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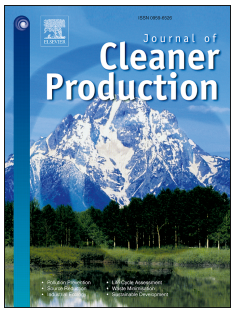

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ASSESSING THE ECO-EFFICIENCY IMPROVEMENTS OF SINISTRA OFANTO IRRIGATION SCHEME

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Abstract

This study investigated the options for eco-efficiency improvement of Sinistra Ofanto irrigation scheme (Apulia region, South-East Italy). The analysis was performed by using a novel multi-criteria meso-scale approach and modeling tools developed within the EcoWater project. Ecological assessment was made on the basis of the life cycle assessment conformed to ISO 14040-14044 using mid-point (problem-oriented) environmental impact categories, while the economic performance was measured using the total value added to the system's final products due to water use and applied management practices. The baseline analysis indicated that the upgrading of the value chain through the adoption of innovative technologies aimed at the improvement of indicators which are related to the use of non-renewable energy sources, fresh water abstraction and fertilizer application. The innovation process was driven mainly by cropping pattern and related hydrological conditions (i.e., precipitation pattern) which directly affected water