INFO-AGRICULTURE – GLOBAL AND LOCAL ASPECTS

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Abstract

The fast development of information technology and communication has the direct result the increase of the number of software applications for agriculture and rural development. As a new activity, specific to the information society, infoagriculture is defined through the use of information technology and communication in order to offer information and services for agriculture and rural development. It is obvious that there are no restrictions neither regarding the nature of information that is used or regarding the way this information is going to be used. The introducing of the “infoagriculture” term is meant to ease the understanding of the idea of interdisciplinary study of information technology and communication and its interaction with the rural area.

INTRODUCTION

The unprecedented development of informational activities is a major characteristic of the contemporary society. The structural and functional complexity of the society determines the individual’s capacity to solve the multitude of problems that he is confronted with. Informatization has turned out to be the most adequate way of dealing with these problems. In everyday-life the informatization process has already shown its various effects and is considered to be the only alternative of supporting man in his effort of facing the difficulties of a complex society.

The information society centers around producing, disseminating and using information, as a symbolic representation of certain entities from the economic, scientific, technical and socio-political reality, generated by cognitive processes such as direct observation or the semantic interpretation of messages.

The accelerated development of information technology and communication has as a direct result the increase of the number of projects and software applications in the agricultural and rural development field. As a new form of activity, specific to the information society, info-agriculture is defined as the use of information technology and communication to provide information and services for agriculture and rural development. Info-agriculture aims at facilitating the understanding of the idea of an interdisciplinary study of information technology and communication and its interaction with the rural area.

MATERIAL AND METHOD

Info-agriculture broadly describes a multitude of various services for agricultural production and rural development, for communication and informational resources. It is aimed at bringing an obvious contribution to the development of the rural area, of agricultural organizations, of agricultural production units and is expected to become a major component of the management system at any organizational level [2].
Info-agriculture is intended to offer a series of services, such as:
- financial-accounting operations;
- data processing;
- economic-mathematical and optimization models;
- decisional assistance;
- make-up editing;
- local/global informing;
- market research;
- e-commerce;
- training.

The main goals of info-agriculture are the following:
- the involving in the information society and the on-line connection of the entire labor force dealing with rural development;
- the creation of an “educated agriculture” in the field of information technology and communication (ITC), with a management culture that is able to lead to economic growth, welfare, and to bring the rural communities closer to the urban ones.

In order to reach these goals there must be faced a series of obstacles holding down the process of implementation of info-agriculture:
- the uncertain and expensive access to the new communication technologies;
- the insufficient education of the rural population;
- the lack of financial resources in the rural area;
- the lack of support from the state for the new technologies and information services in the rural area.

The concept of global info-agriculture refers to the exchange between partners within a very large area, of information of any nature, using the Internet. Local info-agriculture consists in the communication within a limited area, as well as in using software applications for all the activities of agricultural organizations at any level [1].

Here is a diagram presenting the farms of the USA that are using the new communication technologies:

![Diagram showing percentage of agricultural farms using ITC](image)

**Fig 1.** The percentage of agricultural farms using ITC (2005), %
Source: Farm Computer Usage and Ownership, Agricultural Statistics Board, NASS, USDA, 2005

In the European Union the situation is quite similar, as the extent of Internet connection has been enlarging constantly among agricultural exploitations.
Table 1

The percentage of households having Internet connection

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Source: Eurostat, Community survey on ICT usage in households

One can obviously notice the tendency of growth of the agricultural exploitations that are using the new information and communication technologies, even if the percentage will be reduced by the extension of the EU and the addition of 10 new member countries, although the latter have already registered growth as well. Most significant is the fact that in 2004 38% of the people dealing with agriculture, between the ages of 16 and 74 years old, have been regular users, accessing the Internet at least once a week. Things are the same for European countries, Romania having the smallest percentage.

![Fig. 2. Situation of Internet connection in same state](image)

Source: Eurostat, Community Survey on ICT usage in households

RESULTS AND DISCUSSIONS

The question of “global or local” in info-agriculture could not be given a definite answer. We consider that the main problem is that of the effects generated by info-agriculture and their global and local spreading. These effects should be located both at a microeconomic level, as well as at a macroeconomic one and they must be based on the principles that rule the development of the information society: persuasiveness, accessibility, availability, the existence of the necessary resources, suitability. It is also important whether info-agriculture will generate a global process, following a pattern similar to the global character of the Internet, or whether its most significant effects would only consist in the local use of the Internet for business purposes.

One of the main characteristics of the new economy is represented by the so-called e-activities or tele-activities such as: e-education, e-medicine, e-commerce etc. It is obvious, though, that not all the activities in a society could be replaced by e-activities. This is the case of agriculture, for the activities connected to the production process. Nevertheless, in a traditional field such as agriculture, the ability to operate and use information will replace more and more the human and mechanical force. The use of the new communication technologies will contribute to the optimization of the production process, a highly stressed tendency that requires extra knowledge and a multidisciplinary education. The introduction of
information technology and communication will alter the skills that are demanded, as well as the professional relations [3]. Thus, the success of info-agriculture will fundamentally depend upon the acceptance, both by managers and their employees, of the new working instruments.

In this context, we will separate modern agricultural units, which use the new information technologies, from the traditional agricultural units (the narrow-mindedness, conservatism, the lack of financial resources etc., are keeping back the use of the new information and communication technologies). The dominant feature of work in the future will be the replacement of the traditional pyramidal hierarchy with a horizontal one. Thus, the manager’s role at any level will not only be to make decisions but also to optimize the creativity, the innovation capacity and the instruction of the employees. The competitiveness of the management system will depend on the capacity of adopting the new information and communication technologies [4].

Even if we couldn’t talk about the tele-activity of the direct worker, who wouldn’t be able to hoe “on-line”, the virtual office will still find its place in certain agricultural areas. For instance, the manager of a large agricultural unit, whose input/output is information, will transmit his decisions by means of certain components of the new communication technology. The virtual office is a concept that refers to a wide range of working methods, with different degrees of mobility or presence at a certain immobile headquarters [3]. This is why we considered its use as being appropriate for agriculture also, at a certain level. In order to ease the understanding of the idea mentioned above, we would specify that this issue doesn’t only concern the technicians in the field of informatics. The conscious effort of everyone dealing with the rural area is highly required.

CONCLUSIONS

Just like in many other countries, info-agriculture is still a very new field that isn’t precisely defined, as we couldn’t yet foresee the tendencies on a medium and long term. Unfortunately, we couldn’t talk about a global approach of info-agriculture yet (unlike e-commerce, for instance), but local use has been noticed. There are firms in the ITC field that offer their services, and there are also certain organizations that use them. In our opinion the adequate solution would be the use of integrated information systems and of a global electronic communicational environment. In order to do this, things will have to move fast at the macroeconomic level, removing all possible obstacles, big or small.

The development of info-agriculture is obviously even more important for Romania, considering our adhesion to the EU and implicitly the European interests.

BIBLIOGRAPHY