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An Interdisciplinary Approach to the Significance of Digital Economy for Competitiveness in Romanian Rural Area Through E-Agriculture

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Abstract

The digital economy is the key factor in the recovery of the EU economy and especially the Romanian economy. Based on its strengths in technology and knowledge, Europe should exploit the full potential of the digital economy. The digital economy offers great opportunities for SMEs in the manufacturing and service sectors. Therefore, an ambitious Digital Agenda, providing concrete steps to complete the online single market will be a key to sustainable economic recovery and social development of Europe.

The understanding of what makes them a success or failure, and how much impact they may have in contributing to the wider rural economy is still relatively poorly developed. What is clear, from a wider European perspective, is that these new forms of e-agriculture with ecological entrepreneurialism are growing at a relatively fast rate.

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1. Aims:

eEurope, eEurope+ (plan dedicated to countries in the adhesion process - before the enlargement of the European Union), eEurope 2005, i2010, i2020 Strategy action plans have represented major measures in developing the IT&C infrastructure in Europe, citizen education, developing the ability to use new technologies, launching new concepts

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meant to contribute in the development of the European economic society: e-Government, e-Health, e-Learning, e-Inclusion, etc.) [1] and we can add here, e-agriculture too.

We are focusing here on opportunities for a sustainable development and grow in competitiveness in rural area of nowadays, based on the implication of digital economy and Information and Communication Technologies initiatives in rural sector, presenting and discussing latest research and suggesting new ideas, solutions and methods for sustainable producing food, natural resource management, building resilient agricultural systems and farming systems from a bio-eco-economic perspective.

Following the dynamism that life presently know we consider an essential condition for the harmony that the economic discipline enlarges its sphere of investigation so that besides the current preoccupation with mathematic models and statistical analysis it should take care of the great importance but too little analyzed so far such as anthropology, morale but eco and bio economy.

The last decades have called the public attention and decision factors with a new dimension, the ecologic one. By minimizing the consequences of our actions the way man has behaved is being explained as well as the way he was supposed to be compared to the world he lives in and the other life forms he depends on, directly or indirectly through food or other needs.

Therefore as biological beings our activities directed towards the satisfaction of our own needs as being the only ones to be taken into consideration are justified even if they lead to self-destruction.

2. Background:

Eco Bio Economy can be considered an attempt for a new economic vision that reunites: economy, ecology, biodiversity, eco economy and bio economy and it is focused on the intelligent sustainable development of the world.

Recently in the international literature of specialty are more attempts to unite the two concepts in a new paradigm the ecoeconomy from Lester Brown and the bioeconomy from Georgescu Roegen.

Eco Bio Economy defined as such: it is an economy of the future is the life of people by using the environment resources rationally. (bios meaning “life” and “oikos” meaning “habitat” in Greek language). It can create “arenas and reflection spaces in specialist researchers and experts in different, domains but in some other domains insufficiently explored so far”. Eco Bio Economy can generate new directions to approach: Eco Bio Sanogenesis, Eco Bio Ethics, Eco Bio Engineering and new conceptual directions: Eco Bio Projects and Eco Bio Concepts [2].

The Eco Bio Vision of Economy is to develop the welfare of the mankind under all forms in a sustainable way through an economy of the future for people’s life by using the environment resources rationally. Eco Bio Economy is a scientific attempt; an economic and philosophic one dedicated to the development of environmental interpreted health, of the welfare of humanity through a concept that is multipolar interpreted and promotes the Agrifood Green Power and Smart Sustainable Integrated Development of future [3]. All of this can be and should be integrated with the new wave of digital economy.

Paul Hawken in his paper “Blessed Unrest” comes to the conclusion “Now we steal our future by selling it and by calling it G.D.P.” We could have an economy of improvement for the future instead of stealing. One is called reconstruction the other maneuver [4]. This new e-economy, that anyone is expected, it will work only if we will understand the importance of right integration of digital economy in all sectors of life, and we are referring in these lines especially to agricultural aspect.

3. Experimental, Results and Discussion:

If we speak of bioeconomy we get to both the domain of biotechnologies as well as to that of modern technologies. By the enforcement and rapid spread of TIC around the used we have a more intensified wish to understand how those modern technologies might be applied in the main sectors of economy for country development. It is an increase as have as information technology and that of communication is essential to accelerate the social- economic development and the Romanian modernizing agriculture.

Therefore the challenge in to implement innovative strategies, should allow the development of e-agriculture to avoid delays that can increase the discrepancy between the rural and the urban. In this respect, same preconditions to use the technologies of communication and information in agriculture are established in e-service delimitation, developing possible technological platforms or channel diffusion and identification for some tangible benefits are necessary conditions but not sufficient for the development of Romanian e-agriculture. There is a need to aggressively promote valuable creation added to the delivery service of e-agriculture. At last, the major force behind the long term demand for e-agricultural services will come to am and by using accessible platforms. By placing in the center of e-agricultural development the necessities concerning the final used the success in future is essential

An excellent example of good practice of using new technologies in agriculture and rising animals is Sweden, and this, because of the place Sweden occupies in the implementation of information technology and communications even in rural areas, number one in Europe and number two in the world after the United States. In the northern Europe is recorded the biggest dynamics in Europe of numbers for robots use in the farms. For examples the old technology requires a man to wash and fix milking machines. Claims of expertise were increasingly larger every year, which is why there was a need for an alternative. As a result of accessing the European project milking robots are used more and more often. A robot can handle 60-65 cows, and it costs 1 million Sweden Kronors /piece. The new technology system monitors each cow's milk, food, the number of milking per day, how much time has passed since the last milking, whether it is in fertile period if it is pregnant, if it is ill or what diseases it had, how old it is.

During the milking, the quantity of milk obtained from each nipple is measured and is compare by the computer with the average. Moreover the flow is measured and when it decreases, that robot is stopped and the nipple released.

The milk is pumped through pipes with air pressure into the main tank and samples are taken. These are sent to a laboratory for testing, and the result is sent back over the Internet.

In more and more farms that own or work land are machines and tractors that use GPS system with a maximum error of 2 cm through satellites.

In the first instance employees said they did not need this technology, but when the satellites are off for a few hours they complain that it was easier with GPS. Tractor keeps one direction, line, the GPS controlling and recording everything. When they sprayed the crops they have to keep a distance from the neighbors, sources of water, ditches between and all this processed is controlled by the satellite.

If errors are detected in the robotic milking system overnight (i.e. a feeder is blocked) only in case of major alarms the farmer or employee who was entered into the database of the computer responsible for that night is called and if he does not answer the others on the list follows.

The study shows also that from the perspective of the rural population the government is expected to do more to implement the digital economy in this environment thereby trying to reduce the digital divide.

To minimize the negative impact we have in view the investment of governments in developing services for the use of the Internet and the support infrastructure necessary for data traffic, satellites, Internet connection, phone services including Subsidies for the necessary infrastructure to give GSM and 3G signal the rural areas. We must not leave aside the most important resource to back the development namely the human capital who works for the mobile phones and computers, specialists to develop this content, electrician engineers to fight for the spreading of revolution technology regarding information and communication within the rural areas.

It is imperative to solve the problem regarding the access in the rural area of the information and communication technology and so modern agriculture will have a positive impact regarding its development for the continent.

From this outlook we believe it is very important to study the theme of competitively growth within the rural environment by adopting the technology of information and communication and this must be an important objective and can be a chance in order to surpass the present situation. The objectives of the EU are far from being attained regarding the dynamics of using the internet in the rural area and Romania bags behind. But an increase of this dynamics is to be taken into account [5]. There is a strong connection between the increase in the number of Internet users in the rural area and the strategies of the companies that enlarge in online environment and start to give a greater attention to the rural both from the perspective of the consumers and the future employees, in this respect cutting down cost.

During the following priorities for rural development should go towards stimulating innovation and knowledge base in rural areas, strengthening the links between agriculture, research and innovation (e-agriculture), and promote vocational training in agriculture. All this is added to increase the competitiveness of agriculture and farm viability by facilitating generational renewal in agriculture [6].

According the International Union of Telecommunication, a third of the world population has access to the internet while the digital gap is decreasing, estimating that 1 billion people live by agriculture and lack any kind of connection with information and communication technology [6]. I mention it in a special way as it represents a problem for the development of agriculture in Romania because farmers how live in the rural area are not endowed with services necessary for the technology of information and communication.

By using technology information and communication to promote the developing of agriculture, there are extraordinary economic social benefits and new opportunities to transform the means of existence for poor agricultural communities. Same are: food security that comes from the productivity of harvests and animal farms, improvement of access to national and global markets, improvement in delivery of rural financial service cutting costs in transactions, rapid methods of communication decision taking to manage the farm.

By using the technology of information and communication in agriculture and rural development will have a significant contribution both at a local, regional, national and international level.

Even if this technology was used in agricultural areas by the developed states years ago (precision agriculture ,electronic auctions ,negotiations through an online platform)they were accelerated during the last 5,6 years ,with a sudden growth in researching the opportunities offered by those technologies for the farmers ,farms, governments as well as were governmental organizations for increase in the level of lining and state development.

The strategic information can be transacted on web platforms in due time and include tariff data for the product ,weather reports ,pests and surveillance for the disease, market assessment, change in supplying conditions for the products, market availability.

It is important to note that the rate at which ICT is integrated into the national curriculum, education is essential to the success of agriculture and rural development.

Coordination and integration of agricultural developments at national, regional and global levels is demonstrated by the flow of information and content of the development landscape that will stimulate agricultural development worldwide.

4. Conclusion

Despite the progress that has been made in rural development and agriculture, there are still many difficulties to be overcome. Without joint action by the state local actors of rural communities, this development will suffer and delay the harmonious development of the country.

Application on a wider scale and more effective use of digital technologies will thus enable Europe to address fundamental challenges and will provide Europeans with a better quality of life, due better healthcare services, more effective transport solutions, a cleaner environment, new possibilities of communication and easier access to public services and cultural content [7].

Development of high-speed Internet networks today has a revolutionary impact similar to that of the power and transport networks a century ago. Europe is still a patchwork of national online markets, and Europeans cannot take advantage of a digital single market due to problems that can actually be solved. Commercial and cultural content and services need to be able to move freely across borders, and this objective could be achieved by eliminating regulatory barriers and facilitating electronic billing and payment transactions, to resolve disputes, as well as consumer confidence. This study is intended to achieve an increase in market interoperability based on local, regional, European and then global.

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