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Are there differences and analogies in the environmental aspects among agricultural sectors of the European countries?

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Abstract

Abstract Agriculture has a crucial role in preserving ecosystems health. As the European Environmental Agency highlights, living 'within the limits of our planet means that the food system is optimising outcomes in terms of ecosystem health, contributing to ecosystem resilience, rather than degrading biodiversity, ecosystem services and the natural resource base". Changes in agricultural practices during the 20th century were among the major driving forces for environmental degradation in countries of European Union (UE). Food and fiber production soared due to new technologies, mechanization, increased chemical use and governmental policies that favoured maximizing production. The negative environmental impact of intensive agricultural practices on natural resources in several countries of the UE is caused by the high utilization of inputs such as nutrients, pesticides water and energy. However, the linkages between agricultural activities and environmental impacts are further complicated due to the spatial and temporal variation in the effects of agriculture on the environment within and between the 28 European countries, and because the impact of many farming practices on the environment can be gradual and cumulative over time. In light of above, the purpose of this paper was to identified, with the application of Multivariate Analysis, the "similarities" and the "dissimilarities" of the sustainability of agricultural systems among the European countries. The analysis was carried out taking into account a set of 28 Agri-environmental Indicators (AEIs) provided by the Eurostat database. These agrienvironmental indicators were aimed to provide information on the farmed environment, track the impact of agriculture on the environment and inform agricultural and environmental policy decisions, which allows them to serve as analytical instruments in research and provide thresholds for Legislation purpose. An overview of the literature concerning the impacts of agriculture on the environment was provided. Finally, the results of Factor Analysis and Hierarchical Cluster Analysis were discussed.

Keywords : Agri-environmental indicators, Multivariate statistical analysis, Sustainability