



Agriculture Sector in Kosovo And Opportunities for Cooperation With Balkans Countries

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Abstract

Kosovo has a total land area of 10,908 km², with a total length of 602 km land borders. Kosovo lies in a geographical basin situated at an altitude of about 500 km meters surrounded by mountains and divided by a central north/south ridge in two sub –regions. Kosovo`s continental climate is characterized by temperature between -20°C during the winter and + 35°C during the summer. The average rainfall is up to 700 mm. The two main agro-ecological areas are determined by climate, soil and vegetation: the south-west Dukagjini plain with a more Mediterranean climate and the eastern part with a more continental climate. Due to the diverse landscape structure, geographic base, flora, climate and hydrography soils in Kosovo vary with respect to agriculture. It is estimated that 15% of Kosovo`s soil is of high quality, 29% is medium and 56% is poor quality. High and medium quality soils are composed of humus soil (11%) that is mostly distributed in the Kosovo plain, grey carbonate land (8.4%), alluvial (7.8%) and other dark and serpentine soils. Kosovo is, for the time being, a great importer of fruits, vegetables and decorative plants starting from the planting material to final products that this sector provides. Kosovo has an increasing growth potential of export of fruits and vegetables in neighboring countries and broader based on these specifics: Grain sector in Kosovo is one of the main sectors. The total area planted with cereals in 2012 was 137,215 ha. Total domestic production was about 350,000 ton which covers 76% of domestic needs and other part is covered by import. The trade balance was negative but the value of wheat imported is 40% lower than in 2011.

Key words: Kosovo, agriculture, export, import, production.

2. Introduction

⁶Official Name of Country	Republic of Kosovo
Area	10,908 km ²
Population	1, 815,606 (<i>est. 2012</i>)
Capital	Pristina - est. population 205,133
Land Use	<ul style="list-style-type: none">• 53 % agriculture,• 41 % forests• 1% water• 5% other (infrastructure and urban area)
Ethnic Composition	<ul style="list-style-type: none">• 90 % Albanians, 5 % Serbs• 2 % Bosnians and Gorans• 2 % Roma and 1 % Turks
Distribution	<ul style="list-style-type: none">• 42 % urban,• 58 % rural
Diaspora	over 800,000 people living abroad
Languages	Albanian, Serbian, English, Turkish..

⁶ <http://www.invest-ks.org/en/General-Overview>

Legal Framework	On the 17 th of February 2008 Kosovo declared its independence, becoming the latest state to emerge following the disintegration of Yugoslavia. In April 2008 the Assembly of the Republic of Kosovo adopted the country's constitution, which entered into force in June 2008.
Currency	Euro (€)
GDP	Grew 4.3% average yearly for the past decade (source: IMF)
GDP per capita (2012)	2,6761.00 EUR (source: IMF)
Financial Sector	Two tier banking system consisting of the Central Bank of the Republic of Kosovo, eight private Banks, 13 Insurance companies, 2 pension systems (public and private), 14 micro finance institutions, and 4 non-bank financial institutions.
Tariff Duties	<ul style="list-style-type: none"> • 10 % customs duties on imports; • No duties on capital and intermediary goods, or selective raw materials; • Excise tax on fuel, tobacco alcohol and luxury goods; • No duties and taxes on exports
Tax System	<ul style="list-style-type: none"> • VAT 16 %; • Corporate Profit Tax 10 %; • Tax on dividends 0%; • Personal Income Tax progressive (max. 10%)
Free Trade	<ul style="list-style-type: none"> • Customs-free access to the EU market based on the EU Autonomous Trade Preference (ATP) Regime, • Central European Free Trade Agreement – CEFTA • Preferential treatment of exported goods in the US, Japan, and Norway • Free trade agreement with Turkey (January 2014)
Geographical Location	Kosovo is located in the heart of Balkans, and it borders with Albania, Macedonia, Montenegro, and Serbia
Time Zone	Central European Time (GMT+1)

Republic of Kosovo became independent on 18 February, 2008 it is one of the youngest states in Europe. Kosovo is a landlocked country and surrounded by Serbia, Macedonia, Albania and Montenegro. Even Kosovo has great agro climatic and geographical position, based on the difficulties that Kosovo has passed in the past two decades, Kosovo nowadays is facing with the two main problems: poverty and unemployment. The Republic of Kosovo is the poorest country in Balkans and poverty is widespread all over the country, especially in rural areas. 31.5 % of the population lived in poverty and another 10.7 % in extreme poverty in 2011 according to the World Bank (2013). The official unemployment rate was 30.9 %. In terms of GDP and jobs, agriculture is an important sector in Kosovo's economy. The sector contributed 14.1% to GDP in 2011 and it is the largest employer in post-war Kosovo, accounting for approximately 35% of total employment.

3. Materials And Methods

The General Situation of Agriculture in Kosovo

- Based on the data of the Agriculture Households Survey, the largest area of agriculture land was used for cereals cultivation, with 137,215 ha, or 49.5% (mainly wheat, maize, oat and barley). Total domestic production was about 350,000 ton which covers 76% of domestic needs and other part is covered by import.
- The total area planted with vegetables in 2012 was 14,557 ha from which about 22% is planted with pepper. Total domestic production was about 51,000 ton which covers 90% of domestic needs and other part is covered by import. Potato covered 22% of total area planted with vegetables. In 2012 from 14,557 ha the production was 33,407 ton. With this quantity of production Kosovo can cover all domestic needs. The highest quantity of potatoes production, about 65% is sold to the market and the other part is used for household needs and processing industry. The other important vegetables growing in Kosovo are: Mushroom, Cucumber, water melon, Melon, Cabbage, and Cauliflower, Onion, Beans (mixed)etc
- This is followed by fruits with an area of 3,852 or 1.4% of the land used (mainly apple, plum, pear, strawberries, cranberries,
- Vineyards are cultivated in a smaller area 3,219 ha or 1.2%.
- Herbs and aromatic plants

- The livestock sector -cattle and milk constitute one of the most important sectors in Kosovo. Total number of cattle in stock in 2012 was 329,213. With this quantity of production self-sufficiency ratio is 73.4% and consumption per capita is 22.6 kg.
- Area under fruits was increased in 2012 compared with previous year for these fruits: sour- cherry with 84%, apricot with 69%, quince with 37%, plum with 32%, strawberry with 16%, grape by 8% while in three previous years the increase in area was for those fruits: sour- cherry 74%, quince 49%, strawberry 30%, grape 10%. Wine grape in 2012 as compared with last three years was increased by 2%.this sector is dominated by cultivation of apples with 1775ha.

Agriculture faces the following main constraints related to land (ARDP, p.113):

1. Agriculture is small scale. Land tenure is small and extremely fragmented, and subsistence farming predominates.
2. The change of agricultural land into construction land is unrestricted. Efforts to control land use change have been unsuccessful so far. This has resulted in unnecessarily large areas of lost agricultural lands and inefficient urban development.
3. This has led to a loss of investments in irrigation, to an invalidation of land consolidation, and to ad-hoc investments by the municipalities, which tend to follow developments rather than initiate and direct them.
4. In addition, this has resulted in a defunct market for agricultural land. Valuation and pricing of agricultural land are not transparent and do not reflect productive capacity. In addition, there is no functioning and transparent land lease system.
5. Land ownership as currently registered via the Cadaster in the Immovable Property Rights Register (IPRR) is out dated and inadequate.
6. There is no rural land tax, which, however unpopular, would increase the use of agricultural land and help the municipalities to finance rural development. The presence of a modest land tax would be a good tool to encourage the use of agricultural land, and stimulate the land market.
7. Legislation related to rural lands is not consistent.
8. Inter-ministerial cooperation is weak. Institutions protect their own mandates.

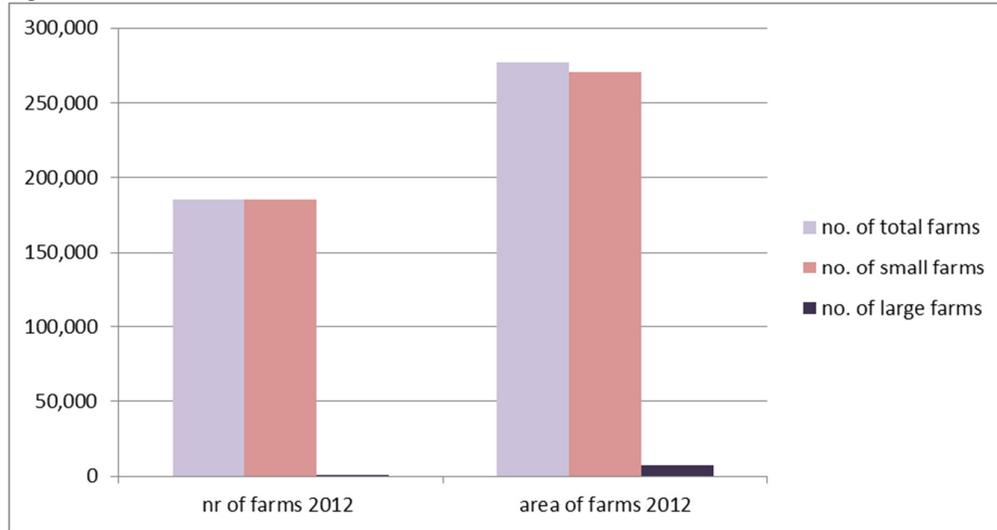
Farm structure: According to the agricultural household surveys of KAS, more than half of the household's surveyed farm was less than 1 ha. The number of farms remained roughly constant since 2007 but the area they utilized increased by 5.7%. However, a strong increase is noticeable in the number of hectares in "Large and specialized farms", from 3,434 in 2007 to 6,969 in 2012, an increase of 102.9%.

Figure 1 Farm structure by size and types in 2012

Farmsize	Small Farms			Large and specialized farms			Total		
	no. of	area(ha)	%of farms	no. of	area(ha)	%of farms	no. of	Area (ha)	%of farms
0.01–0.5 ha	45,812	13,299	24.7	6	1	1.8	45,818	13,300	24.7
0.51–1.0 ha	51,660	39,380	27.9	5	4	1.5	51,665	39,385	27.8
1.01-1.5 ha	35,581	43,762	19.2	8	11	2.3	35,589	43,772	19.2
1.51-2.0 ha	15,707	27,808	8.5	12	22	3.5	15,719	27,830	8.5
2.01–3.0 ha	19,969	49,274	10.8	26	66	7.6	19,995	49,340	10.8
3.01–4.0 ha	5,755	19,932	3.1	22	77	6.5	5,777	20,009	3.1
4.01–5.0 ha	3,722	16,531	2.0	26	116	7.6	3,748	16,646	2.0
5.01–6.0 ha	2,296	12,507	1.2	21	115	6.2	2,317	12,622	1.2
6.01–8.0 ha	2,542	17,573	1.4	40	274	11.7	2,582	17,847	1.4
8.01–10 ha	982	8,743	0.5	25	229	7.3	1,007	8,972	0.5
>10 ha	1397	21,586	0.8	150	6,055	44.0	1,547	27,641	0.8
total 2012	185,424	270,395	100.	341	6,969	100.	185,76	277,364	100.
total 2007	183,182	259,094	100.	104	3,434	100.	183,28	262,528	100.
change in %	1.2	4.4		227.9	102.9		1.4	5.7	

Source: KAS - Agricultural household surveys 2007, 2012

Figure 2: Farm structure in 2012



Agricultural productivity and yields are low, as a result of small farm sizes and lack of access to technical expertise, resulting in outdated farming practices, inadequate use of inputs, lack of credit and inefficient farm management practices. Small farm sizes mean that farmers do not produce surpluses for commercial sales. A significant share of production is self-consumed by the households and only a limited amount is brought to the market, usually without long term contractual arrangement.

As a consequence of low levels of productivity and the dominance of subsistence production, factories have to deal with many small farmers whose supply is small, resulting in high collection costs which do not allow the processing industry to be competitive.

Important and Key points in Kosovo Agricultural Sectors

Since the Kosovo will have in future access to the further EU funds it's important that future Agriculture and Rural Development Program in line with as possible with EU common Agricultural Policy. One essential characteristic of the future EU Agriculture and Rural Development policy will be that foreseen measures are tied to the six mean priorities, which will be also important for Kosovo.

- Fostering knowledge transfer and innovation in Agriculture, forestry and rural areas,
- Enhancing competitiveness of all types of Agriculture and farms viability
- Promoting food chain organizations and risk management in Agriculture
- Restoring, preserving and enhancing ecosystems dependent on agriculture and forestry
- Promoting resource efficient
- Promoting social inclusions, poverty reductions and economic development

Agricultural Research and Education System in Kosovo

As a low-income country and recent creation, Kosovo faces great challenges to strengthen and consolidate the national productive sector, based on new economic and technological competencies, while also better integrating into the global economy and improving living standards and employment. As this note describes, limited capabilities in terms of human capital and R&D investment, a continued emigration of highly-skilled workers, under-developed competencies in technology transfer and knowledge absorption, and, more broadly, insufficient investment science and technology (S&T) are fundamental bottlenecks for the growth of private sector innovation and competitiveness. The government has taken steps since 2010 toward the construction of a national policy agenda for education, research, and innovation, and has begun creating enabling policy frameworks to support the nascent stage of the national innovation system. As mention before agriculture plays an important role in the economy of Kosovo. It accounts for a significant share of economic activities and more than 60 percent of the populations are engaged in some form of agriculture. A strategy for sustainable agriculture and rural development in Kosovo (the Kosovo Green book, MAFRD 2003) aims at improving the agriculture and

rural sector in Kosovo. The strategy also addresses regional and EU market opportunities and developing the food chain from the farm to the final products.

In order to improve the performance of the agricultural sector, assistance to farmers in terms of adoption of advanced agricultural practices is crucial and therefore the support to agricultural research and extension has been recognized as one of the main priorities for the Ministry of Agriculture, Forestry and Rural Development (MAFRD).

The National Agricultural Research System (NARS) of Kosovo is composed primarily of the Kosovo Institute of Agriculture (KIA) located in Peja, Faculty of Agriculture and Veterinary of the University of Pristina and Faculty of Agribusiness of University of Peja, mitrovica.

In this context, MAFRD is currently redefining the role of the Kosovo Institute of Agriculture of Peja (KIA) to transform it into a center of excellence for technology Generation and transfer, training and provision of advisory services. However, the strategy to guide agricultural research and development is still lacking and as well as the staff capacity, in terms of number and skills, limiting the scope of KIA activities.

The lack of a strategy for agriculture research is a critical gap and therefore the KIA Management Board has made a request to the different donors for technical assistance in the field of "Strengthening of agricultural research in Kosovo" in order to strengthen the KIA capacity for the planning, implementation and management of research programmes with specific emphasis on adaptive research and technology assessment and transfer.

Kosovo Institute of Agriculture, Peja (KIA)

The Kosovo Institute of Agriculture (KIA), as a public research institution founded in 1947 with premises in Peja, was transferred to the Ministry of Agriculture, Forestry and Rural Development (MAFRD) from the Ministry of Education, Science and Technology in 2000. KIA is a complex of 12 laboratories clustered in three laboratory facilities, 20 offices, garages and warehouses, a research station and two sub-stations (Dukagjini plain and Kosovo plain) of together 170 ha arable land in Peja.

KIA's main function is focused on applied and adaptive research on:

- Plant production and protection,
- Animal husbandry,
- Seed testing,
- Laboratory analyses of agricultural inputs and products of plant and animal origin; as well as
- Training and advisory services.

KIA has been operating in the last five years on a very limited scale, with 32 staff capacity, comprising of director, agronomists, biochemist, chemical analysts, support staff and administrator.

Due to this, current activities are limited to seed testing, variety trials (wheat, barley, corn, potato) and laboratory analysis of food, soil, fertilizer animal feed and crop products (grain, wine etc.).

Within the government policy framework (Green Book 2003) MAFRD is in process of redefining the role and organization of KIA:

Major development problems faced by KIA:

- Lack of strategy to guide agricultural research for development
- Lack of critical mass of research and technical staff (number and skills)
- Weak linkages among agricultural research and technology stakeholders
- Weak linkages to outside sources of knowledge and information

Faculty of Agriculture and Veterinary, University of Pristina: The Faculty of Agriculture and Veterinary was established on 26 August 1973, by decision of Assembly of Kosovo ("official gazette of the SAP of Kosova" nr-26/1973). Faculty of Agriculture started 1974 with the two section the plant production and cattle breeding and due to the great and multitude needs, from 1975 the Faculty continued with only the General Direction. In 1981, the bio technical institute in Peja was integrated in to Faculty of Agriculture in Pristina. Three other organizations: The institute of Cattle breeding and Veterinary with it seats in Pristina, Institute of Economic and Development with it seats in Pristina and the Agricultural Plant Nursery with it seat in Peja. It is mean the all institution chains were established and function in regard of education and research in Agriculture. After the abolition of Kosovo's autonomy in March 1989 by Serbian government, the first step that they took was the introduction of violent measures at Pristina University within which is part of the Faculty of Agriculture. From these repressive measures mostly were damaged faculty professors and students, because in addition violent measures were applied in research institutes as part of the faculty but also in the processing plants where students practice practical part of the curricula's and research's .As a result of these measures also suffered the all food value chain in all sectors such : livestock farms, fruit orchards, vineyards etc because one of the aim was also to economically damage Kosovo by firing the workers from the jobs. It must be said that all these agricultural potentials were organized

in agricultural combines form and cooperatives, and their number was quite large. It is worth mentioning that there were 121 agricultural combines in most cases they had closed production cycle, starting from raw materials to final production. The most of these structured value chains were highly correlated with the Faculty of Agriculture, all scientific research exactly were done there. The capacity of Faculty of Agriculture and Veterinary and Kosovo Institute of Agriculture had been destroyed as the result of war, many scientists left the country, research facilities were destroyed, the few remaining staff lack training and were cut-off from recent agricultural research and technology developments.

Currently the Faculty is responsible for teaching, research, transfer of knowledge and extension service:
The Faculty structure has five institutes/chairs:

- Livestock Institute,
- Field crops and vegetable Institute,
- Fruit trees and vineyards Institute,
- Plant Protection Institute, and
- Agro economy Institute

The Faculty's curricula follow the Bologna Declaration of 3+2. There are 33 professors, 12 associate and assistant professors, 14 lecturers and 32 technicians.

The Faculty of Agriculture has practical facilities and Laboratories for: feed analyses, chemical and microbial food control, wine testing, seed, flour and bread quality, plant protection, and soil science and plant nutrition. Faculty cooperates with universities in Albania, Germany, Italy, Austria and Norway. Advisory, Knowledge and Information System (AKIS)

a) Agricultural research: Agricultural research in Kosovo is minimal at present and is likely to remain largely unaffordable for some time. Formally, the research function resided with the Faculty of Agriculture – which has no land – and with the Kosovo Institute of Agriculture at Peja that had mainly done applied research on a self-financing basis from its own farm income. So far research staff from KIA has conducted trials and training with demonstration plots on different varieties of wheat, barley, maize and potato in combination with particular cultural practices, particularly using different types of fertilizers, efficacy of different rates and types of pesticides, different seed rates, etc.

Adaptive research (trials and demonstration plots and cultivation of new varieties) is actually done by KIA and to some extent by Faculty of Agriculture. Recently MAFRD's Department of Rural Development successfully did on-farm client research. Rural Development officers within MAFRD and municipal Agriculture Departments at present collaborate in carrying out on-farm demonstrations and variety evaluations in wheat and maize. This is satisfactory in promoting improved technical packages to small farmers with the objective of increasing yields and farmers' margins. MAFRD is proceeding to the redefinition of the role of the Kosovo Institute of Agriculture (KIA) in applied research, training and advisory services support in order to better integrate the Institute with programmes of Technical Departments of the Ministry. MAFRD is on the way to seek technical assistance to examine options for a sustainable research strategy, seeing the possibility to associate the Faculty of Agriculture members with a specific expertise.

This would also include expanding the network of existing links with regional and World research centers. The Kosovo Institute of Agriculture (KIA) needs substantial recurrent funding to sustain for the ongoing adaptive research in the medium term, an Agricultural Research Council should be established.

b) Agricultural education: The formal agricultural education is under the mandate of the Ministry of Education, Science and Technology (MEST) located in Pristina. Formal agricultural education starts in Agricultural High Schools of which there are three, in Pristina, Lipjan and Gjilane, plus two Vocational High Schools with an agriculture section in Ferizaj and Peja, with a total capacity of 1500 students of which 80% are for agriculture and 20% are for veterinarians. The University annual intake for agriculture is about 100, including 20 veterinarians, and the output of agriculturists is about 40 or 50 per year.

c) Research and development: Research and development activities (R&D) have always been marginalized in Kosovo. The Higher Education Strategy (2005-2015), is the first document that made a more systematic effort to address the issue of RD by including it among its strategic objectives and priorities (Ministry of Education, Science and Technology of Kosovo). However, the priority given in the strategic document was not followed with an adequate allocation of fund. Until recently, the general expenditure on R&D in Kosovo amounted to only approximately 0.1% of GDP, or even less, according to some estimates. This is a ratio significantly below the European average, and well below the average of the countries in the region and many developing countries (National Research Council, 2010). Strategic framework to guide national agricultural research in Kosovo for the next decade developed with active participation of research and technology stakeholders.

The strategy will provide for:

- Research and technology policy statement,
- Set of research priorities based on farmer's needs,
- Research and technology development programme,
- Human, financial, and physical resources requirements,
- Organizational framework for KIA,
- Mechanisms for strengthening linkages of KIA with Faculty of Agriculture, Regional Offices of MAFRD and other stakeholders including private sector
- Arrangements for building partnerships with research institutions and networks in the sub-region.

Major constraints on National Agricultural Research System (NARS) in Kosovo

- No clear policy or strategy to guide agricultural research in Kosovo,
- The limited research carried out in KIA or at the Faculty of Agriculture are aggregates of Individual research staff activities,
- Research projects do not respond to farmer's needs and priorities,
- Capacity to undertake applied research is poor,
- Majority of technical staff of KIA and the Faculty of Agriculture lack English,
- Limited access to international scientific developments and information,
- Knowledge and technical skills are outdated,
- Institutional links with other NARS in the region are ad hoc, (although some bilateral agreements exist in education and sciences).

4. Recommendations for Regional Cooperations

- Since countries of the region face similar constraints like absence of coherent policies and strategies to guide agricultural research and extension, research priorities based on country needs ,not set based on agriculture- farmer's needs, fragmented and poorly coordinated research; poorly staffed and funded agricultural extension/advisory services with inadequate and ineffective linkages with research institutions and farmers, we propose to:
 - Focus research on technology transfer (rather than on technology generation), working with research institutes/universities in other countries,
 - Use technology that has been tested and adopted by farmers in neighboring countries, or under similar agricultural conditions,
 - Base technology selection on assessment of farmer's needs, emphasizing market-oriented production technologies,
 - Strengthen KIA's capacity in food quality control, seed testing and certification, agricultural input analysis and control activities, soil analyses, training and dissemination of information,
 - Undertake technology identification, assessment and diffusion cost-effectively within a regional university/research collaborative framework,
 - Develop incentives to recruit young national scientists, including postgraduate programmes, as well as regional exchange programmes for existing research staff and on-the-job training for field and laboratory technicians.
 - However we think that cooperation among the agricultural research and Agricultural faculty of the region will facilitate sharing of experiences and the transfer of agro technologies and knowledge that will contribute to a better use of limited resources, prevention of duplication of work and faster response to the needs of farmers and existing and potential markets.
 - Enhance regional cooperation to promote research and innovation in Agriculture sector.
 - Advanced agricultural practices

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