



# Study On The Importance of Protection Curtains In The Sustainable Development Of The Rural Area

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**Abstract:** Achieving sustainable development necessitates finding an equilibrium between the imperative for ongoing economic and social progress and the safeguarding and enhancement of the environmental condition. This equilibrium is crucial to guarantee the well-being of both current and future generations. In recent years, Romania has been faced with major disasters that have brought the issue of natural risks to the fore, and we believe that the establishment of forest protection curtains would be a particularly important component of the sustainable development of rural communities. The research aims to make a substantial contribution to knowledge in the field and to alert decision-makers to the role and importance of defenses in the sustainable development of rural areas and beyond. Rural development and planning programs should aim to increase forest cover through afforestation and the establishment of forest protection curtains. From a methodological point of view, the research was based on an interdisciplinary approach, which combined qualitative and quantitative methods, such as: documentary analysis and specialist consultations in the field of forestry, agriculture and rural development. Forest protection curtains represent a viable and effective solution for reducing the negative impact of extreme climatic factors on agriculture and rural infrastructure. They contribute significantly to reducing soil erosion, protecting biodiversity, limiting the use of chemicals, as well as developing the local microclimate. In addition, the introduction of forest curtains has a positive impact on the local economy, by increasing agricultural productivity and reducing damage caused by strong winds or drought.

## • Introduction

To solve the problems of environmental degradation and economic development is recommended transformation of nations' goals and policies to support sustainable development through out the world (Lemons, 1995). The promotion for the concept of **sustainable development** gained prominence during the 1992 United Nations World Conference on Sustainable Development held in Rio de Janeiro.

**The concept of sustainable development is defined in the literature as follows:** *"Humanity can achieve sustainable development - to ensure that present needs are met without compromising the ability of future generations to meet their own needs"*, Report of the UN World Commission on Environment and Development, known as the Brundtland Report, 1987.

The key issue of sustainable development is the clash between the growing needs of the population, the limits imposed by the planet's resources and the continuing degradation of the environment. The rise in global average temperature is known as global warming, but climate change includes not only a change in average temperature, but also changes in various aspects of weather, such as wind patterns, amount and type of precipitation, and the type and frequency of extreme weather events. Climate change is the most global process facing mankind this century in terms of environmental protection.

## • Material and method

In terms of research methodology, the study started with scientific documentation. The scientific documentation is combined with direct documentation and consists of the analysis of the practical reality providing information on the field in which the topic under investigation is integrated. The analysis and interpretation of the data that characterise the practice of the field under study have outlined the problem that was the basis for the research. Since documentation is not only a necessary stage of the research but also a very important one for the knowledge of the scientific experience in the field under research, the secondary research was based both on electronic sources (databases available on various specialized websites, institutional websites) and printed sources (books, studies, guides, reference journals).

- The research it self also focused on the collection and analysis of information on the possibility of extending the protection curtains through European projects for the countryside in our country. The main method used is content analysis. The research was carried out within the Research Centre "Sustainable Rural Development" of the Faculty of Management and Rural Tourism of the University of Life Sciences "Regele Mihai I" in Timisoara. The Research Centre "Sustainable Rural Development" has as its activity/objective to carry out research in the field of economics and sustainable rural development, for teachers and students of all educational cycles: bachelor, master and PhD.

## • Results and discussions

- **One of the main ways of ecological reconstruction and creation of a natural balance is long-term regional greening through reforestation and the creation of the national system of forest protection curtains.**
- **The protection curtains are established by forest vegetation formations planted in various lengths and widths relatively narrow, placed at a certain distance from an object in order to protect it from the effects of the harmful factors. This reduces the wind speed over a distance of 5 to 10 times their width. Thus, the wind speed is reduced and there are made some local changes of the wind direction, especially to those near the ground and the curtain.**
- **The agriculture system with protection curtains is a part of the development strategy and is suited to the country's modern legislation. According to the requirements of European integration, integrated environmental management for sustainable agricultural development includes conservation and sustainable use of bio-resources and biodiversity, agro-ecosystems reconstruction, goals that can be achieved by planting forest protection curtains.**

Category	Key Effects
Environmental Benefits	Carbon storage, dust filtration, noise reduction, air purification, biodiversity protection
Agricultural Benefits	Soil conservation, increased fertility, reduced erosion, improved microclimate, higher crop productivity
Economic and Social Benefits	Increased resilience to climate change, reduced infrastructure damage, improved rural economy

Figure 1 The main benefits of protection curtains

- **The main benefits of setting up the protection curtains are primarily on the environment by increasing carbon storage, reducing air temperature and humidity raise, by capturing the dust and air filtration, stimulating exchanges of air, reducing noise and gaseous pollution, having positive effects on biodiversity and farm land by improving the conditions of agricultural land for growth and development for adjacent crops, by increasing fertility conditions and soil conservation (maximizing humidity and humus formation conditions and reducing erosion and deflation - figure 1) and last but not least, by increasing production - figure 2.**

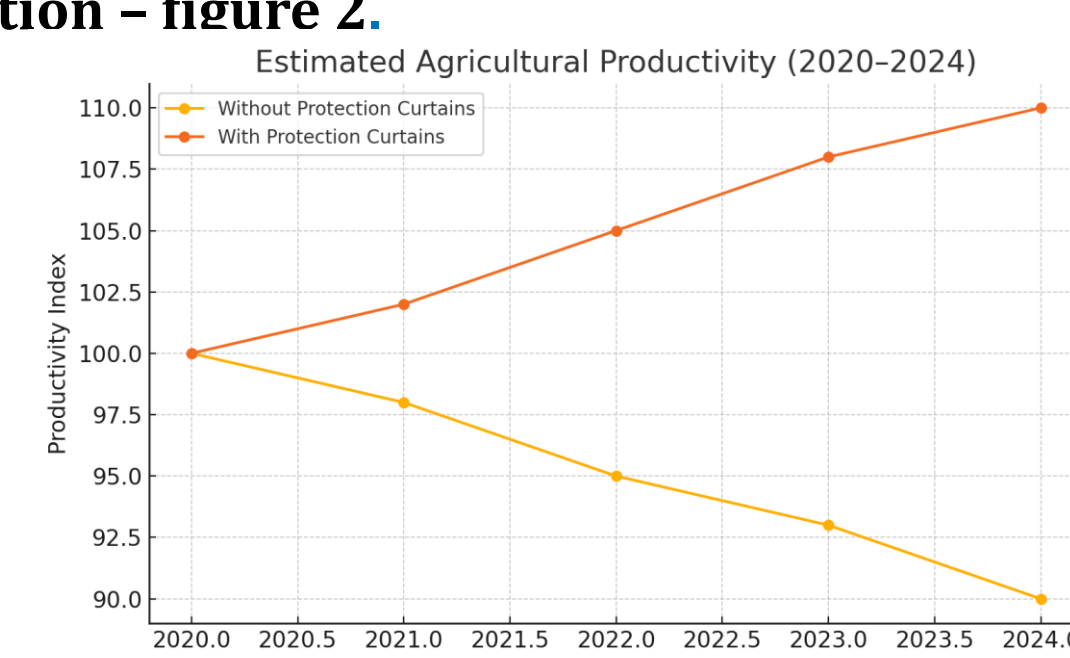


Figure 2 Estimated agricultural productivity

## • Conclusions

**Nowadays, in sustainable agricultural development schemes, it is strongly emerged the need of establishing the forest curtains with their numerous protective effects on crops, causing stability and ecological balance, biodiversity and pesticides pollution prevention etc.**