

# ENVIRONMENTAL PROTECTION IN ROMANIA THROUGH EUROPEAN STRUCTURAL FUNDS – A SPATIAL ECONOMETRICS APPROACH

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**Abstract:** European Structural Funds have been created with the clear goal to redistribute money among European Union members in such a way as to help poorer regions diminish the gaps between them and the richer ones. The present study assesses this problem for the Structural Operational Programme Environment in Romania. Using spatial econometrics methods, we evaluate two issues on the sample of 42 Romanian counties. The first one is if any clusterization process takes place in what regards contracting funds through ESF for environmental protection projects. The second one is intended to test whether the main principle of the ESF is satisfied – helping the poor in a sustainable development process. Using the quartile maps and the spatial Moran's  $I$  autocorrelation coefficient we show different results for the clusterization topic. When considering the budget value of the projects implemented through SOP ENV, both as total and as eligible share, Romanian counties group based on a positive global spatial autocorrelation. This means that counties with approximately the same budget levels are neighbours. Transylvanian counties have gained the most out of the projects on environment. When the number of contracts is assessed, the distribution of the counties proves to be random and no global spatial autocorrelation was found. Moreover, the map analysis shows that, in general, there is a negative relationship between the value of the budget and the number of contracts. The spatial regression analysis shows the violation of the ESF principle. The coefficients of the GDP are positive. This implies a direct relationship between the richness of the county and the projects implemented through the SOP ENV. Thus, instead of being used by the poorer regions, money goes to the richer ones. The higher the GDP, the higher the value of the budget for the environmental protection programmes financed through European funds. The GDP also positively influences the number of contracts scheduled or signed, but the only at a 10% significance level.

**Keywords:** SOP ENV; sustainable development; environment; Romanian counties; spatial distribution; spatial regression model.

**JEL classification:** C31; Q56.

## 1. Introduction

The present paper combines two of the main issues of interest nowadays – European Structural Funds and the environment. For a young member state as Romania, financial aid in the form of the Structural Funds is the main entrance channel for investments. It helps the receiving country modernize its infrastructure

and improve the skills of the labour force in order to diminish the gap between it and the older members. But the efficiency of such programmes depends on the capacity of the receiving country to absorb these funds.

Environmental protection is the subject of continuous concern internationally. Economic activity and the lifestyle have affected environment in a great manner. Problems such as pollution, global warming, etc are now intensively discussed worldwide and solutions are sought. Companies are required to improve their production plants to become more environmental friendly. In the same time, governments search for methods to reduce pollution. Dragos and Dragos (2013) consider the environmental quality of a country as a specific factor for this field, accomplished through adequate governmental politics and population self-awareness.

Considering all these, we have decided to combine the two issues by assessing the projects on environment financed in Romania through the European Structural Funds.

The goal of the ESF is to help poorer members of the European Union reduce discrepancies that exist between them and the richer ones. However, practice has shown that it is not always true. There are many cases in which such projects were implemented by the latter group as they also had the financial resources necessary for the contribution of the beneficiary. Is it also the case of the environmental protection programmes in Romania? In order to reach a pertinent conclusion we have employed spatial econometrics methods to evaluate the budgets and the number of contracts of the projects implemented in the Sectoral Operational Programme ENVIRONMENT. The spatial distribution based on counties was assessed through different kinds of maps fated to emphasize whether any clusters appear or there is a random distribution of values in the sample. Afterwards relationships between variables were studied through different spatial econometric methods, including spatial autocorrelation and spatial regression.

Sectoral Operational Programme Environment (SOP ENV) is one of the seven operational programmes under the "Convergence" objective of the European Union for the period 2007-2013.

SOP is the most important financing program for municipal environmental infrastructure and continuous investment in the pre-accession programs (Phare, ISPA and SAPARD). SOP is based on the objectives and priorities of EU environmental policies, reflecting Romania's international obligations and national specific interests.

The overall objective of the SOP ENV is to improve the living standards and environmental standards and at the same time to contribute to the achievement of the European accession commitments and environmental regulation compliance. To achieve this overall objective, the SOP ENV finances investments for the following sectors:

- The water/wastewater sector – is allocated 60% from EU SOP funds to this sector;
- Waste management sector/rehabilitation of historically polluted lands - investments in the sector aim to create integrated waste management systems at regional level, in parallel with the closure of non-compliant landfills;
- The heating sector – the funds allocated for the sector aim to reduce the

- emissions from municipal heating plants;
- The nature protection sector – the objective is to ensure an adequate management of the protected areas and to prevent the degradation of biodiversity and natural resources;
- Flood protection and coastal erosion reduction aim to protect people and goods from the devastating effects of flooding;
- Technical Assistance. Activities financed from the technical assistance are intended to increase the absorption capacity of EU funds by financing the project preparation and monitoring activities, evaluation and control of projects, publicity and information actions regarding the SOP Env.

The program is financed by two funds:

- European Regional Development Fund (ERDF) –for the waste sectors, nature protection and technical assistance;
- Cohesion Fund (CF) - for the water, heat and flood protection sectors.

The SOP ENV is created to reduce the gap between the EU and Romania regarding environmental infrastructure both in terms of quantity and quality. This should be reflected in effective public services, taking into account the principle of sustainable development and the principle of "polluter pays".

Analyzing the objectives above, we can mention that what follows the SOP ENV program is the development and maintenance of sustainable development, the economic sustainability of the beneficiary countries and the social empowerment of all the people.

Sustainable development is perhaps the key element of the humanity in the XXI century (Ienciu, 2009). Sustainable development became a very important element once with the advent of Brundtland Report in 1987 and with the awareness of the greenhouse effect. The most widely accepted definition of sustainable development is the one proposed in this report. Brundtland Report defined sustainable development as meeting the current needs without compromising the ability of future generations to meet their own needs (WCED, 1987).

Sustainable development does not concern only with the environmental issues. The reference document of the World Summit on Sustainable Development in 2002 (WSSD, 2002) speaks of the independence and mutual support pillars of sustainable development as economic development, social development and environmental protection.

Closely related to sustainable development is the concept of sustainability. Sustainability is a concept that refers to a fair allocation of resources on a global scale. Equity or fairness comes from a responsible and rational distribution of resources and opportunities between the present and future generations (O'Dwyer and Owen, 2005; Dragomir, 2008: 2).

So far, sustainability can be seen as the ultimate objective that an entity/country wishes to attain, a status or a desired condition, while sustainable development is the process by which the human activity is moving towards sustainability and maintains this status (Hibbitt, 2001).

Social responsibility is interpreted as the social dimension of the sustainable development concept. In this case, the entity encompasses social responsibility, economic responsibility and environmental responsibility (Zwetsloot, 2003, Desjardins, 1998).

SOP ENV program is an important step in achieving these objectives so necessary

