Tropentag, September 9-11, 2020, virtual conference

"Food and nutrition security and its resilience to global crises"

Economic Analysis of Mexico's Strategy to Tackle Climate Change through Conservation Agriculture

María del Pilar Salazar Vargas[1], Carlos Matias Figueroa[2]

[1]*National Institute of Ecology and Climate Change, General Coordination of Adaptation to Climate Change and Ecology,*

[2]*National Institute of Ecology and Climate Change, General Coordination of Adaptation to Climate Change and Ecology, Mexico*

Abstract

In the context of the Paris Agreement, Mexico committed to reduce 22 % of its greenhouse gas (GHG) emissions. One of the strategies to accomplish it focused on the agriculture sector is to implement Conservation Agriculture (CA), it is a farming system that can prevent losses of arable land while regenerating degraded lands. It promotes the conservation of environmental services like soil carbon storage by maintaining a permanent soil cover, minimum soil disturbance, and diversification of plant species. It enhances biodiversity and natural biological processes above and below the ground surface, which contribute to increased water and nutrient use efficiency and to improved and sustained crop production. Mexico's strategy includes the reduction of slash and burn practices in key crops, maize and wheat, and the implementation of diverse sustainable agricultural practices in four million hectares by 2030, in the most ambitious scenario. Also, this strategy has the potential to mitigate 1.36 million tons of carbon dioxide equivalent by 2030. To analyse the economic implications of developing this strategy, the National Institute of Ecology and Climate Change (INECC, for its acronym in Spanish) in cooperation with the Danish Energy Agency (DEA) conducted a thorough study which considered benefits like savings in forest fires and improved crop yields, and the labour cost to reduce slash and burn practices. The first results indicate that this strategy brings more benefit than costs, with a net present value of 2,313 million dollars and a carbon abatement cost per ton of -130.83. This indicates that the strategy would have positive environmental results and at the same time increase rural income. These results are relevant in terms of public policy design and finance given that they show that environmental responsible production practices can improve rural livelihoods while tackling climate change.

Keywords: Climate change, conservation agriculture, economic analysis, Nationally Determined Contributions

Contact Address: Carlos Matias Figueroa, National Institute of Ecology and Climate Change, General Coordination of Adaptation to Climate Change and Ecology, Carretera Picacho-Ajusco 4219 Tlalpan, 14210 Mexico City, Mexico, e-mail: carlos.matias@inecc.gob.mx