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SMART AND REGENERATIVE AGRICULTURE IN THE FUNCTION OF AGRICULTURAL ENTREPRENEURSHIP

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ABSTRACT

This paper explores the integration of smart and regenerative agriculture technologies as a function of agriculture entrepreneurship in order to enhance agricultural productivity, environmental sustainability, economic viability and food security. Smart agriculture leverages advanced technologies like sensors, machine learning, and cloud computing for precision farming, optimizing resource use, and improving crop management. Regenerative agriculture focuses on soil health, biodiversity, and ecosystem services, aiming to restore soil organic matter, enhance water cycles, and foster carbon sequestration. The synergy of these practices offers numerous benefits, including improved soil health, increased resilience to climate change, cost savings through reduced input use. Additionally, these methods address the growing consumer demand for sustainably produced food, offering market opportunities for farmers. This transformative approach not only supports the livelihood of farmers but also contributes to the broader goals of food security, environmental protection, and sustainable development. The integration of these technologies promises to revolutionize agricultural practices, potentially reversing the negative impacts of conventional agriculture and creating more resilient and sustainable food systems, particularly in developing regions facing economic challenges and fragmented agricultural sectors.

KEYWORDS

smart agriculture, regenerative agriculture, agriculture entrepreneurship, new technologies, computer networks, cloud computing, machine learning

THE IMPORTANCE OF NEW TECHNOLOGIES IN AGRICULTURE

Technology and technique represent a functional unity of knowledge, skills, and science, procedures and products, serving to improve human life. New technologies in agriculture are crucial for general development and for the development of agricultural entrepreneurship. Agriculture, along with agricultural entrepreneurship, in the modern era becomes inseparably connected with new technologies and Industry 4.0. As a result, smart agriculture, precision agriculture, and smart villages are developed

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as forms of application and implementation of new technology in rural areas, not only to increase the standard of living and profitability of farmers, i.e., residents of rural areas, but also to enhance ecological sustainability and reduce the negative effects of climate change. The key function of smart, and/or precision agriculture, is the intelligent allocation and rationalization of resources to optimize their use for greater efficiency and effectiveness of agricultural production. Until now, this function has been managed by agricultural entrepreneurship, which manages the chain from farm to fork, from agricultural production to supply chains all the way to sales in large markets. New technologies enable better organization, transparency, precision, and sustainability of agricultural production, supply chains, and the agricultural food industry along with agricultural entrepreneurship.

In this way, through new technologies, agricultural entrepreneurship and agricultural production gain a new dimension of business, production processes, and supply, all in accordance with high standards of sustainable development and ecology.

Blockchain technology, applied in agriculture, yields excellent results in terms of product transparency and consumer information about the characteristics, origin, and benefits of a particular agricultural product. Blockchain technology, already applied in developed Western countries in agricultural production and supply chains, provides consumers with a high degree of information and transparency of the agricultural product itself, allowing them to follow the product from agricultural field to the table. Additionally, a new field in agriculture is regenerative agriculture, which, in synergy with new technologies and smart and precision agriculture, opens a new dimension and aspect of agricultural production based on sustainable development, high standards of ecology, and healthy food, i.e., organic products. Regenerative agriculture, supported by new technologies, can greatly contribute to healthier nutrition, which today's consumers seek and demand. In this way, agricultural entrepreneurship gains an advantage in the form of offering agricultural products for which there is great demand. According to the author and numerous experts, agricultural products, primarily food and drinking water, obtained in the process of regenerative agriculture, represent a new golden age of agriculture, i.e., a resource of the future. Condition that needs to be met is more understanding for investments and financial support from the state for new technologies applied in agriculture, agricultural entrepreneurship, as well as for the new form of agricultural production known as regenerative agriculture.

SMART AND REGENERATIVE AGRICULTURE SERVICE

In presenting the smart agriculture service, which pertains to aspects of regenerative agriculture, real-time soil quality monitoring and analysis, machine learning and/or deep learning based on neural networks, are used to predict soil quality based on data from previous time periods. Based on the prediction of machine learning in real time, the process of monitoring and maintaining a high level of field soil quality at every moment of agricultural production is possible. The smart agriculture service can encompass regenerative agriculture and soil analysis via sensors, using data obtained from sensors as input values for machine learning or neural networks on a remote or nearby computer server or cloud computing. This represents a significant technological advancement for addressing the major problem that exists not only in the European Union but across all of Europe, which is the reduction or decline in the quality of agricultural land.

In response to the growing problem, not only to address climate changes that significantly contribute to the declining quality of soil but also to address the overexploitation of land, pollution, and the issue of neglected agricultural land, the smart agriculture service focused on regenerative agriculture has been introduced in the following descriptions. This service enables sustainability, ecological standards,

response to climate changes as well as renewal and enhancement of the quality and fertility of existing agricultural land through regenerative methods and techniques (Lipper et al., 2017).

For the implementation of this smart agriculture service in the function of regenerative agriculture, sensors are required, which today, but increasingly in the future, will be produced as mass production products, becoming cost-effective and more affordable (Chikoye et al., 2017). Additionally, a computer network is required, ideally wireless, 5G or 4G, which enables data transmission from sensors to central servers or cloud computing, where the data will be processed, used in the method of machine learning or deep learning, and the obtained results analyzed and options provided for making the most optimal, intelligent, and rational decisions.

Additionally, instead of using 5G or 4G computer networks, it is possible to utilize far-reaching computer networks specialized for agriculture, such as LoRaWAN and others with low power consumption, suitable for smart cities, smart villages, and smart agriculture (Seneviratne, 2019)0. It is possible to analyze soil and vegetation, namely crops on the given land, thereby obtaining data on the quality of the given soil through multispectral and hyperspectral analysis using a central camera or multiple cameras mounted on drones.

In this case, we will focus on sensors, namely microsensors that are located in the soil and measure various soil parameters, from moisture and temperature to pH values. Additionally, it is possible to manually take samples regarding the quality of agricultural land and upload data to a central server.

To even begin applying techniques and methods of regenerative agriculture, which include certain functions of smart agriculture such as the optimization of resource use, resource alocations for intelligent and rational management of agricultural production to maximize effects, namely yields while minimizing input values, it is necessary to devise a technological solution. This technological solution is from a namely computer network perspective, as well as from a software perspective (Selman, 2010).

This smart agriculture service in synergy with regenerative agriculture allows the application of smart citiy services for the purpose of improving and creating smart villages based on new technologies. This will contribute not only to improving the quality of agricultural land, which is an urgent and concerning problem at this moment, but will also contribute to all aspects of society in rural communities in terms of sustainability, ecological standards, information availability to residents, improving the standard of living, mitigating climate change, mitigating world hunger, and the adoption of new technologies in traditional and conservative communities of rural areas.

THE IMPORTANCE OF TECHNOLOGICAL SOLUTIONS AND THEIR APPLICATIONS IN PRACTICE

Regarding the technical and technological solution, it should primarily focus on a wireless computer network, elements such as sensors or microsensors, stations for transmitting and retransmitting wireless signals, and one or more central servers, i.e., computers that receive data from sensors. Additionally, an alternative to localized computer servers is the use of cloud computing, which is increasingly prevalent, especially for larger holdings and corporate agricultural operations (Peterson, Davie, 2020).

The use of new technologies in the form of edge computing and fog computing, which allow for the processing of received data at the network edge in case of a central server failure, works together with cloud computing in distributing, dispatching data to a central location, processing, and analyzing data, enabling resilience, redundancy, data processing speed, as well as the function of load balancing. The

network of this technical and technological solution would consist of elements such as the data source, represented by sensors, a wireless communication link that connects data sources with telecommunications stations, which forward data to edge computing, then to fog computing, and finally to cloud computing or alternatively forward data to a local server. The end-user is not the cloud computing or the local server, but rather the farmer and his laptop or desktop computer in the office. To forward the information, we use a communication link from the data source, then telecommunications stations for forwarding signals, which use computer networks and data transmission via somewhat faster communication links, such as 5G, and finally, data transmission from the local server or cloud computing to the farmer's laptop or computer can be conducted via the internet, either cable or through mobile telephony.

This computer network enables relatively fast data transmission from sensors to cloud computing, using numerous transmission technologies such as 5G, 4G, depending on the needs and size of the farm, as well as the purpose and function of the given technological solution.

To make all this work, internet access is necessary, through which both the local server and the farmer's computer or laptop need to be connected. Therefore, the solution could be either cable internet or mobile telephony internet, which covers large areas without requiring significant expenses. Such a network allows for relatively good and reliable efficiency at cost-effectiveness, especially important and significant in developing countries.

In this way, by using new technology, these problems can be overcome, which is of great significance not only for the status and financial position of farmers, for their standard of living, but also for the development of economically underdeveloped countries, as well as for improving resilience, flexibility, and scalability of supply chains on a global level.

The technologies that the author would apply in this case include microsensor technology, 5G or 4G wireless data transmission, cloud computing, edge computing, and fog computing. Finally, a technology that is significant for this service of smart and regenerative agriculture, and which is no less important, is machine learning and/or deep learning.

Machine learning is a sub-branch of artificial intelligence of great importance in the modern world, both in science, agricultural and other practices of highly developed countries. Artificial intelligence technology enables systems to perform numerous tasks that require human intelligence, in a way that they are performed by machines, or software, including tasks such as decision making, language translation, and speech recognition.

As an important sub-branch of artificial intelligence, the author would use machine learning technology, which allows machines to learn from data and adapt to additional data through the training process, without explicit programming for specific tasks. Prediction of outcomes through machine learning models possesses two characteristics that are significant and largely define both machine learning and new technologies in the economy and society. These two characteristics are nonlinearity and scalability.

Nonlinearity represents the ability of the system, in this case, prediction, to connect a dependent variable with one or more independent variables in conditions where there is no direct proportional relationship between the change in the dependent variable and the cause, which establishes a complex causal relationship between cause and effect, or input and output data. This can be of great significance for the analysis and interpretation of complex and complicated systems and models.

The other characteristic related to this service of smart agriculture and regenerative agriculture is the scalability of managing and processing a significant increase in both users in the business and/or data as input values, without significantly reflecting on the performance results.

The technology that would be applied as an alternative to machine learning is deep learning, a subfield of machine learning that is based on neural networks and also on nonlinearity, and which simulates neural pathways in the human brain. In this way, numerous analyses can be performed and insights into significant results and research can be obtained not only in the field of regenerative agriculture and soil quality but also in numerous other areas of agriculture, economy, and society.

REGENERATIVE AGRICULTURE FROM THE PERSPECTIVE OF AGRICULTURAL ENTREPRENEURSHIP

Understanding the problems of smart and regenerative agriculture from the perspective of agricultural entrepreneurship, its implementation in agriculture and individual farms, represents not only the design and architecture of the computer network and technology but also the method of financing new technology and maintenance. Agricultural entrepreneurship has the task not only to manage the agricultural production (via smart and regenerative agriculture), manage the process of product placement and sales in the market, but also to design, organize, and manage an investment project, which includes numerous phases, among which are significant: careful selection of sources of financing and financial analysis of the investment project (Pejanović, 2019; Evenson, Pingali, 2007).

Financing is one of the key aspects of agricultural entrepreneurship that can greatly modernize technology and enhance the profitability of agricultural production from the perspective of smart and regenerative agriculture. Financing is necessary from the perspective of fixed and working capital. Fixed assets are assets that have a long lifespan and can be divided into intangible, tangible, financial assets, and receivables.

Also, the financing of working capital should be considered, which includes raw materials, consumables, working tools, worker wages, property rentals, and other circulating assets, which are assets with a short lifespan (less than a year).

In this case, the focus should be on fixed assets, which can be divided into intangible and tangible, where intangible includes patents, licenses, and software. Software represents a key component of intangible fixed assets that is needed for the optimal functioning of the computer network and other technological infrastructure necessary for smart agriculture. Under tangible fixed assets falls infrastructure, which includes computer infrastructure, microsensors, telecommunications stations, computer networks, local servers or cloud computing, along with edge computing and fog computing. Tangible fixed assets also include buildings, machinery, and equipment.

To fully understand the problem of financing new technologies in agriculture in developing countries (such as the Republic of Serbia) by agricultural entrepreneurship and entrepreneurs, we must understand the financial system and economic environment of developing countries and how serious a problem of the underdeveloped financial infrastructure and institutions represents for the progress and technological development of each country.

The financial system primarily serves to procure funding sources, and it consists of financial markets, financial institutions, and financial instruments. The absence of any of these three elements represents a significant problem in financing any investment project, not only those related to new technology and smart and regenerative agriculture. The lack of a developed financial system, financial institutions, is a failure of the state. The lack of financial instruments is an aspect of the interest of citizens of a given country in investing in securities. The development of the financial market itself represents the

responsibility and obligation not only of the state, but also of economic entities and their willingness to accept risks, and of the citizens themselves and their willingness to invest.

In developing countries, this problem is particularly pronounced, and it is overlooked by using one aspect of the financial system, i.e., banking. Therefore, in such countries, bank-centric financial systems most commonly occur, in which, as in the Republic of Serbia, financial resources and sources of financing are in the hands of large banks, most often of foreign origin.

In order for such a system to change and diversify, offering a multitude of financing source options and opportunities for developing the financial system, and thus economic and technological development (because technological development is mostly financed from financial instruments and financial markets), significant, deep and fundamental changes are needed , encouraged by the top of the state, by promoting entrepreneurship and a tendency to rational risk among citizens.

To address the issue of financing smart and regenerative agriculture in developing countries, it is necessary to adapt to the bank-centric system at this moment, until conditions are met for a broader range and spectrum of financial instruments and sources of financing. The bank-centric financial system is not capable of meeting the needs of domestic entrepreneurship for development, as well as the needs of the country for economic and technological development in the long run. Therefore, changes are necessary and essential.

Still, to implement the system of smart and regenerative agriculture, using the current possibilities of the financial system in a bank-centric system, it is necessary to consider the available sources of financing. These can include personal funds, loans, pooling of investors, leasing, issuing securities, as well as cooperatives or clusters, depending on the system of organizing and consolidating capital from country to country.

Firstly, it should be mentioned that the most expensive form of financing is leasing, which should be avoided at all costs and alternative sources of financing should be found. Primarily in a bank-centric system loans stand out as a logical solution for financing an investment project.

To carry out and present an investment project, and ultimately obtain loan approval, it is necessary to develop and elaborate the investment project and accompanying documentation, which consists of the following phases and elements: market analysis, technology analysis, location analysis, ecological analysis, staff organization analysis, as well as financial analysis of the investment project. Among the elements of the investment project that agricultural entrepreneurs should pay attention to when investing in smart and regenerative agriculture, besides technological analysis, financial analysis particularly stands out, as well as the payback period of the investment and the ecological aspect of the given agricultural production.

Regenerative agriculture represents a new form of agricultural production, and in synergy with precise and smart agriculture, it can contribute to the production of high-quality organic food. Such food is in high demand on the global agricultural market and will continue to be an extremely sought-after resource in the future, along with drinking water and energy. Therefore, the price of these agricultural products will very likely reach extremely high levels and will allow a quick return on funds within a few years. Already, with the current demand for healthy and organic food, disruptions in the supply chains of agricultural products and a high level of public awareness for ecology, sustainable development and organic products, it enables a relatively short investment horizon.

The second aspect is the ecological aspect, which is significant not only from the aspect of production, but environmenatal protection as well. Agricultural products produced with this technology are understood to be organic products of exceptional quality. Therefore, they must meet not only high criteria and conditions for qualifying for organic products, but also high standards of sustainable development and environmental protection. Therefore, the sale of these products has a significant

competitive advantage compared to other agricultural products, especially nowadays with the development and growing awareness of the importance of ecology, green economy, sustainable development and mitigating the negative effects of climate change, of which agriculture contributes 25% to the impact on climate change (Francis, 2016). Therefore, citizens recognize quality and are ready to pay a high market price for it. This makes these products very sought after, but currently in deficit, which makes smart agriculture and regenerative agriculture not only the future of agriculture in developed countries, but also in developing countries.

To some extent understand the problem of financing new technologies in agriculture in a bank-centric system, agricultural entrepreneurs must view this problem not only from a socio-economic aspect, but also from the perspective of natural sciences, as a different view that contributes to precision and reliability.

Three concepts that stand out as significant from the aspect of electrical engineering and computing, that is, natural sciences, in solving the problem of financing sources for smart and regenerative agriculture in developing countries in a bank-centric system are: The concept of negative feedback, which we highlight as a key and crucial concept for the sustainability of financing sources and agricultural production based on new technologies. The concept of positive feedback, which applies additional new technologies if certain conditions are met. The concept of dichotomy, or two mutually opposing concepts, which together exist in synergy and can be used as needed, by whoever uses them, to solve problems. The concept of negative feedback in electrical engineering is particularly represented by the example of a water heater, which, when certain conditions in terms of heating water to a certain point, or temperature level, are met, the system turns off, or shuts down. Agricultural entrepreneurs can use these concepts with success, a significant concepts in terms of the way of thinking, philosophy, but also systems, mechanisms for managing financing sources, as well as risks and costs.

Indeed, these concepts can be used such that, thanks to smart and regenerative agriculture and the demand for organic products resulting from this agricultural production, the time horizon for returning investments can be short, which favors investors, i.e., farmers. This moment should be seized and, in accordance with the concept of negative feedback, the system should be turned off when certain conditions are met, i.e. in this context the condition that the loan can be fully repaid.

Loan repayment is a factor of exceptional importance, a factor of release from the bank, from debt, from periodic interest payments and expenses. In this way, agrarian entrepreneurs can efficiently and effectively manage costs and when certain conditions are met, debts and obligations to banks with early repayment of loans are resolved. This should be kept in mind, because banks, other creditor and financial institutions consider premature loan repayment as an extremely unfavorable risk for them, wanting to maintain profitability and the relationship of high dependence of the debtor on the creditor, which is the goal of every bank, as well as the bank-centric system in a certain economy. countries.

In this way, with the help of this concept, in a precise, disciplined, efficient, and effective manner, the entrepreneur frees himself in agricultural production of additional financial costs and obligations and becomes his own owner, without a mortgage and without debts. Thus the concept of negative feedback, which has long been present in entrepreneurship, in the form of wisdom of great entrepreneurs who manage to run a business without excessive indebtedness and business obligations, both in agriculture and other economic branches.

Another concept for managing and solving the problem of funding sources is the concept of positive feedback. In the field of electrical engineering, the most obvious example is an electrical device such as an air conditioner. Namely, the air conditioner works in such a way that, when certain conditions are reached, for example a high temperature of the outside environment, the device turns on and lowers the

given temperature or vice versa. Therefore, when certain conditions are achieved, energy, work, concentration, functioning of the mechanism to change the given state for the better are enhanced.

Besides the concept of negative feedback, which authors emphasize as extremely important, positive feedback can be beneficial in conditions of high risk and losses in business. It involves the use of new technologies to a greater extent for the purpose of increasing sales, increasing profitability, and getting out of the risk and order of costs and losses. This new technology is not based on hardware infrastructure and significant investments but mostly on virtual infrastructure of electronic business.

Computer literacy and skills, as well as basic knowledge and skills in using computers, are necessary in today's world in order to be able to fully use the great potential and capacity of tools and means of electronic business, for the sake of increasing and improving business channels and product distribution. To improve sales, we can use digital tools such as B2B platforms, private agricultural exchanges, digital marketing using social networks, websites, applications, various business platforms, internet search engines like Google and artificial intelligence like ChatGPT.

In order for agricultural entrepreneurs to take full advantage of this concept of positive feedback and improve their business, whether it is to improve a loss-making business or to improve a business with regular income, they must make an extra effort to understand its' importance and reach a level of awareness that future and current consumers, be they in retail or wholesale, will no longer look for products in markets or micro markets, but on the Internet, on online platforms, websites, social networks and applications for smartphones and fast home delivery.

One example of the rapidly growing concept of artificial intelligence are AI-based platforms that connect manufacturers of specific products with large consumers, i.e., companies that purchase these products in significant quantities. These AI platforms use publicly available databases to create nonlinear and causal connections, processing vast amounts of data in seconds, linking producers with potential customers. Such examples are increasingly common in developed countries, and will gradually appear in developing countries, facilitating the connection between large buyers and local producers, i.e., large companies, but also regular consumers.

E-commerce represents a significant aspect of agricultural entrepreneurship and cannot be bypassed, ignored, or unrecognized. The fact is that, according to some studies, the value of products bought and sold through e-commerce worldwide has increased about fivefold in the last decade. Also, it is a fact that individual sellers and buyers, in the form of recommerce, have sold or bought goods worth 5 to 10 times more than in the few years before. This shows that the focus in business, entrepreneurship, and thus in agricultural entrepreneurship and trade, is shifting from the physical buying and selling of goods and agricultural products at markets, fairs, and shops, to virtualization and e-commerce, which is already present in numerous developed countries such as the USA, China, UK, Canada, Australia, Japan, and this trend has become the new standard, the new reality, which is increasingly present and will be more significantly represented in the future.

The last concept from electrical engineering and computing, which can be used for managing and controlling the costs of financing sources in agricultural entrepreneurship, related to the example of smart agriculture services in synergy with regenerative agriculture, is the concept of dichotomy, i.e., two mutually opposing elements, which exist simultaneously at the same moment. Thus, we have debt and loan repayment through taking on debt and/or collecting outstanding debts based on trust from business partners, an informal and market-unregulated skill, which is already present in developing countries among more skillful entrepreneurs. Trust is a key factor, both in the risk-prone and uncertain world of agricultural entrepreneurship and agricultural production, and generally in entrepreneurship, because it allows not only good business operations and good cooperation but also the potential of certain

companies to emerge from the financial crises, as well as to emerge from severe economic situations, both at the level of the country, region, and in the case of global economic-financial crises. It is the fact that the modern system of economic organization, in the form of capitalism, is prone and subject to periodic and increasingly frequent cycles of economic downturns, according to the Russian and Soviet economist Kondratiev.

The interconnectedness of companies is of exceptional importance and is based on trust. An example of this is found in Japan with the keiretsu system – a successor concept to the zaibatsu – representing the interconnectivity of Japanese companies that orbit and gravitate around a few central companies and which cooperate and support each other based on mutual trust. This concept enabled Japan, as a country developing after World War II, to achieve high levels of economic development and surpass the USA in both economic production and technological innovation and development, while also remaining economically independent from the influence and influx of American capital into the Japanese economic system.

In line with this, the concept of trust can be applied in the concept of electrical engineering and computing known as dichotomy, namely repaying debts through debt collection or lending assets. The mutually opposing concept of repayment through collection or lending assets already exists in countries where relationships on financial and economic markets are not highly regulated, especially in developing countries, where this concept is considered one of the fundamental principles of economic, financial, entrepreneurial, and ultimately, business sustainability.

This concept, applied in entrepreneurship, represents a key concept for circumventing, avoiding crisis moments of any enterprise, but also achieving resilience, that is, resistance and flexibility of enterprises in cases of major economic crises. This business wisdom, applied sparingly, which can be linked with the electrical engineering concept, represents a form of resourcefulness, perseverance, creativity, and the survival ability of the fittest, upon which liberal capitalism is based.

This concept should be learned by every agricultural entrepreneur and every entrepreneur in general, to survive in the global financial competition, business competition, and to become a successful entrepreneur. These and other concepts for managing and optimizing debts and costs in entrepreneurship, applied to agricultural entrepreneurship, are not taught in colleges and schools, but they should be, and instead represent the wisdom and axioms of business and entrepreneurship, which are learned in the so-called "school of life for entrepreneurship" in developing countries, where creativity and resourcefulness are dominant traits for financial survival.

CONCLUSIONS

New technologies in agriculture are of great complexity and importance for the future of agriculture, food security and sustainability. In this paper we have analzyed effects of smart agriculture and regenerative agriculture not just for agriculture itself but for society as a whole including living standard, environmenatal sustainability and mitigating negative climate change effects and risks.

Technological innovations in smart agriculture, such as energy-efficient computer networks and machine learning models, combined with regenerative agriculture as an approach aimed at improving soil health, biodiversity and environmental services, emphasize systems and practices that restore soil organic matter, improve water cycle and promote sequestration of carbon. This combination of new technologies and methods in agriculture has the potential and capacity to reverse the negative impacts of conventional agriculture on the environment and create more climate-resilient and sustainable food production systems, especially scalable food supply chains.

The mentioned technologies in agriculture in combination with agricultural entrepreneurship offer significant benefits to farmers, including (Rhodes, 2017):

- Improved Soil Health – Regenerative practices help to build healthy, fertile soil by increasing organic matter content, improving soil structure, and enhancing nutrient availability resulting in better yields and reduced application of artificial fertilizers.
- Increased Resilience – Regenerative agriculture systems are more resilient to extreme weather events, such as droughts or heavy rainfall, due to improved soil structure and water retention capacity. This aspect is more and more relevant in todays conditions of negative climate change effects.
- Cost Savings – Not only that this new technology and new methods in agriculture can, as its moto minimizing unputs with maximazing outputs, improve profitability of agricultural production, but improved soil health can contribute to reduced erosion, nutrient runoff, and the need for tillage, saving both time and money.
- Enhanced Biodiversity – Regenerative practices support biodiversity that can help reduce the need for chemical inputs and promote a more balanced ecosystem.
- Carbon Sequestration – It is considered that traditional agriculture is responsible for 25 percent of atmospheric pollution and indirectly contributing negative effects of climate changes. One of the key benefits of regenerative agriculture is its potential to sequester carbon from the atmosphere into the soil mitigating climate change while also improving soil health.
- Market Opportunities – Consumers are increasingly seeking out products produced using regenerative agriculture practices, leading to market opportunities for farmers who adopt these methods. This high demand for this kind of products can help farmers differentiate their products and access premium markets.

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