

## The Future We Want: Sustainable Development Goals Accomplishment with Organic Agriculture

### Przyszłość, której chcemy: możliwości osiągnięcia Celów Zrównoważonego Rozwoju w rolnictwie ekologicznym

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#### Abstract

The aim of the paper is to enlighten the role that organic agriculture can have in the achievement of Sustainable Development Goals (SDG). Currently, sustainable agriculture systems are not adequately recognized in SDG and supported by the decision-makers. Given that agriculture plays one of the key roles in sustainable development accomplishment, the expansion of an organic agriculture can be a basis to implementing SDG. Organic agriculture has multiple benefits as most valuable option in redesigning food systems to achieve ecological, economic, and social sustainability. Moreover it could encompass and establish food system from field to fork necessary to complete the SDG without oversize resource depletion and negative impact on the environment. The study showed that by placing organic agriculture high in the agenda of SDG it is possible to create conditions for sustainable development while identify and manage trade-offs in agriculture and maximize co-benefits.

**Key words:** organic agriculture, ecological intensification, agroecology, sustainability, environment

#### Streszczenie

Celem artykułu jest wyjaśnienie roli, jaką rolnictwo ekologiczne może odgrywać w osiągnięciu celów zrównoważonego rozwoju (SDG). Obecnie systemy zrównoważonego rolnictwa nie są odpowiednio uwzględniane w SDG i wspierane przez decydentów. Biorąc pod uwagę, że rolnictwo odgrywa jedną z kluczowych ról w realizacji zrównoważonego rozwoju, wprowadzenie rolnictwa ekologicznego może być podstawą do rzeczywistej realizacji SDG. Rolnictwo ekologiczne ma wiele zalet, jako najcenniejsza opcja w przeprojektowywaniu systemów żywnościowych w celu osiągnięcia zrównoważonego rozwoju ekologicznego, gospodarczego i społecznego. Ponadto może ustanowić system żywnościowy od pola do stołu niezbędny do ukończenia celu zrównoważonego rozwoju bez nadmiernego wyczerpywania zasobów i negatywnego wpływu na środowisko. Badanie wykazało, że umieszczając rolnictwo ekologiczne w agendzie SDG można stworzyć warunki dla zrównoważonego rozwoju, jednocześnie identyfikując i zarządzając kompromisami w rolnictwie oraz maksymalizując korzyści.

**Słowa kluczowe:** rolnictwo ekologiczne, intensyfikacja ekologiczna, agroekologia, zrównoważoność, środowisko

#### Introduction

Globally, agriculture is the world's largest employer and the most important economic sector for many countries, especially the developing ones. At the beginning of the 21<sup>st</sup> century, agriculture represented a complex system created by the integration of agriculture and industry, which make the preconditions

for increasing production efficiency while reducing costs and increasing profits. The establishment of world trade allows for increased availability of all types of food throughout the year, regardless of season and region (Suweis et al., 2015). As a result, agriculture in the 21<sup>st</sup> century has the potential to provide more than enough food for over 7.7 billion people (World Resource Report, 2019). This contradicts

the view that food is deficient and that food security has been dramatically compromised by the use of agricultural products for industrial purposes and by global climate change (Godfray et al., 2010). In addition to that, arable land needed to produce a fixed quantity of crops, calculated as arable land divided by the crop production index, has considerably decreased over time, from 1.0 (1961) to 0.3 in 2014, while the yield of major staple crops increased (Ritchie and Roser, 2020). According to Gaurav et al. (2017) there is increase in usage of arable crops (up to 40% of production) for bioethanol and biodiesel production, which dramatically changes the objectives of agriculture.

Because of that there is an intensive, global discussion and confrontation of views on the most appropriate ways of agricultural development that can accomplish the goals of increasing production on a sustainable basis (Hickel, 2019). Opinions are divided and range from advocating highly industrialized forms of production using genetically modified organisms to completely ignoring them and promoting the fundamental ecological principles in agriculture. At the same time, the circumstances of growing constraints and uncertainties caused by the COVID-19 pandemic (Elleby et al., 2020; Altieri and Nicholls, 2020), affected agriculture and initiate an internal transformation whose results are yet to come. Current situation, with the increasingly pronounced effects of global climate change on agriculture (Agovino et al., 2019), demonstrated sensitivity of primary agricultural production and exposes weak points of food supply chains (Ray et al., 2019). Consequently it imposes reconsideration of approach to food production and redefines its further development.

Given a current trend in agriculture and future perspective the aim of this paper is to enlighten the role of agriculture in sustainable development goals achievement. Starting hypothesis is that the accomplishment of sustainable development goals can be realized through sustainable agricultural systems such as organic agriculture, but only if organic agriculture is established and scaled out as niche *food system*.

### **Agriculture on the crossroad**

The United Nations Food and Agriculture Organization (FAO) estimates that, by the year of 2050, 9.7 billion people will live on our planet, while 70% of the global population, with the current 49%, will be in urban areas. Based on the estimates given, it is anticipated that the annual production of cereals will increase by 20% in the future, from the current 2.5 billion tones, while the meat consumption will go up to 480 million tones. In addition to the warning facts about the world population increasing need of for

food, one of the main problems is the highly subsidized and inefficient production and use of food. Approximately 88 Million tonnes of food is wasted in the EU each year and the environmental impacts of these losses throughout the food supply chain are widely identified (Scherhauer et al., 2018). The lack and unequally developed awareness of the ways and potentials of waste recycling with the reduction of energy consumption and non-renewable resources is one of the key problems facing modern agriculture (McCarthy et al., 2018).

At the same time, the dramatic increase in population on our planet has imposed the task for agriculture to continuously strive for dynamic growth in all sectors. The main goal has become to obtain cheaper product while continuously searching for new solutions to exploit renewable and non-renewable resources regardless of the means for increased production efficiency or rational use of raw materials. The question arises as to whether this is the right path for agricultural development, knowing that increasing production volumes lead to negative environmental consequences and increased pressure on ecosystems (Lal, 2016). The negative outcomes of such agriculture cannot be rationally viewed in a shorter period; however, more studies indicate its long-term unsustainability (Tuomisto et al., 2012). According to Galluzzo (2017), an improvement of food self-sufficiency has been tightly linked to an increase of pollution in terms of greenhouse gas emissions. This leads to the conclusion that the problem of food security cannot be solved by increasing production, but the potential solution can be homogeneous food distribution (Lappé et al., 1998). For that reason, primary food production is not considered as key pillar of food security and crucial point of intervention for food availability. This speaks of uneven economic relations in food production and a long term overflow of surplus value from agriculture. In the long run, this situation is unsustainable and does not give hope that agriculture is strategically oriented towards the quality and healthy food.

Taking into account subsidies for agriculture Scown et al. (2020) noted that global agricultural subsidies are over \$700 billion per year, but often drive environmental damage and fail to provide broader social benefits beyond farming. In the EU, around €54 billion per year of public funds have been spent under the Common Agricultural Policy (CAP) since 2006, but still did not address the sustainability issue of agriculture. The above mentioned authors come to conclusion that the distribution of €59.4 billion of 2015 CAP payments exacerbates income inequality within agriculture, while little funding supports climate-friendly and biodiverse farming regions. More than €24 billion of 2015 CAP direct payments went to regions where average farm incomes are already above the EU median income. A further €2.5 billion

in rural development payments went primarily to urban areas. All of this indicates that, although SDGs are present from 2016, the agriculture as a sector is still at its begging when talk about achieving these goals.

According to Semedo (2017), humanity is facing a crisis of such magnitude that if we do not drastically change our attitude towards agriculture, we have only 60 years left to produce food – hypothesis of *the 60 harvests left*. The most important global issues of the twenty-first century are thought to have been created by inappropriate solutions to some routine problems. Sometimes the impression is that *the root cause of the problem is its solution* (Bartlett, 1994).

### Sustainability of agriculture – a way forward

Sustainable development is a complex term, not yet unambiguously defined that unites in itself economic, technological, social, political, physiological and environmental aspects (UNEP, 2015; Tomaš Šimin et al., 2019). These pillars are interconnected by a series of cause-and-effect relationships that are sometimes difficult to understand and measure (Bossel, 1999, Munitlak-Ivanović 2005, Rigby et al., 2001). Janker et al. (2019) pointed out that sustainability has become a key term for linking environmental, economic and social issues, in both the sciences and politics. It can even, sometimes, be understood as an integral part of wider rural development theory (Huttunen S., 2019).

The study of economic growth and development is a phenomenon that appeared in economic theory in the middle of the 20th century. It has led to the emergence of a significant number of theories of growth and development. They were formulated by economists who, in connection with growth and development, tried to determine the laws, as well as the possibilities to manage growth and development. The terms economic growth and economic development are very often used in the economic literature. These two terms, despite the fact that they explain complementary ideas in a certain sense, are essentially different. They have diverse economic context, so in addition to their definition, there is often a need for them to be precisely defined. Economic development is defined as a process (Todaro & Smith, 2015; Bogdanov, 2015). In this process, long-term sustainable growth of production and income of a country is ensured, if it takes place in the conditions of structural improvements. It results in the realization of basic national values such as raising living standards, establishing financial independence and strengthening the political freedoms of the population. Thus, economic development is a complex category that, viewed in a qualitative sense, encompasses a whole spectrum of very different socio-economic changes that characterize the process of continuous transformation of the economy and society. This also implies the increase of the volume of national production

over time, that is, the realization of economic growth. But, the current situation in economy introduces *new reality* in humanity that will generate the end of the system as we know (Pawłowski, 2020). Moreover, as in agriculture permanent growth is difficult to sustain, we should focused our activities and strategy to secure the sustainable growth.

The understanding of the term agricultural sustainability differs depending on whether the developed country or the developing country are analyzed (Table 1), which is related to the expectations and the role that agriculture as an industry has at different stages of development of a society. Regarding agriculture, Janker et al. (2019) interpret that there are an increasing number of social certifications for agricultural products but they are often not explicitly related to sustainability but more to fair production and trade, such as fair payment of farmers and workers and transparent trading conditions. The mentioned authors in their work give a comprehensive and scientifically based overview of the prevailing attitudes and general neglect of social sustainability in agrarian systems.

They find that, due to severe criticism of the negligence of the social dimension in sustainability conceptions and assessments from social science, this dimension of research has received increasing attention in recent decades. The aim of future societies is to have agriculture that improve social welfare, but how to achieve this, while limiting environmental degradation, is a major unknown.

With this in mind, Laurett et al. (2021) conducted a study, trying to identify what can be understood as sustainable agriculture in social dimension. They argue that different authors consider different attributes as sustainable. For example, demographic factors, such as farmer's level of education, age and gender were also identified in the literature as predictors of sustainability (Siebert et al., 2006; Ma et al., 2009; Rodriguez et al., 2009; Foguesatto et al., 2020) together with altruistic feelings eg. thinking about other people well-being (Miranda-Ackerman & Azzaro-Pantel, 2017; Mupfasoni et al., 2018). However, despite advances in social research, Janker et al. (2019) conclude that the social dimension of framing is urgently needed to complement the existing environmental and economic pillars of sustainability of assessment tools, sustainability strategies and sustainability politics for agriculture.

Common to all definitions related to sustainable development is that they are associated with the scarcity of natural resources. Therefore, many of the researchers used different agricultural sustainability closely explain the sustainability triptych. The part of sustainability related to environmental protection implies the implementation of a certain economic activity, or any other form of activity in a way that will not have a harmful effect and endanger the environment currently or in the long run. This also applies to agriculture. One part of the scientific literature is

Table 1. Focuses of sustainable agriculture, source: Bogdanov, N. (2015) according to Amekava, Y. (2010)

Themes and questions	Developed countries	Developing countries
<b>The main focus of a sustainable agricultural system</b>	Sales of food in the local market on the basis of direct sales	Growth of self-sufficiency
	Providing low risk food in terms of quality	Resistance to economic crises
	Consumer support to producers	Low level of input use is an advantage for manufacturers
<b>Technical-technological practices</b>	Use of modern innovative inputs	Emphasis on traditional production practices
<b>The main actors</b>	Individual producers and consumers	NGOs and producer associations
<b>Economic motives for producers</b>	Commercial business orientation	Orientation to survival; sale of modest surpluses
<b>Goals and results</b>	Sustainable profits from agriculture for small farms	Input use reduction
	Health	Food security and self-sufficiency
	Environmental protection	

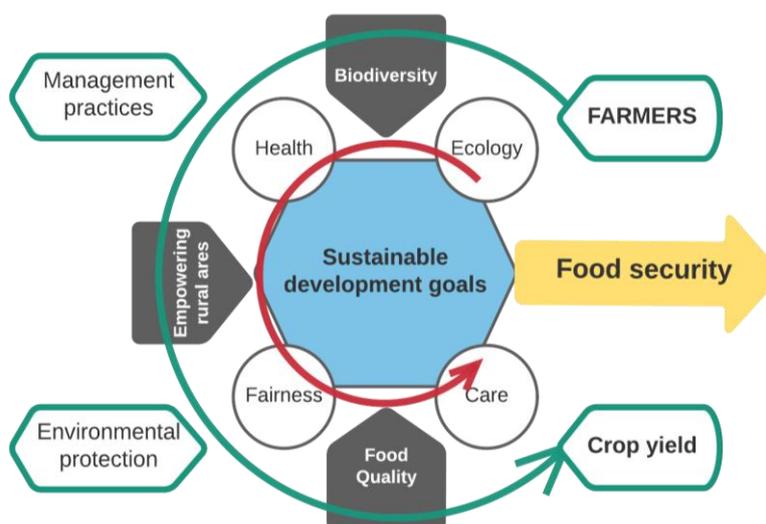


Figure 1. SDG environment for agriculture

focused on the analysis of the negative effects of modern agriculture on the environment and its degradation (Praneetvatakul et al., 2013, Krajewski, 2016), as a consequence of increasing dependence on the industry (in terms of fertilizers and pesticides) and the introduction of monoculture, for the sake of profit. Some authors (Peyraud et al., 2014) argue that one of the main problems of modern agriculture is specialization, so territories specialized in crop-growing face soil impoverishment and have to import mineral fertilizer and pesticides. Hall and Crowther (1998) discuss water pollution with nitrate and pesticides, methane and nitrogen oxide emissions, fossil fuel usage and Pang et al. (2020) inferred that shortage of water resources and soil erosion of fertilizer are important factors that restrict sustainable agricultural development. Bengochea Paz et al. (2020) conclude that agriculture is thus dependent on the natural environment, but it also heavily transforms this environment.

### Pathways to unlock the contribution from economic models to sustainability

Due to its multi-functionality, agriculture can be the backbone of different *economic models* that inherently consider the possibilities of achieving sustainability and in many ways contribute to the achievement of Sustainable Development Goals (SDG). From the economic point of view, it is considered that agriculture becomes profitable only if it uses natural resources efficiently, because in cases where the level of intensity of exploitation decreases, profit also decreases (Lazić & Šeremešić, 2017). Therefore, there is a wide range of approaches that address the future of agriculture by combining the dimensions of economy, sustainability and ecology. Initially, the term *biobased economy* was used to describe ecology-based economics. DG Research (2006) defines biobased economy as *sustainable eco-efficient transformation of renewable biological resources into food, energy and other industrial*

*products*. Bio-economy also refers to the transformation of biological resources from land, plants, animals or marine organisms (McCormick, 2014), waste, including food residues, as well as inputs for industry and energy production. In February 2012, the European Commission adopted a strategy for a sustainable biobased economy aimed at ensuring meaningful green development for Europe (EU Commission, 2012). *Bio-based economy* (BBE) or *knowledge-based bio-economy* (KBBE) are concepts that are based on biomass instead of fossil fuels and focused on the transformation of renewable resources. One of the models that target ecology is eco-functional intensification that relies on building the synergies in a multifunctional and resilient agricultural system in agreement with its surroundings. There is an idea that balanced intensification of agriculture can ensure food security (Figure 1). *Sustainable intensification* would reduce the adverse effects of agriculture on the environment and optimize food production with increased efficiency in resource exploitation (Garnett et al., 2013). Sustainable intensification in agriculture can lead to increased productivity, stability and *resilience* of agroecosystems. The green economy, on the other hand, has a similar approach. The most common type of green production and economy is recognized through biomass recycling, thus making a significant step forward in socio-economic, agricultural, energy and technological aspects. The green economy recognizes the role of sustainable agriculture as a strategic commitment because it engages large numbers of workers and potentially has a major environmental impact. According to Marković et al. (2010), ecological economy seeks to place economic activities in the context of biological and physical systems that sustain life, that is, starting from limiting human activity to environmental capacity. In this way, it shows great compatibility with organic farming. It is argued that the way in which the ecological economy manages the complex relationships that exist between ecological and socio-ecological systems can represent a good framework for decision making in organic production (Kledal et al., 2006).

In addition to the different economical approaches, contribution to sustainability could come from development of Voluntary Sustainability Standards. According to the information provided by the Eco-label Index (2020), today there are 463 standards in 199 countries and 25 sectors of the economy. The most prominent are: Rainforest Alliance, Fairtrade International, UTZ Certified, etc. Private voluntary sustainability standards are an innovative, market-based approach to promoting sustainable production and business practices. They are basically intended to be voluntary and not created, led or required by governments or state regulatory bodies. Instead, they are non-governmental initiatives that target sustainable production and consumption by generating market demand for sustainable products and supplies

and meeting those needs. They help buyers (consumers and businesses) identify sustainable food production around the globe and affect supply-side economic activity in ways that positively contribute to sustainable development. Their use is conditioned by the confidence of the customers, the conviction that they contribute to the protection of the environment and the improvement of the life of the producer (farmer). For that reason, they have many points of contact with the other sustainable systems but also can be competitive in some segments. Currently, there is a global trend towards products containing a greater number of eco-labels, which can confuse potential buyers (Nuttavuthisit & Thøgersen, 2017).

### **Relationship of organic agriculture and economic concepts in sustainability**

Organic agriculture is linked to contemporary economic concepts of sustainable development in many ways. Similar to other sustainable agricultural systems, it is based upon relationships that ensure fairness with regard to the common environment and life opportunities. It is dedicated to the establishment of ecosystem health that connects soil to our planet. From the technological side, production process results in large quantities of by-products that can be the basis for the development of an ecology-based economy. On the other hand, it is also a major consumer of green technologies but also increasingly relies on information communication technologies (ICT). With strict rules and regulation, organic production represents a holistic system that combines best environmental practices and processes with preservation of natural resources to meet demands of certain consumers (IFOAM, 2017). Organic agriculture owes its dynamic growth to the development of standards and international associations (IFOAM, Soil Association, Rodale Institute, FIBL, ISO FAR, etc.). Organic agriculture today is based on IFOAM guidelines (IFOAM, 2017) and agenda of *Organic 3.0* that envisages the transition of organic agriculture from the position of alternative production to the generally established ecological system of production as an integral part of multifunctional development for the enormous challenges facing planet Earth and our civilization (Rahmann et al., 2017). The organic market in the world is constantly growing, which is also indicated by the fact that the global sales reached 95 billion euros with an area of 71.5 million hectares (Willer et al., 2020).

Although it shows clear trends in area increase and production volume, organic agriculture still faces criticism regarding production efficiency and underdeveloped biotechnical solutions to the problems that arise in practice. This generally casts doubt on its ability to provide stable yields of adequate quality (Reganold & Wachter, 2016). Due to the relatively slow acceptance of a large number of individual innovations in organic agriculture, the only effective

solution is to creation of a small scale ecological self-sustained system that could be efficiently scaled up. Although it is the core of organic production today, standardization and co-optation of organic agriculture by national and international institutions suggests certain problems in the future. Lady Eve Balfour (1977) points out *I am sure that the techniques of organic farming cannot be imprisoned in a rigid set of rules. They depend essentially on the outlook of the farmer. Without a positive and ecological approach it is not possible to farm organically.* Ikerd (2018) stressed that when an organic farmer is not a person but a large publicly traded corporation, or production takes place under conditions dictated by such an economic entity, production and profit inevitably take precedence over *farm integrity*. Thicke (2017) by analyzing the U.S. organic agriculture sector warns that the impact of industry in organic farming is much greater than the producers' influence. This created the preconditions for the emergence of "organic light" model. The concept of *organic light*, presented by Guthman (2004), anticipated big agribusiness model of farming practices and adaptation (specialization to high value crops) leading to the conventionalization of organic production. Such a trend leads to the conclusion that it is necessary to redefine the positions in organic farming in order to ensure and preserve its integrity for the future.

### The context of agriculture in SDG achievements

The UN Agenda 2030 can provide a framework for formulating a new Sustainable Development Strategy, as well as other sectorial policies that are directly focused on the specific SDG goals (Breuer et al., 2019; UN, 2020). This agenda has taken the initiative to eradicate extreme poverty, achieve universal education and promote gender equality and environmental protection. SDG adopted in September 2015, are striving to align development with the challenges that humankind expects by 2030 (UN, 2015). They represent a universal set of 17 goals (with 169 targets that constitute them) and indicators that UN members can use to develop their own national agendas and policies by 2030. The defined and adopted goals of sustainable development provide guidance for the well-being of all humankind and shift the focus towards sustainable and compliant development that will lead to the advancement of all spheres of human being (Sachs, 2020). In their research, Lamichhane et al. (2021) investigate the status of OECD countries' sustainable development performance towards reaching the 17 SDGs. They found that Sweden had the first rank (when it comes to fulfillment the SDGs), which was followed by Finland, Norway, and Denmark, while Mexico was ranked as the last. Within Europe a high performance of the Northern countries and a poor performance of the Southern countries can be confirmed (Drastichová & Filzmoser, 2019).

As an essential link between people and the planet, agriculture and food are high on the list of priorities in SDG agenda. The reason is that agricultural production and meeting the needs of safe food are the main prerequisites for a healthy and productive life and for the advancement of society (Goals 1 & 2). As SDG provide a strategic framework for securing and managing development, they also provide the opportunity to achieve sustainability by selecting appropriate production systems and targeting environmental values.

As a result, the agricultural sector has a new opportunity to offer solutions that will conserve resources and provide food security with high cost-effectiveness. The assumption is that in order to achieve SDG, it is not enough to change the way of production in agriculture, but to change the whole food production chain, the so-called *Food system*, because only in this way food security can be guaranteed (Figure 1). In addition to that, it is very important that there is a change in awareness, not only among producers but consumers as well.

According to Mensah & Casadevall (2019) new paradigm is needed, which involves raising awareness of the need to reconcile human economic development with environmental constraints and to align it with the social and cultural values of the region in which it is performed. Thus, there is a broad consensus that without a developed agricultural sector it is not possible to achieve a sustainable development of civilization (UN, 2012; Griggs et al., 2013), where it is necessary to simultaneously develop moral responsibility for the use of non-renewable and interdependent resources that agricultural production relies on.

Meeting the SDG is particularly challenging in the agricultural sector given the heterogeneity of local conditions, the diffuse nature of its environmental impacts, and the important interactions with various aspects of sustainable development – from education and poverty alleviation, to human health and the environment. And yet it is precisely because of these interactions are vibrant, resilient because of that sustainable national agricultural sectors are key to the SDGs' success (Kanter et al., 2016). However, few countries have developed a clear understanding of how to make transformative changes in their often complex and diverse agricultural and food systems that would enable them to address these kinds of key cross-sectoral issues in a coordinated way.

### Sustainable Development Goals and organic agriculture

In recent years the significant progress has been made in recognizing organic agriculture as a sustainable integration of economic, social and environmental dimensions (Eyhorn et al., 2019). The comparison on SDG targets and organic agriculture principals and goals showed many overlapping and the

deep linkage between them. (Sachs, 2020; Willer et al., 2020). The empirical evidence showed that organic agriculture in developing country has the potential for achieving their development goals (Setboonsarng & Gregorio, 2017). Even so, there is very limited literature dealing with this issue.

By considering organic agriculture as a mechanism for achieving SDG, different institutions can be mobilized and closely involved in the development of capacity for its implementation. Creating a favorable environment for small farms, converting conventional land to organic, and aiming at the development of this sustainable branch of agriculture would consequently create more favorable socio-economic conditions for rural areas and the employment of the rural population. Given that the organic food production involves a short value chains and reduced number of intermediaries between producers and consumers scaling out organic agriculture can encourage sustainable development (Šeremešić, 2020). Preserving the diversity of rural performance through the promotion of organic production, i.e. its integration with other business activities, would create favorable conditions for the expansion of multifunctional activities such as rural, eco-and ethno-tourism, the production and processing of products according to traditional recipes, the preservation of old crafts and other types of services that would create added value and encourage rural growth, but above all, it would create the conditions for young people to stay in the rural areas and develop small and self-sufficient farms.

The implementation of such strategy must be organized in a top-down manner so that it can reach every producer, otherwise it will not give adequate results. Such an approach requires a SDG agenda that can offer a smooth transfer of knowledge, technology and decision-maker support. This view is in contradiction with the approaches of agro-ecological science where the reverse path of establishing a sustainable system (the bottom up approach) is recommended. With bottom up path the disconnection of participants or institutions in the chain impedes the achievement of the goals set. Developing consumer awareness of the importance and value of organically produced food, followed by an increase in people's purchasing power, will lead to the conversion of conventional plots into certified organic ones, where smaller family farms should find the largest share. Encouraging such sustainable directions for agricultural development, especially in protected areas (natures reserves, Natura 2000, etc), through the support in the training of potential producers, the procurement of equipment and certification of organic production, the introduction of balanced crop rotation and the cultivation of cover crops, would preserve soil resources, biodiversity and affect the creation of healthier agroecosystems. In addition to that, it will allow for organic producers to create a

production space on their farms where the boundary between nature and human activity is barely visible and the benefits generated over a long period of time will serve future generations.

Despite its undeniable significant achievements in environmental protection, and high awareness of consumers, which indicate a vast potential for the development of organic farming, a number of major hurdles and problems still lie ahead and need to be overcome. Firstly, focusing on single dimension in order to optimize the system, in most cases, failed to deliver functional sustainability. Therefore, it is necessary to follow a holistic approach and scale out niche production system under organic agriculture. Generating capital on all levels of value chain, efficient use of available funds, co-creation of knowledge, efficiency of production, processing and marketing are all important issues to be addressed in the course of accomplishment of SDG through organic production.

## Conclusion

In the overall SDG accomplishment agriculture and especially sustainable agriculture has made a significant contribution. However, the sustainable agriculture sector that participates in this achievement has not adequately recognized and rewarded by the decision-makers. The various methods of sustainable agriculture exist but only a few of them can be relevant for SDG achievement. One of the most prominent is organic agriculture because it seeks to redesign whole food systems to achieve ecological, economic, and social sustainability. Up to now, organic agriculture showed huge perspective in combining the scientific research, community based innovation and information and communications technologies (ICT). Global interest in organic agriculture is growing, especially in areas where the conventional farming system has degraded resources essential to agricultural production. The best alternative for further expansion and development of organic agriculture is its integration into a global strategic framework such as the SDG as to connect various aspects of sustainable agriculture and stakeholders and to secure a pivotal position in healthy and safe food production while protecting the environment. Consequently, SDG will help organic agriculture to play a central role in agriculture expansion in the future and simultaneously can contribute the new paradigm in agriculture *Agriculture 3.0* and *Climate-smart agriculture*.

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