

*Saša KNEŽEVIĆ and Miomir JOVANOVIĆ<sup>1</sup>*

## **ECONOMIC DEVELOPMENT OF AGRICULTURE IN MONTENEGRO IN THE PERIOD FROM 1878-1914**

### **SUMMARY**

Following the Congress of Berlin (1878), Montenegro managed to meet all the requirements for rapid economic and overall social development upon being granted diplomatic recognition and significant territorial expansion, including fertile plains, towns and boroughs, and a coastline.

Significant expansion of arable land enabled more intensive cultivation of agricultural crops, although Montenegrin agriculture still faced the challenge of extension.

It can be gathered that industrial development of Montenegro in 1878-1914 in the sphere of food industry was hindered by numerous factors, despite the incentives provided by the government. There was a lack of ongoing capital investments, mainly present in the trading area, and industrial enterprises operated with small capacities and insufficient resources.

**Keywords:** agriculture, development, enterprises.

### **INTRODUCTION**

Numerous initiatives were taken from the governmental level for improving and advancing the state of agriculture (agronomy, livestock farming, and pomiculture), which implied introducing regulations, forming social organisations, forming educational institutions and educating the staff, engaging international experts, providing financial aid from the state budget, and incentivising remarkable growers in the field of agricultural production. (Marović, 2006: 277).

In 1880, the first Institute for the Dairy Industry was founded, along with the first technical school for agriculture, as a result of a growing need for experts in the area of agriculture, which was the main driver of the livelihood of the population (Kaluderović, 1910: 338). Prince Nikola I decreed that every soldier was to plant vines, and every officer was to plant olives, in addition to which the most distinguished workers would be exempt of taxation. (Pedeset godina na prestolu Crne Gore, Cetinje 1910: 223). Numerous exhibitions and courses on cultivation of fruit were organised, and aid was provided for mitigating the impact of vermin and plant diseases. The first agricultural associations were

---

<sup>1</sup> Saša KNEŽEVIĆ, University of Montenegro, Faculty of political sciences, Miomir JOVANOVIĆ, (corresponding author: miomirj@t-com.me) University of Montenegro, Biotechnical Faculty, Podgorica, MONTENEGRO.

Notes: The authors declare that they have no conflicts of interest. Authorship Form signed online.

formed in Zeta and Nikšić, in line with the regulations articulated by the Department of National Economy, founded in 1902, within the Ministry of Internal Affairs. The department was in charge of conducting analyses of soil in particular areas for more precise allocation of ground to crop cultivation. This resulted in replacing the cultivation of corn with barley in Banjani, Jezera and the Nikšić Nahiya. Planting activities were also organised, as evidenced by the chestnut-tree planting action in 1889, when 10,000 seedlings were provided (Marović, 2006: 278).

The country allocated grants from the budget to support the development of agriculture, while educating the people through manuals and information packages, with the aim of enhancing agricultural production. Awards and premiums were given to the best producers in agriculture, and to the finest cattle breeders. Students interested in these fields received scholarships for studying abroad.

It can be inferred that the state invested considerable effort to improve the circumstances, but despite those efforts, the majority of country folk did not change their methods of cultivation. The primitive methods and simple tools further hindered the development of agriculture. Scarcity of areas of arable land and its dispersion, along with a low level of utilisation of mechanisation acted as additional contributors.

The objective of this research was to determine of economic development and position of agriculture in Montenegro in the period from 1878-1914.

## MATERIAL AND METHODS

The aim of the paper was the analysis of economic development of agriculture in Montenegro in the period from 1878-1914. All the available literature about the studied area related to the agriculture- livestock farming and plant production), social organisations, educational institutions, agricultural cooperatives, trade and food industry were studied. The data were provided by the different sources including available official data.

## RESULTS AND DISCUSSION

Data on how impeded agricultural production was is rich both in terms of harvests and the cultivation methods. We will rely on data from 1910 to illustrate this in the context of the sowing structure and crop yields per arable land 22,934 *ralo*<sup>2</sup> of land was covered in wheat, with a total harvest of 2,820,922 kg of crops, and an average of 123 kg per *ralo*; 77,414 *ralo* were covered in corn, with a total harvest of 16,088,982 kg, i.e. 207.83 kg per *ralo*; barley encompassed a surface of 14,328 *ralo*, with a harvest of 3,100,693 kg of crops, i.e. 216.40 kg per *ralo*; and rye covered 8,460 *ralo*, with 1,450,073 kg of crops, or an average of 172.36 kg per *ralo*. In addition to these grains, millet, buckwheat, spelt and oats were

---

<sup>2</sup> *ralo* is an old Montenegrin unit of measure, still in existence and use at present. It is equivalent to 1820 square metres.

sown on 4,742 ralo, with a harvest of 791,714 kg of crops. As for vegetables, potato covered 16,714 ralo of land, with 13,858,458 kg of crops, or 829.15 kg per ralo; cabbage covered a total of 1,852 ralo, with 2,250,482 kg of crops, an average of 1,233.14 kg per ralo; beans covered 1,771 ralo, with a harvest of 188,857 kg of crops, or an average of 106.63 kg per ralo; and onions covered 318 ralo, with a total harvest of 271.23 kg per ralo. With regards to industrial crops, tobacco was cultivated on a surface of 1,125 ralo, with a total harvest of 180.41 kg. Hay covered a surface of 217,604 ralo, resulting in a harvest of 72,031,824 kg of crops, or 331.02 kg per ralo. Clover covered 394 ralo, and yielded in 327,210 kg of crops, or 830.48 kg per ralo. There was a total of 4,388,828 vines, used for the production of 1,696,767 litres of wine, and 206,645 litres of brandy, or an average of 0.377 litres of wine produced per vine, and 0.047 litres of brandy per vine (DACG, MUD, 1911, 70734; Branislav Marović, 2006: 276).

Data from this period indicates that in 1914, Montenegro had 160,075 plum trees, 15,075 apple trees, 20,750 pear trees, 59,100 chestnut trees, 80,030 fig trees, 7,900 walnut trees, and 18,310 trees categorised as 'various fruits' (Kaluđerović, 1910: 330).

Within the period considered, livestock farming was the leading branch that produced a market surplus, and essentially generated the livelihood of the population.

Data illustrating the quantity of livestock indicates fluctuation, as livestock was affected by disease, and a great number of head of livestock was commandeered during the Balkan Wars (201,208 head of sheep and 36,619 head of cattle) (Đurović, 1960: 98). The livestock of Montenegro comprised 635,488 head in 1880, at the start of the analysed period, and 952,489 head in 1914. (Marović, 1998). Given that pastures represented the largest areas of land, sheep and goat comprised the majority.

A significant suggestion that contributed to the improvement of livestock farming was forwarded by a Dalmatian, Ilija Beara, who worked as a professor in the Lyceum and the Seminary in Cetinje. This suggestion was first submitted in 1878 to the Minister of Internal Affairs, Mašo Vrbica. Particular emphasis was placed on livestock nutrition, as food was scarce. In order to increase the production of food, he advocated creating "artificial meadows", i.e. planting Alfalfa, which "is the most productive, appropriate, and drought-resistant food for the livestock." Beara proposed forming a dairy institute which would collect greater amounts of milk, and importing a cheese production unit from Switzerland. Thus, the state would use its own capital to form institutes which would help develop the farming skills of the country folk, and increase the production of livestock food and fertiliser. Furthermore, he considered that the Montenegrin cheese was fit for European quality standards, and as such, it could easily be targeted at European markets. (Marović, 1998: 285).

Prince Nikola most likely took these specific suggestions and general recommendations into account when he decided to form the Institute for the Dairy Industry in Nikšić in 1880. The institute was a "practical centre for

communicating smart farming of livestock and its utilisation”, and its headquarters were located by the Trebjesa Hill, with 100 cows and several bulls - “both domestic and foreign breeds. An expert from Switzerland acted as head of the institute, Dr L. Švalej, who approached “livestock farming from a scientific and experiential viewpoint, which is why the process made great progress” (Pedeset godina na prestolu Crne Gore, 1910: 220).

Another famous scientist from that period, Dr Leopold Adametz, a professor of livestock farming at the University of Krakow, and later on, a professor at the High School of Agriculture in Vienna, also provided suggestions on methods of improving the area of livestock farming. Following a series of visits and studies of livestock in Montenegro, Adametz submitted his report to Prince Nikola in 1895. He suggested forming a centre for the advancement of livestock farming in the central region of Montenegro, with the aim of forming a pure breed from a selection of the Montafon and Oberinntal breeds. These breeds could provide Montenegrin farmers with sufficient amounts of milk, wool and meat. Additionally, the breeds were more robust, so Adametz concluded that mixing other breeds of sheep would not be profitable “when the country already has wonderful material, which can easily be transformed into absolute perfection. Adametz proposed a cross-selection with the Hungarian pig breed Mangalica, a sturdy, resilient and fertile breed. He recommended farming goats only in areas that were not suitable for other domestic animals” (Marović, 1998: 287).

The Department of National Economy formed a Livestock Institute in 1901, with an Agricultural Unit by the Čadalica Hill in Nikšić, as a type of experimental centre for developing livestock farming. (Marović, 1998: 292).

Traditional folk medicine was used in treating the animals. As the need for a more professional approach to this issue emerged, a Medical Department was formed within the Ministry of Internal Affairs in 1879, which included a veterinary centre that was annexed by the newly formed Department for National Economy in 1902. Petar Plamenac, a veterinarian who studied in Vienna, was appointed head of the department in 1906. (Marović, 1998: 295-296).

Fishing experienced a gradual development towards a more modern approach. Smoked bleak, smoked carp, eel, mullet and the nase were quite common. Stevan Lukačević was a trader who exported not only fish, but also the scales of bleak, used for producing pearl essence. (Franetović, 1960: 490). In 1884-85, the catch of bleak was 400 miliars, according to the data presented by Rovinski, who further asserts that the income from fish sales in the pool of the Skadar Lake was around 400,000 forint. (Rovinski, Marović, 1998: 299).

Fishing was also popular among the people of the Bay of Kotor, which was not part of Montenegro at the time. At the beginning of the 20<sup>th</sup> century, fishing was the main source of livelihood for 500 families in this area, and more than 1000 families practiced fishing on an occasional, non-commercial basis (Radusinović, 1978: 97).

Viticulture and the production of wine and brandy were incentivised with governmental activities, such as the aforementioned decree issued by Prince

Nikola. In 1909, a central plant nursery for resistant American vines was created, occupying 20 morgen of land in the village Sotonići. 31,560 vine roots were added to existing vineyards, so vines covered a total surface of 600 hectares in 1914 (Kaluderović, 1927: 330). A part of the coastline which was under Austro-Hungarian occupation at the time had 1,072 hectares of vineyards (Radusinović, 1978: 104).

As in other agricultural fields, traditional methods of planting and processing were dominant in viniculture, so the Department of National Economy granted scholarships for studying abroad to a small number of pupils.

Following the Congress of Berlin, when Montenegro got its coastline, the country received 132,147 olive trees, and several olive mills, which were used for producing olive oil. The number of olive trees grew to 150,000 at the beginning of the 20<sup>th</sup> century, and a total of 1,558,662 kg of olive oil was exported in 1905-1910, contributing to an income of 1,070,793 perper (Marović, 1998: 304).

Beekeeping in Montenegro could not be developed at a sufficient level, and the production of honey stagnated, despite the efforts invested in education. Based on taxation protocols noted in the relevant literature, the number of beehives fluctuated in the following manner:

Table 1. Number of Beehives in Montenegro (1883-1913)

YEAR	Beehives
1883	31.191
1890	19.736
1895	32.734
1900	38.363
1905	20.487
1910	38.922
1913	19.250

Source: Branislav Marović, „Stočarstvo Crne Gore 1860-1953“, Podgorica 1998.

Oscillations are evident, which confirms that beekeeping was heavily affected by various diseases, as well as grazing, and keeping conditions (Marović, 1998: 305).

There were several attempts of forming agricultural cooperatives. The first such attempt, in 1904, resulted in forming 6 cooperatives in Zeta, 1 in Piperi, and 1 in Bratonožići, with a total of over 100 members. The number of cooperatives grew to 12 by the end of the year. They were mixed-type organisations, credit-purchasing, with unlimited liability, dealing mostly with the procurement of agricultural tools, seeds, and other essentials. By the end of 1914, there were over 30 cooperatives in the country. They did not receive financial aid or subsidies from the government, which only provided moral support to the members, encouraging the idea of cooperation, and contributing with general directions. (Marović, 1998: 307-308).

In the period covered by this paper (1878-1914), industrial production in the sphere of food was in its incipient stages, but even the very first few industrial objects made a significant contribution to the overall development of Montenegro. The first brewery, "Onogošt" was opened in 1896 in Nikšić, by Vuko Krivokapić. Initially, the brewery could not cater for the market in Nikšić alone, but a few years in the production, it covered the needs of Podgorica, as well as other cities. Bread yeast was also produced, and the brewery was exempt from taxation for a period of 10 years. In 1912, it produced 3,700 hectolitres of beer, which induced innovations and modern production methods, so new capital investment models were in demand (Đurović, 1959: 83). In 1907, the brewery was turned into a "consortium" of 13 traders from Nikšić, who invested 210,000 perper for the procurement of new industrial machines, construction of a new well and storage areas (Đurović, 1959: 83). A few years later (1909), the brewery grew into a joint-stock company, with a capital of 250,000 perper, shared into 2,500 stocks, with a 30 years horizon (Đurović, 1959: 83).

In 1911, another brewery, "Trebjesa" was founded in the form of a joint stock company. It utilised advanced equipment, and it had greater production capacities. The company's basic capital was 500,000 perper, shared into 100 perper stocks, with a 50 years horizon. The brewery operated well, with growing profits per annum, and growing production per annum – starting from 1,500 hectolitres when it was first founded, to 7,500 hectolitres in 1912. (Đurović, 1959: 94-96).

A beer factory was opened in 1999, in Pljevlja, which operated as a private company of the family Šećerović, although it was built with a shared capital. The capacity of the brewery was 2000 hectolitres of beer per annum, and the main consumers were soldiers from the Austro-Hungarian garrison in Pljevlja. The beer was also sold in surrounding towns and boroughs. The brewery operated until 1908, after which the production was renewed, but on a temporary basis and with smaller capacities (Marović, 2006: 444).

The first hydraulic oil production unit with iron presses, which could produce far more olive oil than the old, traditional production units with small capacities, was started in Bar, by duke Mašo Vrbica in 1888. A similar industrial enterprise for oil refinement, with an olive press mill was set up in Ullcinj. (Marović, 2006: 305). In Bijela, the brothers Mardešić from the island of Vis opened a canned fish factory in 1907, with the capacity of producing up to 240 tons of canned fish, although the actual production levels were never that high. The excellent quality and price of products contributed to their overall appeal. Consequently, they were exported to various countries, and salt fish was exported to Austria on an ongoing basis (Marović, 2006: 308).

The Tobacco Monopoly factory in Podgorica was arguably the most significant industrial institution in this timeframe, and it was handed over to an Italian stock company. Italian companies invested in construction projects in Podgorica and Bar in 1903 and 1904, and by the end of 1905, the total invested capital reached 2,820,000 perper (Đurović, 1960: 384). In 1905, the turnover was

364,270 perper, and pure profits neared 150,000 perper. In 1907, the Italian capital invested in Tobacco Monopoly reached 3,500,000 coronas (Marović, 2006). The factory produced around 180,000 kg of fine-cut tobacco, and 24,000 units of cigarettes. 95% of the sales was fine-cut tobacco, and 5% was cigarettes (Marović, 2006: 387).

It can be gathered that industrial development of Montenegro in 1878-1914 in the sphere of food industry was hindered by numerous factors, despite the incentives provided by the government. There was a lack of ongoing capital investments, mainly present in the trading area, and industrial enterprises operated with small capacities and insufficient resources.

## CONCLUSIONS

Following the Congress of Berlin (1878), Montenegro managed to meet all the requirements for rapid economic and overall social development upon being granted diplomatic recognition and significant territorial expansion, including fertile plains, towns and boroughs, and a coastline.

Numerous initiatives were taken from the governmental level for improving and advancing the state of agriculture. The country allocated grants from the budget to support the development of agriculture, while educating the people through manuals and information packages, with the aim of enhancing agricultural production.

In 1880, the first Institute for the Dairy Industry was founded, along with the first technical school for agriculture.

Within the period considered, livestock farming was the leading branch that produced a market surplus, and essentially generated the livelihood of the population. A significant suggestion that contributed to the improvement of livestock farming was forwarded by a Dalmatian, Ilija Beara and Dr Leopold Adametz. They provided suggestions on methods of improving the area of livestock farming. Prince Nikola most likely took these specific suggestions and general recommendations into account when he decided to form the Institute for the Dairy Industry in Nikšić in 1880. The Department of National Economy formed a Livestock Institute in 1901 in Nikšić, as a type of experimental centre for developing livestock farming.

Fishing experienced a gradual development towards a more modern approach. Fishing was also popular among the people of the Bay of Kotor, which was not part of Montenegro at the time.

Viticulture and the production of wine and brandy were incentivised with governmental activities, such as the aforementioned decree issued by Prince Nikola. In 1909, a central plant nursery for resistant American vines was created, occupying 20 morgen of land in the village Sotonići.

Following the Congress of Berlin the country received 132,147 olive trees, and several olive mills, which were used for producing olive oil. The number of olive trees grew to 150,000 at the beginning of the 20<sup>th</sup> century.

Beekeeping in Montenegro could not be developed at a sufficient level, and the production of honey stagnated, despite the efforts invested in education. Oscillations were evident, which confirms that beekeeping was heavily affected by various diseases, as well as grazing, and keeping conditions.

There were several attempts of forming agricultural cooperatives. The first such attempt, in 1904, resulted in forming 6 cooperatives in Zeta, 1 in Piperi, and 1 in Bratonožići, with a total of over 100 members. They were mixed-type organisations, dealing mostly with the procurement of agricultural tools, seeds, and other essentials. By the end of 1914, there were over 30 cooperatives in the country. They did not receive financial aid or subsidies from the government.

The first brewery "Onogošt" was opened in 1896 in Nikšić. In 1911, another brewery, "Trebjesa" was founded in the form of a joint stock company. The brewery operated well, with growing profits per annum, and growing production per annum. A beer factory was opened in 1999, in Pljevlja too. The capacity of the brewery was 2000 hectolitres of beer per annum.

The first hydraulic oil production unit with iron presses was started in Bar. A similar industrial enterprise for oil refinement was set up in Ullcinj. In Bijela is opened a canned fish factory in 1907, with the capacity of producing up to 240 tons of canned fish. The excellent quality and price of products contributed to their overall appeal. Consequently, they were exported to various countries, and salt fish was exported to Austria on an ongoing basis.

The Tobacco Monopoly factory in Podgorica was arguably the most significant industrial institution in this timeframe, and it was handed over to an Italian stock company. The factory produced around 180,000 kg of fine-cut tobacco, and 24,000 units of cigarettes. 95% of the sales was fine-cut tobacco, and 5% was cigarettes.

Industrial development of Montenegro in 1878-1914 in the sphere of food industry was hindered by numerous factors, despite the incentives provided by the government. There was a lack of ongoing capital investments, mainly present in the trading area, and industrial enterprises operated with small capacities and insufficient resources.

## REFERENCES

- Franetović, D (1960): *Historija pomorstva i ribarstva Crne Gore do 1918. godine*, Titograd, 490.
- Đurović, M (1960): *Formiranje akcionarskih društava u Crnoj Gori početkom XX vijeka*, „Istorijski Zapisi“, br.3-4/1959,83
- Đurović, M (1960): *Crnogorske finansije 1860-1915*, Titograd 1960, 98.
- Đurović, M (1960): *Crnogorske finansije 1860-1915*, Titograd 1960, 384.
- Kaluderović, I (1927): *Poljoprivreda u Crnoj Gori 1860-1914*, Beograd 1927, 330.
- Marović B, (1998): *Stočarstvo Crne Gore 1860-1953*, Podgorica.
- Marović, B (2006): *Ekonomska istorija Crne Gore*, Podgorica, 2006, 276.
- „Poljoprivredna statistika za 1910 godinu“, DACG, MUD, 1911, 70734;
- Pedaset godina na prestolu Crne Gore, Cetinje 1910, 223.
- Pavle Rovinski, *Černogorija*, tom II,729.
- Radusinović, P (1978): *Stanovništvo Crne Gore do 1945. godine*, Beograd , 97.