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CONTRIBUTIONS TO THE EXTENSION PROGRAM ON SUSTAINABLE MANAGEMENT OF SOIL AND WATER RESSOURCES IN AGRICULTURAL HOLDINGS IN SOUTH EASTERN ROMANIA, PRAHOVA COUNTY

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Abstract: ***Agriculture has major contribution to sustainable development of economy and society through economic and social opportunities it gives current and future generations. Agriculture not only support for biomass production or business that provides human food, but the very basis for life. At the same time, but agriculture must assume responsibility and soil protection and other resources of the environment that may degrade. Sustainable agriculture is the major objective to optimize productivity, and at the same time preserving natural resources base This means that agricultural production systems will keep the balance between inputs and outputs, between investment and benefits, in terms of quality assurance environment and promote overall, a sustainable economy.***

Keywords: primary natural potential, sustainable rural development, soil and climate conditions, agricultural performance

1.INTRODUCTION

Sustainable development aims to improve both current and potential future to meet the needs of people through harmonization exploitation of natural resources with environmental policies, and by judicious investment orientation and technological or institutional innovations.
At this time of civilization, that natural resources are limited and the needs and consumption are growing in a more or less exponentially. This is why, dualism quantity - and quality can become a fundamental starting point in cutting the dilemmas of the new millennium with ramifications so wide and deep socio-political and economic circles. It's about the new concept that is limited to a minimum intake of chemical additives (pesticides, fertilizers) in culture.

2. SUSTAINABLE MANAGEMENT OF SOIL RESOURCES IN AGRICULTURAL HOLDINGS IN SOUTHEASTERN ROMANIA, PRAHOVA COUNTY

Following that cultivation will result in only products free of chemical substances that could harm both human (their customer) and the whole area used.
Organic farming involves replacing chemical additives with biological products, biodegradable and safe environment. Such products are used successfully for many years and are diversifying their range each year thanks to the research teams around the world including Romania. The advantages of these organic-farm agricultural products of plant and animal are multiple, complex and performs a beneficial particularly broad spectrum of interests as follows:
a) in terms of the farm itself:
- Determine the inputs and thus lower costs, which annihilates a certain extent current financial constraints of farmers;
- Involves a significantly higher labor each technological chain in part (in the context of shortages of equipment and special equipment) which refers to a range of workforce employed in agriculture and declining unemployment and retraining;
- Equivalent yields quantitative results compared with current ones) and the incomparable quality of conventional products polluted / contaminated;

- Friendly local ecological factors and natural resources (water, air, soil) and biodiversity (a very important asset in respect of obligations assumed by Romania in signing or acceding to various international conventions on environmental protection and biodiversity);
- Gentle technological environment for health workers (leading to lower health costs of people employed in agriculture, but also potential consumers);
- Reducing intensive upstream industry;
- Integration of organic residues in agricultural technological process of field crops;
b) in terms of ecological product as such:
- Healthy product without nitrates / nitrites or heavy metals, the major use various treatments, including

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preventive and curative gerontology and with reference to future generations;
- Significantly higher export requirements, as well as prices (offset balance of payments);
- Higher efficient land infrastructure improvements;
In any farm size is paramount role of water, both in quantity and quality report. In areas with sufficient moisture, organic farming is more profitable technologies.
Excluding mineral amendments and wide application of organic fertilizers help to develop more abundant root system and reduce the soil compaction.
As a result, maintaining records of soil moisture and increase its utilization by the plant root system. Thus, in conditions of organic agriculture in arid and dry years, yields of cereals, grain legumes and technical crops are higher than those of traditional technologies. Use fertilizers and pesticides is linked to their penetration and accumulation or their metabolites in soil, water and sometimes in agricultural crops.
A very special role we have decorations to control soil erosion, given under organic cultivation on slopes, but grazing under the same conditions, all with a slightly higher exposure to these risks, especially in intensive mechanization, especially in the absence of proper sizing of the system of agricultural machinery and the grazing plan.[1]
Reported solely to agriculture, environmental emergencies worldwide are related to climate change, the rate of deforestation and soil with chemicals intoxication increased remanence. Protecting endemic flora and fauna, biodiversity conservation by creating and maintaining gene banks, and it should become a priority although the goal is long term.
In essence, organic agriculture, ie agriculture and clean unpolluted also represents the farm inputs are minimal, applying environmentally friendly technologies, but excluding entirely pesticides, fertilizers and other chemical compounds and synthesis technology.[2] This prohibition includes both full-year conversion period the agricultural and technological chain in its completeness, from preparation through to agri-culture-fluid fitopedo ameliorative technologies for specific crops, harvesting, transportation, storage, processing (if applicable) and to packaging / labeling and exposure for sale.
All farms and agricultural companies, agro-ecological and market undergoing a period longer or shorter conversion, which is equal to the time elapsed between the start of environmental management and obtaining the organic farm or company. Certification is made by a national or international organization recognized by the International Accreditation Service International Federation of Organic Agriculture Movement , which is empowered to assess and guarantee in writing that the production and processing system is carried out in accordance with organic standards.
The transition from conventional agriculture to organic is the step by step, because the economic structures do not feel the effects of decreased productivity, and manufacturers to gain confidence in new systems. Certification is done once all economic units meet environmental standards. Sectoral certification is provided that both systems (conventional and organic) are clearly separated both in documentation and in productive activity. Agri technology combines traditional methods of land cultivation, animal husbandry and processing of agricultural products with modern high-tech and cultural simplified and automated systems and simulation models and analysis.
Data used in this paper were the result of information obtained through a survey manage values achieved in 2008-2009, a total of 80 holdings in the range counties of Prahova, Arges, Ialomita, Teleorman and Dambovita.
The data analyzed were collected from farms in south-eastern Romania, Muntenia, grouped into three categories: 40 vegetable farms, 10 livestock farms and 30 mixed farms. Considering the ownership of the total farm holdings belong analyzed 60 individuals and 20 legal status.
Out of 80 farms, Prahova county only five are in organic conversion, the remaining holdings using conventional methods of protection.
In terms of agricultural technologies used, the data show that 80% of total agricultural area of approximately 35,000 hectares of farms was plowing or disk and harrow gu discuirea was performed on 55% weeds and pests suprafetei.Combaterea was achieved largely by chemical methods, the treatment of herbicides and fungicides pest with insecticides. On methods of fertilization, approximately 35% of the arable land was fertilized chemically analyzed, and only 3% organic tin total arable.
From the data obtained, are remarkable appropriate use manure in fertilizer shares, although 15 are profiled on livestock farms and 50 farms are mixed profile. Discussion of all farms, only seven cases were reported sold quantities of manure for fertilization. Other holdings bought seven solid manure from other farms.
The crop rotation, data analysis shows that 70% of farms using crop rotation envisaged. The land area used in crop rotations is 90% of all arable. Average number of crops in the crop rotation is 3-4 and 2-3 in the case of large farm crops if small farms with an average length of rotation of 2-4 years.

3. RESULTS AND DISCUSSION

The implementation of land use management strategies and water requirements, technical standards, methodologies and instructions will be considered as useful tools at all levels. It will consider the following:
• Performing detailed analysis, including methods for reserve requirements on time and sub-basins;
• Investigation processes drip irrigation strategies, studies on water requirements and available reserves;

• Promote professionalism through membership of institutions and professional associations;
• regulating and measuring devices for water consumption;
• Methods, modern irrigation techniques to increase water use efficiency;
• Methodologies for assessing the needs of modern agriculture water needed;
• Use of manuals (instructions) design and maintenance of irrigation works and construction.

Information management is one of the most important problems of water usage and demand for integrated planning of water resources. A good system of information management is a valuable tool that "the measure is to know." Best efforts on water management in crisis situations is deposited, for example in times of drought. Some of the information management tools available, including databases, computer models known strategy refers to:

• Knowledge of available water resources - especially the underground - the use of resources is usually unknown;
• Databases to support water management strategy;
• demographic effects, the rate of rural exodus;
• Ability to pay for increasing consumption of high water;
• Estimated water use sector present and future, and then re-use estimates for water where a failure is predicted;
• Assessment of the irrigation water quality (eg salinity) in different seasons and its effect on yield;
• Data on actual quantities of water extracted from rivers for farming work and their storage needs;
• Documentation of case studies on water requirement;
• Data on water demand forecast;
• Information systems for water supply schemes and sanitation.

Prahova River Following the evolution of quality indicators and throughout the river, it is noticed that the Prahova Valley - tourist area - the negative influence of catchment water quality with the same name. This influence is especially manifest in the downstream section Comarnic - Tinosu because of the multitude of varieties and sources of pollution, as follows:

- By the river logs fall into the second class of quality;
- The monitoring point downstream Sinaia is set to grade III, the next section, grade remains the same, primarily due to higher intake of tributaries and the autoepurarii;
- The area Tinosu Prahova river water quality falls into grade IV, this can be attributed to discharge of waste water from industrial platform Petrobrazi.

River Teleajen River quality changes from class I to class II of the quality monitoring point downstream Gura Vitioarei . River downstream from the city of Ploiesti situation worsens, so Moara Domneasca control section is included in the fourth grade of quality.

River Azuga Fit the characteristics of quality class III, but corresponds to the maximum allowable concentration of Class II quality Qual 2003 schedule.Cricovul Sarat River Because of strong mineralization is polluted natural grade V being the entire length. Brook Dambu On the section upstream sources Ploiesti-grade is the third, then within the city limits degrades easily reaching the fourth grade, after which the downstream section Ploiesti-watering definitely fits in the grade of V a. Not specified control sections on these sections, the quality is established after occasional analysis and knowledge of the situation on the ground. This situation is due largely to the fact that treatment of Ploiesti station is far exceeded the quantity and quality, with only the mechanical stage. Add to this situation and the impact of other discharges of sewage and industrial waste directly into the river Dambu, water with high content of pollutants, depending on the profile unit which releases. Most important of them come from tailpipes Vega Refinery, SC Extrapan, Astra Refinery, SC January 24. On the other hand, by crossing the city, due to pollute the river Dambu diffuse pollution, drive the pollutants by rainfall and improper storage of garbage on its banks. Variation of different indicators on the chemical quality of groundwater along the river is generally seen their values rising from upstream to downstream. This is explained by the contribution which you have discharges of wastewater on river water quality by reducing capacity and Self-purification in the same sense evil. In sub-Prahova two lakes are used for complex: drinking water, alleviating floods, power generation, etc..

Lake water evolution was followed in time into three sections: upstream dam, middle and tail and on one level. Lakes classification was done in class as the data stored in the program in 2003 Qual. Of physico-chemically the two lakes were grade II a. Trophic state assessment of lakes were examined values of specific indicators of eutrophication process: mineral nitrogen, total phosphorus, phytoplankton biomass plant along with indicator organisms and zooplankton. Groundwater quality Groundwater quality in Prahova county was monitored by a total of 36 wells with depths of up to 50m of which were water samples for physicochemical analysis.

They consider the following indicators: pH, turbidity, nitrite, nitrate, electrical conductivity, dissolved oxygen, calcium, magnesium, alkalinity, total hardness, permanent and temporary, sodium, potassium, chlorides, sulfates, iron, manganese, detergents, lead, copper, zinc, aluminum, fluoride.

4. CONCLUSIONS

Agriculture has major contribution to sustainable development of economy and society through economic and social opportunities it gives current and future generations. Agriculture not only support for biomass production or business that provides human food, but the very basis for life. At the same time, but agriculture must assume responsibility and soil protection and other resources of the environment that may degrade. Sustainable management of soil resources should be based on the old admonition to "let future generations agricultural land in better shape than we received" (Lal and Stewart , 1992).

Sustainable agriculture is the major objective to optimize productivity, and at the same time preserving natural resources base This means that agricultural production systems will keep the balance between inputs and outputs, between investment and benefits, in terms of quality assurance environment and promote overall, a sustainable economy.

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