

# PERSPECTIVES OF THE AGRI-FOOD SYSTEM IN MONTENEGRO

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Food production and agriculture play an important role in Montenegro's economy, with the primary sector alone providing (source: Eurostat) more than 10% of total GDP (GDP (EUR 2.95 Billion in 2009), compared to 2% in the EU27, together with processing industry shares around 20% of GDP, and 4.9% of total exports<sup>1</sup>. Surveys<sup>2</sup> reveal an agricultural labor force of 11,902, while official estimates point to a total of around 55,000 rural households in Montenegro. Agriculture has been growing steadily at an average 2.4% annually from 2002 to 2006, with certain sub-sectors generating significantly higher growth, such as fruits at over 10%. Fruits and vegetables, with a combined share of 34% of the total value of agricultural production, contribute to

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<sup>1</sup> Source: MONSTAT

<sup>2</sup> World Bank - Montenegro Institutional Development and Agriculture Strengthening (MIDAS)

3.4% of GDP; grapes alone contribute 13% of the value of agricultural production and 1.3% of GDP.

Fruit and vegetable (including potatoes) production covers almost 38,000 Ha (7.3% of total agricultural area), 99% of which is allocated to private farms and just a few to enterprises and collective farms. Most of the individual farms are households with other sources of income, thus farming is a secondary economic activity. These two categories of farms are significantly different in terms of efficiency and specialization (sources: Statistical Yearbook of Montenegro 2009); for example, potato yields on enterprises are 20 tons/ha while private farms produce only 12 ton/ha: peppers, peas, beans, apple, cherries, etc... are only produced by private farms and not by enterprises. The main horticultural species are as follows: vegetables: potatoes, peppers, tomatoes and cabbage, followed by: cucumbers, watermelon, onions, lettuce, musk-melons, carrots, Swiss chard, eggplant, zucchini and pot herbs; fruits include apples and plums, then tangerines and grapes. Orchards in Montenegro are very small and fragmented, and only a few producers have orchards over 1.00 Ha, while the largest majority have orchards ranging from 0.20 Ha to 0.40 Ha (example: apples). The area of Podgorica, Zeta - Malesjia, Bjelo Pavlicj is considered to be the best for vegetable production in Montenegro. Northern Montenegro is more suitable for onions, cabbages, roots and tubers. Niksic and Kolasin are good areas for roots and tubers. Montenegro's coastal region produces watermelons and melons. The major vegetable crops in the region of Podgorica are tomatoes, peppers, cabbage, cucumbers, salad, onions, watermelons and melons. Irrigation systems in the region of Podgorica are widely available.

Farms are usually small, around 0.50 Ha, with only a few farms having a larger area over 2.00 Ha and more. Producers with 0.50 Ha of greenhouses and 1.00 Ha of open-field cultivations are considered to be "large" vegetable producers. On the Malesjia

plainmeaning? the largest potato producer cultivates 8.00 Ha of land. A current trend in the vegetable sector is the expansion of greenhouses, which now account for 30.00 Ha in the area, with +20% growth in the last 4 years. There are approximately 260 greenhouse producers (average, 0.15 Ha/farmer) as follows: Zeta Plan 170; Malesjia 50; Bjelo Pavlicj 40. Fruit producers lack adequate expertise for high level cultivation, they are traditional producers. Major constraints for the sector's development are: the small size of orchards and fragmentation. The assortment suffers from a lack of innovation, with a traditional assortment. Furthermore, competitiveness is quite low due to poor logistics and post-harvest facilities like cooling and processing capacities. Fruit producers, indeed, do not have cold stores and usually sell their fruit directly to green markets. Existing large cold stores (not many, 2-3) prefer trading in bananas to domestic fruit. Furthermore, producers need a constant, defined plan of technical assistance. There are no producer organizations established in the fruit and vegetable growing sectors. Instead, farmers are organized in associations of producers – fruit growers, associations of producers – vegetable growers, as well as associations of greenhouse producers in accordance with the Law on Non-governmental Organizations, (Official Gazette of Montenegro 27/99, 71/99, 30/2002 and 11/2007), as well as cooperatives in accordance with the Law on Cooperatives (Official Gazette of the Federal Republic of Yugoslavia 41/96).

Associations are non-profit organizations organized by farmers, for the purpose of exercising individual or common interests or for the purpose of acting in and promoting the public interest. The new Law on Agriculture and Rural Development (Official Gazette of Montenegro 56/09) in chapter V (Articles from 34 to 39) provides for establishing of producers' organizations, and the effects of these decisions are expected in the following period. Representative markets for determination of production and import prices in this field, are processed through (spell out the name

first)AMIS, which provides daily (in the season), weekly and monthly indicators concerning prices of fruit and vegetables from the area of Montenegro, Serbia, Croatia and the EU.

Vineyards are much more developed than fruit orchards. The average area of vineyards is larger and in this sub-sector there are larger farms, from 1.00 Ha (5,000 vines) to 4.00 Ha (20,000 vines) and even larger (but 5-6 farmers only). The best vine areas in Montenegro are: Podgorica and Zeta – Malesjia; Srmniza; Rijecka Mahija; Ljesanska Mahija; Coastal region. The production of vineyards (sources: Statistical Yearbook of Montenegro 2009) amounts to 4.325 Ha (0.8% of total agricultural area) with 51% private farms and 49% enterprises and collective farms, with a significant difference in efficiency: yields of 3 Kg of grapes per plant on enterprises (mainly Plantaze) versus 1.9 Kg on private farms. The largest enterprise is Plantaze which grows mainly traditional wine-grape varieties: 65% Vranac and 20% Krstac white grapes. Production of propagation materials is also significant. Out of a total production of 17 million bottles of wine, Plantaze exports 6 million bottles to Serbia, and 3.5 million bottles to Bosnia-Herzegovina. In the Serbian market Plantaze supplies stores directly while in Bosnia-Herzegovina the company has contracted a local distributor, and in Russia two distributors. About 20% of the output is quality wines and 80% premium wines. The company's 13 million liters of store capacity is equal to its annual production. According to data of the Ministry of Agriculture there were 897 grape producers and 2,500 ha of vineyards entered in the vineyard application register as of 2008. The Register contains data on vineyard owners, cadastral information on vineyards and their characteristics: the number of vine-plants, the age of vine-plants and the vineyard's varietal composition. Of the total, 84 grape and wine producers are from private sector and Plantaže, possessing 2,310 ha of vine growing area with an annual production volume of 20-22 million kg of grapes

and around 16 million of wine, were registered in the Central Register of Grape and Wine Producers (Law on Wine Official Gazette of the Republic of Montenegro 36/07). Agriculture is characterized by a low level use of chemicals which represents a good opportunity for environmentally friendly production methods. However, organic production is just at a starting point: in 2004, the Ministry of Agriculture adopted the Law on Organic Agriculture; in 2006, the National Agency for Certification and Control of Organic Produce "Monteorganica" issued the first certificates. In 2009 there were 34 organic producers (total: 6 organic + 28 in-conversion) in Montenegro (from 13 in 2007). Since 2002, the NGO 'Production of Organic Food' has been involved in the development of organic agriculture, nature conservation and the promotion of rural areas in Montenegro as tourist attractions. In 2002 the first experimental organic field was set up on Lukavica mountain in Župa Nikšić. Since December 2002, the NGO Production of Organic Food has published "EcoFood", a monthly magazine for organic food. It focuses on organic agriculture and sustainable development in Montenegro. In 2004 some members of this organization were certified by the Swiss certifier Bio Suisse. As mentioned above, in 2004 with the adoption of the Law on Organic Agriculture. ( Law Nr. 01-1006/2), a legal framework was provided for the development of organic agriculture in Montenegro according to EU Regulation 2092/91 (now 834/2007). In 2006, the National Agency for Certification and Control of Organic Produce Monteorganica issued the first certificates. In 2008, the NGO 'Production of Organic Food' established the first organic shop - Biomontenegro-, in order to develop and promote organic agriculture. It serves as a purchase center for organic products produced in Montenegro.

Most conversion to organic farming has taken place on cropland (arable and permanent crops) amounting to ca. 75 hectares, and there were an additional 1800 hectares of grassland. Montenegro has more than 100,000 hectares of wild collection

areas. In 2009 just 55 tons of organic vegetables and 7.4 tons of organic fruit were produced (source: Monteorganica). The slow development of the local market is a significant constraint to growth and an obstacle to the long term sustainability of the sector. Many farmers lack information and support, and in export-oriented markets traders play the biggest role. The market would need more discipline in terms of controls on final sales and legal controls, while horticultural producers are not keen to organize themselves in groups because of their traditional mentality. The development of organic agriculture is one of the main objectives of Montenegrin agricultural policy. So far, most activity has been geared toward the establishment of organic legislation and an institutional framework.

In 2009, the government plans to spend 165,000 Euros on direct payments, to finance the work of the certification body Monteorganica as well as other support measures. As for direct payments, 120 Euros per hectare are planned for arable crops and 220 Euros for vegetables and fruit. For organic livestock, 40 Euros are planned per head of cattle, 2 Euro for poultry, and 20 Euros for beehives. At the local level, some of the first initiatives regarding organic agriculture have been supported by the Ministry for Agriculture, Forestry and Water Management (MoAFWM) in the regions of Nikšić, Kolašin, and Morača. Activities in these regions have led to the formation of three growers' associations, which have expressed a strong interest in practicing organic agriculture - "Proizvodnja zdrave hrane" in the Nikšić municipality, "Ozirska dolina" in the municipality of Kolašin, and "Morača" in the Podgorica community. Today there are two companies that are involved in the marketing and processing of organic products: Biomontenegro, a specialized shop in Podgorica, and INSPE, which collects and processes medicinal plants, from the municipality of Bar. In 2008, total turnover of organic products was estimated at 55,000 Euros. Currently no organic products are exported. The main challenge for the further development of organic

farming in Montenegro is the lack of institutional infrastructure for the promotion and faster development of organic agriculture. The undeveloped market, the small range of organic products, and the underdeveloped processing infrastructure are further factors hindering the development of organic agriculture in the country.

Montenegro has a significant and increasing trade deficit in agricultural products with the EU (source of data: Eurostat): EU imports from Montenegro (2006/08 average) were as follows: fruits €1.1 million (m), vegetables € 2.1 m, wines € 0.5 m; EU exports to Montenegro (2006/08 average in 1000 Euro): fruits € 0.3 m, vegetables € 38.8 m, wines € 3,8 m. Grape growing takes up just 14% of land but contributes 28% of agricultural value. Other fresh vegetables (peppers, tomatoes, watermelon,) contribute significantly to agricultural value. In contrast, fruit growing takes up 37% of hectares but contributes less than 14% of agricultural value. Thus, comparing the share of production in value to the area, which represents an index of value-added, grapes rank first (delta of +13.5%), followed by peppers (+7.4%), tomatoes (+5.8%) and watermelon (2.4%). Finally potatoes show a negative contribution to value-added (-5,9%) as well as fruits (-23.8%). Thus Montenegro has a clear competitive advantage in terms of the value of its products compared to the EU27 and CEFTA countries. Many agricultural products (grapes and fruits and vegetables) present an average value that is more than 50% lower than the EU or CEFTA average: the value of grapes is 55% lower than the EU average and 75% lower than CEFTA. Comprehensively, vegetables are -52% and fruits -61% below the CEFTA average. However, the real value of products at the sector level is quite low not just due to production inefficiencies but also due to constraints and inefficiencies in the supply chain: cooling chain? and storage facilities, loss of product, high rate of self-consumption, etc.

Indeed, production efficiency is high only for some products (tomatoes, watermelons, figs, apples, plums, oranges) when benchmarked with CEFTA. However, only figs are competitive with respect to the EU average. In other words, the positioning of value provides good competitiveness as commodities in the short run, but often it is also an index of quality performance: thus low price is often a reward for low quality. Thus, price positioning should be combined with strategies of mark-up, quality and efficiency in order to create added-value and a sustainable position in the long run. Price competition is very important in the short run view, but in order to design long run strategies, a map of competitiveness has to be outlined. For that purpose, two indices have been calculated using price and yield data benchmarked with EU and CEFTA countries: a) cost-quality competition: estimated from the difference (delta) of prices of specific products from Montenegro compared to the EU or CEFTA average; and b) efficiency competition: estimated from the difference (delta) of yield of specific products from Montenegro compared to the EU or CEFTA average. Then, the two indices have been crossed with each other in a single matrix in order to identify the market position of Montenegro with respect to EU or CEFTA countries (matrix of competition strategy): product differentiation (lower right corner of matrix): low efficiency but high price of Montenegro's products; economies of scale (upper left corner of matrix): high efficiency and low price; product and quality differentiation (upper right corner of matrix): high efficiency and high price poor competition (lower left corner of matrix): low efficiency and low price.

There are substantial differences in the development of Montenegro's three regions: southern; central; and northern. At the same time, an important development goal for long-term economic development is to overcome the gaps in sub-regional inequalities: the northern region comprises the following municipalities: Andrijevica; Bijelo Polje; Žabljak; Berane; Kolašin; Mojkovac; Plav; Plužine; Pljevlja; Rožaje; and Šavnik. The



size of this sub-region is 7,320 square km 53% of the total territory of Montenegro. 31.45% of the population lives in this region whereas some 18% participate in the generation of domestic product (in 1996, it was 25.5%). 17.4% of all employees work in the processing industry. This region has the following resources: the prevailing part of total available hydro potential; 100% of the coal reserves processed by the Thermal Power Plant (TPP) Pljevlja; 67% of arable land; 71% of the total timber mass; 70% of cattle stock; almost all lead and zinc reserves; as well as resources for winter and eco-tourism development. The central region comprises the following municipalities: Danilovgrad; Nikšić; Podgorica; and Cetinje. The size of this region is 4,903 square km, 35.5% of the total territory of Montenegro, but it has 45.1% of its population. This region contributes 55.5% of the domestic product of Montenegro (in 1996, it was 49.5%). Economically speaking this is the most important region, where the greatest part of domestic product is created in the sectors of electricity, construction industry, traffic and storage, commerce and catering, followed by tourism and agriculture. This region contains 22.4% of arable land, 25.5% of timber mass and 22.6% of cattle stock, as well as abundant bauxite deposits and a part of hydro potential. The southern region – the Mediterranean zone – is the most developed region of the state, with 23.4% of the total population and contributing 26.5% of the domestic product of Montenegro. It comprises the following municipalities: Bar; Budva; Kotor; Tivat; Ulcinj; and Herceg Novi. The size of this region is 1,588 square km, 11.5% of the total territory of Montenegro. This region offers outstanding resources for tourism, the shipping industry and agricultural development and production, and these, along with traffic services and catering, are the dominant economic sectors.

From an agricultural viewpoint Montenegro has different climatic areas and agricultural production is quite differentiated on a regional basis: the coastal region includes the municipalities of the Montenegrin coastline, from Debeli brijeg to the

River Bojana and has 20 thousand ha of arable land, relatively fertile, consisting of deep alluvial-delluvial soil in lowlands and depressions and anthropogenized cambisols in terraces and lowlands. This area produces mainly fruit (subtropical fruits and olives) and wild species (figs, dog rose, etc.). The Zetsko-bjelopavlicki Region comprises the areas of Podgorica and Danilovgrad municipalities, 14% of total Montenegrin territory. The main Montenegrin lowland regions are found here at an altitude of up to 200 meters (Zeta, Malesija, Bjelopavlicka ravnica, Cemovsko polje, etc.). Cambisols are predominant in Cemovsko polje, along the Cijevna and Moraca banks and in Bjelopavlicka ravnica. In the area of Zeta and Malesija cambisols traverse into the zone of alluvial and swampy soils. Here mainly vegetables, fruits (including figs, oranges and kiwi) and wine are produced. The northern mountainous region is the largest region (32,5%) in terms of territory and it comprises all the mountain municipalities of the central and northern part of the republic. This area is characterized by many plateaus, often with deeper soils. Generally, this region is distinguished by a shorter vegetation period, longer lasting snow cover, cold winters and frosts during the fall and spring time. In this area the production is limited to potato and brassicaceae.

The Polimsko-ibarski region comprises municipalities extending through the Lim and Ibar valleys (20.5% of the territory). Proportionally, this region has the largest share of arable land 32.9% or 62,000 ha of Montenegro's total arable land. Arable land consists of relatively fertile alluvial, delluvial and brown soils in the old river terraces, and lake sediments in lowlands and slightly hilly relief; and brown, mainly acid soils on the moderately steep slopes of river valleys. All these traits combine with climatic conditions and an abundance of springs and flowing waters that may be used for irrigation. This area produces vegetables including mushrooms and wild medicinal herbs, small fruits (raspberries, blueberries, etc.), plums, cherries and apples. The

Karstic Region stretches across the central regions of Cetinje and Niksic municipalities, or Starocrnogorski krs, up to Golija, Vojnik and Maganik. This region has a scarce quantity of arable land, mainly located in karsts, sinkholes and depressions, which are numerous but small and scattered. Although the Karstic region comprises 21% of the entire territory, arable land makes up only 8% of the region. This feature together with emphasized aridity limits plant production (except for Niksic and Grahovsko polje) to crops and partially fruit production (up to 700-800 metres).

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