



ULST Timisoara
**Multidisciplinary Conference on
Sustainable Development**
21-22 May 2026



ORGANIC FARMING – A SUSTAINABLE SOLUTION TO REDUCE THE IMPACT OF CLIMATE CHANGE

Manuela – Dora ORBOI¹, Andreea Adriana PETCOV¹, Ana Maria VÎRTEIU¹,
Ioana GROZEA¹, Simona Cristina CONSTANTINESCU¹
affiliation ¹*University of Life Sciences „King Mihai I” from Timișoara*

Abstract: *Climate change is one of the most important global challenges of the 21st century, with significant effects on natural ecosystems, the world economy and food security. Agriculture, a fundamental sector for global food security, is in a double situation: on the one hand, it is strongly affected by climate change, and on the other hand, it contributes to its amplification. In this context, organic farming is emerging as a viable and sustainable alternative to conventional agricultural practices. Organic farming is an essential tool in combating climate change and promoting sustainable development, and it needs to be supported by appropriate public policies and investments in the agricultural sector..*

• Introduction

In recent decades, **conventional agriculture** has relied on the intensive use of chemical fertilizers, pesticides, herbicides and fossil fuels, with the aim of rapidly increasing agricultural production. These practices have contributed to increasing agricultural yields, causing numerous negative effects on the environment, such as soil fertility degradation, groundwater and surface water pollution, biodiversity reduction and increased emissions of carbon dioxide, methane and nitrous oxide. An important role of **organic agriculture** is its contribution to reducing the effects of climate change by reducing greenhouse gas emissions and increasing the carbon storage capacity of the soil.

Organic agriculture promotes the responsible use of natural resources, respect for natural biological processes and the reduction of negative impacts on the environment. The growing interest of consumers in healthy, safe and environmentally friendly food products has led to a continuous development of the organic products market.

Organic farming is not only an alternative to conventional agricultural systems, but also a way to protect natural resources, conserve biodiversity and support sustainable rural development.

• Material and method

The research used information from scientific articles, specialized studies, international reports and statistical data on organic farming and climate change. Research methods specific to the agricultural and sustainable development fields were used, based on documentary and comparative analysis of scientific and statistical information. The documentation aimed to identify the main organic farming practices that contribute to reducing the negative impact on the environment, such as crop rotation, the use of organic fertilizers, composting, biodiversity conservation and reducing the use of chemical pesticides.

• Results and discussions

The analysis highlights that organic farming can significantly contribute to reducing the impact of climate change through multiple ecological and economic mechanisms.

Organic farming plays an important role in reducing the effects of climate change and protecting natural resources. By eliminating or reducing the use of pesticides and chemical fertilizers, organic systems contribute to reducing soil, water and air pollution, as well as reducing greenhouse gas emissions resulting from the production and use of these substances.

An important aspect identified in the analysis is the ability of organic farming to improve soil fertility and structure through the use of compost and organic fertilizers. At the same time, crop rotation and the use of nitrogen-fixing plants contribute to the natural restoration of the soil and the reduction of erosion.

From an economic and social point of view, organic farming can represent an opportunity for the development of rural communities, by capitalizing on high-value-added products and by creating jobs in the agricultural and agri-food sector.

The implementation and expansion of organic practices requires effective agricultural policies, financial support programs, education and information activities for farmers and consumers, as well as investments in agricultural research and innovation..

• Conclusions

Organic farming is a sustainable and effective solution to reduce the impact of climate change by promoting environmentally friendly agricultural practices and the responsible use of natural resources. Organic farming practices contribute to reducing greenhouse gas emissions, preserving soil fertility, protecting biodiversity and using water resources efficiently.

In conclusion, **organic farming** is not just an alternative method of agricultural production, but an essential direction for the development of sustainable agriculture, capable of reducing the impact of climate change and protecting natural resources for future generations. By promoting responsible agricultural practices and the efficient use of natural resources, organic farming contributes to the development of a healthier, safer and more environmentally friendly food system.