USE OF COMPUTER-ASSISTED MANAGEMENT FOR MAKING STRATEGIC DECISIONS IN THE AGRICULTURAL FARMS

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Abstract

For a business to be effective it must be well organized, must use software programmes to provide data on the evolution of the activity at any time, use advanced software to facilitate work in agricultural farms and increase its productivity. The main purpose of MBS determining is in comparing the size on geographical areas, making a uniform classification of agricultural farms, in order to determine the economic size and technical-economic orientation of the farm.

To calculate the standard gross margin in the SC Agricola Frugal SRL agricultural farm we took into account the average yields per hectare for each crop, marketing value of each product and variable expenses involved in the production process and that change during the process according to the value of production. In the SC Agricola Frugal SRL agricultural farm the standard gross margin increased significantly during the three periods, thus to 4,827,177 lei recorded in Present, to record an increase of 106.20% reaching 9,554,060 in Objective period.

Key words: MBS, agricultural management, strategic decisions, farms

It is now widely accepted that computer science is an important source for modern agriculture. Computer development offers farmers the opportunity to quickly obtain technical and economic information and effective use of their decision-making on future strategies that society will take.

MATERIAL AND METHOD

To achieve his work we used the case study as major research strategy and in the analysis of company's level of performance we used the model of determination the Standard Gross Margin realized in Excel worksheets. For data collection and analysis we used tools specific to qualitative research and internal documents, technological records and discussions with managers SC Agricola Frugal SRL.

RESULTS AND DISCUSSIONS

The agricultural companies wishing to become or remain competitive need financial, material, human and not least information resources.

For a business to be effective it must be well organized, use the software programmes that provide data at any time on the evolution of this activity, use advanced software to facilitate work in agricultural farms and increase its productivity.

By using software programmes in the farms the working time for collecting, processing and obtaining results is reduced.

S.C. Agricola Frugal SRL was founded in 2005 on the skeleton of another farm, SC Frugal SA and its registered office is located in Dorohoi, Botosani county.

The main activity of the company according to CAEN code is “The cultivation of vegetables and melons, root and tuber plants”. The society in addition to the main activity has recorded two secondary activities CAEN code 0111 “Growing of cereals, leguminous and oil seed plants” and CAEN code 5121 “Wholesale and retail of various agricultural products.”

At present, the company has numerous locations for farm crop (grain and vegetable storage warehouses), machinery and agricultural equipment for the smooth conduct of the business. S.C. Agricola Frugal SRL has now 34 employees, of which 14 employees on undetermined period and 20 fix-term employees. The company uses daily workers during the campaigns. The percentage of persons with superior studies is 14.28% of all employees, hence the training is quite high. S.C. Agricola Frugal SRL commercial company uses especially the young, so it recorded increased productivity. From 2005 until now the company has increased the cultivated area of 80 hectares as held in 2005 to 300 ha in 2010.

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Structure on cultures of SC Agricola Frugal SRL farm is shown in figure 1.

From figure 1 we can see that SC Agricola Frugal SRL farm cultivates 22% of the area with potato, winter wheat – 15% and onions - 13%. The cultures that have the lowest share are pepper 4%.

Standard gross margin is an economic concept of major importance used in structural and technical-economic analyses of the farms.

The main purpose of determining the MBS size is to compare its size on geographical areas, make a uniform classification of agricultural farms, in determining the economic size and technical-economic orientation of the farms.

Standard gross margin (SGM) of an agricultural activity (crops or animal species) means the gross product of the activity in question minus the corresponding specific costs. Gross product value is represented by the value of primary and secondary production, plus subsidies from the state. Variable costs are considered those that vary according to output.

To determine the standard gross margin in the SC Agricola Frugal SRL agricultural farm was used as basis the Microsoft Office software work with Microsoft Excel, where, based on sets of mathematical formulas we could calculate the standard gross margin during the current, objective and optimized period.

To calculate the standard gross margin in the agricultural farm SC Agricola Frugal SRL have been taken into account average yields per hectare for each crop, marketing value of each product and variable expenses involved in the production process that changes during the process according to the value of production.

Regarding the consumption of raw materials and material these were represented by the costs of seed, fertilizers, plant protection, mechanization costs and other expenses incurred in storage, transport, handling and packaging of its production (fig. 2).
Figure 2 shows that the highest value of gross margin per hectare of crop plants with a record 43,236 lei / ha, and the highest value recorded revenues of 45,524 lei / ha.

Gross margin situation in "Present" presents a clear picture of crop farm owned by SC Agricola Frugal SRL and variable costs and revenues for each crop in hand, so farm on basis of these reports can see which crops are efficient and to which to give up the following year.

In the Present value of total gross margin is 4,827,177 lei, resulting in gross margin per hectare of 16,090 lei. The level of total income in this situation is 5,870,486 lei and expenditures of 1,043,309 lei. The culture that registers the highest value of gross margin is potato 1,531,205 lei, and the smallest is held by sunflower with 52,647 lei.

Gross margin value is influenced by total revenue, area variable costs of crops and where it is analyzed.

In the Present situation we noticed that gross margin recorded a value of 4,827,177 lei, the total fixed costs are 149,197 lei, hence there result an income from exploitation of 4,351,580 lei and the value of 4.15943 million lei in operating profit.

Gross margin situation "Optimized" can be further improved by leasing an area of 140 ha (fig.5).

From figure 5 it can be seen that the surface optimized of an agricultural farm is of 440 ha, with 37.66% higher than the Present period. Cultures that have significantly increased the area are those of eggplants with more than 39 hectares in the Present period, onions with 13 hectares and peppers with 12 hectares.
At this stage the gross margin increased by 52.18% compared to the Present period. This increase was due to areas which are planted with eggplants, peppers and onions that record high production per hectare, higher selling prices compared to other cultures and the production costs are relatively small (fig. 6).

Seen from figure 6 that the additional gross margin to the Present period is 2,316,630, with 52.18% higher than the Present period, and interest on additional capital used is 210.4%.

During the objective period, the standard gross margin registers a value of 9,995,405 lei and cultures that present the highest standard gross margin are the eggplants with 3,458,880 lei, peppers with 1,813,756 lei and potato with 1,690,845 lei.

From figure 7 we can see that the value of gross margin increased by 35.55% compared to the Optimized and by 106.20% compared to the Present period. In the Objective period SC Agricola Frugal SRL farm wants to use a total area of 600 hectares, with 36.36% higher compared to the Optimized period and 100% higher compared to the Present period.

Additional farm income of SC Agricola Frugal SRL to the current period is 4,726,060 lei and 22,221 lei in comparison with Optimized.
CONCLUSIONS

Gross margin is a standard economic concept of major importance and of great topicality used in structural analysis and technical-economic farms. Standard gross margin allows both the comparison of individual activities within a farm, and comparison between different farm activities. In the SC Agricola Frugal SRL farm, the standard gross margin increased significantly during the three periods, thus from 4,827,177 lei that was recorded in Present to record an increase of 106.20% reaching 9,554,060 in Objective period.

In the SC Agricola Frugal SRL farm, the implementation of computer-aided management has many advantages such as making technical-economic analysis faster and release of solutions in very short time, reducing processing costs, creating a database with information farm to reduce the storage space.

SC Agricola Frugal SRL farm should maintain or increase the areas planted with eggplant, peppers and onions, which although quite lifting costs have recorded high productivity per hectare is 17000-18000 kg / ha and that have prices between 1.4 and 2.5 lei / kg.

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