenue in after the storage process followed by the potato harvest that has been stored in refrigerators by about 12.3% of the total revenue before storage and by about 11.6% of the total after storage.

As for their frigate fruit, it occupies the last rank among the crops under study since its storage ratio reaches about 6.2% of the total revenue due to its damaging after the cooling process and during the transfer process, as well as their rapid exposure to damage due to the nature of the commodity if it is not disposed of within few days. Besides, the study showed the thin increase gained from the selling prices after doing the storage service. Thus, the view never complete until cost is considered. As for the marketing activity of the product separated from its productive activity, the rate of return is counted in comparison with the cost, according to the following equation²

$$\text{The rate of return to cost} = \frac{\text{Actual selling price}}{\text{Average selling price (without the marketing service) + the cost of the marketing services per unit of production}}$$

Moreover, to calculate the rate of return to costs after carrying out the storage process, it becomes clear that the rate of return / costs for each of (potatoes, vegetables, and fruit) reaches about 1.2, 1.4, and 1.1 for each of them, respectively. This means that the increase in the price performance of the marketing service may be equivalent to the cost of this performance. With another meaning, it becomes obviously clear that the performance of marketing role is highly active and achieves profits. These profits have ranged between 2, 4 and

1% of the overall cost of the product value before carrying out the marketing service and the cost of this marketing service (storage).

It is worth mentioning that the decline of the marketing efficiency in general contributes to the increase of the marketing cost without getting any remunerative prices. The lack of marketing expertise may be one of the factors causing the decline in marketing efficiency with regard to the increase of the waste ratio of most crops under study. This result from the lack of the storage means prepared to save the crops until market them with price remunerative prices. Also, the rising costs may be due to the small marketed quantities.

Storage Problems and its Economic Implications

The storage problem comes at the forefront of the problems that face marketing operations, which cause heavy losses for the merchant or the doer of the based process. Also, this study cares for the storage process of the crops under study and its problems as well as the proposed solutions to encounter these problems. The importance of the storage problems have been ordered according to the ratio of those who confess their suffering from this problem in comparison with the totality of the doers of this process in the study.

Storage Problems of the Crops under Study

The storage and environmental problems of the crops under study are discussed. It becomes clear that these problems have multiple types and divisions. Also, these problems relevant to the decline in the performance means of the storage service. Besides, among these problems is the extent of the effect of the storage method and its period on the crop and on its price. Also, it is important to mention the environmental problems resulting from the storage of the crop. This study will tackle review of the most important problems separately. The analytical approach of the data includes using the simple average measure of the coefficient of the preference factor.

Additionally, the importance of the problems is ordered according to the ration of those who confess their suffering with the problem in comparison with the total number of the members of this sample. Moreover, each problem is arranged according to its importance and ranking among all the other suggested alternatives. The analytical approach of the data includes an evaluation of the relative importance of the problems and their proposed solutions percentages. Also, the order of the factors or variables is valued by its dependence on the best grades; first and then the second, and so on, according to the following equation⁽²⁾ to the grade of the referred order:

$$MH = \frac{(\sum N_o R_{ho})(T_h)}{N^2}$$

- M_h = The measure rate of coefficient preference to choose "h."
- R_{h_o} = there presented value of the test rank for H for witness Show "o"
- o = 1, 2; ... n for the observations of the sample.
- N = the size of the sample (number of views)
- T_h = the frequent occurrence of the test "h" in the sample under study.

The greater the degree of the order of the variable increased, the greater its distinctiveness and importance will be. For example, in the case of the storage problems, it reaches about 16 problems and the variable (problem) is the cutting off the electric current expressed by a number of (d) of the doers of the storage process (A). The most important problem (r = 16) at (b) among them and the second most important issue is at (c). Thus, the rank degree of the problem of the blackouts of the electric current

$$= \frac{(B * 16 + (C * 15)) * D}{A^2} \text{ (2)}$$

The expected value has been modified according to the following:

1. The observed value expresses the recurrence of those who suffer from this problem. Also, it is modified according to the importance of each single problem.
2. It is the arithmetic average of the adjusted values of all problems. The storage problems are searched through the sample of the study. Therefore, it is found out it is divided into problems related to the problems of refrigerators such as the cutting off the electric current voltage and the lack of skilled labor to carry out the process of storage. Also, among these problems are the lack of the number of the needed refrigerators for that process and the raise in the purchase and renting prices of the needed refrigerators. Thus, this study will also review the importance and ranks of those problems individually³.

1-The storage problems in refrigerators

The problem of the cutting off the electric current from the refrigerators for a long period of time occupied the first rank. This may expose the crops for damage, and about 95% of those who do that process suffered a lot. Also, this problem occupied the first rank for the storage in refrigerators. The ratio of those who suffer from this problem during storing through (cooling) reached about 80% out of their total number in the sample since it occupied the fourth rank. Besides, it is followed by the irregular temperature and humidity by about 75%. It occupied the third rank as well as the regular maintenance of water condensate, which characterized by its high costs. Also, the shortage of Freon cylinders in the market occupied the last rank by about 60%.

2-The storage problems in looms packages

It is important to mention in this context that the problem is represented in the spread of the brown rot of potatoes and insects and rodents, which cause the damaging of this crop. However, when you use the powder, it helps to avoid injury but it reduces the retail price of the crop. Also, it is advised not to spray the crop because of the side effects on humans. In addition to this is the high temperatures inside the looms packages cause damage in parts of the crop. Also, the spread of infection in butterfly tubercle cause damage in large amounts of the crop. Besides, the lack of good places for those looms packages along with the lack of following the guidelines of the Ministry of Agriculture through using the pesticides cause damage to large quantities of the crop. Those who suffered from those problems are about 35% 0.26% 0.12% 0.10% 0.7% 0.3% for each of them, respectively. This problem occupied the second rank in terms of the relative importance of the storage methods under study.

3-The environmental problems resulting from the storage of the crops under study.

These problems are embodied in the bad odors of these damaged crops along with the decline of cleaning companies and lack of its continuity. Also, the problem becomes more complicated when there is waste after selling the crops. Consequently, this leads to an increase of insects, worms, ants and weevils. Besides, spraying potatoes with powder causes very bad smell that reduces the ratio of the crop selling. Thus, it leads to a decline in its price and about 90% of the sample members agree on this point of view.

Moreover, the economic significance of these storage problems is clearly illustrated in the shortage of the financial side that causes the non-availability of the various storage means like refrigerators and buying the different storage requirements to keep the crops from damage.

Accordingly, the study recommends the need to address the quality of the storage, the cleanliness of refrigerators and its continuous purification. Consequently, this helps to get a good crop that will not be subjected to damage. Also, good ventilation of the crop is highly needed. The longer the crop is exposed to the sun (potatoes), the greater the possibility of being injured by the brown rot. Besides, the study recommends that the storage period should not go beyond 2 or 3 months. Finally, in order to overcome the environmental problems must be allocated places to get rid of the damaged crops.

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