



***“Gheorghe Asachi” Technical University of Iasi, Romania***



# DEVELOPMENT OF AGRICULTURAL CLIMATE CHANGE VULNERABILITY INDEX: THE CASE OF MOLDOVA

**Alina Ianioglo\*, Tatiana Gutium**

*National Institute for Economic Research, Academy of Economic Studies of Moldova, 45 I. Creanga Street,  
Chisinau, MD-2064, Republic of Moldova*

## Abstract

As one of the main sectors of Moldova's national economy, agriculture is particularly vulnerable to the impacts of climate change. Climate change influences the sustainability of the agricultural production system. In this context, considering regional peculiarities, it is essential to assess the vulnerability of the agrarian sector to climate change. The research aims to develop a composite index of agricultural vulnerability to climate change adjusted to the regional peculiarities of Eastern Partnership countries, such as the Republic of Moldova. The paper presents the Vulnerability Index of the Agricultural Sector to climate change for the country's administrative-territorial units. A set of indicators was determined to develop the composite index and assess the agricultural sector's vulnerability to climate change. The normalization method was used to bring the disparate data to a single scale. Calculations performed using the developed index revealed that every second district out of 35 is highly or very highly vulnerable. Four districts in the southern region (Leova, Basarabasca, Taraclia, and Cantemir) and two in the central region (Hincesti and Nisporeni) exhibited a very high level of vulnerability. One of the reasons for vulnerability is water shortage. To solve this problem, irrigation systems must be restored, reservoirs must be built to store rain and flood water, and drip irrigation must be practiced in agriculture. To reduce the vulnerability of agriculture, it is necessary to develop new crops more resistant to drought, low temperatures, and diseases.

**Key words:** adaptive capacity, agriculture, climate change, composite index, sensitivity

Received: July, 2024; Revised final: March, 2025; Accepted: April, 2025

\* Author to whom all correspondence should be addressed: e-mail: [alina.ianioglo@gmail.com](mailto:alina.ianioglo@gmail.com); Phone: +373 22501114