

**FIRST INTERNATIONAL SCIENTIFIC AGRI-BUSINESS CONFERENCE
"AGRO MAK" 2025.**

**"ORGANIC AND FUNCTIONAL FOOD WITH RURAL TOURISM -
SUSTAINABILITY AND FUTURE OF MACEDONIA AND THE REGION
OF SOUTHEASTERN EUROPE"**

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ОДРЖЛИВОСТ И ИДНИНА НА МАКЕДОНИЈА И РЕГИОНОТ НА
ЈУГОИСТОЧНА ЕВРОПА"**

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CONTENTS

INVITED SPEAKERS

I – 1.	Ljupčo Mihajlov, Zoran Dimov DRAFT PLAN FOR HARMONIZATION OF THE MACEDONIAN ORGANIC PRODUCTION WITH THE EU REGULATION 2018/848	15
I – 2.	Eleonora Delinikolova, Vezirka Jankuloska POTENTIAL USE OF COLD PRESSED BLACK SEED OIL IN PRODUCING NOVEL FOOD AND FUNCTIONAL FOOD	24
I – 3.	Siniša Kresović, Paun Lučanović, Đorđe Čabilovski THE QUALITY OF RURAL DEVELOPMENT - ANALYSIS, STRATEGIES, AND CHALLENGES	34
I – 4.	Boyko Sokolovski, Orce Spasovski, Jordan Gorčev, Dragan Cvetkovic, THE APPLICATION OF ZEOLITES FOR IMPROVING STANDARDS AND CONDITIONS IN MODERN LIVING	46
I – 5.	Saša Stepanov, Blagica Gavrilovska Cvetković, Radovan Subin IS IT A NEW TIME - TIME FOR RURAL TOURISM?	55
I – 6.	Sara Stanić Jovanović APITURISM AS A DEVELOPMENT OPPORTUNITY FOR RURAL TOURISM AND AGRO-BUSINESS	67
I – 7.	Drago V. Cvijanović, Aleksandra Vujko, Dušica P. Cvijanović, HARNESSING GASTRONOMY: THE ROLE OF SUSTAINABLE TOURISM AND LOCAL PRODUCTS IN RURAL DEVELOPMENT	77
I – 8.	Tamara Jurina, Ana Jurinjak Tušek, Davor Valinger, Maja Benković, Jasenka Gajdoš Kljusurić HOW LOCAL AGRICULTURAL PRODUCTION REDUCES THE CO ₂ FOOTPRINT OF FOOD CONSUMED	85

PLENARY PRESENTATIONS

P – 1.	Jean Vasile Andrei, Ovidiu Condeianu, Bianca-Florentina Nistoroiu, Mihalcea Mihai Viorel, Papadopol Paula Irene A ROMANIAN PERSPECTIVE ON THE NEXUS LABOR, ENERGY AND AGRICULTURAL PERFORMANCE IN SOME EUROPEAN UNION COUNTRIES	95
P – 2.	Todor Petković, Mirko Petković, Saša Stepanov IMPACT OF ECONOMY, ENERGY AND ECOLOGY ON SUSTAINABLE DEVELOPMENT	107
P – 3.	Maxim Ekaterina Aleksandrovna, Lugovoy Mikhail Mikhailovich, Yakovlev Evgeny Alekseevich, Yurin Denis Anatolyevich, Skamarokhova Alexandra Sergeevna STUDY OF CHOLINE CHLORIDE REPLACEMENT WITH BETAINE MOLASSES IN STURGEON GROWING	123
P – 4.	Aco Kuzelov, Nadica Bajraktarova, Dimitar Nakov INFLUENCE OF ORGANIC VERSUS CONVENTIONAL PIG PRODUCTION ON MEAT QUALITY AND FATTY ACID COMPOSITION	127
P – 5.	Daniela Pelivanoska - Dameska, Ljupco Mihajlov, Natalija Markova Ruzdik OPPORTUNITIES FOR CULTIVATION OF WILD FLAX - CAMELINA SATIVA (L.) CRANTZ IN THE PRILEP PRODUCTION REGION	134
P – 6.	Ivana Mladićević, Nemanja Stepanov, Saša Stepanov ANALYSIS OF SUCCESSFUL AND UNSUCCESSFUL TECHNOLOGICAL ENTREPRENEURIAL VENTURES	139

P – 7.	Danijela Raičević, Tamara Pejanović, Jovana Kojić, Radmila Pajović Šćepanović, Tatjana Popović THE INFLUENCE OF ENOLOGICAL MEANS ON THE CHEMICAL COMPOSITION AND SENSORY CHARACTERISTICS OF VRANAC AND KRATOSIJA WINES	155
P – 8.	Juliana Pandurević, Stan Wachon UNDERSTANDING THE “GREENHOUSE OF THE FUTURE”: HARNESSING NEW TECHNOLOGY TO TACKLE FOOD PRODUCTION INDUSTRY CHALLENGES	164
P – 9.	Milan Novović, Paun Lučanović CIRCULAR ECONOMY: A NEW BUSINESS MODEL OF SUSTAINABILITY IN RURAL TOURISM	170
P – 10.	Silvana Pashovska, Karolina Kočoska, Nataša Zdraveska MOVEMENTS AND TRENDS IN THE PRODUCTION OF ORIENTAL TOBACCO IN MACEDONIA	178
P – 11.	Milan V. Šoškić, Sonja D. Radenković, Ivan Ivanović, REDUCING BUSINESS RISKS WITH THE HELP OF ARTIFICIAL INTELLIGENCE IN AGRIBUSINESS	184
P – 12.	Biljana Matejić, Dragan Cvetkovic, Blagica Gavrilovska Cvetkovic "ORGANIC PRODUCTION AS A SUSTAINABLE APPROACH TO AGRICULTURE: PRODUCING 'FOOD FOR THE SOUL' WITH MINERAL FORTE PLUS"	189
P – 13.	Gorica Cvijanović, Marija Bajagić, Boro Krstić SYNERGY OF SUSTAINABLE AGRICULTURE AND RURAL TOURISM	208
P – 14.	Skamarokhova Alexandra Sergeevna, Yurin Denis Anatolyevich METHOD OF PREPARING A PLANT COMPONENT FOR A PROTEIN FUNCTIONAL FEED ADDITIVE	217
P – 15.	Dragica Stojanovic, Paun Lucanovic, Vladimir Stankovic MODELS FOR EVALUATING THE SUSTAINABILITY OF TOURISM: CREATING A SUSTAINABLE REGIONAL FUTURE	222
P – 16.	Tanja Stojanovska, Tatjana Kalevska, Nevena Gruevska, Viktorija Stamatovska COMPARISON OF ORGANIC AND CONVENTIONALLY PRODUCED FOOD	230
P – 17.	Raluca Andreea Ion, Maria Cristina Sterie, Ramona Ovidia Popa ETHICAL DIMENSION OF SUSTAINABLE DEVELOPMENT OF AGRICULTURE – LEGISLATIVE APPROACHES	240
P – 18.	Milena Magerovska, Kristina Tomska FERMENTED MILK PRODUCTS AS FUNCTIONAL FOOD AND SOURCE OF PROBIOTICS	246
P – 19.	Marija Bešlin Feruh, Biljana Knežević ETHICAL CHALLENGES IN THE MARKETING OF ORGANIC PRODUCTS IN SERBIA	255
P – 20.	Emil Rekanović, Miloš Stepanović, Milica Milošević, Svetlana Milijašević-Marčić, Ivana Potočnik, Jelena Stepanović, Bojan Duđuk FIELD EFFICACY OF BIOFUNGICIDE EKSTRASOL F IN THE CONTROL OF BOTRYOTINIA FUEKELIANA AND MONILINIA SPP.	261
P – 21.	Nimetula Ramadani IMPACT OF POTATO IMPORTS ON THE PRICE OF POTATOES IN NMK	267
P – 22.	Stojan Srbinoski POSSIBILITY OF USING SMART SYSTEMS IN IRRIGATION, AS A RESPONSE TO THE NEGATIVE IMPACT OF CLIMATE CHANGE	273
P – 23.	Neshe Salih, Vezirka Jankuloska	282

	THE NUTRITIONAL AND THERAPEUTIC IMPACT OF BLACKCURRANT (RIBES NIGRUM) SEED OIL	
P – 24.	Jelena Tasić, Ivan Živanović, Jelena Petrović SOCIO-ECONOMIC AND SOCIO-CULTURAL IMPACT OF TOURIST ATTRACTIONS – EVENT TOURISM ON SERBIA'S ECONOMIC PROSPERITY WITH A SPECIAL FOCUS ON THE RURAL AREAS OF ŠUMADIJA	288
P – 25.	Miljan Joksimović, Miomir Jovanović, Aleksandra Despotović THE IMPORTANCE OF RURAL TOURISM AND AGRICULTURE FOR THE DEVELOPMENT OF THE NORTHERN REGION OF MONTENEGRO	302
P – 26.	Milivoje Čosić, Irina Čosić, Miroljub Ivanović PSYCHO-SOCIAL PREDICTORS OF SUPPORT FOR RURAL TOURISM ON A SAMPLE OF THE SERBIAN POPULATION	311
P – 27.	Lilya Gevorgyan DEVELOPMENT OF ORGANIC PRODUCTION IN THE EU: IMPLEMENTATION OF THE PLAN UNTIL 2027.	320
P – 28.	Nikola Jovanović DIGITALIZATION AND INNOVATIONS IN AGRICULTURE: CHALLENGES AND OPPORTUNITIES FOR SUSTAINABLE PRODUCTION	327
P – 29.	Dana Petrovic CULTURAL HERITAGE AND RURAL AREAS AS A BASIS FOR DEVELOPMENT OF TOURIST DESTINATIONS IN SERBIA AND ALBANIA	337

SESSION A

A – 1.	Bratimir Nešić, Jelena Malenović Nikolić, Miloš Cvetković, Miodrag Šmelcerović NEGATIVE IMPACT OF THE NON-SANITARY LANDFILL ON AGRICULTURE - A CASE STUDY OF THE LANDFILL DUBOKO, SERBIA	344
A – 2.	Vesna Knights, Olivera Petrovska, Tatjana Blazevska, Marija Prčkowska DIGITALIZATION AND INNOVATIONS IN AGRICULTURE: CHALLENGES AND OPPORTUNITIES FOR SUSTAINABLE PRODUCTION	345
A – 3.	Berat Durmishi, Vesna Knights, Viktorija Stamatovska, Valentina Pavlova, Gorica Pavlovska, Smajl Rizani, Demokrat Nuha, Arbric Bytyci STATISTICAL ANALYSIS OF THE PRESENCE OF MINERALS IN HONEY SAMPLES FROM MACEDONIA, KOSOVO AND ALBANIA ENRICHED WITH FIVE PLANT EXTRACTS	347



DRAFT PLAN FOR HARMONIZATION OF THE MACEDONIAN ORGANIC PRODUCTION WITH THE EU REGULATION 2018/848

НАЦРТ ПЛАН ЗА ХАРМОНИЗАЦИЈА НА МАКЕДОНСКОТО ОРГАНСКО ПРОИЗВОДСТВО СО ЕУ РЕГУЛАТИВАТА 2018/848

Ljupčo Mihajlov, Full professor,¹
Zoran Dimov, Full professor,²

Abstract: *The purpose of this paper is to analyze the development of organic agriculture in North Macedonia and propose key policies, legal adjustments, and strategic directions necessary for its harmonization with EU Regulation 2018/848. The plan is proposed to support sustainable growth of the organic sector, enhance rural development, and ensure compliance with European standards. A comparative analysis and adaptation of specific articles from the regulation, to the conditions of these areas in North Macedonia are used as methodologies applied in the preparation of the draft plan.*

Key words: *organic, agriculture, sustainable, rural development*

Анотација: *Целта на овој труд е да го анализира развојот на органското земјоделство во Северна Македонија и да предложи клучни политики, законски прилагодувања и стратешки насоки неопходни за негово усогласување со Регулацијата на ЕУ 2018/848. Планот е предложен со цел да го поддржи одржливиот раст на органскиот сектор, да го подобри руралниот развој и да обезбеди усогласеност со европските стандарди. Компаративна анализа и адаптација на конкретни членови од регулативата, кон условите и состојбите во овие области во Северна Македонија се користеа како методологии применети во подготовката на нацрт-планот.*

Клучни зборови: *органско, земјоделство, одржливо, рурален развој*

1. INTRODUCTION

The first activity in the organic sector in the Republic of Macedonia was recorded in 1997 when the company "Alkaloid" applied for the country's first organic certificate to market wild herbs, such as linden and chamomile, as organic on the national market. The first inspection of organic production in the Republic of Macedonia was conducted in 2003, and the first organic production certificate was issued in 2004, (National Plan for Organic Production of the Republic of Macedonia 2013 – 2020).

In 2007, the Government of the Republic of Macedonia adopted the National Strategy with an Action Plan for Organic Agriculture for the period 2008–2011, (National Strategy with Action

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Plan for Organic Agriculture 2008 – 2011, Ministry of Agriculture, Forestry and Water Management of the Republic of Macedonia).

In 2013, a new National Strategy for Organic Production, 2013 - 2020 was adopted, (www.mzsv.gov.mk, 2013).

The Law on Organic Agricultural Production was first adopted in 2004. In 2009, a new Law on Organic Agricultural Production was enacted, fully aligning with European Regulation 834/2007 (European Regulation 834/07), and 889/2008 (European Regulation 889/08).

In 2010, the bylaws for harmonization were officially enacted in alignment with Council Regulation (EC) 834/2007 (28.06.2007) and Council Regulation (EC) 889/2008 (05.09.2008). These regulations were published in the Official Gazette of the Republic of Macedonia, No. 161/2010 (15.12.2010) and No. 163/2010 (17.12.2010).

A chronologically following official document on the development of the Macedonian organic sector is the National Strategy with Action Plan for Organic Production in the Republic of Macedonia 2013–2020.

A new Law on Organic Farming was adopted in 2021, (Law on Organic Farming (2021), further aligning national regulations with the latest European Union standards and requirements. This law aims to modernize organic production in line with the latest European standards, particularly in the areas of:

- **Certification** – Enhancing the certification process to ensure compliance with organic regulations.
- **Control** – Strengthening monitoring and enforcement mechanisms to maintain high organic production standards.
- **International Trade in Organic Products** – Facilitating the export and import of organic products by aligning with EU trade policies.
- **Support for Organic Producers** – Increasing subsidies and financial assistance to encourage the growth and sustainability of the organic sector.

Currently, the preparation of a new Draft Law on Organic Production is in its final phase, with a draft text of the proposed law already completed, (www.mzsv.gov.mk (2024)). The purpose of adopting this law is to align it with **Regulation (EU) No. 2018/848** of the European Parliament and of the Council of **30 May 2018** on organic production and labeling of organic products, which repeals **Council Regulation (EC) No. 834/2007**. Another significant reason for adopting this law is the harmonization of Macedonian legislation with **Commission Implementing Regulation (EU) 2021/1165 of 15 July 2021**, which authorizes certain products and substances for use in organic production and establishes their official list.

2. MATERIALS AND METHODS

Adaptation of specific articles from the Regulation (EU) No. 2018/848, to the conditions of these areas in North Macedonia are used as methodologies applied in the preparation of the draft plan. Emphasis was placed on preparing **draft versions of four by-laws** at the national level to harmonize them with the Law on Organic Agriculture as well as EU Regulation 2018/848. The regulations should be applicable to all parties in North Macedonia involved in any stage of production, preparation, labelling, distribution, marketing, and other activities related to the production and trade of organic products. The four draft national-level bylaws that align with the **national organic agriculture regulation** as well as **EU Regulation 2018/848** are:

1. Rulebook on the Detailed Provisions for Placing on the Market of Plant Reproductive Material from Organic Heterogeneous Material;
2. Rulebook on the for Special Rules for the Production of Organic Processed Food and the Use of Certain Products and Substances in Food Processing;
3. Rulebook on the Detailed Rules for the Use of Terms Related to Organic Production;
4. Rulebook on the Special Rules for Closer Conditions and Rules for Groups of Certification Entities;

Since the objectives of this Regulation, in particular fair competition and the proper functioning of the internal market in organic products, as well as ensuring consumer confidence in those products, Official Journal of the European Union (OJEU), L 150/17, (2018)

3. RESULTS AND DISCUSSION

The analysis of the development of organic agriculture in **North Macedonia** is presented in **four chapters** in the following text. Additionally, the final part of this section contains an explanation of some of the **key activities undertaken to align the new Law on Organic Agriculture with EU Regulation 2018/848**, listed above in the "**Materials and Methods**" section.

3.1. Major strategic documents with goals for the development of organic agriculture in the RN Macedonia

To date, four major strategic documents addressing organic agriculture have been adopted in the Republic of North Macedonia. These include two national strategies exclusively focused on organic agriculture: The National Strategy with an Action Plan for Organic Agriculture of the Republic of Macedonia (2008–2011), and The National Plan for Organic Production (2013 – 2020), as well as two National Strategies for Agriculture and Rural Development (2014 – 2020 and 2021 – 2027), which assign significant importance to organic production.

The strategic and implemented goals from the National Strategy for Organic Agriculture (2008 – 2011) are outlined below (Table 1.):

Table 1. Strategic and Implemented Goals for Organic Agriculture, 2008 – 2011

Target Set	Target Achieved
By 2011, organic arable land to account for 2% of the total arable agricultural land in the Republic of Macedonia	In 2011, organic arable land accounted for 1.29% of the total arable agricultural land in the Republic of Macedonia, amounting to 6,580.92 hectares. The total arable agricultural land in the Republic of Macedonia in 2011 was 511,000 hectares.
Certified areas for wild plant and fruit collection to account for 5% of the total land area in the Republic of Macedonia	Certified areas for wild species collection have increased to approximately 250,000 hectares. Since wild plant and fruit collection occurs on pastures, meadows, and forests, a significant portion of these areas is not registered in cadastral records, making precise measurement impossible. Additionally, there is no nationwide database or record for wild plant and fruit collection from regular production, meaning the total certified areas for such collection cannot be accurately calculated.

By 2011, the majority of consumers in the Republic of Macedonia should understand what organic agriculture is and create domestic demand for organic products	A growing number of consumers in Macedonia understand what organic agriculture represents and recognize the value of organic food. However, much work remains in this area. To establish a strong domestic supply and demand for organic products, continuous consumer education and awareness-raising through targeted campaigns, promotions, and other informational tools are essential.
By 2011, establish stable export connections	Certain entities, primarily companies, have independently established export connections with EU countries, but organized export of organic products has not yet been achieved.

The national strategic goal outlined in the **National Organic Production Plan (2013 – 2020)**, was to enhance the competitiveness of organic production in the country for successful placement in domestic and international markets. Specific objectives for 2020 related to primary agricultural production included:

- **Achieve 4% organic production share** of the total arable agricultural land in Macedonia and ensure 4% of the total certified livestock in organic farming (including beekeeping and aquaculture) from the total livestock population.
- **Identify and support strategically significant organic products.**
- **Improve the availability of inputs permitted for use** in organic production.

Additionally, specific goals and methods of realization were detailed for the processing industry, trade, control and certification, education and science, policy and legislation, and the collection of wild species.

The National **Strategy for Agriculture and Rural Development (2014 – 2020)** emphasized that organic production should align with real domestic market interest. The policy's desired projection was:

- **2% cultivated land under organic production** of the total arable agricultural land.
- **2% certified organic livestock** (including beekeeping and aquaculture), of the total livestock population.

A more ambitious approach was deemed possible only with serious reorganization among organic producers, focusing on increasing their presence in foreign markets with higher demand for organic products.

In the National **Strategy for Agriculture and Rural Development (2021 – 2027)**, the state of organic agriculture was acknowledged: despite growth in previous years, organic production remains under **2%** of total agricultural land and livestock. This remains the target for the next period. To address this, organic production must focus on leveraging its added market value rather than relying solely on income support. Recommendations include:

- Finalizing organic products;
- Improving organic product marketing domestically and internationally;
- Raising public awareness of organic food.

Further suggestions included stimulating trade in seeds, fertilizers, and plant protection products, increasing subsidies for organic product processing, enhancing monitoring and laboratory testing systems, and more.

Additional key policy documents addressing organic agriculture include:

- **Stabilization and Association Agreement (2001):** Covers social justice, employment, and sustainable resource use in North Macedonia.
- **Strategy for Harmonizing the Macedonian Agro - Food Sector with the EU's Common Agricultural Policy:** Highlights the need to identify regions suitable for organic production and align with EU regulations.

World Trade Organization Agreement (2003): Aims to improve international food safety and security standards as adopted by Codex Alimentarius ((National Strategy with Action Plan for Organic Agriculture 2008 – 2011, Ministry of Agriculture, Forestry and Water Economy of the Republic of Macedonia).

3.2. Organic agricultural production in the RN Macedonia

Statistical data on organic production in RN Macedonia can be obtained from two primary sources:

I. Website of the Ministry of Agriculture, Forestry, and Water Economy (MAFWE):

A dedicated section provides information on organic production, including legislation, an overview of organic production areas and livestock, a registry of organic producers, relevant literature, contacts, and more.

II. MakStat Online Database of the State Statistical Office (SSO):

This database displays statistical data on areas under organic crops, organic livestock production, and beekeeping families.

According to the latest data, in 2023, there were 6,001 hectares of certified organic production, representing 1.17% of the total arable land in 2023 (514,375 hectares). This figure still falls short of one of the specific goals outlined in the National **Strategy of Agriculture and Rural Development (2021–2027)**, which aims for the share of total organic area in total arable land to reach 2%. The number of certified organic operators has been gradually increasing, with the highest total recorded in 2021 at 929 operators. However, the number has decreased over the past two years, standing at 913 operators in 2023, with an average area per operator of 5.3 and 6.6 hectares, respectively.

From the organic crop production cereals occupy the largest share of the total certified organic area, followed by fruit and fodder crops (Chart 1.) (MAFWE, 2023; SSO, 2023).

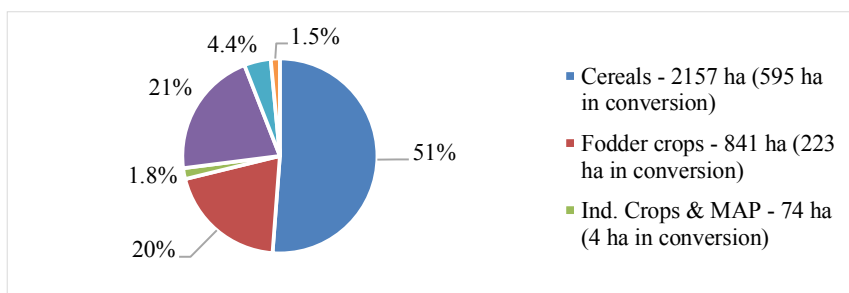


Chart 1. Area of organic crop production, 2023.

In organic livestock production, sheep account the largest share of the certified livestock population, mainly because sheep farming in the country is predominantly extensive due to the large pasture areas. The number of sheep in organic production in 2023 is 120,514, of which 50,092 are fully organic and 70,422 are under conversion. Organic milk production totaled 2,437,000 liters. The number of cattle in organic production is 7,528, producing 48,300 liters of milk, while the number of goats 4,966, yielding 268,000 liters of milk. Additionally, 10,944 beehives were certified for organic honey production, with a total output of 67,886 kilograms of honey (24,470 kilograms in conversion) (MAFWE, 2023). Other organic livestock production is minimal. There is some potential for organic poultry production, but this sector requires further development.

3.3. Budgetary support for organic agriculture in RN Macedonia

Organic production in North Macedonia is supported in accordance with the Law on Agriculture and Rural Development under two pillars of measures: i) for agriculture and ii) rural development. The total amount of funds paid to beneficiaries in the program period from 2015 to 2023 reached 12.3 million euros. From year to year, the amounts for support are increasing, which is expected to lead to an increase in both production and the number of producers who choose this type of production. The financial support for organic agricultural production for 2023 amounts to a total of 104,000,000.00 MKD (1.68 million euros or 1.6% of the total financial support for agriculture)². In addition to domestic support, organic production support will also be provided through the IPARD program for the next period, Measure 4: Agro ecology, Climate, and Organic Production.

3.4. Strategic and specific goals for organic agricultural production in RN Macedonia until 2027

Taking into account the importance of agriculture as one of the key sectors in the country, and especially organic production, for which there is broad consensus among all relevant stakeholders that it must be increased if we want to be recognized on the European map, the strategic goals for organic production by 2027 should be directed towards:

- Increasing the competitiveness of organic production in RN Macedonia for successful placement in domestic and foreign markets;
- For organic agriculture to be a fully developed sector of agriculture with all appropriate characteristics, such as a stable market, services, and state policy support, the aspects related to the environment and animal welfare must be satisfied.

Additionally, some of the strategic goals should include:

- An effective connection between primary production and processing activities, across the entire organic agriculture chain;
- To create infrastructure that will enable continuous and sustainable development while creating conditions for organic products to be a significant aspect of Macedonian organic agriculture (significantly increasing the production of organic food with Macedonian origin).

¹ The funds for financial support in agriculture for 2023, in the total amount of 6,437,634,000.00 MKD, are provided in accordance with the Budget of the Republic of North Macedonia for 2023 (Official Gazette of the Republic of North Macedonia, No. 282/22), section 140.04, program 2, subprogram 20, item 464 – various transfers.

According to the National Strategy for Agriculture and Rural Development of the Republic of Macedonia 2021-2027 and the National Organic Production Plan of the Republic of Macedonia 2013-2020, specific goals until 2027 are:

I. Primary Agricultural Production:

- Organic production should cover 2% of total agricultural land in the Republic of North Macedonia and 2% of the total certified livestock in organic farming (including beekeeping and fishing) of the total livestock population in the country;
- To identify and support strategically important organic products;
- To improve the availability of approved raw materials for use in organic production.

II. Processing Industry:

- **Contract Farming:** Collaborate with organic farmers through long-term agreements to ensure a consistent supply of high-quality organic raw materials;
- Adopting Sustainable Processing Practices that preserve the natural integrity of organic ingredients, such as cold-pressing, freeze-drying, or fermentation.
- **Waste Management:** Develop systems to minimize waste and recycle by-products into organic compost or animal feed.

III. Trade:

- To increase the assortment and quantities of organic agricultural products;
- To increase demand and consumption of organic agricultural products;
- To raise public awareness of organic food;
- To exploit the potential for organic product consumption through the development of rural tourism;
- To increase the placement of Macedonian organic agricultural products in export markets.

IV. Control and Certification:

- To increase competition in the supply of control and certification services;
- Institutional strengthening of the monitoring system in organic production.

V. Education and Science:

- To increase the share of education in the field of organic production (both formal and informal education);
- To intensify research on organic agricultural techniques;
- To intensify and expand research on the potential of natural resources;
- To begin market research.

VI. Policy and Legal Regulation:

- To institutionally strengthen and professionally train institutions involved in the organic production system (knowledge, human resources, infrastructure);
- To increase cooperation and communication between all involved and affected parties;
- To strengthen organic farmers' associations and other non-governmental organizations and support their networking and cooperation.

3.5. KEY ACTIVITIES UNDERTAKEN TO ALIGN THE NEW LAW ON ORGANIC AGRICULTURE WITH EU REGULATION 2018/848

The activities for the preparation of the four draft rulebooks took place from June 12, 2024, to November 25, 2024, within the framework of the **project: “Germany - Western Balkan Agricultural Policy Dialogue (APD-WB)“ (2024)**. As a result of the activities carried out within the framework of the aforementioned project, four **draft Rulebooks** has been prepared.

The first of the draft bylaws is the **Rulebook on the Detailed Provisions for Placing on the Market of Plant Reproductive Material from Organic Heterogeneous Material**, ensuring alignment with **EU Regulation 2018/848**, (OJEU, L 150/27, Artille 13, (2018)). The subject of

regulation is the determination of the rules related to the **production and placing on the market of plant material from organic heterogeneous material**, namely:

- Seeds of field crop plant species;
- Reproductive material from vegetables (except seeds);
- Reproductive material from ornamental plants;
- Reproductive material from vines;
- Reproductive material from fruit plants;

In the above-mentioned first draft by-law they are justified Specific provisions for the marketing of plant reproductive material of organic heterogeneous material among which the most important is the first:

1. Plant reproductive material of organic heterogeneous material may be marketed without complying with the requirements for registration and without complying with the certification categories of pre-basic, basic and certified material or with the requirements for other categories, which are set out in Directives 66/401/EEC, 66/402/EEC, 68/193/EEC, 98/56/EC, 2002/53/EC, 2002/54/EC, 2002/55/EC, 2002/56/EC, 2002/57/EC, 2008/72/EC and 2008/90/EC or acts adopted pursuant to those Directives. in the sense of the directives, (OJEU, L 150/27, Article 13, (2018).

The second of the draft bylaws is **The Regulation on the Special Rules for the Production of Organic Processed Food and the Use of Certain Products and Substances in Food Processing**.

This Regulation establishes the **specific rules for the production of organically processed food for humans and animals** and the **use of certain products and substances in food processing**. These provisions are designed to enhance **precautionary and preventive measures** implemented by commercial global entities and may be subject to amendments or additions to ensure compliance with evolving organic production standards. Official Journal of the European Union (OJEU, L 150/29, Article 16, (2018).

The third by-law is **Regulations on the Special Rules for the Use of Terms related to Organic Production**. This Regulation establishes **detailed provisions on the special rules for the use of terms related to organic production**. For the purposes of this Regulation, a product is considered to be labeled with a term referring to organic production if **its labels, promotional materials, or commercial documents** describe the product, its ingredients, or the **feed components used in animal feed production** in a way that suggests to the purchaser that they have been produced in accordance with this Regulation, (OJEU, L 150/37, Article 30, (2018).

The fourth draft bylaw is **The Regulation on the Special Rules for Closer Conditions and Rules for Groups of Certification Entities**. This draft document defines **the groups of entities** and the **conditions** under which they may engage in the **processing, preparation, or placing on the market** of organic food or organic animal feed, OJEU, L 150/39, Article 36, (2018).

4. CONCLUSION

As a production system, organic farming has great potential for RN Macedonia due to the extensive traditional agriculture, predominantly found in mountainous areas with very favorable ecological conditions for its sustainable development (over 50% of the country's total agricultural land). Products from these regions already enjoy a good reputation among Macedonian consumers, who often refer to them as "eco-friendly" products. However, although the first activities in the organic sector date back to 1997, organic production in RN Macedonia is still in its pioneer phase. Organic production accounts 1.2% of the total agricultural land under

conventional farming in the country. Despite the optimistic indicators, organic farming and organic food production still face many challenges. Areas that require attention include improving quality in agricultural production, establishing sustainable supplier-buyer relationships, supporting local sales of organic products, enhancing professionalism, and transferring scientific knowledge into practice. Agricultural producers and organic food processors need to become respected leaders by implementing advanced technologies and ecological standards. Also, international cooperation and partnerships, including programs for international collaboration, are key components of a holistic approach to implementing activities that will contribute to the continuous and sustainable growth of the Macedonian organic sector.

REFERENCES

- www.mzsv.gov.mk (2013). National Plan for Organic Production of the Republic of Macedonia 2013 – 2020.
http://www.mzsv.gov.mk/files/Nacionalen%20Plan%20za%20Organsko%20Proizvodstvo_2013%20-%202020.pdf
- www.mzsv.gov.mk (2008). National Strategy with Action Plan for Organic Agriculture 2008 – 2011.
<http://www.mzsv.gov.mk/files/NSAP%20Mkd.pdf>
- European Regulation 834/07, and 889/2008; European Regulation 889/08 (2007;2008).
<http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32007R0834>
- <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:250:0001:0084:en:PDF>
- Official Gazette of the Republic of Macedonia,(2010), No. 161/2010 (15.12.2010) and No. 163/2010 (17.12.2010).
- Law on Organic Farming (2021).
<https://diz.gov.mk/wp-content/uploads/2021/01>
- Draft Law on Organic Production (2024).
<https://www.mzsv.gov.mk/CMS/Upload/predlog-za-organsko-proizvodstvo/Nacrt-zakon-za-organsko-proizvedstvo.pdf>
- Commission Implementing Regulation (EU) 2021/1165 of 15 July 2021: Authorising certain products and substances for use in organic production and establishing their lists.
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021R1165>.
- Official Journal of the European Union (OJEU), L 150/17, (2018).
<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32018R0848>.
- MAKSTAT database. Total organic areas with organic agricultural crops, by year.
<https://makstat.stst.gov.mk/PXWeb/pxweb/en/>
- Budget of the Republic of North Macedonia for 2023 (Official Gazette of the Republic of North Macedonia, No. 282/22), section 140.04, program 2, subprogram 20, item 464 – various transfers.
- Mihajlov, Lj. (2024) “Germany - Western Balkan Agricultural Policy Dialogue (APD-WB)“
<https://eprints.ugd.edu.mk/id/eprint/35186>
- Dimov, Z., Mihajlov, Lj., Prentovich, T., Ristakjovska Shirgovska, B., Markova Ruzdik, N. (2024): Status and visions for the development of organic production in RN Macedonia. In: Innovations in sustainable agriculture – bridging science and practice, 11 Dec 2024, Skopje. <https://eprints.ugd.edu.mk/id/eprint/35755>

APPENDIX

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81.	Srbinski Stojan	104.	Cvijanović Dušica
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84.	Stepanović Miloš	106.	Čabrilovski Đorđe
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94.	Tomska Kristina		
95.	Tušek Jurinjak Ana		

**Appendix B: Authors – Participating Countries
(Прилог Б: Автори – земји учеснички)**

No. (P. Бр.)	Countri (Земја)	Number of authors (Број на автори)
1.	North Macedonia	11
2.	Serbia	16
3.	Russia	2
4.	Montenegro	2
5.	Bosnia and Herzegovina	2
6.	Romania	2
7	Canada	1
8.	Croatia	1
9.	Kosovo	1
10.	Armenia	1
11.	Bulgaria	1
	Totally (Целосно)	40

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PROCEEDINGS / First international scientific agri-business conference "agro mak" 2025, "organic and functional food with rural tourism - sustainability and future of macedonia and the region of southeastern europe", Sveti Nikole, North Macedonia, 04. – 06. April, 2025. ; [editor Dragan Cvetkovic] / Прва меѓународна научно агро-бизнис конференција "агро мак" 2025, "органска и функционална храна со рурален туризам - одржливост и иднина на македонија и регионот на југоисточна европа", Свети Николе, Северна Македонија, 04. – 06. Април, 2025. ; [уредник Драган Цветковиќ]. - Kumanovo : Association for Development of Agriculture and Environmental Protection through Research, Education, and Biodiversity Conservation „ŽIVOT“ ; Куманово : Здружение за развој на земјоделство и заштита на животната средина преку истражување, едукација и одржување на биодиверзитет „ЖИВОТ“, 2025. - 351 стр. : илустр. ; 24 см

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