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# C O N T E N T S

# APPLE FOLIAR SURFACES IN FUNCTION OF FOLIAR FERTILIZER APPLICATION.

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***Abstract***

*In the period that the 2008- 2010 years we studied the influence of foliar fertilisation application device development and yield in apple foliage. The study took varieties: Golden Delicions, Florina and Idared 8 years old, grafted on M26 rootstocks. Distance of planting is 4x2 m as fertilizer to the foliage was 46% Urea in concentration of 0,4% to 1,2%in different stages of fruit development, Polyfeed (N19P19K19) at a concentration of 0,1% and $CaCl_2$ (0,5%-0,7%).The results showed that the use of foliar fertilisation stages provide conditions conductive to the growth of leaf area. The Golden Delicious variety is increased leaf area by 12,6% to 40,1% Idared variety, and 23,5% Florina variety is compared with control variant 21,4%- 26,3 thousands $m^2$/ha.*

***Key words*****:** *Apple, Golden Delicious, variety,*

# CURRENT STATUS, PRIORITIES AND ACTIONS NEEDED IN THE RURAL AREAS OF THE ROMANIAN NORTH EAST REGION OF DEVELOPMENT FOR SUSTAINABLE DEVELOPMENT

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***Abstract***

*Consists of six counties, NE Region is the largest developing region of Romania in terms of population, but also one of the poorest developing regions in the European Union, situated on the second smallest position in terms of GDP per capita. This article aims to provide an assessment of the current state of development of regions, focusing on the rural component, and a prioritization of needs and actions to be undertaken to overcome the current difficulties. The research method involves the processing and interpretation of data obtained in the field research and the statistical sources by using sustainable development indicators used at national and European level. The research result indicates development of agro-tourism and non-agricultural activities as solutions for socio-economical problems of the region in the rural areas. The developing of this region, can be assured in the near future by improving the infrastructure of the region, which will assure the support of increasing investments in the rural areas and the development of economical activities, based on reach cultural heritage of the region.*

***Keywords:*** *rural, regional development, North East Region*

# STUDIES REGARDING MANAGEMENT OF SOWING, SPRINGING AND FORMATION OF PRODUCTION ELEMENTS AT PREMIUM AND DURUM WHEAT KINDS BELONGING TO PROBSTDORFER IN THE SOUTHERN PART OF ROMANIA

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***Abstract***

*This research aims at establishing relashionship between density when sowing, density of ears and productivity elements at premium grains, including durum, for the purpose of reducing the sowing doses and, correlatively, to reduce the farmer's costs, according to the rules of dematerialization of economy and of reducing input values in food production. The studies done in the Southern part of Romania demonstrate that when soils are ecologized and well preserved, the quantity of seed/ha in premium grains can be reduced even under 100 kg/ha. This is possible because the soils have a big capacity of tillering, which increases with the decreasing of the density when sowing. In the same sense and correlatively, the density of ears easily decreases, but the yield is compensated by the increase of the number of kernels within the ear and the increase of the mass at a thousand kernels. By using an appropriate management when sowing, at least 300 lei/ha could be saved, with a positive impact on the farm's economy.*

***Keywords***: *premium kinds, seed, sowing, springing, efficiency*

# THE PREMISES OF ECOLOGICAL AGRICULTURE DEVELOPMENT IN THE REPUBLIC OF MOLDOVA

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***Abstract:***

*The article approaches in a systemic and logical way the theoretical concept of premises for the development of ecological agriculture within market relations. Besides these, the article presents certain considerations regarding mechanism functioning and ecological agriculture development in the Republic of Moldova. Agriculture represents the main economic sector in Moldova and has always played a very important role in state economy. In this context, agriculture must make valuable contributions to state's economic development. Ecological agro-alimentary production is a method of sustainable development in agriculture, which allows the efficient resolution of a number of social, environmental economical and political problems.*

***Keywords :*** Ecological agriculture, Ecological monitoring, Ecological production, Ecological products.

# SIZE AND CHARACTERIZATION OF AGRICULTURAL HOLDINGS IN ROMANIA REPORTED IN EU - 27

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***Abstract***

*The main segment that ensure food resources - agriculture, has an essential role in economic development through agricultural production are the source of food for mankind continues to rise, the boom conditions of the poorest countries, and also the raw material for a series of industries: food industry - 90%, light industry - 70%, chemicals - 20%. Currently, 60% of Earth's population ensures its existence directly from the practice of agriculture. Agricultural development is conditional on decisive differences in geology, topography, climate and natural resources and the diversity of regional activities, infrastructure and social customs. According to statistics, the paper shows the evolution of agriculture in Romania to the EU-27 reported, through the evolution of agricultural holdings and land used by them.*

***Keywords*****:** *agriculture, farm, area, Romania, EU-27*

# NATIONAL IMPLEMENTATION OF EUROPEAN FUNDS IN THE CONTEXT OF SUSTAINABLE DEVELOPMENT

**Octavian Constantin BURGHELEA[1], Cristina BURGHELEA[2]**

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***Abstract***

*Article seeks to demonstrate the priorities it has the Common Agricultural Policy and the impact that the European Agricultural Guidance and Guarantee Fund had at national level. CAP was one of the most important and essential elements of the EU's institutional system. Its objectives are set out in Article 39 of the Treaty of Rome: increasing productivity, ensuring a fair standard of living of the agricultural population, to stabilize markets, to ensure security of supply, ensuring the rational consumer food prices. This article recognizes the need to take into account the desire to reduce farming costs, increase economic welfare and increasing their interest in gradual adjustments to make timely adjustments otherwise required by the European Community.*

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***Keywords****:* agricultural policy, economic funding, increased competitive, financial solidarity

# CEREALS PRODUCTION EVOLUTION IN BRAILA COUNTY – BACKGROUND FOR ESTABLISHMENT OF CEREALS CLUSTER

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***Abstract***

*The research results will be applied in the production of the Braila county, on a main sector of this pedo- climatic zone of cereals.Cereal production in Braila county had an uneven trend over the period analyzed, climatic conditions, quality of germinal material and compliance of cultivating technologies has a decisive influence. The minimum was recorded in 2007, when production fell by 293,000 tons over the previous year and peak in 2005 (over 740,000 tonnes). The structure of cereals production has changed in favor of wheat, barley and two-row barley and at the expense of maize. Of the total production of cereals, wheat represented 26.5% and 67.1% maize; in 2009 the wheat share increased to 37.1% and corn fell to 39.5%.*

***Keywords*** *: production, grain, farm, barley, rye*

# INCREASE ENVIRONMENTAL PERFORMANCES IN LIVESTOCK FARMS BY USING BIOGAS

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***Abstract***

*Biogas production in Romania has been a growing concern at the end of the past century. Anaerobic digestion to produce and capture biogas is a process driven by the decomposition of moist organic matter, which takes place in indoors, in controlled environmental conditions, in the absence of molecular oxygen and light. Through anaerobic digestion, microorganisms decompose organic matter, releasing a series of metabolites, including methane and carbon dioxide. Cellulose is the main component of organic matter resulting methane by bioconversion. Dry basis, this represents 12-23% in fresh manure of ruminants and 6-10% in poultry and swine manure. Obtaining methane from organic waste in such a farm has a double quality - animal manure treatment, resulting in reduced water, soil, air pollution and energy production for farm or for market.*

***Keywords*** *: biogas, fermentation, environment, pollution, management.*

# REASONS FOR LAND RE-PARCELLING AND LAND CONSOLIDATION MECHANISM FOR PRIVATE FARMING IN THE REPUBLIC OF MOLDOVA

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***Abstract***

*The paper examines the case for market-driven land consolidation using data from several recent surveys in the Republic of Moldova. We show that, in the individual sector, larger farms consume less of their output and attain higher levels of commercialization. Larger individual farms thus have higher revenues from commercial sales and generate higher family incomes. Farm augmentation accordingly makes a positive contribution to the well-being of the rural population. The extent of parcel consolidation is directly correlated with the relative efficiency of farms: consolidated family farms are more efficient than those with fragmented holdings. Hence, land consolidation leads to better economic performance of family farms.*

***Keywords*** **:** *land consolidation, land market, fragmentation, family farms, Republic of Moldova.*

# THE ADAPTABILITY OF THE ECONOMY OF THE REPUBLIC OF MOLDOVA TO THE REGIONALISATION PROCESS VIEWED THROUGH AGRO FOOD COMMERCE

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***Abstract***

*In this scientific article I will analyse the regionalization process of the Republic of Moldova adapted through the ecological agro-food commerce, which in their turn represent the good safety and it is the consumer's major demand of European Union.European markets ask strictly that the agro-food products being not only qualitative, but also inoffensive for their health. The fact is proved by the existence of 80000 of fresh fruit and vegetable producer from 80 countries, GLOBALGAP certificated, which realize export operations in the European Union Countries, the certification according the HACCP and ISO, standards are also recognized systems in the food stuff industry as efficient approaches in getting qualitative products, in assuring the appropriate hygiene and some production technique witch will bat, in the end, to an appropriate safety of food products. In the republic of Moldova over 100 enterprises had been certified according to the ISO international standards demands, the certification becoming a special demand for the realization of export operations and for the development of the relations with prestigious partners.*

***Keywords:*** *commerce, agriculture, standard, agro-food products.*

# ECOLOGICAL AGRO-FOOD PRODUCTS OF THE REPUBLIC OF MOLDOVA – KEY TO INTERNATIONAL MARKETS AND STABILE COMMERCE

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***Abstract***

*Traditionally for the Republic of Moldova, the agriculture sector continues to be primary basic sector of the economy, where the active population is proximately 40%. There were made some key objectives during the period of prevision reforms that, in spite of these objectives, showed that the balance of the exterior commerce of the Republic of Moldova registered, during the last decade, a clear diminishing tendency, fact that demonstrates an unpleasant evolution of the economy as a whole. The export of the organic food products of the Republic of Moldova is preponderantly oriented to traditional sale markets of the Community of Independent States (CIS), and, less, on the Unique Intern Markets, because, at present, the fact exposed to a great risk is the export in these countries. Diminishing the export to the agro-food countries is influenced by a great number of factors, including also the reduced competitiveness of local agricultural products on the local and extern sale markets, due to the safety and quality inappropriate to the growing demands required by these markets.*

***Keyword:*** *Unique Intern Market, Products competitiveness, export-import, quality.*

# THE IMPLICATIONS OF THE BANK CREDIT OVER THE SUPPORTING MEASURES GRANTED FOR THE OLT COUNTY'S AGRICULTURE

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***Abstract***

*The agricultural sector of Olt County has dealt with coarsened credit conditions, to which it has been added the existence of high interests and the requirement of difficult to provide guarantees (determined by the reduced value of plots). Furthermore, the serious floods have produced losses not only at the level of the cultivated fields, but also at the level of animal raising, where there have been registered animal losses and destruction of the provender storage houses. In this context the support granted from the state budget has been materialized in Olt County as a series of normative decrees. Simultaneously with the setting up of AIPA these supporting forms have been included in certain stipulations meant to facilitate the access of the subsidies to the rural beneficiary. Thus, the bank units granted credits based on the subsidies for areas that are to be received from AIPA. In this manner the bank product partially permitted the financing of the agricultural producers that benefit of direct subsidies for areas till the date when AIPA will make the full payment of these sums.*

***Key word:*** *rural, credit*

# RESEARCH ON DYNAMICS OF THE QUALITY PARAMETERS OF THE FLAVOURED WINES AND VERMOUTH TYPE WINES, OBTAINED FROM THE ITALIAN RIESLING WINE VARIETY

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***Abstract***

*We analyzed the physical and chemical parameters ($D^{20}_{20}$, Alcool %, Total Dry Extract g/l, Free Sugar g/l, Unreducing Extract g /l, Total Acidity g/L $C_4H_6O_6$ , Free $SO_2$ mg/l, Total $SO_2$ mg/l, for 9 wine samples, in order to emphasize the dynamics of the quality parameters of the flavoured wines and vermouth type wines obtained by adding hydroalcoholic macerates from plants to the Italian Riesling wine variety. Compared with the basic wine, we noticed the following dynamics of the tested quality parameters: the Density, Alcoholic Strength and Free Sugar increased significantly in vermouth type wines. The decreasing of Total Acidity has been significant in flavoured wines and distinct significant in vermouth type wines. The Free $SO_2$ increased and the Total $SO_2$ had smaller values for both types of wine. The Unreducing Extract decreased significantly in vermouth type wines and the Total Dry Extract increased very significantly for these wines. The addition of hydroalcoholic macerates from plants to the wine varieties changes the quality of wines.*

***Keywords*** **:** *Italian Riesling, quality parameters, hydroalcoholic macerates from plants, flavoured wines and vermouth type wines.*

# DAIRY SECTOR IN THE FUNCTION OF RURAL DEVELOPMENT IN MONTENEGRO

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***Abstract***

*Dairy sector is one of the most important factors for the development of livestock production, which gives the largest contribution to the agricultural economy in Montenegro. The aim of the paper is analysis of dairy sector in the period 2006 -2009 as well as its possible improvements in rural areas of Montenegro, based on available natural, human and material assumptions. We used the statistical data for the respective year, and the Household Budget Survey. Also, we used data from annual reports of services in agriculture and dairy laboratories. Description method is applied in the paper. In accordance with the results of the analysis it was concluded that the dairy sector is the strongest in the central part of Montenegro.*

***Keywords*** **:** *dairy sector, rural development, Montenegro*

# REMOTE SENSING FOR DETECTING AND DISTINGUISHING MOISTURE AND NITROGEN STRESS IN MAIZE

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***Abstract***

*Remote sensing has been known as a robust technique in precision farming over the last quarter of the 20$^{th}$ century. It has been successfully used to asses many biophysical and biochemical properties of various crops. Detecting stress in crops at an early growth stage is important to limit crop reductions and therefore increasing productivity. Thus, remote sensing may be a valuable tool for precision farming in cereal production. This study was conducted to investigate the effectiveness of broad band and hyperspectral remotely sensed data to monitor biophysical and biochemical properties of maize (Zea maize L.) under moisture and nitrogen stress. A field experiment was conducted to (i) assess the influence of nitrogen and moisture stress on maize and the resulting spectral reflectance characteristics at the leaf and canopy scales (ii) assess the potential of vegetation indices derived from hyperspectral remotely sensed data to predict maize yield and (iii) investigate the potential of distinguishing moisture and nitrogen stress spectrally. The results demonstrated Strong significant correlations between crop yield and some vegetation indices. RVI, SAVI, OSAVI and $R_{750}/R_{550}$ were found to be sensitive to maize grain yield ($r > 0.80$). The correlations with grain yield were found to be strongest at the flowering stage. Penalized Linear Discrimnant Analysis (PLDA) and Principle Component Analysis (PCA) demonstrated the possibility to distinguish between moisture and nitrogen deficiency stress.*

***Keywords*** **:** *remote sensing, reflectance, nitrogen deficiency, moisture, stress*

# ECONOMIC RESOURCES – THE BASIC ELEMENT OF THE ECONOMIC POTENTIAL

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***Abstract***

*The paper presents an analysis concerning the efficient use of economic resources in agricultural production.Economic resources by content, composition and aspect , they are heterogenous resources and as a result, they require a classification and hierarchisation. A criteria for resource classification may be used: origin, attitude on production and use. Based on their origin, resources are divided into large natural and economic resources.According to their attotude on production, theire divided into: operational resources and possible resouces and based on their use in production, resources are classified into : productive and unproductive resources. Land resources, labor resources, human capital and information resources in agriculture are the main elements of the production potential, which form its basis, and each element in the community as a whole characterizes the production potential.*

***Keywords:*** *resource, efficiency, land , assets, labor*

# DEVELOPMENT AND EVALUATION OF A LOCAL OIL SEEDEXPLIER TO IMPROVE THE EXTRACTION EFFICIENCY

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***ABSTRACT***

*In small-scale industries for dyeing and in medicines as anti-inflammatory substance. Seeds have been used as insecticide and oil extraction for fuel, soap and varnish production. Seed cake has been used as fertilizer, as solid fuel, or in biogas production. Non toxic varieties detoxified seed cake has been used as feed for animal.An local oil extraction machine used to extract different varieties of oil seeds developed and evaluated to increase the extraction efficiency and find the solution for the most problem of all oil press extraction machines that the high percentage of oil in cotton seed cake by use the press screw pitch of double flight , number of blades of 18 blades , development the machine head to control the clearance between machine head and press screw of 1, 1.5 , 2 and 2.5mm, and studying the effect of press screw speed of 30, 60, 90 and 120 rpm on machine efficiency and final product quality .The optimum parameters and condition of machine were 32.43kg/h machine productivity, 88.10 kW h/ton energy requirement , 63.905 extraction efficiency, 11.08% oil extracted percentage, 6.51% oil percentage in cake, by using double flight press screw , clearance of 1.5mm, screw speed of 90 rpm and 18blades number .the obtained results were very important for oil extraction industries that use the oil press method for oil extraction.*

***Keywords:*** *oil, extraction, machine, energy efficiency*

# EFFECT OF SOME OPERATIONAL FACTORS ON THE COSTS OF SEED COATING

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***Abstract***

*The present research was carried out at the Station of Seed Processing in Gemmiza Agricultural Research [middle of the Nile Delta-Egypt] to costs evaluate under some operational factors involved in processes of corn and wheat seed coating. The results revealed that, increasing the angle of coating pan and speed pan rotation leads to less needed time for coating 1 ton of corn and wheat seeds and vice versa. Then, the operating costs were reduced from 15.94 L.E.Mg$^{-1}$ to 10.53 L.E.Mg$^{-1}$ under $\theta_1$ and $\theta_4$, respectively [one U.S. Dollar≈ 5.5 Egyptian pound, L.E in 2011]. On the other hand, it reduced from 15.61 L.E.Mg$^{-1}$ to 11.31 L.E.Mg$^{-1}$ under $V_1$ and$V_4$, respectively for corn. But in case of wheat, the operating costs were reduced from 17.36 L.E.Mg$^{-1}$ to 12.68 L.E.Mg$^{-1}$ under $\theta_1$ and $\theta_4$, respectively. And it reduced from 16.92 L.E.Mg$^{-1}$ to 12.21 L.E.Mg$^{-1}$ under $V_1$ and $V_4$, respectively. The effect of changing speed of spinning disc has not meaningful variation on the time needed for coating 1 megagram (Mg) of corn and wheat seeds.*

***Keywords****:* operational factors, seed coating, costs

# STUDY OF SOME ENGINEERING FACTORS AFFECTING ON SEED COATING EFFICIENCY IN SEED PROCESSING TREATMENT

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***Abstract***

*The present study aimed to evaluate the effect of some engineering factors involved in processes of corn and wheat seed coating. The engineering factors were speed of the coating pan, diameter of the spinner disk, slope of the coating pan and speed of the spinner disk. The studied seeds were corn and wheat. The results revealed that, the coating efficiency increased as the slope of coating pan increased up to 27.66 × $10^{-3}$ rad., then tends to decrease with higher angle of slope. Also, a significant coefficient of variation was found only with corn seeds. The coating efficiency increased as rotating pan speed increased up to 0.05592 m/s, then tends to decrease with higher rates of speed. The coating efficiency increased as disc diameter and/or speed increased.*

***Keywords****:* engineering factors, coating efficiency, processing

# THE STRUCTURE OF ARABLE SURFACE CULTIVATED WITH CEREALS IN BRAILA COUNTY IN ORDER TO ESTABLISH A CLUSTER

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***Abstract***

*This study refers to research results of The research project on the development of Clusters in Romanian agribusiness - Studies and analysis of cereals channel in the Plain Baragan, aimed at finding new organizational solutions which can be implemented in the agrarian economy, based on better collaboration between economic agencies, to produce competitive in terms of price and quality ,in a new European design of cluster.Braila county has favorable climatic conditions for cultivation of cereals, the yield and economic efficiency depends on the technologies employed and commissioning of the irrigation system. The area cultivated with cereals is 17.8% of the South-East Area of development of Romania, 98.95% of this area belonged to the private sector in the year 2009.*
*The area planted with wheat and rye grew by 29.6% in 2005 compared to 2005, and corn ranged from 54.6% in 2005 to 40.6% in 2009.*

***Keywords*** **:** *surface, cereals, wheat, corn*

# SWOT ANALYSIS OF THE CEREALS CHANNEL IN BRAILA COUNTY

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***Abstract***

*SWOT analysis of the cereals channel at Braila county enables us to define the requirements and directions for future development of the cereals channels at the level of analyzed county. In the analysis basis, were the field studies conducted in the county, and the volume of information resulting from studies and research have involved their synthesizing through various multidisciplinary methods and techniques for collecting, processing and analysis. From the cereals channel analysis in Braila county, will result the following: analysis of grain production, system analysis of the acquisition, storage and marketing of cereals production, grain handling system analysis and selling the products to consumers, keeping into account the weaknesses , strengths, risks and opportunities.*

***Keywords*** *: analysis, strengths, weaknesses, opportunities.*

# IRRIGATION IN SERBIA - DEVELOPMENT CONDITIONS AND PERSPECTIVES

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***Abstract***

*Land and water represent irrestorable natural resources. Every living creature on the Earth, including state, nation and entire economy of an area depend on these resources. Water, being one of basic natural factors for growth and development of all plants, participates in all basic processes in the lives of plants. Therefore, growth and development of plants depend mostly upon water content in the air and in the soil. Agricultural land surfaces with irrigation systems in Serbia, water springs used in irrigation systems and basic development perspectives on irrigation in our region are shown within this work. The results of the above mentioned statistical research show that irrigation hasn't been developed sufficiently in our region, but that it has perspectives on future development.*

***Keywords:*** *irrigation, soil, development perspectives*

# CRITERIA AND PRINCIPLES OF SUSTAINABLE DEVELOPMENT

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***Abstract***

*In the context of ecosystem-ecoefficiency duality, sustainable development of society involve the care of humanity for its actual and future resources. Efficient use of natural, energetic, material and informational resources suppose both the responsible approach for the future generations and the intensifing of the sustainable economy working for the actual requirements satisfaction of the society. Work presents an unitary and coherent ensemble of the strategic and integrated management criteria and principles of the sustainable development in respect to the efficiency increase of the natural, energetic, material and informational resources.*

***Keywords****: duality, ecosystem-ecoefficiency, informational, strategic*

# CHARACTERISTICS OF THE AGRICULTURE OF FORMER COMMUNIST COUNTRIES IN EUROPE AND WORLDWIDE

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***Abstract***

*The paper emphasizes the situation and evolution of average cereal productions, before and after the year of 1990, in Romania and in some former communist countries in comparison with European developed countries. Moreover, comparison analysis of the efficiencies is conducted on different continents and agricultural areas worldwide. To emphasize specific differences a series of statistical indicators have been determined, such as the annual average increase of yield per hectare, the average development rhythm of average production and the absolute increase per percentage increase.*

***Keywords*** **:** *historical gaps, cereal average production, average annual increase, average rhythm, production increase per percentage increase*

# DIMENSIONS OF FOOD SOVEREIGNTY

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***Abstract***

*The fact that we have become aware that in that world, globalization, events that are happening can be seen as "normal", such as the specialization of production in regions least expensive exports, imports of agricultural products prices below cost of production in the importing country, and the provision by various supranational organisms aid that allow rich countries to export at prices below their production costs ruining food sovereignty of all regions, has resulted in these few lines where we make some reflections on food sovereignty, and more specifically, we make some reflections on various aspects to consider, social, economic, cultural and political.*

***Keywords*****:** *food sovereignty, dimensions*

# SUSTAINABLE DEVELOPMENT OF THE AGRI/FOOD SECTOR OF THE REPUBLIC OF MOLDOVA IN THE CONTEXT OF FOOD SECURITY ASSURANCE

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## *Abstract*

*The paper is aimed to present the state of food security problems in the Republic of Moldova during the period 2000 - 2010. It is based on the statistical data provided by Ministry of Agriculture and Food Industry, National Bureau of Statistics and FAOstat. The data have been processed into a set of food security indicators. The nowadays food security challenges in the Republic of Moldova have two major dimensions. The first dimension seeks to maintain and increase the country's ability to face the national food demands through assurance of the internal food production. The second dimension is related to the reduction of the increasing inequalities and expansion of the poverty among the majority of the population of the Republic of Moldova. In order to assure the sustainable development of the national agri-food sector it is necessary to implement measures for creation of a diversified and labor intensive farm sector and non-farm activities, integrated vertically and horizontally with other sectors of the national economy. Support of the public-private partnership programs with the intensive use of the rural labor force could solve some of chronic problems related to the food insecurity, unemployment and underdeveloped infrastructure. As a conclusion, the economic growth resulted from programs implemented will contribute to the rural poverty alleviation, and subsequently to the assurance of the sustainable development of the agri-food sector and national food security.*

***Keywords:*** agri-food sector, food security, risks, sustainability.

# SUSTAINABLE DEVELOPMENT OF THE AGRICULTURE AND AGRICULTURAL HOLDINGS - CONCEPTUAL DELIMITATIONS AND METHODOLOGY

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*Abstract*

*The purpose of this paper is to the conceptual and methodological development of sustainable agriculture and agricultural holdings. Working methods used in preparing the article were the analysis and deduction. In the investigated materials the following results were reached: All countries have tried to promote agricultural development by financing the research activities, providing support services and other forms of stimulating production by providing subsidies. Sustainable development presupposes the insurance a balance between economic growth and environmental protection, and on this basis, meeting not only present but also the perspective of social development. With time, this concept of sustainable development and agriculture has entered a response to shortcomings of the full suite of conventional agriculture. The concept of sustainable agriculture has become a scale planetary circulation throughout the doctrine of Agricultural Economics. Sustainable agriculture can not be "pure ecological" because it must employ fully, but judiciously, chemistry and biology achievements to raise crop yields. As the important conclusions of this work, we might underline the following: the formation of sustainable agriculture is a long process and not least it is very difficult to implement because there are many contradictions. There are many barriers in adoption of specific practices and technologies of sustainable agriculture. One of the most important barriers is the fact that existing policies and programs sometimes contain conflicting objectives.*

***Keywords:*** *sustainable development, the conventional agriculture, agrarian economy, contradictory objectives*

# MEASURING THE PHOTOSYNTHETICALLY ACTIVE RADIATION OF ILLUMINATION SOURCES AND GLOBAL SUN RADIATION USING THE MATLAB PROGRAM

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***Abstract***

*The Earth's surface is continually illuminated with the flow of light energy from the Sun. Part of this energy is reflected from the atmosphere, and part is absorbed and through complex biochemical or physical processes is transformed into other forms of energy such as light, heat or the of biomass of plants. There are various ways to determine the amount of light energy reaching the Earth's surface. This contribution is oriented at measuring the Photosynthetically Active Radiation (PAR) using a semiconductor sensor implemented with a measuring converter and appropriate algorithms (MATLAB). It is also oriented at the possibilities of using of this circuit by projection of the adaptive illumination in covered areas.*

***Keywords*** **:** *MATLAB measurements, Photosynthetically active radiation PAR, PAR measurement using MATLAB*

# PRESSURES OF VARIOUS FACTORS OVER THE QUALITY STATUS OF SOILS IN CALARASI COUNTY

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***Abstract***

*Soil polution is considered as a result of unhygienic habits or improper practice, due to the random removal and disposal of residues resulting from human activity, industrial waste or misuse of chemicals in agricultural practice. The paper under consideration land use categories of the county in recent years have highlighted the pressures on soil quality status of the following factors: fertilizer, plant protection products, heavy metals, etc. Agricultural areas have been studied recently and the situation monitored degraded and contaminated land in the county.Quality agricultural land includes both soil fertility, and conduct of other environmental factors to the plant. Quality classes of land to determine their suitability for agriculture. Soil quality is affected to a lesser or greater than one or more restrictions. Their harmful influences are reflected in the deterioration of soil characteristics and functions, in their ability bio, but also affecting the quality of agricultural products.*

***Keywords*** **:** *soil quality, pressure, degraded lands, waste*

# MONITORING OF GREENHOUSE GASES IN CALARASI COUNTY

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***Abstract***

*This paper aims to highlight the aspect of air pollution responsible for the greenhouse gases identified in the county of Calaraşi among the pollutants covered by the Kyoto Protocol, in Calarasi county following emission inventories of greenhouse gases that contribute to climate change: carbon dioxide ($CO_2$), nitrous oxide ($N_2O$), nitrogen oxides (NOx) and methane ($CH_4$).Monitoring of greenhouse gases was made in the Environmental Protection Agency Calarasi, based on questionnaires completed by the operators.*
*Reducing emissions of greenhouse gases in the county of the previous year was due to methane gas supply expansion both in the city of Călăraşi, Oltenița and the city and connecting the gas distribution network of communities, increased energy efficiency the insulation of buildings, increased in rural areas with green spaces, road transport fleet modernization.*

***Keywords:*** *emissions, air pollutants, greenhouse gases, climate change, prevention, control.*

# THE INNOVATION SYSTEMS– CONCEPTS AND PERSPECTIVES

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***Abstract***

*The agricultural sector of many countries is changing in response to new market opportunities and productivity requirements, new resource management problems, and new roles assumed by public, private, and civil society actors. In this context, the pace of change and level of uncertainty can be considerable. Support to agricultural research and extension systems is necessary but not sufficient to expand the capacity for innovation in agriculture. New ways of enabling innovation are required to deliver economic growth and reduce poverty.*

***Keywords*** **:** *agriculture, innovation, development*

# AGRI-ENVIROMENTAL PAYMENT ISSUES IN ROMANIAN AGRICULTURE

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***Abstract***

*Agri-environment payments are designed to support sustainable rural development and to meet society's demand for environmental services. The present paper aims to draw attention to issues relating to the payment terms for package 1 and 2 of agri-environmental measures regarding the pastures. Therefore were analyzed payment conditions for the two packages. The analysis shows that through these measures could be encouraged also farmers who do not have animals and by default the pastures will not be used and valued according to the norms of the packages 1 and 2. Thus several proposals have been made to avoid these shortcomings.*

***Keywords*****:** *Agri-environment payments, control, pastures, LSU, Romania*

# SOIL EROSION BY WATER IN OLT COUNTY IN THE CONTEXT OF GLOBAL CLIMATE CHANGE

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## *Abstract*

*This paper presents some problems related to soil erosion, which are today among the most discussed topics in the circles of specialists worldwide. Soil erosion is one of the most negative phenomena, whatever it comes from the wind (wind erosion) or from water (hydric erosion)Water erosion is a complex phenomenon of degradation which affects the productivity of agricultural land and involving participation of several processes that change discrete or violent the physiognomy landscape. In the last period of history, the natural conditions that favor the emergence of such a process or added the massive deforestation were carried out at present. Only 26,7% of Romanian's surface is covered by forest and about 43% (6,4 million hectares) of total agricultural land is subject to soil erosion and associated processes, and as the amount of sediment that is eroded on the surface of agricultural land amounts to 106,6 million tons per year.*

***Keywords:*** *hydric erosion, soil, fertility, degradation*

# THE DIMINUTION OF THE AGRICULTURE VULNERABILITY AT THE RISK FACTORS AND THE ENVIRONMENT PROTECTION IN REPUBLIC OF MOLDOVA

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***Abstract***

*In the elaboration of agricultural politics directed to the agricultural harmonization with the environment protection it is indispensable to take into account of some essential elements dependent one of the others: the necessity to increase the positive contribution of the agriculture with reference to the environment; the maximum reduction of the pollution challenged to the environment by the agriculture; the agricultural politics must take into account of the environment. The agricultural practices that do not take into account of the possible negative effects on the soil, environment and biodiversity represent a peril for a durable development of the agriculture. The diminution of the agriculture vulnerability to the risk factors and the risk control may be promoted by means of different mechanisms and politics such as: measures with managerial character, special measures in order to fight the soil erosion and drought, the devastating meteorological phenomena risks, the transfer of the risks.*

***Keywords:*** *agriculture, vulnerability, risk, environment protection*

# EFFICIENT INFORMATION PROCESSING IN THE CONTROLLING PROCESSES FOR IRRIGATION SYSTEMS

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***Abstract***

*In this paper, a design of the methods for efficient information processing in the controlling processes for irrigation system is proposed. Expected trends in the near future is a decided turn in the irrigation processes as a one of possibilities for solving actual problems how to achieve a sufficiently yield per hectare in the agriculture production. The size and stability of yield per hectare of agricultural crops are greatly affected by climatic conditions, temperature, solar radiation, but especially the quantity and quality of rainfall, which for most agricultural crops is insufficient. Building large-scale irrigation systems is difficult in terms of investment, as well as operating costs. Claimed agricultural yields often do not emanate from a set of certain claims for each of the crops, but are only an estimate based upon empirical experience. Precise determination of these data is very difficult and without the use of exact mathematical methods and information technology would be virtually impossible. Main emphasis is on the decision-making optimalisation in the irrigation process, where principles of heuristics data analysis are defined. Stochastic nature of water availability and irrigation requirements has been taken into account as well.*

***Keywords*** **:** *irrigation system, queuing theory, analytical model, process optimization*

# ENHANCING THE ATTRACTIVENESS OF RENEWABLE ENERGY TRAINING IN THE GREEN SECTOR

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***Abstract***

*One of the most important conclusions of the Lisbon Conference in 2000 was the declaration concerning the transition to a knowledge economy. This aim is linked with a constant upgrading and improvement of vocational training and education as a response to rapid changes in economies and societies so as to facilitate the employability and quality of knowledge acquired during the VET process and improving access to lifelong learning for all, including disadvantaged people.The aim of these recommendations has been oriented to the creation of affordable and accessible vocational and lifelong learning systems by the Member States so as to respond to the changing needs of the knowledge economy and society. This paper deals with the projects in the frame of Leonardo da Vinci – Transfer of Innovation – RESNET and ECEVE with the main objectives to improve the quality of education and international cooperation in the field of renewable energy resources and energy efficiency. These projects are linked to the principles of the European Qualification Framework, which combines the national qualification systems of various countries and places to better understand and compare qualifications levels of different countries and different education and training systems and its main aim is to establish new conditions for vocational training.*

***Keywords*****:** *VET, lifelong learning, e-Learning, ICT, Renewable energy resources, European Qualification Framework*

# POPULATION AGEING PHENOMENON IN THE REPUBLIC OF MOLDOVAN, ITS DETERMINANTS AND CONSEQUENCES

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***Abstract***

*The purpose of this investigation is to elucidate the evolutionary aspects of the population ageing phenomenon in the Republic of Moldova, its basic determinants and consequences. In order to achieve the intended purpose, there have been examined statistical data which reveal population structure by average and age, population's natural movement rates in the Republic of Moldova in the period of 1980-2009, and the evolution of population migration in the Republic of Moldova in the period of 2002-2009. The study results highlighted the evolutionary trends of population ageing phenomenon, emphasized the main determinants, and exposed the consequences of this phenomenon. By examining the correlative data which prove population ageing, evolution of migration and population's natural movement, it has been argued the impact of migration and reduction of natural increase on the population ageing phenomenon.The main conclusion of our research consists in the need for more effective state action aimed at remedying the problem of population migration in the Republic of Moldova, creating a suitable environment for working and living in their home country, thus ensuring the necessary conditions to solve our demographic problems and, implicitly, the economic and social problems.*

***Keywords:*** *population ageing, migration, natural increase, social insurance.*

# METHODS AND ASSESSEMENTS UPON THE HOLDINGS' SIZE AND DELIMITATION OF THE SEMISUBSISTENCE AGRICULTURE

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***Abstract***

*Semisubsistence agriculture is difficult to identify statistically while no clear definition exists to delimitate it. As CAP is based on methods used for evaluation of the economic size that creates a disparity in dimensioning the individual farms, the paper investigates methodological tools, currently used in EU and Romania, related to the identification and assessment of the agricultural holding. This study will address the analysis side of the distribution of farms by physical and economical size class, in order to identify differentiation basis for evaluation the Romanian semisubsistence holdings. The scientific endeavour underlines the necessity of providing sound basis of analysis at the semisubsistence level and adjustment the policies to the Romania's agricultural structures features, in order to provide larger perspectives for the holding of family type, economically viable, as a potential segment of the rural economy. In this view, contextually connected to the sustainable development objectives, it is expected that reshaping the compatibility of the EU model to be expressed by political measures addressed to the semisubsistence agriculture and its integration in the market.*

***Keywords*** **:** *semisubsistence holdings, size classes, sustainable rural economy*

# PAKISTAN's POPULATION GROWTH AND ITS EXPECTED BURDEN ON ENVIRONMENTAL RESOURCES.

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***Abstract***

*Population explosion is a big problem in most of developing countries like Pakistan. Pakistan is undergoing rapid industrialization with insufficient natural resources (explored) and low literacy rate causing a serious threat to the targets of achieving sustainability for the country. Recent studies were designed to determine the correlation between population increase and condition of natural resources of Pakistan. Ecological Foot Print was chosen as an indicator of condition of natural resources. It was concluded that Ecological Foot Print has increased a little representing a poor quality of such a huge population according to international standards. On the other hand, in spite of low ecological foot print, country is running at an ecological deficit of -0.3 g ha / person, representing an alarming situation. Continuously deteriorating natural resource will definitely put a limit on economic development which will ultimately lead to social deterioration. Pakistan needs immediate efforts in the form of environmental management and mass awareness in this regard to follow a sustainable path of development.*

***Keywords :*** *Ecological Foot Print, Population Growth, Environmental Sustainability*

# ENVIRONMENTAL IMPACT ASSESSMENT (EIA): AN EYE WASH OR AN EFFECTIVE ENVIRONMENTAL MANAGEMENT TOOL IN PAKISTAN.

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***Abstract***

*EIA is a policy tool used for evaluating a project proposal from physical and socioeconomic environmental perspectives. Its aim is to reduce the impact of development on environment, hence, ensuring environmental sustainability. It is mandatory to submit an Environmental Impact Statement (EIS) before starting a mega project as required by Environmental Protection Act of 1997 and Environmental Policy of Pakistan. Public consultation plays a key role in an EIA system, identifying the likely aspects and impacts of a development activity. This aspect has been ignored in effective enactment of environmental legislations in Pakistan. Sufficient legislative instruments are there to support EIA system in the country but the agencies responsible for the enforcement of environmental regulations have failed to do so. Most of the environmental issues arising during construction phases of development projects are addressed by the Supreme Court of Pakistan; although the honourable court is not the most appropriate agency meant for this purpose. This paper gives an insight into the actual status of EIA system in Pakistan along with the feedback of EIA specialists and University teachers of the concerned departments. The data collected was interpreted in the form of an index in the order to exhibit the over all system in Pakistan.*

***Keywords*****:** *EIA, Sustainability, Economic Development, Pakistan*

# CORRELATIVE ASPECTS OF THE ECOLOGICAL SITUATION AND OF THE SUSTAINABLE DEVELOPMENT IN THE REPUBLIC OF MOLDOVA

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***Abstract***

*Environmental issues by their nature, character and implications prove to be a global problem. The environment and its protection increasingly require more coherent, flexible and competent management, a wide variety of intervention tools, and continuous communication with socio-economic actors in order to decrease to the minimum pollution phenomena and to use rationally planetary resources. Sustainable development reveals to us an economic and social development, which provides vital needs of the society by exploiting natural resources and human values and simultaneously preserving to the maximum the potential of the nation's natural heritage. At present Moldova has the opportunity to rectify the poor ecological situation by taking measures to promote environmental training and education of the population, to implement effectively environmental management achievements, and finally, to reach the path of sustainable development within European space.*

***Keywords:*** *environmental factor, sustainable development, ecological status, environmental management, investment.*

# ECONOMIC SITUATION ANALISYS AND IRRIGATION USE POSSIBILITIES IN THE REPUBLIC OF SERBIA

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***Abstract***

*Today world is characterized by growing food demand, which requires constant improvement of applied agro-technical practices in order to increase yields per unit of used arable land. Irrigation is one of the major melioration and hydro-technical measures in agricultural production. According to statistics, in 2009 in Serbia only 30,000 to 40,000 ha out of 4.7 million ha of arable land was irrigated, which seems rather low in comparison to the existing potentials and needs. Based on the last five-year period statistics, the paper analyses the current state and tendencies of irrigated areas, as well as potential of application of certain methods of irrigation. With the aim of Serbia's agricultural production improvement, during the analysis all important issues were taken into consideration and certain suggestions were also given for more intensive application of mentioned agro-technical measures.*

***Keywords:*** *arable land, irrigation, problems, opportunities, Republic of Serbia.*

# THE ROLE OF THE STATE IN PROMOTING THE INNOVATIONS IN AGRICULTURAL SECTOR IN REPUBLIC OF MOLDOVA

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***Abstract***

*Currently, the state's role in facilitating of innovation investment in agriculture is crucial, because it confirms the possibility of participation in the innovation process so for the domestic investors as for foreign investors. State policy in the science and innovation needs to be orientated towards stimulating innovation and creating a favorable climate to innovative processes, as a system of measures taken by state power to realize, an effective bridge from technical activities - academic scientific to the own sphere of production. In this context, the creation of favorable conditions for innovation investigations will realize new preconditions for implementation of innovation at all levels of the national economy, and this will create a continued economical growth.*

***Keywords***: *innovation, innovative process, agricultural sector, investment, economical growth*

# POSSIBILITIES OF NAVIGATION OF MOBILE AGRICULTURAL ROBOTS ON THE PRINCIPLE OF THE GEOMETRICAL OBJETS DETECTIONS

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***Abstract***

*Nowadays, there is a great emphasize laid on the effectivity of production. We can achieve it by optimalizing the production time and labor. For the reason that agricultural production is a seasonal labor we can accomplish great profit by implementing mobile robotics elements into the production. Mainly, autonomous mobile robots are required because of their self working abilities. However, it brings new problem that has to be solved. The mobile robot should be able to localize itself with the biggest punctuation in whatever setting. We have to find a solution for navigating mobile robots into specific positions and so we have to search the most proper method for this navigation. Although at our modern age there are various methods of navigation, none of them is really applicable in real agricultural conditions if we want to get accurate data. For autonomic navigation we can take into consideration systems based on inertional navigation, odometry or visual navigation with the detection of geometrical objects. In this article we introduce possibilities of the last mentioned navigation. Because we should find an autonomic mobile robotic system, our goal was to create navigation without the support of GPS.*

***Keywords*****:** *mobile robot, agricultural robot, autonomic mobile robot, navigation, localization.*

# RELATIONAL GROUP COUNSELLING

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***Abstract***

*The goal of the paper is to test the relational method devised by the author in improving organizational relations. The methods used are the Relational group questionnaire and relational matrix of the organization. The relational method can be used in groups, particularly in organizations, classrooms and families to change crossed relations and thus increase performance and satisfaction.The results obtained involved identifying conflict generating crossed relationships, and changing them, followed by reassessment. The main conclusion of the paper is that the relational method can be safely and fruitfully used in organizational settings, actually improving work relations.*

***Keywords*** **:** *relational, organization, group counselling, crossed relations, relational matrix, qualitative method*

# PROSPECTS FOR AGRICULTURE IN THE GROWTH OF FOOD NEEDS OF POPULATION

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***Abstract***

*Agriculture is one of the backbone industries of any country. Regardless of soil and climatic conditions even the most advanced industrial countries are investing heavily in the development of domestic agriculture. The crisis in agriculture and the decline of its production directly inflicts a heavy blow to the economy because it leads to loss of huge amount of free natural resources, and these losses have to pay for food imports. Based on the value of agricultural production as the main source of food, should assess the prospects of this sector in the current economic conditions and determine trends in the use of agricultural resources, primarily for food purposes. forecasts of production of main agricultural products suggest that if transfer of agricultural innovation, resource development trajectory for the foreseeable period can significantly reduce the threat of a protracted global food crisis.*

***Keywords:*** *agricultural production, economic resources, scientific and technical progress, food crisis.*

# STUDY ON RURAL DEVELOPMENT STRATEGY IN "BREBENI" OLT COUNTY

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***Abstract***

*This paper present some objective data of local strategy, sustainable development analysis of the current situation of Brebeni, local plan of action for sustainable development The efficiency of this action enforced by the "Strategy of Local development is tied by the accessibility of potential beneficiaries to the information and opportunities offered by this operational program. The Local Council will take care to provide technical assistance for putting in practice the necessary, improving relations with participants of the territory (specifically the social and economic, Local authorities and other relevant organizations interested.) and to inform the public opinion about the results obtained from the interventions provided by "Rural Development Strategy" 2008-2013 of Brebeni.*

***Keywords:*** *investment, facilities, infrastructure and agriculture*