

The Study of Causes Losses Post-Harvests Of Cereal the Case of the Wheat - Barley at the The Region Gharb Chrarda Beni Hssen.

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Abstracts: *The agriculture plays an important role in the Moroccan economy. The cereal culture occupies a place excellence in the farming sector. Cereals are essentially represented by the cultures of the wheat and the barley. The farmers meet several obstacles which accompany them during all the season and which can cause dramatic losses. The difficulty of the estimation of these losses by the farmers which is provoked by multiple parameters influences the quality and the cost price of these farmers. A questionnaire worked out to collect information about the causes of the economic losses of both cultures the barley and the wheat (hard wheat, soft wheat) and the factors which intervene in the variation of cost price during every year. The results show that the major problem for the questioned farmers they are the climatic conditions following the various stations of Gharb Chrarda Beni Hssen region.*

Keywords: *cereals, post-harvest loss, farmers, quality.*

I. Introduction

The cereal production plays a very important role in the economy of the country. The evaluation of the losses begins with the demarcation of various sources of the losses which allows directing the farmer to the problem to be adjusted. "Said Spurgeon, the post-harvest system should begin at the moment and instead of the harvest and to end only at the table of the consumer. Throughout, he should insure a maximum income all those who work, while minimizing the losses and by maximizing profits" (Spurgeon, D., 1976).

According to estimations of the African Information System postharvest losses, which arise before the processes of treatment and of transformation vary from 10 to 20 % (Fao, on 2011).

Cereals are mainly plant food edible by humans and used in farming also as seed for the following year, and grains stored to be marketed at the various moments of the year, undergoes a set of modification of quantity and quality which makes it unfit for consumption.

The Peasants tried to develop plentiful solutions for the mastery of the conservation and the cereal protection at the end to increase the return. The objective of this inquiry is determined the causes of the economic losses of both cultures the barley and the wheat (hard wheat, soft wheat) and the factors which intervene in the variation of cost price during every year.

II. Material And Methods

1- Study area:

The Gharb Chrarda Beni Hssen is situated in the Northwest part of Morocco and covers an area of 8805 km² (Kenitra: 4745 km² and Sidi-Kacem 4060 km²) or 1.2 % of the national area. It consists of a coastal zone (dune, flooded depressions) of continental margins and the central alluvial of Sebou which is the main Oued (Ormvag, 2013). This region occupies a special place on the national level as producer of the cereal and oleaginous crops.

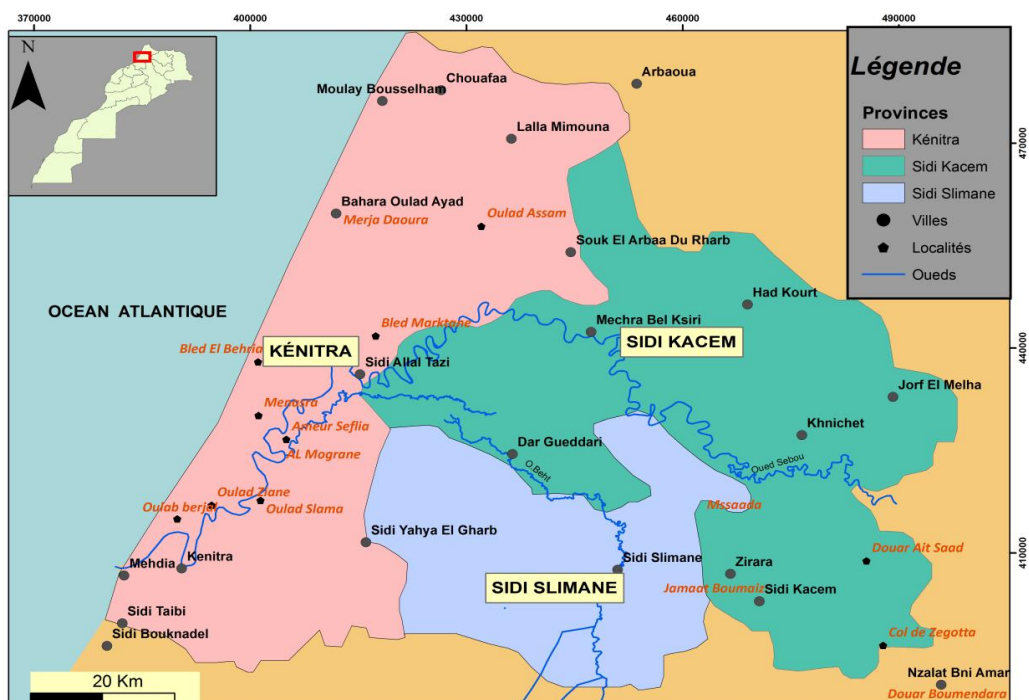


Figure 1: Geographical location of the Gharb plain Chrarda Beni Hssen

2- Methodology:

The culture of cereal in Gharb Chrarda Beni Hssen's region and occupy a wide agricultural surface. We were interested in the stations which exploit autumn cereal, but before beginning inquiries themselves, a preliminary questionnaire was developed has the light of the meditative information of ORMVAG (Regional Office of Agricultural Development), INRA (National Institute for Agricultural Research), and ENA (National School of Agriculture) and we have built a plug survey in French that was translated into Arabic for villagers presented orally is the type of survey most used which is made in the street, in storage agencies in the souk etc. with a record questionnaire that gathers closed questions Multiple choice, closed questions multiple choice or open-ended questions.

3- The species studied:

The species studied two species of cereals studied at the Gharb Chrarda Beni Hssen it is barley and wheat.

Durum Wheat *Triticum turgidum*
 Common Wheat *Triticum aestivum*
 Barley *Hordeum vulgare*



Picture 1: common wheat *Triticum aestivum*.

III. Results And Discussion

1- The causes economic losses:

The farmers use the cereal production in particular that of the barley and the durum wheat for the home consumption and the common wheat is essentially a culture of sale.

The estimation of the various causes of the losses of the system post- harvests (figure 1) leads the farmer towards possible problem to settle. The recent food and financial crises strengthened the accent put on the necessity of reducing the losses post-harvest " Africa cannot allow to lose 20 % of its production of cereal ", declares Jamal Saghir, Director of the Department of the sustainable development of the World Bank for the region Africa (Fao, 2011).

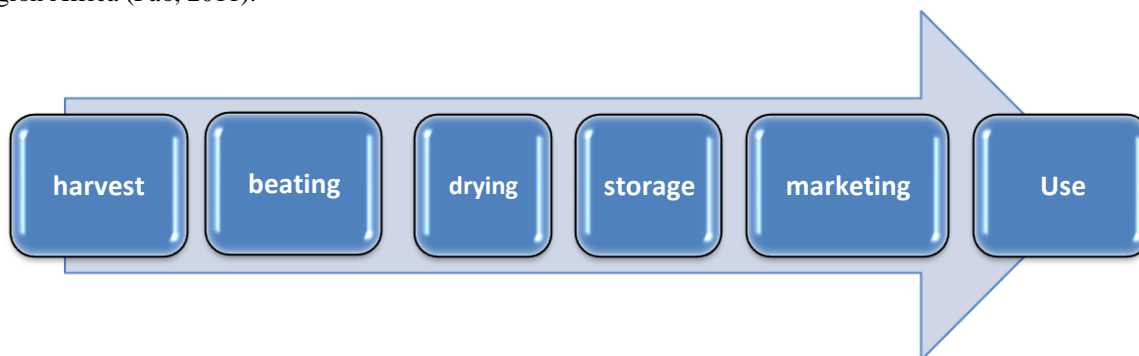


Figure 2: The different stages of post-harvest system

The losses post-production appear under various forms loss of weight by the drying loss of nourishing elements of quality or acceptability economic loss of value or deterioration and material loss of the very harvest due to various factors (Hodges R.J., 2013).

The study of the losses according to harvest includes numerous aspects, which hold the diversity of the concerned products, the operations which follow one another during the system post-harvest, causes which cause these losses, pests and other parasites commodities not to mention the physical, technical, economic and other conditions, which favor the action of the agents of deterioration and, as a consequence, the worsening of the losses (Grolleaud M., 2002).

All this damages can also be of economic order when these losses influence on the price of goods that are lowered in parallel with the poor quality of the grain.

IV. RESULT AND DISCUSSION

The evaluation of the economic losses is realized from an investigation with the farmers, the wholesalers and storage agencies during the period of the harvest have at the end to collect the following information.

1- The causes economic losses:

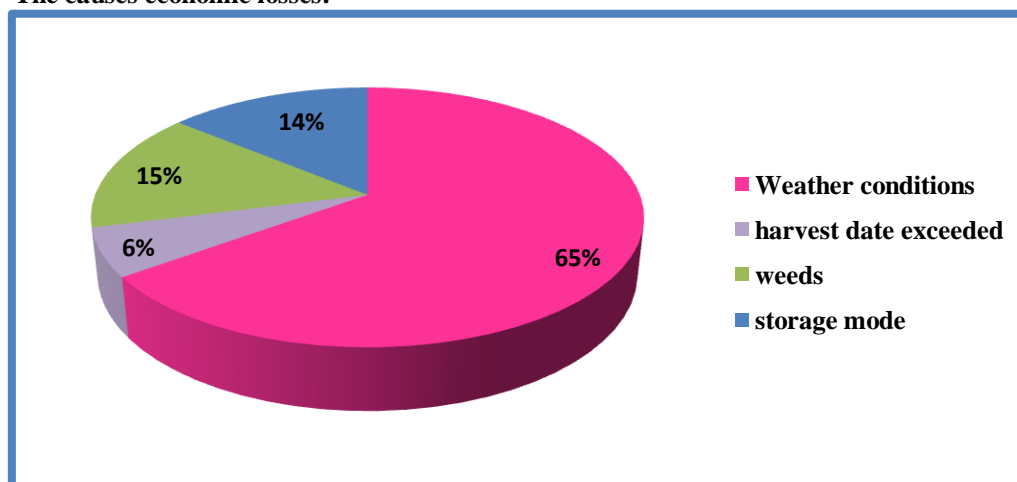


Figure 3: the causes of the economic losses.

During the culture, the farmers meet several obstacles which accompany them during all the season and which can cause dramatic losses. But, what causes the major problem for the questioned farmers they are the climatic conditions (Figure 3) especially if the conditions of harvest and storage are bad such as a high humidity.

The late harvest can expose to losses, in particular because of the excessive dehydration of ears, stalks and grains or late rains. Indeed, in absence of the treatments of weed the quality of seeds deteriorates necessarily and the presence of these herbs obliges the farmers to exceed the dates of optimal harvest until the rate of humidity falls.

In peasant environment the mode of storage played a role very important for the preservation of the good quality of grain. The storage capacity at the family level is important for avoiding that the farmers are forced to sell their crop at low prices under the threat of losing it due to pests and are obliged to buy it back later at a high price for their own consumption (Céline Laisney al, 2012).

We meet several modes of storage at the level of the region Gharb Chrarda Beni Hssen that once these structures are improved, could play an important role at the end to reduce the losses a lot due to to poor storage.

Of what precedes, the successful operation of mechanized postharvest grain depends on a number of parameters related to environmental conditions, to techniques meadows-harvests, to the degree of maturity at the time of the harvest and to the various modes storage used.

2- The Variation of the purchase price:

During this survey, in note of the variations of the prizes according to stations and places of purchase (places of purchase 19,2 %, as SONACOS).

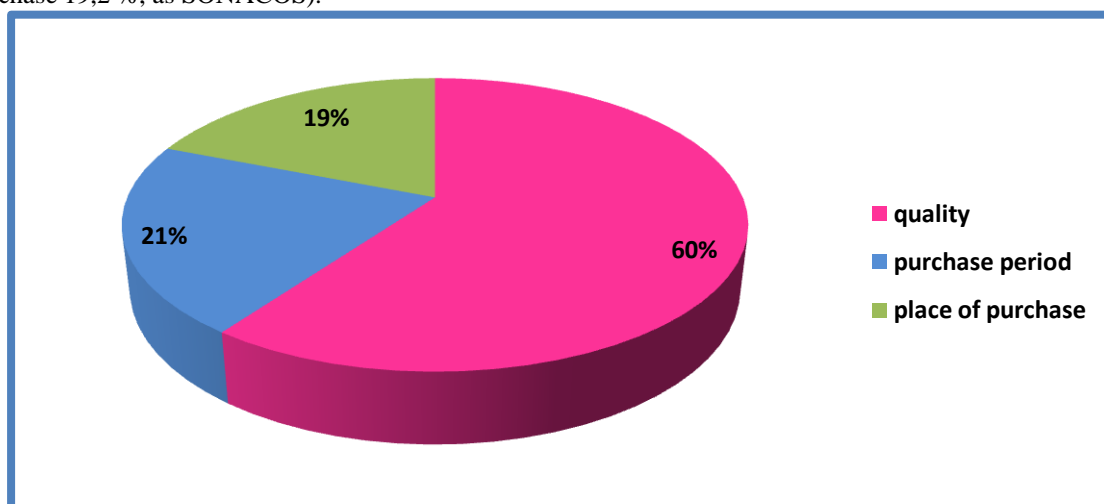


Figure 4: the factors of variation of cost price of the farmers of Gharb Chrarda Beni Hssen's region.

Indeed, the results showed that even if seeds certified as well as uncertified seeds are seriously infected by numerous pathogenic agents, the rate of infection of the uncertified common seeds is clearly upper to that of the certified seeds, as well as the period of purchase which influences the price of seeds, because at the time of the harvest there is a competitors between the farmers where most between them indicate their cultures to the direct selling what reduces the prices with the rates of the exposed grains.

The quality of grains plays a major role in the production and according to outcomes of the investigation; the quality of the used seeds influences the incidence of numerous diseases in the field. The preservation of the good quality consists in maintaining as long as possible the quantity and the quality of grains by acting on the diverse mechanisms of change what limits the growth of microorganisms and insects appeared on the stored grains.

Grain quality plays a major role in the production and post the results of the survey, the quality of the seed used influences the incidence of many diseases in the field. The conservation of good quality is to maintain as long as possible the quantity and quality of grain by acting on the various mechanisms of alteration which limits the growth of microorganisms and insects appeared on stored grains.

The goods must be delivered in good conditioning, what influences necessarily on the cost price of grains that it requires the respect of a set of the parameters and the permanent surveillance.

The losses of cereal after harvest are due, on one hand, to the dispersal of the attributable grain (in the inadequacy of the activities after harvest (harvesting, beating, transport) and on the other hand, in the biodeterioration attributable to the harmful bodies (insects, molds and fungi, rodents and, sometimes, birds).

The study of the losses according to harvest includes numerous aspects, which hold the diversity of the concerned products, the operations which follow one another during the system post-harvest, causes which

cause these losses, vandals and other parasites of foodstuffs, not to mention the physical, technical, economic and other conditions, which favor the action of the agents of deterioration and, as a consequence, the worsening of the losses.

R Boxall, in its methodological work (1986), prefers to separate the losses in storage of the other places and types of losses, which leads us to distinguish two main parts or sections, the first section is dedicated to the losses concerning on one hand, the pre-storage (of the harvest until the drying) and on the other hand the industrial processing (milling, manufacturing, etc.) and domesticates (cooking).A second section is dedicated to all the losses which can intervene in the course of storage, that they are caused by insects, microorganisms or vertebrates.

All this damage can also be of economic order when these losses influence the price of the goods which fall in parallel of the bad quality of cereal.

V. Conclusion

The losses of cereal after harvest are due to all the agents causing deteriorations attributed by harmful bodies (insects, fungi, rodents).

The economic damage deteriorates when the stocking is not made in the good climatic conditions which also depend on characteristics of grains what provokes losses higher than that at the time of the harvest because of treatments and insufficient methods practiced by the farmers.

The quality losses entail a decrease of the nutritional value and the germinal power of the grains which are still difficult to determine them. The farmers tried to increase the quality of grains in the presence of set met difficulties (weather conditions, mode of storage) to increase their productivity which is going to allow them to increase the income of the sale.

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