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Problems and Prospects of "Green" Economy in the Regions of Great Altai

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Abstract: With the development of globalization, the international community faces the emergence of new risks of natural resources management. The priority is the issue of consumption and production of ecologically clean food which is safe for human health and the environment. The abstract-logical, calculation, constructive and monographic research methods enabled identifying the following principles of organic agriculture: the principle of health, principle of ecology, the principle of fairness to all natural resources and the principle of care for human welfare and the environmental equilibrium. The organic farming technologies significantly reduce the costs of mineral fertilizer application and chemical plant protection while increasing the costs of fuel and lubricants. The cultivation of cereals and forage crops using organic technologies forms the basis for the output of animal products that meet the environmental standards of farming production. The development of the animal farming industry should be managed through the development of cooperatives within regional cluster structures that include micro-clusters based on the principles of business administration partnership, effective interaction of scientific, educational and industrial spheres. This requires the feasibility study of environmentally sound technologies, arrangement of organic product manufacture, conducting product veterinary and sanitary examination, market research and determination of the price level. The problems of organic product certification should be solved at the state level. The main factors that hinder the development of organic-oriented farming production in the region are as following: the Russian agricultural education lacks a comprehensive targeted system of theoretical knowledge and practical training aimed to the organization of organically focused farming production; a low level of development of the organic product market

Key words: Green economy, problems, prospects, principles, welfare

INTRODUCTION

More than ever the global community faces the increasing consequences of the existing global challenges and the emergence of new risks related to the use of natural resources. According to the United Nations (UN), there is an increasing demand for depleting natural resources, there is growing inequality of income distribution in the society and the world population is growing with great strides from 7-9 billion by 2050.

As, it follows from the report of the World Wildlife Fund that global biodiversity has declined by 30% over the 1970-2008 period, the level of consumption of natural resources has doubled since 1966 to the present and the ecological footprint (the damage caused to the environment by human activities) of the countries with high incomes exceeds 5 times that of the countries with low-income population (Fischer, 2009). The priority is given to the problem of consumption by the world population and production of life-supporting ecologically clean food safe for human health and the environment. According to the World Health Organization (WHO), up to 30% of the population in the developed countries every year suffers from diseases associated with poor nutrition.

These problems pose the potential risks and require immediate action and a long-term efficient strategy of society and nature development. This strategy is the concept of sustainable development which implies the equivalence of three main components-economic, social and environmental and is named the "green" economy based on organic farming.

MATERIALS AND METHODS

The abstract-logical, calculation, constructive and monographic research methods were used.

Analysis results: The concept of "green" economy includes the ideas of many other fields in economics and philosophy associated with the challenges of sustainable development. The supporters of this concept believe that

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currently prevailing economic system is imperfect and causes significant negative consequences, in particular, environmental problems (climate change, desertification and loss of biodiversity), the depletion of natural capital, large-scale poverty, the shortage of fresh water, food, energy and inequality of people and countries. The new course for "green" economy is based on the following areas:

- Clean energy generation and clean technologies including recycling
- Farm energy generation including use of biomass and other renewable energy sources
- Sustainable agriculture including organic farming
- Ecosystem infrastructure
- Reducing emissions caused by deforestation and forest degradation
- Sustainable cities, including planning, transportation and "green" construction

In accordance with the decisions of the UN Conference on Sustainable Development (Rio+20), food security, nutrition and sustainable farming are the priority activity areas for the development of "green" economy. In turn, ensuring food security in terms of physical and economic access to high-quality food is impossible without sustainable development of the primary production base, i.e., agriculture.

The production of high-quality and healthy food, maintaining and enhancing the resilience of ecosystems and the sustainable development of rural areas may be regarded as the main tasks that are set before the industry at the moment. The performing of these tasks is implemented within the existing concept of organic agriculture.

There are many definitions of the term "organic agriculture" but they all agree that it is a system based on ecosystem management rather than the use of external agricultural inputs and taking into account the potential negative impact on the environment and humans of such synthetic inputs as synthetic fertilizers and pesticides, veterinary drugs, genetically modified seeds and livestock, preservatives, additives and irradiation. In organic farming all these methods are by specific techniques and practices that maintain and extend soil fertility and prevent pest reproduction and spread of diseases.

For the first time the term "organic agriculture" was used in the book Look to the Land by Lord Northbourne published in 1940). The closest synonyms of this term are biologic agriculture", "ecological agriculture" and "biodynamic agriculture".

Frank Eyhorn regards organic farming as the system of farming production that relies on natural means which include crop rotation, composts, biological methods of pest control and mechanical tillage to maintain soil fertility with total exclusion of synthetic fertilizers and plant protection chemicals, feed supplements for livestock and genetically modified components.

The Western scholars N. El-Hage Scialabba and C. Hattam state that the term "organic agriculture" in a global sense is not only the manufacturing of certified organic products but also agricultural production based on the use of natural resources and processes as opposed to the application of inorganic inputs in order to increase agricultural productivity.

Based on the above definitions, we believe that the essence of organic farming may be formulated as a concept that covers all farming systems based on natural means and resources, taking into account the natural needs of flora and fauna, the natural environment and its main purpose is the manufacturing of ecological (organic) products approved by international and national environmental certificates.

The following key principles of organic farming should emphasized: the principle of health, principle of ecology, the principle of fairness to all natural resources and the principle of care for human welfare and the environmental equilibrium.

Organic farming may be opposed to the conventional commercial farming that uses non-renewable resources of industrial origin; some of its advantages in terms of environment may be emphasized (Table 1).

The regions of the Great Altai have the fullest opportunity for the formation of farming industry focused on organic production: longstanding agricultural traditions, vast areas of agricultural lands and lower level of intensification and agrochemical application compared to that of the industrialized countries. The average rate of mineral fertilizer application in the EC countries makes 192 kg/ha, whereas that in Russia makes 39 kg ha^{-1} and in the Altai Region 3.8 kg ha^{-1} (Kovaleva, 2010).

The situation on the Russian market of organic products is such that the demand is outgrowing supply; a large part has to be imported from Europe and that leads to high prices. At present, the percentage of organic products in the food and farming industries makes 0.1; and 95% of these products are imported from abroad; while 45% of the Russian certified companies place the "BIO" mark on their products due to the underdeveloped regulation and control mechanisms of this market. Lagging behind the developed countries in terms of organic product market development is primarily determined by a very weak development of the organic

Table 1: Environmental advantages of organic farming

Target area	Advantage
Soil	The innovative land use practices contribute to the development of soil flora and fauna, improve soil composition and structure and create more stable ecosystems. As a result of this approach, the nutrient and macro-nutrient turnover is enhanced and soil ability to retain moisture and nutrients and resist to erosion increases.
Water	Synthetic fertilizers and pesticides are replaced by organic fertilizers (compost, manure, green manure) that, together with greater biodiversity, lead to improved soil structure and water infiltration and reduce the risks of groundwater contamination.
Air	Organic farming reduces the use of non-renewable energy sources and uses the techniques that lead to the retention of carbon in the soil (minimum tillage, return of crop residues into the soil, cultivation of cover crops and crop rotation).
Biodiversity	At ecosystem level, the conservation of natural zones around organic fields and the refuse to use chemicals create suitable conditions to attract new and renewable colonies of organic environment, including wild flora and fauna and organisms beneficial for the organic system. The formation, conditioning and soil stabilization, residue recycling, carbon retention, nutrient cycling and pollination support the interaction within agro-ecosystems and the conservation of biodiversity in general.

guarantee system and the lack of legal framework governing the manufacturing and sales of organic products.

The transition of an agri-business to the principles of organic production in the Altai Region has enabled involving 6,152 ha of arable lands in agricultural production; 1,220 ha are used for organic agricultural technologies. It has been found that organic agricultural technologies significantly reduce the costs of mineral fertilizer application and chemical plant protection while increasing the costs of fuel and lubricants. The cultivation of cereals and forage crops using organic technologies forms the basis for the output of animal products that meet the environmental standards of farming production. The involvement of abandoned and idle lands in organic production increased the production profitability of the agri-business from 28-39%, created 41 new jobs and substantially increased the tax deductions.

The well-founded mechanism of development and implementation of regional programs of agricultural industry development enabled designing a draft regional target program "The involvement of the Altai Region's misused arable and idle lands in agricultural production for manufacturing organic products for the period of 2015-2020". The program is aimed at fuller and more effective use of arable lands by agricultural producers, the improvement of their economic activity efficiency and the increase of organic production in the Altai Region. Under this Program, 207 thousand ha of misused arable lands and 110 thousand ha of idle lands will be involved in organic agricultural production by 2020.

The researchers have calculated the subsidy level up to 2020 based on the standard for misused arable land being involved in agricultural production turnover in the amount of 2,000 rubles per 1 ha; the subsidy level amounts to 1,060 million rubles

The developed procedure of monitoring the effectiveness of the organic use of the former idle lands enables the municipality authorities of the Altai Region to carry out operational monitoring of the state of lands being involved in agriculture in order to make decisions on the cessation of further subsidy assistance to the agricultural producers in the event of negative factors of land use and to calculate the land rent of the agricultural producers paid to the district land redistribution funds (Krugman and Obstfeld, 2000).

Organic-focused land use has the following distinctive feature: the entire process of manufacturing and processing of organic products is focused on the conformance to severe requirements that ensure environmental safety and quality of food products. Consequently, the whole system of production management is organized in accordance with the system of standards that contain the requirements for production technology, processing, storage, transportation and sales of organic agricultural products.

RESULTS AND DISCUSSION

The study of the problems hampering the development of the organic production in the mountainous areas of the Great Altai revealed the following problem areas: dire shortage of animal feeds in the winter, veterinary risks, the shortage of veterinary specialists and services, underdeveloped transportation and power supply infrastructure, wear of fixed assets in the sphere of material production and housing and public utilities, raw-material orientation of the economy due to the shortage of processing facilities and respectively, a small percentage of businesses involved in added-value processing of agricultural products, low innovation activity of businesses, shortage of investment, underdeveloped economic infrastructure, social sphere and international relations and the underdevelopment of cooperative links and vertically integrated structures.

In our opinion, this situation requires the management of livestock industry development through the development of cooperatives within regional cluster structures that include micro-clusters based on the principles of business and administration partnership, effective interaction of scientific, educational and

industrial spheres. This requires the study of ecologically sound technologies, organization of manufacturing of organic products and their veterinary and sanitary examination, market research and price level determination.

A large-scale increase in the production of ecologically clean food, including quality meat and meat products, involves reducing the risks of epizootic animal diseases and improving the veterinary service in the emerging cluster that is necessary for the livestock industries in the mountain regions. The development of the Mongolian-Russian transport network is also possible provided the investments are attracted that will enable increasing the output of organic cattle breeding products. This may be cross-shipments of meat, at least after primary processing, from Mongolia to Russia and organic feeds from Russia to Mongolia in granular form, pressed bales and formula feeds (Catherine, 2000).

In the future, the power supply of cross-border areas is possible with the implementation of the project of the construction of small hydropower stations that will be followed by the construction of reservoirs, expansion of valuable fish species farming in high mountain rivers and lakes.

Organic production and organic farming may became the "growth poles" for the rural cross-border areas of the Great Altai; they will contribute to the creation of favorable conditions for the residents of the areas, development of social services, increase of local budget incomes, improvement of the living standards and quality of life of the rural population; the farming industry of these areas will gain an impetus for development.

It is necessary to solve the complex of legal and customs problems in order to facilitate the Mongolian meat imports to Russia and the Russian imports of processing equipment and agricultural machinery to Mongolia. The Mongolian experts emphasize the reduction of the quotas to import meat to Russia and extremely strict veterinary requirements (Catherine, 2000).

It is advisable to use the veterinary experience and technologies accumulated in Russia and, in particular, research institutes and universities of the Altai Region to improve the organization of sanitary, epidemiological and veterinary control and prevention of infectious diseases.

It is necessary to establish close contacts of agricultural scientists and economists with the Altai Region's businessmen ready to import meat and dairy products from Mongolia. The main problem in this regard is to find the opportunities to reduce costs, primarily, high transportation costs. It is possible that a large share of transport, customs and production costs will have to be defrayed by higher prices for the end products. At the state level, the problems of organic product certification should be solved.

The refusal of the compulsory certification system which ensured product safety for the environment, life, health and property of citizens of the Russian Federation for ten years was associated with the need to minimize the excessive government interference in certain spheres. From the enactment of the Federal Law "On Technical Regulation" the mandatory confirmation of conformity is effected only regarding the products to be sold on the territory of the Russian Federation (Grishsina *et al*., 2001). The requirements of the Federal Law "On Technical Regulation" provide for different nature of conformity confirmation depending on the evaluated object-voluntary and mandatory.

Mandatory confirmation of conformity should be effected only in the cases established by the appropriate technical regulation and exclusively for the compliance with the technical regulation by adopting a declaration of conformity or by issuing a certificate of conformity to the applicant by a certification authority. The declaration of conformity and certificate of conformity have equal legal force. They remain in effect on the entire territory of the Russian Federation regarding each unit of product manufactured for the territory of the Russian Federation for the lifetime of the declaration of conformity or the certificate of conformity and for the shelf life or service life of products established by the legislation of the Russian Federation.

Conformity declaring is effected by one of the following schemes: the adoption of a declaration of conformity based on own proofs or the adoption of a declaration of conformity on the proofs obtained from a certification agency or an accredited testing laboratory.
Informing consumers about the conformity of released products to the requirements of technical regulations which has been confirmed in the form of acceptance of the declaration of conformity or mandatory certification is effected with a special symbol a conformity mark. The description and picture of a conformity mark, designed for labeling of such products, is approved at the level of the Russian Federation Government Decree of November 19, 2003 No. 696 and represent a combination of the Russian letter "T' (with a dot above it) and Russian "P" inscribed in the letter "C" styled as a snap gage having the same height and width.

In general, the situation regarding the mandatory confirmation of conformity is as following: pending the adoption of appropriate technical regulations, the mandatory certification and declaration of conformity is

applicable only to the products that are included in the respective consolidated list of products specified annually by the Russian Government.

The products that are not covered by the technical regulations and are not included in any of these lists are not subject to mandatory confirmation of conformity.

According to a general rule, a voluntary confirmation of conformity is effected at applicant initiative under the terms of the contract between the applicant and certification agency and can be effected to establish the compliance with the national standards, national pre-standards and company standards, codes of regulations, voluntary certification systems and contractual conditions.

According to Article 21 of the Federal Law "On Technical Regulationõ" (Grishsina *et al*., 2001), the objects of voluntary confirmation of conformity are the products, the processes of production, operation, storage, transportation, selling and disposal, works and services and other objects which are subject to certain requirements by the standards, voluntary certification systems and contracts.

In case of voluntary certification, a certification agency is authorized to confirm the confirmation of the objects of the voluntary conformity confirmation and to issue certificates of conformity for the objects that have passed the voluntary certification. In addition, the applicants may be granted the right to use the conformity mark if the application of the conformity mark is provided by the respective voluntary certification system. In specified circumstances, the certification agency has the right to suspend or terminate the issued confirmation certificates.

A false declaration of product conformity, the violation of the rules of selling the products subject to mandatory confirmation of conformity, the violation of the rules of labeling the products subject to mandatory confirmation of conformity and the violation of the certification procedures and submission of false test (examination) results is an administrative offense.

Therefore, the actual safety of products should be ensured by all the participants of legal relations from the producer to retailer. The achievement of this goal is ensured by a number of legal measures. Definitely, the recent legislative innovations have brought a lot of changes in the sphere of certification. The adaptation of the existing legislation to the realities of today takes place slowly.

The approach of the legislator during the legislative reform of certification is determined by the desire to protect the interests of Russian consumers. The legislation in this area currently contains some gaps, the uncertainty in some individual provisions, contradictions; there are some declarative provisions which is certainly a characteristic of the transitional period of the development a new system of certification and standardization.

In this regard, undoubtedly, the world experience should be considered and at the same time more attention should be given to the already established national practice in terms of the continuity of past experience, including a detailed analysis of the state regulation effectiveness.

Therefore, the state regulation in the field of standardization is not associated with the voluntary nature of the application of standards as the documents in which the product specifications, the rules and characteristics of production, operation, storage, transportation, selling and disposal, works and services, types or peculiarities of deals are established for the purposes of voluntary multiple use . This situation would not be so relevant if it were not directly related to the quality of life, especially the spiritual and physical health of people, the family, motherhood, fatherhood, childhood, sanitary and epidemiological welfare of the population. In modern conditions, health care is defined as an issue of national importance.

CONCLUSION

Based on the studied materials and personal vision of the issues of transition to the "green" economy and greening of agriculture, the following necessary conditions of these processes should be pointed out:

- The development and adoption of necessary regulatory and legal acts, primarily regarding the certification of organic products
- The priority of government investments and spending to stimulate the transition of economy sectors and commodity producers into the "green" category
- On the contrary, expenditure restraints in the areas and industries that deplete natural capital
- The use of taxation and market instruments to change the preferences of producers and consumers and encouragement of "green" investment and innovations
- Investing skill enhancement, research and education
- Strengthening of international cooperation

The main factors that hinder the development of organic-oriented farming production in the Great Altai are as following:

- The Russian agricultural education lacks a comprehensive targeted system of theoretical knowledge and practical training aimed to the organization of organically focused farming production
- A low level of development of the organic product market

We believe that domestic agricultural manufacturers of organic products need a corresponding segment of the food market aimed at consumers who are concerned about their health and that of their near and dear ones. The consumers of organic products may be children (baby and dietetic food); people with poor health; patients on rehabilitation and spa treatment; people suffering from food allergies; agro-tourists and other consumers of organic products.

Emphasis should be placed on the research on the formation of the transition strategy of a segment of agricultural producers to organic farming. The research in the field of agricultural greening becomes integrated; all the problems related to soil fertility, quality and certification of organic products and to the economic efficiency of agricultural production should be solved.

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