IMPLEMENTATION OF IT IN AGRICULTURE A NECESSITY FOR ROMANIA

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Abstract. At this hour, IT&C is very weak represented in agriculture. Regarding the other European countries, Romanian agriculture doesn’t make use of the facility offered by the modern data storing and processing devices. The present paper tries to present the advantages brought by ITC&C, and the existing problems in Romania, problems that must be surpass.

INTRODUCTION

Of all Romania’s economic branches, agriculture is the least advanced in meeting the ICT (Information and Communications Technology) requirements. This is because of several objective and subjective factors that make problems difficult to solve (adapted after [2]).

![Figure 1. The share of agricultural farms using ICT (2005)](source: Farm Computer Usage and Ownership, Agricultural Statistics Board, NASS, USDA, 2005)

Such factors are:
- the absence of an adequate ICT infrastructure;
- the absence of a communications network in the field of agriculture;
- huge costs that limit the access to the existing communications networks;
- very few agricultural organizations use computer technology;
- the farmers are not familiar with computer technology;
- the farmers are reluctant to new aspects;
- the farmers fear that ICT will inevitably lead to a reduced number of jobs;
- major financial difficulties of all kinds.

In the European Union, the number of households connected to the Internet has increased, as presented in table 1.

<table>
<thead>
<tr>
<th>Share of households connected to the Internet</th>
<th>UE 25</th>
<th>UE 15</th>
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<tbody>
<tr>
<td></td>
<td>2004</td>
<td>2004</td>
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<tr>
<td>Households with Internet connection (%)</td>
<td>43</td>
<td>47</td>
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<td></td>
<td>2003</td>
<td>2002</td>
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<td></td>
<td>43</td>
<td>39</td>
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Source: Eurostat, Community survey on ICT usage in households

It is obvious that the number of households using ICT is increasing, although it may decrease once the EU has comprised ten new members states. A significant aspect is that in 2004, in the European states, 38% of the agricultural employees with ages between 16 and 74 were regular users who connected to the Internet at least once a week. Among these states, Romania is the last on the list.

The data in figure 2 confirm the above-mentioned situation regarding ICT usage in Romanian agriculture. We have performed an opinion poll among agricultural producers, but in all cases the situation could not be evaluated correctly because the people interviewed were unreliable. When asked whether they would be willing to invest in ICT, most of them asked in their turn: “Does my cow eat ICT?” Such a “dialogue” is the best description of the poor financial resources in the Romanian economy in general and the state of the Romanian private agriculture in particular. Consequently, the decision-making system cannot operate at best.
parameters irrespective of its level. In our opinion the solution would be the implementation of ICT in agriculture by any means and as fast as possible. ICT implementation does not turn an ineffective management into an effective one, but it creates a complex system of conditions that smooth the progress of high quality operations.

The contribution of ICT in the agricultural managerial process may take the following concrete forms [1]:

- the possibility of storing unlimited amounts of data that will create a quality database;
- the possibility of applying larger economic and mathematical models that allow complicated calculations;
- the possibility of simulating agricultural processes and phenomena;
- the possibility of processing the data about all the activities performed in an agricultural system with a computer (at any level in the agricultural system hierarchy).

The implementation of ICT in agriculture implies more than simply typing the handbook at the computer. It also implies improving the methods and execution procedures of the information process. As part of this process, information is given new dimensions related to their organization, to eliminating processing and transmitting errors, to their contents and high speed, to their amount etc. Basically, the efficiency of the agricultural managerial system and the process of making a rational decision both depend on the informational process that can be optimized by computer usage.

The concept of info-agriculture or computerized agriculture is meant to assist us in understanding another concept, that of the interdisciplinary study of ICT usage and its interactions with the rural environment.

Info-agriculture describes a multitude of models of services for agricultural production, rural development, communications and computer resources. It must actually contribute to the development of the rural area, agricultural organizations and producers and to become a fundamental part of the managerial system at any level within an organization.

In a more restricted sense, info-agriculture must provide a series of services, such as:

- desktop publishing;
- financial and accounting operations;
- data processing;
- economic, mathematical and optimization models;
- assistance in the decision-making process;
- local/global information;
- archiving;
- market research;
- on-line trade;
- training.

Info-agriculture must accelerate the positive changes in the rural environment and to guarantee that these changes lead to progress, opportunities and integration. The main objectives of info-agriculture are the following:

- to provide the involvement in the information technology society and the on-line connection of the whole agricultural labour force;
- to provide “ICT-trained agriculture” and a managerial education able to lead to economic growth, welfare and a closer link between the rural and urban communities.
The above objectives can be reached on condition a series of obstacles that hinder the ICT implementation process are eliminated. Such obstacles are:
- uncertain and costly access to ICT;
- poor training of the rural population;
- the absence of financial means in the rural area;
- no government support for new technologies and services in the rural area.

The notion of global info-agriculture refers to exchanging any kind of information on the Internet among partners in larger areas. Local info-agriculture involves smaller areas and the use of the computer at any level of agricultural organizations.

CONCLUSIONS

Unlike mechanization and fertilization, processes that had extensive effects on man’s physical capacities, info-agriculture has an intensive effect expressed, among others, by man’s better intellectual capacities and performances. At the same time, info-agriculture allows a synthetic, integrated and uniform approach of both the basic activities and those to which they are connected and which are not limited to computer usage.

Info-agriculture will lead to a superior managerial process at any level, although negative effects may occur as well. This is because training the expert in management is not enough; he must have access to instruments able to do what he cannot. The decision-making process that involves co-operation between the manager and info-agriculture is the key to high quality performances of the managerial system. Although high costs are involved, the current performances fully justify them. In other words, info-agriculture is the main means of making the information and decision-making system more efficient. As the decision-making process is in fact an informational one, it can be rationalized by ICT usage. Meeting the information requirements of the system rationally and effectively will balance the effects and the value of the resources, leading to target achievement eventually.

Capitalizing the facilities provided by info-agriculture is a way to a rationalized information system and improved production activities. ICT usage will provide the database required for developing models of economic growth, access to information on how to reach objectives, intensive links within the system and an estimation of the deviations and their causes.

Info-agriculture will provide the best possible operational rural system and its components. The local and global results of this system will depend on a large number of elements like establishing the most advantageous connection among resource type and characteristics, resource allocation, best technologies etc.

BIBLIOGRAPHY