### ECONOMIC IMPLICATIONS OF MONETARY-CREDIT POLICY MEASURES ON THE DEVELOPMENT OF REGENERATIVE AGRICULTURE IN THE REPUBLIC OF SERBIA

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This paper is the result of research conducted under the Agreement on the Transfer of Funds for Financing Scientific Research in 2025 (reference number 451-03-137/2025-03), concluded between the Ministry of Science, Technological Development and Innovation of the Republic of Serbia and the Faculty of Economics, University of Niš.

Abstract: The role and importance of agriculture in stimulating economic growth in the Republic of Serbia are substantial. It represents the leading and priority branch of the economy, considering that, in Serbia, favorable natural conditions favor agricultural production. Agriculture provides food for the population and raw materials for agroindustry development. However, regenerative agriculture is of special importance in the development of agriculture. It is agriculture that is self-sustaining, as it actively supports three key natural resources: biodiversity, water and soil. Preserving these three factors is an important legacy that can be left to future generations. In this way, this kind of production represents benefits for the entire country. Regenerative agriculture uses the power of nature to achieve sustainable production. The development of regenerative agriculture in the Republic of Serbia faces numerous limitations. One of them is the mass use of production based on agrotechnical measures and a lack of information about the advantages of regenerative agricultural production. On the other hand, although Serbia has significant potential for

the development of regenerative agriculture, which is hidden in traditional production, it faces another limitation. It is about the lack of funds for starting regenerative agricultural production and for its further development. There is a very small percentage of agricultural farms in Serbia that have opted for this method of production. Agricultural professional services, as well as the Association for Regenerative Agriculture, can play a significant role in its promotion. This paper aims to point out the importance of regenerative agricultural production in the Republic of Serbia and the necessity of providing financial support for its development. The state plays a key role in financing through the implementation of monetary policy measures in the form of more favorable and subsidized loans that support regenerative agriculture and encourage its development.

*Key words:* regenerative agriculture, loans, subsidies, monetary policy, Republic of Serbia

JEL classification: E62, H50, Q14

#### 1. INTRODUCTION

Regenerative agriculture is a set of practices that aim to change the effects that intensive agriculture has had in the last few decades on land, water, air, but also biodiversity, the quality of food produced, and the lives of animals and people involved in agricultural production. Its goal is to reduce negative effects, but also to compensate for what was lost and create conditions for sustainable food production. Modern agriculture has a number of negative impacts on the environment, flora and fauna, but also on the people who use its products or engage in agricultural production.

The aim of this paper is to point out the importance of financial support to the regenerative economy in the Republic of Serbia by the state in the form of more favorable and subsidized loans. Agriculture in Serbia has access to loans from the Agricultural Development Fund, banks, the Development Fund of Vojvodina, the APV Guarantee Fund, as well as subsidized loans from the Ministry of Agriculture, and local selfgovernments, municipalities and cities. All these loans are given under more favorable conditions than market ones, in terms of lower interest rates, longer repayment terms, and sometimes they are completely interest-free. In this way, the state encourages the development of agriculture through monetary and credit policy measures. The goal of the work is to indicate that it is necessary to increase the number and availability of loans to regenerative agriculture, because it ensures sustainable development and preservation of natural resources for future generations.

This work is based on the following hypothesis (H1): Credit support to regenerative agriculture is a factor in its survival and further development and should be realized through the monetary policy measures of the NBS.

The paper is structured as follows. In addition to the introduction and conclusion, the paper consists of three main parts. The first part analyzes the importance of regenerative agriculture in the Republic of Serbia, as a distinctly agricultural country. Regenerative agriculture ensures the maintenance of biodiversity, improvement of soil fertility, high and stable incomes, reduction of CO2 emissions, reduction of costs, etc. It represents a special approach to agriculture that uses natural resources for its sustainability. The second part analyzes the monetary credit policy measures of the Republic of Serbia, intending to develop regenerative agriculture. Credit support for regenerative agriculture is necessary and should be implemented through favorable and subsidized loans. The final section presents examples of good practices in regenerative

agriculture within the AgriCaptureCO2 Horizon 2020 project.

The conclusion emphasizes the importance of the state's financial support for regenerative agriculture, which can ensure the sustainable development of the Republic of Serbia.

#### 2. ROLE AND IMPORTANCE OF REGENERATIVE AGRICULTURE

Agriculture is a key branch of the economy of every country, given that it plays a crucial role in providing food for the population on its territory, employing the able-bodied population in rural areas, but also preserving those areas, which are often borderline and underdeveloped. The impact of agricultural production on health and nutrition is very large and often depends on social norms, cultures, access to information and other socioeconomic and physiological factors (Amirova, Gavrilyeva, Romanishina and Asfandiaranova, 2022). In the Republic of Serbia, it has been a priority economic branch and has been a driver of economic growth for many years. Serbia has extremely favorable natural and climatic conditions for the development of agricultural production. The high share of agriculture in the basic macroeconomic aggregates of the Republic of Serbia compared to other countries can be attributed, on the one hand, to the wealth of natural resources and favorable climatic conditions, and on the other hand, to the slower process of structural reforming of the rest of the economy and stagnation in it.

### Graph 1: Agriculture growth rate in the Republic of Serbia, 2011-2023





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Graph 1 shows the growth rate of agricultural production, and it can be seen that the rate is very uneven from year to year. In the observed period, it reached its lowest value in 2012 and its highest value in 2013.

However, agriculture faces numerous problems. One of the key problems is exposure to natural circumstances, often adverse weather conditions, which can lead to a decrease in yields, leading to increased uncertainty and risk for farmers. In addition, outdated and insufficient mechanization also leads to lower yields, so some agricultural farms are often unable to ensure even simple reproduction of their crops (Velten, Leventon, Jager and Newig, 2015). Because of this and poor infrastructure, young farmers increasingly decide to leave their farms, move to cities and engage in other occupations. According to the final data of the 2023 Census of Agriculture, the number of agricultural holdings in the Republic of Serbia is 508,325. Out of the total number of agricultural farms, 2,002 farms are owned by legal entities and entrepreneurs, while the rest (99.6%) are family farms. Zlatibor region has the largest share in the total number of agricultural holdings (8.5%) (https://www.stat.gov.rs/sr-latn/). With the decrease in the number of agricultural farms, a new problem opens - unused land.

The share of unused land in the total agricultural land is a relative indicator that quantitatively and especially qualitatively relativizes wealth; that is, it indicates the "dead capital" of the most important resource for agricultural production in the Republic of Serbia. Namely, unused agricultural land per inhabitant is most often an indicator to illustrate our irresponsible attitude towards the most important resource for self-sustainable food security of the population (Đorđević and Jovanović, 2020).

The representation of unused land in the total agricultural land ranges from only 1.8% in the Srem region to as much as 39.2% in the Pčinj area, while the differences by municipality range from only 0.2% in Žitište in Vojvodina to as much as 75.0% in the agriculturally neglected and demographically devastated Crna Trava - which, according to this indicator, is the leader among as many as 40 municipalities characterized by a nationally above-average representation of unused land in the total agricultural land in the region of Southern and Eastern Serbia (Sevarlić, 2015). Analyzing data on unused agricultural land, Ševarlić (2015), in his study, points to potentially possible, but unrealized production in this area. He advocates for the urgent preparation of a detailed analysis of the causes of non-cultivation of agricultural land and the possibility of including certain areas of unused land in agricultural production.

There is a difference between theoretical, methodological, personal, and practical obstacles. Theoretical obstacles address science and research and definitional aspects, ways to transfer new scientific knowledge to practitioners, and the implementation scale. Methodological obstacles refer to assessing sustainable agriculture with tools or systems and related challenges. Personal obstacles are found at the individual scale with the farmers who mainly affect sustainability through management decisions and behavior. Practical obstacles are related to issues that limit implementation in practice, even when there are no other critical issues (Siebrecht, 2020).

For the successful functioning and development of agriculture in the market economy model, the following are of key importance: the establishment of an agricultural advisory service whose task, among other things, would be to guide the structure of production based on realistic demand projections (food balances for domestic needs and export), better organization of input supply, establishment of parity of input and output prices, especially for strategic products, education of producers and managers in agribusiness, marketing orientation and increase of the agricultural budget in the function of the development of agriculture and rural areas (Pejanović et al., 2007).

United Nations Sustainable Development Goal 2 (UNSDG-2) aims to achieve the eradication of hunger along with the assurance of food security for all by 2030. This cannot be achieved without combining all forms of science, including mathematics and statistics, with agricultural practice to make agriculture sustainable. Agriculture has been considered the backbone of the economic systems of developing and developed countries. However, while practicing the activities, various conflicting issues arise and make the situation challenging for the agriculture industry in the decision-making process (Kumar and Pant, 2023).

According to the results of the 2023 census, available agricultural land is 4,073,703 hectares, used agricultural land is 3,257,100 hectares, while 122,257 hectares are unused (https://www.stat.gov.rs/sr-latn/). The available land was reduced by 1.2 million hectares, or 23.81%, in 11 years. A large part was used for infrastructure facilities, such as highways and facilities. Manv construction agricultural economists claim that the quality of our soil, which used to be one of the most valued in this part of Europe, is seriously threatened. In Vojvodina, which was the most fertile, because of humus, the highest quality part of the soil, which was 5% 20-30 years ago, has now decreased to 2-2.5%. Also, the uncontrolled use of pesticides and other organic polluting compounds is what threatens the quality of the soil.

The task of agricultural policy should be to solve the above-mentioned problems. It is most often defined as a set of measures within the framework of economic policy, which form a strategy for the achievement of goals regarding the integration of the agricultural sector into the development of the national economy, and then its integration into the international division of labor (Đurić, 2021).

The first step of any national economy is the selection of a certain model, that is, organizational forms through which the agricultural sector can be developed, followed by the selection of supporting measures that form the basis of the strategy for achieving the defined goals.

One of the potential forms of the development of agriculture is the so-called regenerative agriculture. Regenerative agriculture is a special approach to agriculture that actively supports three key natural resources: biodiversity, water and soil (https://www.psss.rs/). Regenerative agriculture uses the power of nature to achieve sustainable production. By regenerative agriculture, we mean production that uses limited plowing, mixed crop rotation, cover crops, application of compost, preservation of seeds of indigenous species and the like. In this way, the soil becomes stronger, preserved and more biologically diverse and productive. Soil conservation is an important legacy that can be left to future generations. In this way, this kind of production represents benefits for the entire country. It may require our society to change some of its paradigms and "values" if we wish to preserve our support system, the soil and its health, for future generations (Gomiero, Pimentel and Paoletti, 2011).

Many authors from different fields have been involved in defining the concept of sustainable agriculture: economists, agronomists, engineers, sociologists and others.

Overall, among the views of sustainable agriculture in the different disciplines, we find a spectrum of perspectives ranging from more production-centered views with a concentration on fewer aspects on the one end and a consideration of a great variety of aspects accompanied by a greater regard for social and societal questions on the other end (Velten, Laventon, Jager and Newig, 2015).

The advantages of regenerative agriculture are reflected in the following:

- improvement of soil fertility,
- preservation of biodiversity,
- reduction of CO2 emissions,
- reduction of production costs,

- high and stable yields,
- reduced use of fertilizers and pesticides, etc. (https://agriculture.net).

Allen, van Dusen, Lundy and Gluessman (2009) propose an expanded conceptualization of sustainability—one that focuses on the entire food and agriculture system at a global level and includes not only environmental soundness and economic viability, but social equity as well.

As for the development of regenerative agriculture in the Republic of Serbia, it can be stated that previously, before World War II, every agricultural product in Serbia was produced through the application of regenerative practices.

Today, regenerative agriculture is a pioneering venture and is not widespread. That percentage may be less than 1% of the total number of farmers. The beginning of the recent development of regenerative agriculture in Serbia is linked to the work of the Tamiš Institute from Pancevo in 2006, when several advisers from the Institute established the first experimental fields where they began to apply regenerative soil cultivation practices (https://regagrisrbija.rs/).

Regenerative agriculture was created on the foundations of traditional agriculture, but it also implies the integration of farming and animal husbandry. Over the years, the experimental fields of the Tamish Institute develop and test all types of reduced tillage, covering the production of several types of crops, on different types of soil, with the use of different mechanization as well as the introduction of cover crops into production. The fields, above all, serve to demonstrate practices intended for farmers.

As a result of the dedicated work of those few advisers of the Institute, today we have a group of farmers engaged in regenerative agriculture in the entire territory of Vojvodina. The popularization of regenerative agriculture in Serbia continues and the branch cooperates with advisors from the Institute.

Also, the Alliance for Regenerative Agriculture in Serbia was founded, which has the task of increasing the number of regenerative farmers through raising awareness of the importance of regenerative agriculture, education, networking of farmers with other actors and providing assistance to farmers in order to switch to regenerative production (https://regagrisrbija.rs/).

Also, the Alliance for Regenerative Agriculture provides farmers with access to knowledge, education and relevant information. Additionally, it provides them with practical support and access to other people's experiences, but also networking and joint participation in the public community.

The meeting organized by the Alliance for Regenerative Agriculture, held in March 2025 under the title "Challenges and opportunities of regenerative agriculture in Serbia", was attended by employees of agricultural expert services and agronomists or agricultural advisors employed in private companies. As part of the conclusions, it was stated that, in the long term, regenerative agriculture offers sustainable solutions for improving soil quality, increases the economic profitability of agricultural farms and reduces impacts the negative on environment (https://regagrisrbija.rs/regenerativnapoljoprivreda-u-srbiji-izazovi-i-mogucnosti/).

#### 3. MONETARY AND CREDIT POLICY MEASURES TO STIMULATE THE DEVELOPMENT OF REGENERATIVE AGRICULTURE IN THE REPUBLIC OF SERBIA

Monetary and credit policy measures can influence the stimulation of agricultural development in such a way that the provision of favorable loans will help the faster development of this economic branch. If there are no such loans, farmers will not be able to secure financial resources for expanding their activities. There is a widespread belief that farmers with good investment projects are stymied because they lack access to formal credit (Meyer, 2011).

Credit placements in the economy are the basic expansionary flow that can positively influence economic development. Banks grant loans to the domestic non-banking sector that are aimed at the population, the economy or the state. This sectoral distribution of short-term bank loans is one of the prerequisites for the efficient functioning of the economy (Đurović Todorović, 2014).

Respecting the maturity criterion, all bank loans can be classified into two large groups: 1) shortterm loans granted to the economy and consumer loans granted to the population, 2) long-term (investment) loans directed to the economy and housing loans intended for the population. This maturity structure of the credit potential implies a diversity of sources of funds. The main source of short-term credit potential is short-term bank deposits formed on the basis of short-term savings deposits of surplus units and funds from the primary issue. On the other hand, long-term deposits (funds of accumulation created by the distribution of income, i.e., unspent parts of the income of surplus units) are the basis of long-term credit potential (Đurović Todorović, 2014).







For agriculture, short-term loans are approved for current and seasonal operations, while long-term loans are approved for investment operations and only to registered agricultural holdings. Graph no. 2 shows the trend of credit placements for agriculture in the Republic of Serbia. Based on it, a growing trend can be observed from 2019 to 2022. This period coincides with the crisis caused by the COVID-19 virus, when the Government of the Republic of Serbia, as part of measures to overcome the crisis, subsidized loans to certain sectors of the economy, including agriculture. The regulation on financial support to agricultural holdings through easier access to the use of loans in difficult economic conditions due to the COVID-19 disease, through the subsidization of a part of the interest, facilitated the access to the use of loans, namely for the development of livestock, farming, fruit growing, viticulture, arable growing; vegetable growing and flower investments in agricultural machinery and equipment; liquidity, etc. (https://uap.gov.rs/uredbe). Also, in 2022, the Ministry of Agriculture signed contracts with banks on interest-free loans to encourage agricultural production. Table 1 features a list of banks that joined this program.

**Table 1:** List of banks with which the Ministry ofAgriculture signed the Agreement on interest-freeloans, 2022.

| Bank            | Bank            |
|-----------------|-----------------|
| Commercial bank | ProCredit bank  |
| Sperbank        | Bank Intesa     |
| OTP bank        | Credit Agricole |
| Halk Bank       | UniCredit bank  |
| Rajfajzen bank  | AIK bank        |

Source: http://www.minpolj.gov.rs/beskamatnikrediti-za-poljoprivrednike-u-desetbanaka/?script=lat The widespread development of low-input agricultural systems depends not only on the desires of farmers and consumers but also upon national and international policy changes. Many existing policies favour high-input/high-output agricultural systems. However, governments around the world have begun to recognize the need for sustainability agriculture practices (Mason, 2003).

Monetary authorities in the largest number of countries in the world approve favorable and subsidized loans in order to stimulate the development of their priority branches of the economy. As agriculture is the main economic branch in developing countries, a large number of these countries take care that agricultural farms receive the most favorable credit placements, which they will invest in their production and, thus, contribute to the development of the entire agriculture. It is necessary to conduct a selective credit policy, whereby favorable loans with a longer repayment term and a lower interest rate will be approved.

When it comes to developing countries, a large number of countries on the African continent resort to particularly favorable loans. Evbuovman (2014) shows that, in Nigeria, the proportion of government total recurrent and capital expenditure allocated to the agricultural sector between 1981 and 2014 has been less than 3.0%, compared with the 10% recommended by the African Union. Similarly, the agricultural sector's share of total commercial banks' sectoral allocation of loans and advances to the economy declined from 19.6% attained in 1996 to 3.7% in 2014. Meanwhile, the Bank of Agriculture, set up to focus on financing the sector, has been plagued by inadequate capital and poor management. Governments in the African emerging markets should gear their financing policies to boost output to ensure food security. They should address risk aversion tendencies among the lenders and feeble credit guarantee, subsidies and budgetary allocations to agriculture (Onyiriuba, Okoro and ImoIbe, 2016).

Huang and Wang (2014) conclude that mainstreaming agricultural mitigation and adaptation into agricultural development programs, enhancing local capacity, and considering different stakeholders' needs are major experiences for successfully financing sustainable agriculture under climate change.

Also, in countries with a higher level of income, states resort to subsidizing interest on loans to agriculture. In this regard, Balogh (2023) emphasizes the importance of the impact of subsidies on the common agricultural policy of the European Union. The following types of loans are available to agriculture in Serbia:

- 1. Loans from the Agricultural Development Fund,
- 2. Bank loans,
- 3. Loans from the Development Fund of Vojvodina,
- 4. Loans from the APV Guarantee Fund,
- 5. Subsidized loans from the Ministry of Agriculture,
- Loans of local governments, municipalities and cities (https://www.kredium.rs/blog/agrokrediti).

Loans for farmers are an important tool for the development of agricultural production. To improve their farms, farmers have to invest in the purchase of equipment or the expansion of production, so agricultural loans are a significant financial support. These are financial products designed to help farmers finance various aspects of their production. They include the purchase of land, equipment, investment in agricultural machinery, and expenses for working capital (seeds, fertilizer, etc.). Also, agricultural loans include funds for the necessary infrastructure for livestock production. Banks that offer these loans have special adaptation programs for different types of agricultural activities, whether it is farming, vegetable growing, fruit growing, animal husbandry, or some form of organic and regenerative agriculture. In this way, farmers can improve their production, ensure stability and competitiveness in the market, as well as encourage further development.

There are different types of loans available to farmers in Serbia, with each type of loan having its own specific conditions, purposes and characteristics. Table 2 shows the types of agricultural loans in the Republic of Serbia.

**Table 2:** The types of agricultural loans in the<br/>Republic of Serbia, 2025

| Loan type   | Characteristics  |  |
|---|--|--|
| Loans for the<br>purchase of<br>agricultural<br>equipment | To purchase the necessary<br>equipment, such as tractors,<br>harvesters, irrigation systems<br>and other machines. This type<br>of loan is often secured by the<br>equipment being purchased,<br>and interest rates may be lower<br>due to government subsidies. |  |
| Loans for   | These loans are specialized for  |  |
| iivestock   | investock farmers, whether it is   |  |

| development   | raising livestock, purchasing<br>equipment for livestock<br>production, or improving<br>animal facilities. They often<br>come with benefits in terms of<br>lower interest rates and longer<br>repayment periods.   | use this type of loan for<br>investments in production<br>equipment and expansion of<br>their capacities.Subsidized<br>loansMany states or banks offer<br>subsidized interest rates on<br>for   |
|---|--|---|
| Loans for the purchase of land                                    | Farmers who want to expand<br>their farm or invest in new land<br>can apply for this type of loan.<br>Interest rates can be more<br>favorable if the land is used for<br>agricultural production, and<br>repayment can be spread over a  | farmers agricultural loans to support<br>farmers in certain regions or<br>sectors. This means that the<br>interest rate can be lower than<br>in commercial markets, and<br>farmers can get more favorable<br>repayment terms.   |
| Revolving<br>credits for<br>production<br>financing               | longer period.<br>These loans are intended to<br>finance current operations, such<br>as the purchase of seeds,<br>fertilizers, protective equipment<br>and wages for workers during<br>the production season.<br>Revolving credit usually has a<br>shorter repayment period and is<br>used to settle obligations during<br>the year. | <ul> <li>Source: https://www.kredium.rs/blog/agro-krediti</li> <li>Subsidized loans for farmers include: <ol> <li>Subsidies for the purchase of equipment and machinery - Support for the purchase of tractors, harvesters, irrigation systems and other agricultural equipment;</li> <li>Subsidies for ecological projects - Incentives for ecological production, organic agriculture, and the use of renewable energy sources;</li> <li>Subsidies for obtaining certificates and education - Help for farmers who want to improve their knowledge and obtain certificates or attend training;</li> <li>Subsidies to support rural development - Assistance for infrastructure projects and improvement of living conditions in rural areas;</li> <li>Incentives for investments in sustainable development - Subsidies for farmers who invest in energy-efficient farms and sustainable technologies;</li> <li>Subsidies for establishing new plantations - Help for farmers who want to develop new plantations (orchards, vineyards, etc.);</li> <li>Green loans for environmental projects, etc. (https://www.kredium.rs/blog/agro-krediti).</li> </ol></li></ul> <li>As we can conclude from the attached, the Republic of Serbia, within its credit policy, has different types of loans to encourage regenerative, sustainable and organic production. The table lists loans for organic production offered on favorable terms; the goal is to increase the number of organic production, organic agriculture, and the use of</li> |
| Loans for the<br>reconstruction<br>and renovation<br>of buildings | Farmers who want to improve<br>or build new facilities, such as<br>barns, silos, warehouses or<br>processing facilities, can apply<br>for this type of loan. Loans may<br>be subsidized by the state.  |   |
| Loans for the<br>promotion of<br>organic<br>production            | Due to the growing interest in<br>organic farming, many banks<br>offer loans specifically for<br>farmers who want to switch to<br>organic production. These loans<br>often come with more favorable<br>terms, and the goal is to<br>increase the number of organic<br>food producers.  |   |
| Loans for<br>capital<br>investments                               | Farmers who want to improve<br>their long-term production<br>capacity, such as building new<br>buildings, buying new land, or<br>investing in green energy, can<br>apply for capital loans. These<br>loans usually have longer<br>repayment terms and a higher<br>amount, but also have specific<br>conditions.                      |   |
| Loans for agro-<br>industry                                       | This type of loan is intended for<br>farmers who are engaged in the<br>processing of their agricultural<br>products. For example, those<br>who produce juices, dairy<br>products, or process grains can  |   |

renewable energy sources can be singled out. Also of importance are the incentives for investments in sustainable development, which are intended for farmers who invest in energy-efficient farms and sustainable technologies. Finally, green agriculture loans provide funds for projects related to environmental protection, such as the use of renewable energy sources, environmentally friendly production technologies, or the use of recycled materials.



Graph 3: Movement of agricultural subsidies in the Republic of Serbia, 2005-2021.

Source: Ministry of Finance of the Republic of Serbia, Public Finance Bulletin for January 2025.

In the Republic of Serbia, the funds allocated to agriculture show disparities across the observed years. During the analyzed period, state aid directed toward agriculture was primarily focused on agricultural producers through direct payments and subsidies.

The analysis of state aid to agriculture in the Republic of Serbia from 2005 to 2021 reveals a clear upward trend in the allocation of subsidies, despite some fluctuations over the years. The lowest level of financial support was recorded in 2005, when only RSD 8,961.2 million was allocated. On the other hand, the highest amount of subsidies was granted in 2020, reaching RSD 44,542.6 million.

#### 4. EXAMPLES OF GOOD PRACTICE OF STATE SUPPORT FOR THE DEVELOPMENT OF REGENERATIVE AGRICULTURE

Within the EU Horizon2020 project, a project related to regenerative agriculture called AgriCaptureCO2 can be singled out.

It is a farm community building project, supported by the use of new technologies. Working with farmers in 5 countries to pilot and test this approach and develop digital solutions is the essence of this project. By combining satellite imagery with farmer data and soil samples, the project aims to make measuring soil carbon more accurate and cheaper than ever before. This will allow farmers to easily track how their efforts in the field translate into increased carbon in their soil, and help farmers get paid for their results (https://agricaptureco2.eu).

The project will also support and accompany farmers on the path to regenerative agriculture through community building. Through webinars, on-farm debates, farm demo days and more, AgriCaptureCO2 will facilitate knowledge sharing between farmers, scientists, businesses and other relevant stakeholders, as well as peer-to-peer knowledge sharing between farmers themselves.

## 1. The example of Greece: Sustainable olive cultivation

Mediterranean agriculture, including the cultivation of olives, must adapt to new challenges related to water conservation. The goal is to promote a new regenerative approach to olive cultivation, protecting the soil while ensuring efficient use of water and other inputs.

It is necessary to develop and market a brand of olive oil with low emissions, rewarding regenerative farmers. Farms are small and familyowned. Eight are irrigated and two are rainfed. Before the start of the project, most applied traditional practices had to be redesigned to achieve lower emissions.

The aim of this pilot project is for other farmers in the area to learn from these practices, to be convinced of their effectiveness and to actively replicate them. These methods are easily applicable to any olive farm of the same scale in the Mediterranean and can be adapted to larger farms (https://agricaptureco2.eu).

#### 2. UK example: Public land management

Lancashire county has a population of 1.4 million and covers 3,000 km2 in western Great Britain. Like many local, regional and national governments, Lancashire has recognized the climate emergency and has committed to carbon neutrality, which it aims to achieve by 2030. Using AgriCaptureCO2, Lancashire will explore how publicly owned land can be used to maximize carbon sequestration. This project involves the management of former quarries and other rehabilitated sites. It also includes making the most of recycling garden and forest waste to contribute to soil health.

The pilot project is testing management on 3hectare plots at two sites: Midgeland Road, a former landfill site, and Chisnall Hall, a former colliery that was restored in the 1970s. Both experimental sites are currently used for silage and winter grazing. Composted green waste was applied to 1 ha of the Chisnall Hall site at a rate of 630T/ha. This area will be planted with fastgrowing oak shoots. The intention is to provide biomass for future biochar production, as well as benefits for biodiversity.

The goal of this project is to identify regenerative agricultural practices that could be implemented on such land, and focus on the use of biochar as well as compost created from green waste. In addition, functionality would be provided to land that has limited potential.

# 3. Example of Serbia: Promotion of regenerative agriculture with the help of public subsidies

Every year, the burning of residual stubble contributes to low air quality in Southeast Europe. Other intensive agricultural practices common in the region (deep tillage, general application of pesticides, high doses of fertilizers and others) also lead to damage to water courses, biodiversity and air quality. Although legal restrictions exist, they are not effectively enforced. Small networks of farmers experimenting with regenerative practices are the starting point for developing a new regenerative approach in the region.

AgriCaptureCO2 is piloting ways to obtain subsidized credits that are being developed through the project. This includes providing decision support tools and financial benefits through access to voluntary, subsidized credit markets. This support will be essential for a large-scale transition from conventional to regenerative agriculture.

Several medium-sized family farms are involved in this project. While most are already familiar with the application of regenerative practices, some have not yet engaged in them. AgriCaptureCO2 tracks the effects of regenerative practices on farm economics, as well as the impact on soil health, the environment and climate. It is planned that the subsidy project will be extended to other Serbian farms, as well as beyond.

#### CONCLUSION

Based on the analyses performed in the paper, it can be concluded that agriculture is one of the most important branches of the economy for the Republic of Serbia. It represents a priority and supporting branch for most developing countries. However, conventional agriculture is not sustainable and leads to soil and water pollution, as well as food for human and animal consumption. In this way, the survival of future generations is threatened. As a result, there is a tendency to switch to regenerative agriculture. Regenerative agriculture is a special approach to agriculture that actively supports three key natural resources: biodiversity, water and soil. It uses the power of nature to achieve sustainable production. Everything that would be considered waste in conventional agriculture, regenerative agriculture uses in the best possible way.

In this regard, financial support for regenerative agriculture is necessary. In Serbia, there are different types of loans that are subsidized by the state, development funds, or given under particularly favorable conditions by banks. Within the scope of subsidized loans, those intended for ecological production, organic agriculture, and the use of renewable energy sources can be singled out. Also of importance are the incentives for investments in sustainable development, which are intended for farmers who invest in energy-efficient farms and sustainable technologies.

Finally, in the last part of the paper, we could see the example of Serbia, which emphasizes state support in the form of subsidized loans for the development of regenerative agriculture.

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