

Contribution of the Agriculture Sector in Sustainable Development in Eurasian Countries: Evaluating Risks and Opportunities

Asst. Prof. Dr. Funda Gençler (Celal Bayar University, Turkey)

Prof. Dr. İsmail Bircan (Atılım University, Turkey)

Abstract

If the economic performance of the Eurasian countries are to be evaluated, the significant positive impact of the rich natural resources used in energy production deserve the central attention. However, agriculture sector still has a great influence on economy. According to the statistics; Azerbaijan's agricultural exports have jumped by almost US\$500 million in the last ten years, now totaling to almost half its Gross Domestic Product. Kazakhstan and Uzbekistan contribution to GDP is roughly 27% by agriculture sector. For the rest, similar characteristics can be seen as well. Agriculture sector has a crucial role not only for production but also for the potential labor force that can be transposed to other sectors. For this reason, the policies that are implemented for the rural development contribute to the whole country. Since, increasing the social welfare and promoting the competent labor force for other sectors will lead to a country which is self sufficient and sustainable. The aim of this study is to analyze agriculture sector of Eurasian countries to find out the sector's contribution to economic development. As a result, tourism and textile sectors to be qualified as focal sectors in the coming years in Eurasian countries and capable to provide essential value added to development are directly related to agriculture. Enhancement of agricultural productivity, development and diversification of market oriented production will be achieved through supporting rural areas. In addition to agricultural support, facilitating access to information sources can be provided by enhancement of dissemination activities.

JEL codes: J21, Q01, O13

1 Introduction

Eurasia is defined as the region extending from Atlantic Ocean to Pacific, containing almost the entire Europe and Asia continents, extending from Eastern Ural Mountains to Western Ural Mountains or as the wide region where Turks, Mongols, Slavic, Chinese of Middle Asia live. The borders vary depending on different points of views and the perspective of assessment of Europe and Asia continents. Common point regarding the borders is the economic, cultural, ethnic, religious and political specific values of historical-geographical basis which dates back to centuries.

Some researchers consider the concept of Eurasia as the synthesis of civilizations occurring as a result of mutual interaction and development lasting for centuries in the ambience of both peace and conflict. In the basis of such synthesis, it is likely to make several conclusions by discovering traditional values of Western and Eastern cultures as well as material and moral life styles which build Eurasia (Okan Üniversitesi, 2012).

Among Eurasian countries are several countries existing in the geography following the collapse of Soviet Russia. There are also countries such as Armenia, Belarus in addition to Turkic Republics with common language and race.

The economic structure of the countries in the region is heavily based on energy sector. The region fails to utilize its potential in energy sector fully and some failures are seen in marketing process. For that reason, there is a need to develop the energy potential of the region, to establish energy policies and develop higher quality products in energy sector so as to enhance the competitiveness in foreign trading. However, what is known as "curse of sources" in economics literature should be overcome and dependency on one single product in the region should be eliminated. Within this framework, several potential sectors including mainly tourism should be considered for the region. For instance, the region is heavily dependent on foreign sources which are mainly agricultural products. In the sense of being capable to meet the self-needs, the countries in the region are to increase the agricultural efficiencies and develop agriculture based industry (Uzunoglu et. al., 2007).

In regard to supply of energy, Eurasian countries are to be divided into two groups; energy exporters and energy importers. Armenia, Belarus, Estonia, Georgia, Kyrgyzstan, Latvia, Lithuania, Moldova, Tajikistan and Ukraine are energy importers while Azerbaijan, Kazakhstan, Russia, Turkmenistan and Uzbekistan are energy exporters. According to data of 2008, accounting for 4,3% of the world population Eurasia's share in GDP of the world is 1,6%. Consuming 13,7% of the energy in the world, the region's energy consumption per capita in average is 5,94 TEP. This seems to be considerably at high rank in world average of energy consumption. Particularly, it is seen that energy consumption per capita in Russia, Kazakhstan, Estonia and Turkmenistan is about 4 TEP. In electricity consumption per capita, it is above the world indicators with 4.660 kWh (Maşrap et. al., 2010).

In this study the contribution of agriculture sector to sustainable development in Eurasian countries has been studied. As described above, having a particularly considerable portion in energy exporting, Azerbaijan, Kazakhstan, Russia, Turkmenistan and Uzbekistan are examined and the policy recommendations have been made for development of agriculture sector in particular upon overcoming single product dependency in those countries. Agriculture sector has a significant position in the sector in respect to good management of natural sources and is inevitable for basic nutrition and accommodation of the population. Accordingly, it also supports employment in respect to development of other sectors when the population is considered.

In this study, firstly, the sustainable development and agriculture dimension have been studied and secondly, socio-economic and agricultural data of the above mentioned countries have been examined.

2 Sustainable Development Sustainable Agriculture Concepts

Concept of sustainable development is one of the top concepts frequently occupying the agenda of discussion worldwide. Although it seems as a simple concept at first glance, when examined in all aspects, it is a considerably deep concept (Gürlük, 2010).

Emergence of sustainable development as a strategy has occurred as a result of failures following several development trials. World countries focused on producing more during 1950-1960. Paying priority to more economic activities and focusing on constant growth, the systems were widespread in countries in the world. However, in 1970s particularly the increasing poverty in the developing countries has led the world countries to produce policies taking into account the income distribution. In other words, development efforts which focused on production and economic activity targeted in previous years have paved way for more balanced development model also covering social objectives such as income distribution and poverty decrease. The environmental disasters which began to show their impacts starting from 1970s have initiated the view that the environmental protection is an important means of development. The concept of sustainable development has occurred as a description of balance desired to be established between economy, society and environment starting from 1970s.

The concept of sustainability contains the applications aiming at protection of the sources as they are today, which form the needs of the future generations rather than today's generations. Agriculture which has direct relationship with sustainable development process in terms of economy is the strategy of satisfying the needs of today's generation after guaranteeing the future of next generations.

Sustainable development establishes balance between human beings and nature and allows the satisfaction of the needs of next generations and development without consuming natural sources and thus means programming the life and development of today and tomorrow. Sustainable development is a concept having social, environmental, economic, local and cultural dimensions (Gençler, 2009).

It was Thomas Malthus who first made the argument in 1798 that in every age and in every state population increases are limited by the means of subsistence and that when the means of subsistence increase, population will also increase, and that the population increase will be limited by misery and vice. However, the demand for food has increased since the second half of the twentieth century and led to development of agricultural technologies, which has caused a departure from the view called "Malthusian Trap" However, environmental related concerns were initiated by various discussions related to future scenarios in 1950-1960 for the first time. In 1963 Rachel Carson states that environmental risks are caused by agriculture in "Silent Spring". The report entitled "Limits to Growth" by Meadows et al. in 1972 leading to argument points out the economic problems that might be encountered by societies when there is over consumption of natural sources, and also the needs for different policies required for realization of sustainable economic growth (Pretty and Conway, 2004).

There are several definitions related to economics or production subject to culture and ecology of the countries describing sustainable agriculture. Berry defines in brief that "sustainable agriculture is not the consumption of human being or land". Sustainable agriculture is considered as to address the restrictions and problems of both conventional and modern agriculture. In this concept, it is intended to use the wisdom of traditional system and the scientific superiority of the modern agriculture. The aim is to establish integrated studies based on agriculture eco-systems in an efficient and source protective manner both in the short and long run (Pezikoğlu, 2004).

3 Agriculture Sector in Eurasian Countries

This part of the study gives and examines agriculture sector data of the studied countries. As a general assessment, it is seen that oil and other natural sources in the studied countries do not create employment for themselves in general and frequently exclude other economic sectors. There is a fact called "Dutch Disease": Input of oil money results in increase of country's currency. Foreign currency entering the country intensively from oil and gas exporting increases the value of the country's currency and as a result the products produced in the country become expensive and competitiveness of the country in foreign markets decreases. In addition, imported goods get cheaper because of increasing currency value and local production is negatively affected in domestic market. As a result, several local sectors, mainly agriculture and industry experience difficulties and

unemployment rate increases. Competitiveness decreasing due to valuation of national currency makes the country dependant on richer countries (Tsalik, 2003).

Following information about the agriculture sector in the studied countries, a general evaluation supported by the agricultural indicators has been made.

3.1 Azerbaijan Agriculture

Azerbaijan's economy during almost a 70 year period (1920-1991) was developing as a part of USSR's economy. The economy was mainly dependent on the USSR market and the main developed sectors were oil-producing, oil-refining and agricultural industries. Today, Azerbaijan's economy is a leading economy in the entire Transcaucasia region. This achievement was obtained due to successful oil strategy. On the other hand, there are underdeveloped sectors as well. For instance, in 2009 agricultural sector weighed only 6.4% of total GDP. Weak development of agriculture is directly linked to the productivity. Today agricultural sector has more extensive farming features rather than intensive farming (Shikhaliyev et al., 2011).

According to the 2005-2009 data; there are no sharp changes in the productivity of cereals and fruits for the period. On average productivity was the same and there were slight changes. Cereals productivity was changing approximately between 2.4 and 2.8 tons/ha. Fruits productivity was fluctuating between 6.1 and 7.8 tons/ha. However it is nice to see that there is a steady growth of productivity in potatoes between 2000 and 2005, but it is relatively the same for the period 2007-2009. It is crucial to increase productivity of these agricultural products in the context of "food security" of the country.

Azerbaijan's annual demand in grain is 3 mln tons, about one million of which is imported from Russia and Kazakhstan (Trend, 2010).

3.2 Kazakhstan Agriculture

Kazakhstan's agricultural sector has extensive arable land resources, high regional demand prospects, growing domestic consumption and there is an absence of distortive government support in most agri-business sectors.

To enhance its competitiveness across the agri-business sector, policy makers and the private sector must address the following sector-wide barriers: limited working capital, obsolete technology, limited access to land, especially for foreign investors, major skills gaps, lack of consistency of legislative framework, limited logistics infrastructure.

Specifically, the grain, meat and dairy sub-sectors are where Kazakhstan shows the greatest potential to successfully compete in global markets. Kazakhstan produces a high quality of hard grain – its major non-extractive export – which makes up 2% of the country's total exports. The country is among the ten largest wheat producers and five largest exporters in the world. Its large land area, low production costs and freight advantage provide an opportunity for moving up the value chain with more processed wheat products.

53% of Kazakhstan's enterprises surveyed cited access to financing/credit as a first priority in developing their businesses. Investment in machinery and other inputs remains too low, and farmers do not have sufficient credit and financial support.

Farmers of Kazakhstan have little knowledge of modern farm management and marketing techniques. There are insufficient standards to attract foreign retailers that global retail chains require suppliers to guarantee product availability, quality and safety. Globally, the dairy sector has changed significantly in its structure, geographical distribution and volumes of production. Technology and changing global trends in dairy consumption have seen a shift of power from producers and processors to retail operators; the main growth of dairy production has been in developing countries. Kazakhstan is presently a dairy-importing country but in the long run should position itself as a producer of higher value-added dairy products with export potential, such as milk powder. The Kazakhstan dairy industry has relatively low costs of milk production and can take advantage of favourable sector development trends globally. It now has an opportunity to move up the value chain into value-added dairy products. Importantly, its government subsidy levels – as measured by Sector Commodity Transfers (SCT) – are near zero.

With the dissolution of the Soviet Union, Kazakhstan lost a major market: cow milk production fell by 40% in 4 years; herd levels have not yet regained the levels of 1992 (OECD, 2011).

3.3 Kyrgyz Agriculture

With the collapse of the Soviet Union and the independence of the Kyrgyz republic in 1991, Kyrgyz agriculture went through deep structural changes, from large collective farms to household-scaled semisubsistence farms. Former kolkhoz and sovkhoz specialists became small-scale farm-generalists with a huge lack of technical knowledge and entrepreneurship. Those new farmers were poorly prepared and fields of various crops decreased dramatically. Besides a lack of inputs, they were particularly in need of training which would give them the knowledge and confidence to make their own proper decisions (Eveleens, 2004).

The dramatic changes that occurred in Kyrgyzstan's agriculture during the transition from plan to market are perhaps best illustrated by the shifting role of agricultural enterprises and individual farms. In 1988, toward the

end of the Soviet era, just 500 agricultural enterprises (collective and state farms) controlled 98% of arable land. The quasi-private sector consisting of hundreds of thousands of small household plots controlled the remaining 2% of arable land. Twenty years later, in 2008, the share of agricultural enterprises (about 1,200 privatized successors of collective and state farms) in arable land had gone down to 25%, while the share of the individual sector (the traditional household plots and some 300,000 peasant farms that have emerged since 1992) had increased to 75%. Individual farms achieve consistently higher levels of land productivity than agricultural enterprises. Among the two components of the individual sector, the traditional small household plots outperform the newly emergent peasant farms. Because of the higher productivity of family farms, the individualization of Kyrgyz agriculture has led to significant recovery of agricultural production. The steep decline in GAO that characterized the early years of transition (1990-1994) – a standard outcome of transition disruptions in all CIS countries – changed to robust growth after 1995, with GAO recovering to the 1990 Soviet-era peak already in 2002.

The positive response in agricultural production occurred despite the decrease in agricultural land use, shrinkage of machinery inventories, and sharp reduction in the use of fertilizers and other purchased inputs. Thus, renewed agricultural growth can be attributed primarily to changes in farming structure associated with the process of land reform. Agricultural recovery was driven entirely by growth in the individual sector of household plots and peasant farms, while the formerly dominant sector of agricultural enterprises continued its decline. The steady increase of livestock inventories during the Soviet era (1960-1990) was supported by the increase of areas sown to forage crops, which came at the expense of areas allocated to cereals and to a certain extent also cotton. During the post-Soviet transition period, on the other hand, we witness dramatic reduction of areas under forage crops, which allowed reexpansion of cereals (from considerations of food self-sufficiency) and cotton (from apparently misguided considerations of export potential). In addition to increasing cereal and cotton areas, Kyrgyzstan increased the share of land under high-value crops, such as vegetables and melons.

Agriculture is the main source of living for the rural population in Kyrgyzstan, which is relatively poor compared with urban population. The issue of raising rural incomes and improving the rural standard of living is therefore a major concern for policy makers in Kyrgyzstan. Individual farmers experience many difficulties in their attempts to sell farm products. Farmers universally complain of low prices received; they often complain that it is difficult to find a buyer for their products; they experience serious problems with transporting their products to the market; individual farmers recognize that their output is too small to sell. With regard to farm inputs, the universal complaint is that the prices are too high, although physical availability as such (i.e., finding a supplier) is not a problem. All these are typical problems of smallness. They are not unique to transition countries: family farmers all over the world experience similar problems, although admittedly they are less acute in a functioning market environment. In addition to difficulties with sales and inputs due to lack of bargaining power (prices) or restricted physical access to markets (finding a buyer, transport), the problems of smallness are also reflected in shortage of machinery (too expensive to buy for a small farmer) and restricted access to credit (lack of collateral, high transaction costs for small loans) (Lerman and Sedik, 2009).

3.4 Russian Federation Agriculture

The dissolution of the Soviet Union in 1991 marked the beginning of a transition from a centrally-planned to a more market-oriented Russian economy. While significant progress has been made, the transition has not been easy or linear. In fact, in some sectors the state has deemed “strategic”, the move toward greater market orientation has been reversed in recent years, with the state taking on a greater role.

Since its 1998 financial crisis, Russia’s economy has strengthened significantly, growing at a rate roughly 6.7% annually between 1999 and 2005 – propelled largely by a boom in oil and gas markets. This growth fueled demand for higher value food products while oil and gas related revenues also allowed the state to increase its role in other sectors, including agriculture.

Following a period of decline, agricultural output has shown positive growth in recent years. Currently, agriculture accounts for about 11% of total employment and 5% of the nation’s GDP. Agriculture has important implications for the welfare of Russian society; some 18% of the population lives below the poverty line, and food and beverages account for 38% of expenditures for low income households. Agriculture’s contribution to the overall economy has been falling as agriculture has been growing more slowly than non-agricultural sectors. Russian agri-food imports are substantial and increasing, given the nation’s relatively static domestic production and growing consumer demand. Consequently, the import-export trade balance has been widening since 2000.

The EU is Russia’s largest agri-food supplier, followed by Brazil, Ukraine and the United States. Russia takes one-third of US exports of frozen cut poultry and two-thirds of Brazil’s pork exports. Russia is a net-exporter of grains and oilseeds. The federal government is now making efforts to improve agricultural efficiency, with more assistance being put into capital and technological improvements. A new Federal Law on Development of Agriculture is being executed to provide a more stable legal and regulatory framework for the sector.

Agriculture is now benefiting from an improved Russian economy and a return to pre-crisis levels of policy support. Federal programs are being implemented during 2006-10 to emphasize sustainable farming, rural

development, and quality of agricultural labour and life in rural areas, including the two-year 2006-07 National Priority Project for Development of Agro-Industrial Complex.

3.5 Uzbekistan Agriculture

Agriculture is the backbone of Uzbekistan's economy, contributing almost one-third to the annual GDP. More importantly, agriculture provides the livelihood for most of the 60% of the population who live in rural areas (Djalalov, 2001). Agriculture is also a great consumer of the natural resources, and it accounts for 92% of Uzbekistan's 56 billion cubic metres (BCM) total water use (Dukhovniy et al., 2002), equivalent to 60% of all water use in Central Asia. Since the collapse of the Soviet Union, 80% of Uzbekistan's water supplies has come from neighbouring countries, primarily via the Rivers Amu Darya and Syr Darya (Mirzaev, 1996). Thus, agriculture and agricultural policy in Uzbekistan now have significant international dimensions. Cotton was the dominant crop within Uzbekistan's agricultural sector during the Soviet period. Although grown for hundreds of years in the region, the more recent expansion of cotton was made possible by two main factors: the extension of the irrigated area and Soviet central planning. Irrigation allowed increased crop production, and central planning imposed cotton as the major crop. In exchange for cotton production, central planning provided Uzbekistan with water, energy and food from elsewhere in the integrated national system. The growth of irrigated agriculture, in particular for cotton, has been associated with a range of water related environmental problems, most famously the shrinking of the Aral Sea, but also including less publicized salinity and water-logging of irrigated lands throughout the Sea's two river basins. Since the disintegration of the Soviet Union and independence of Uzbekistan in 1991, the policies of Uzbek agriculture have simultaneously been subject to both inertia and change.

After the collapse of the Soviet Union, the newly emerging states began to change their agricultural policies. In Uzbekistan, changes included: (1) re-distribution of land to families, in order to prevent social unrest; (2) increasing wheat production for food security; (3) implementing a quota system for cotton and wheat; (4) changes in agricultural subsidies; and, (5) disintegration of large collective farms.

Following information about the agriculture sector in the studied countries, some common data pertaining to agriculture sector have been evaluated.

	Azerbaijan	Kazakhstan	Kyrgyzstan	Russian Federation	Uzbekistan
Country area (1000 Ha):	8 660	272 490	19 994	1 709 824	44 740
Population (1000):	9 188	16 026	5 334	142 958	27 445
GDP (millions of US dollars):	43 019	115 306	4 578	1 231 893	32 104
GDP per capita (US dollars):	4 682	7 195	858	8 617	1 169
Agriculture as % of Gross Domestic Product:	7	6.8	27.1	5.5	28.7
Value of agricultural exports (US\$ millions):	544	3 029	218	7 901	797
Share of agricultural exports (% of total exports):	12.2	4.3	11.7	1.7	6.9
Value of agricultural imports (US\$ millions):	1 122	2 910	546	31 389	788
Share of agricultural imports (% of total imports):	15.6	7.7	13.4	10.8	10.5

Table 1: General Data Concerning Agricultural Indicators (2009) **Source:** Derived from FAO, UNDP and World Bank Data

According to Table 1, Russian Federation is the country with the biggest area, followed by Uzbekistan. Having population of about 143 million, Russian Federation is the 8th most crowded country in the world. Kyrgyzstan is the country with the lowest population among the studied countries. According to 2009 data, Russian Federation has the highest Gross Domestic Product with 1 231 893 million US Dollars. Kazakhstan and Azerbaijan follow Russia. When the contribution of agriculture in Gross Domestic Product is examined, Uzbekistan has the rate of 28.7% while Kyrgyzstan has 27.1%. Based on these data, agriculture has an important place in all sectors in both countries. With 12.2% Azerbaijan is the country having the highest rate of agriculturally export share in total export. Kyrgyzstan follows it with 11.7%. When the matter is examined for importing, it is seen that Azerbaijan is the country having the highest rate of agriculture importing in total importing (15.6%) and Kyrgyzstan, Russian Federation and Uzbekistan follow it.

The data about lands and water use in the studied countries are given in Table 2.

	Azerbaijan	Kazakhstan	Kyrgyzstan	Russian	Uzbekistan
--	------------	------------	------------	---------	------------

				Federation	
Land area (1000 ha):	8 263	269 970	19 180	1 637 687	42 540
Agricultural area (1000 Ha):	4 757	208 480	10 617	215 561	26 651
Arable land (1000 ha):	1 860	22 700	1 280	121 649	4 300
Permanent crops (1000 ha):	228	100	73	1 793	320
Pastures (1000 ha):	2 669	185 098	9 374	92 052	22 000
Irrigated land (1000 ha):	1 430	3 556	1 020	4 593	4 223
Share in total water use by agriculture (%)	76.4	81.8	93.8	19.9	93.2
Share in total water use by industry (%)	19.3	16.5	3.1	59.8	2.1
Share in total water use by domestic (%)	4.3	1.7	3.2	20.2	4.7
Forest area (1000 ha):	936	3 309	954	809 090	3 276

Table 2: General Data of Land and Water Usage (2009) Source: FAO

When Table 2 is examined, it is seen that Kazakhstan has the most agricultural land. Russian Federation follows it. When irrigated agricultural lands are examined it is seen that Russian Federation is the country with the biggest irrigated agricultural land, followed by Uzbekistan and Kazakhstan. Based on the rate of use of the water in agricultural lands, Kyrgyzstan is the country with the highest rate (93.8%). Uzbekistan (93.2%) follows it. According to the rate of water used in industry, two countries having the smallest rate of use of water in industry are Uzbekistan and Kyrgyzstan. Russian Federation is the one having the highest rate of water use in industry. Russian Federation has the highest rate of share in total water use by domestic.

To sum up the tables in general, the contributions of agriculture to Gross Domestic Product in the studied countries are considerably low. The ratio of importing to exporting in agricultural products is high and it is seen that all countries could not provide food safety. It can be said that Russian Federation having the most agricultural lands also has the highest irrigatable land. It is seen that Kyrgyzstan and Uzbekistan having the highest water use rate in agriculture do not use the natural sources in a sustainable manner. It is also understood from the rate of water used in the field that rate of urbanization and industrialization is the highest in Russian Federation.

4 Conclusions and Recommendations

In this study it has been discovered that the agricultural structure, product pattern and sector specific policies in the studied countries in general have displayed considerable changes since 1991 after the gain of independence. The positive results of structural changes have occurred in a short time. However, serious environmental issues have been experienced in the countries where sustainable production methods are not employed in the past and reflection of the issues have continued until today.

The structure of agriculture sector displays difference according to the agricultural policies applied in a country in addition to its natural source. Therefore, agricultural policies should be directed in accordance with the domestic dynamics of a country.

Ensuring food safety in Eurasian countries which have energy focused income is very important for the future. At this point, the way of production aiming at meeting the food needs of the population should be taken as basis in particular, and nature and efficiency of agricultural sector should be supported. For this purpose, subsidy policies should be developed.

Being the main focal points of sustainable development economic and ecological development should be considered integrally and integration between sectors should be ensured and rural-industrial promotion based on agriculture should be encouraged. As a result, tourism and textile sectors to be qualified as focal sectors in the coming years in Eurasian countries and capable to provide essential value added to development are directly related to agriculture. Enhancement of agricultural productivity, development and diversification of market oriented production will be achieved through supporting rural areas. In addition to agricultural support, facilitating access to information sources can be provided by enhancement of dissemination activities. In this context, supporting data and communication technologies in the mentioned countries will allow widespread use of such technologies, create awareness in citizens, enterprise, domestic and foreign market demands and develop trade relations (Bircan, 2012).

On the other hand, livestock has an important place in agricultural production sector in the Eurasian countries. Meat production plays an essential role in subsistence. Development of livestock products based on traditional and organic subsistence in middle Asian countries having wide pastoral areas in terms of quantity and quality will support economic development. Furthermore, it will be easier for processed meat and dairy products to gain

place in foreign markets. In this framework, establishment of cooperation between Turkey and Eurasian countries will enable realization of joint projects also ensuring share of Turkey's experiences.

In general in agriculture sector, productivity should be increased in SMEs where livestock and vegetable production is carried out and lending, consulting and training supports should be provided for such enterprises. On the other hand, product variety should be provided in such sub-sectors exchanging inputs upon enhancement of irrigation facilities. For instance, product variety has been increased by growing products such as kiwi, jojoba, soya, Japanese turnip, broccoli etc. which were not produced in Turkey before.

Development of water sources, use of reservoirs and lagoons of structural modification and development of water products, support of reservoir fishing should be another value added of sustainable agricultural production and employment in this sector should be increased.

Development of agriculture sector, safe supply of food needs of increasing domestic and foreign population is only possibly by means of stability of agricultural production with price supports. For that reason, a common insurance system should be established and put into effect to provide protection of producers and production level, quantity and quality in Eurasian countries against risks.

Within the internal dynamics of Eurasian countries, the Eurasian countries should offer training to their citizens on sustainable development, sustainable agriculture, organic agriculture and new agricultural products and create awareness and sensitiveness in this matter by means of mass media.

On the other hand, public and private sector cooperation in agriculture sector, scientific and corporate cooperation among privatization policy makers, corporate and Eurasian countries in agriculture fields should all contribute to development of plant production and livestock farming. Thus problems such as aridity, plant diseases and animal diseases should be eliminated in applications of sustainable agriculture and sustainable development policies.

The revenue gained in foreign currency in energy and natural sources exporting in Eurasian countries may also strengthen other sectors where such countries could not compete. For instance, a wealthy country with dependency on agricultural products may not only increase the rate of employment by means of introduction of new agricultural fields, green housing, irrigation systems by use of its own sources but also may provide sustainable development without dependency on one single source.

Sustainable development and growth policies are only possible by enhancement of more and competitive agricultural products and varieties, in brief, providing more value added. Being rich in energy and natural sources, Eurasian countries may utilize a part of their such incomes for support of agriculture policies because increase in employment rate upon development of industries based on agriculture, decrease in poverty and cooperation among region countries will be much easier. Particularly, achievement of a strong economic integration will enable Eurasian countries to become dominant in world policy in political aspects and this process will get much more powerful with reasonable smart energy policies.

Agricultural production, effective use and share of water sources are all highly important for future world population. Sustainable development and growth will also strengthen the neighborhood economies.

References

- Bircan, İ., 2012. "Türkiye'nin 2023 Vizyonu Hedeflerine Ulaşmada Üniversitelerimizin Katkısı ve Beklentiler", 3. İzmir Ulusal Ekonomi Kongresi, İzmir.
- Djalalov, S., 2001. Tendencies in Uzbekistan Farm Production. Review (Tashkent: Centre for Effective Economical Policy) <http://en.trend.az/capital/business/1653130.html>.
- Dukhovniy, V. A. and Sokolov, V. I., 2002. Lessons On Cooperation Building To Manage Water Conflicts In The Aral Sea Basin, *Technical Documents in Hydrology: PC-CP Series: 11*, Publ: 2003, Tashkent.
- Eveleens, K., 2004. The Training of Trainers/Farmers Field School Programme for Cotton and Potato IPM in Kyrgyzstan in 2004: Evaluation and follow-up, FAO consultancy report, unpublished, Global IPM Facility, p. 14.
- Evin, H., 2005. "Trakya Bölgesi Deri ve Bitkisel Yağ Sanayi'nde Çevre Duyarlılığı", Trakya Üniversitesi Fen Bilimleri Enstitüsü Yayınlanmamış Doktora Tezi.
- Gençler, F., 2009 AB ve Türkiye'de Sürdürülebilir Tarım Uygulamalarının İncelenmesi ve Türkiye'de Sürdürülebilir Tarıma Yönelik Politikaların Geliştirilmesi Üzerine Bir Araştırma: Zeytin Örneği Ege Üniversitesi, Fen Bilimleri Enstitüsü, Tarım Ekonomisi Anabilimdalı, İzmir.
- Marşap et al, 2010. "Avrasya Ülkeleri Açısından Yenileşen Dengeli Enerji Yönetiminde Paylaşılan Stratejik Yaklaşımlar", International Conference on Eurasian Economies Proceedings 2010.
- Mirzaev, S. Sh., 1996. "Problems of Aral Sea: Causes and Solutions", in: Proceedings of Conference on Aral Sea Problem, pp. 21–32 (Tashkent: Institute of Irrigation and Melioration).

- OECD, 2011. Competitiveness and Private Sector Development, Kazakhstan Sector Competitiveness Strategy, http://www.oecd-ilibrary.org/finance-and-investment/competitiveness-and-private-sector-development-kazakhstan-2010_9789264089792-en
- Okan Üniversitesi, 2012. Avrasya Uygulama ve Araştırma Merkezi, <http://avasyamerkezi.okan.edu.tr/node/1>
- Pezikoğlu, F., 2004. Türkiye’de Sürdürülebilir Tarım Uygulamaları ve Yönlendirilmesi için Gerekli Politikaların Belirlenmesi, Uludağ Üniversitesi, Fen Bilimleri Enstitüsü, Tarım Ekonomisi Anabilimdalı, Bursa.
- Pretty, J. N. and Conway, G. R., 2004. Agriculture As A Global Polluter, International Institute For Environment and Development (IIED), GateKeeper Series No:11.
- Russia Agriculture Policy Review http://www4.agr.gc.ca/resources/prod/doc/pol/pub/ra-ra/pdf/russia_e.pdf
- Serkan G., 2010. “Sürdürülebilir Kalkınma Gelişmekte Olan Ülkelerde Uygulanabilir Mi?” Eskişehir Osmangazi Üniversitesi İİBF Dergisi, 5(2), 85-99.
- Shikhaliyev et al., 2011. Agricultural Sector of Azerbaijan – Overview and Analysis http://www.iset.ge/files/kamran_shikhaliyev__oktay_ismailzada__samir_khalilov.pdf
- Tsalik, S., 2003. What Recourse To The Resource Curse?, Local Government Brief, <http://lgi.osi.hu/publications/2003/241/41-60.pdf>, 22.02.2006
- Trend, 2010. Minister: Azerbaijan creates half of annual grain reserves <http://en.trend.az/capital/business/1653130.html#popupInfo>
- Leman, Z. and Sedik D., 2009. Agrarian Reform in Kyrgyzstan: Achievements and the Unfinished Agenda FAO Regional Office for Europe and Central Asia Policy Studies on Rural Transition No. 2009-1