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Agricultural Landscape Change and Land Footprint: The Case Study of Sardinia, Italy

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Abstract

Urban population growth has triggered a process of change in rural areas and landscape patterns. This transformation has a twofold consequence. On one hand, land conversion causes loss of biodiversity and habitat destruction (Deng et al., 2017). On the other hand, higher levels of food demand, together with the reduction of available land, endanger the capability of supplying food at local level. The local food systems and food security is increasingly dependent by trade and transport costs. Local food system conservation is increasingly recognized as a key factor in the pursuit of sustainable and bio based economy perspective. Land food footprint is a significant tool in assessing food self-sufficiency, land displacement and thus food system sustainability. In this paper we analyse the evolution of land food footprint and landscape diversity in Sardinia over the period 1970-2010 to assess the impact of land use change and food systems evolution. Time series show a decrease in landscape diversity and greater degrees of few landscape elements dominance, agricultural specialization and declining self-sufficiency. In summary, these results show that diversified and traditional crops have been replaced by specialised, less labour-intensive crops and that the local food system is integrated by food imports, resulting in land unbalance (land displacement), in landscape features simplification and in rural settlements abandon.

Keywords: Land food footprint; Landscape diversity; Food planning; Landscape quantitative analysis; Land use.
