



## **Irrigation Water Allocation in the Embanked Great Island of Brăila, Danube River, Romania**

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One of the extended natural units in the Danube floodplain, Balta Brailei (76,700 ha), located in South-East of Romania, was subject of complex amelioration works such as embankment, surface and subsurface drainage and irrigation after 1963. Between 1975 and 1980 the new land, called Embanked Great Island of Braila, was arranged on 69,730 ha for sprinkler irrigation, of which about 53,000 ha with buried pipes and pressure stations. Water for irrigation is taken from Danube River through six reversible pumping stations, designed to provide a discharge of 37.99 m<sup>3</sup>/s, and conveyed to the 34 electric pressure stations by channels totaling 140 km in length. During the recent years, important investments for updating the irrigation infrastructure had been accomplished, more than 350 sprinkler irrigation center pivots are currently installed on 48,000 ha. In this context, irrigation water allocation become an important task during drought periods when different water restriction levels are imposed by the National Administration „Romanian Waters”. For improving irrigation water allocation during drought periods at the level of Water Users’ Associations and Water Management Authorities, a Decision Support System that integrates GIS technologies with seasonal and in-season weather forecast technologies and remote sensing technologies was created in the framework of the MOSES Project. In-season irrigation forecast, performed using MOSES Soil Water Balance module, is one of the main product of MOSES DSS for an efficient water allocation in irrigated agriculture. The MOSES DSS is tested in four Demonstration Areas (DAs) located in Italy, Spain, Romania and Morocco. In Romania, in the Embanked Great Island of Braila, irrigation estimates (2016-2017) carried out with MOSES SWB module are compared with irrigation estimates obtained using MABIA crop water requirement model implemented in Water Evaluation and Planning (WEAP) software (Stockholm Environment Institute, 2011) and with in-situ soil water measurements (Acclima TDR multi parameter sensors as well as Decagon, 10HS, capacitance sensors) in order to test the reliability of the MOSES irrigation forecasts. Agriculture water demands estimated using different approaches are used to create water allocation scenarios in the Embanked Great Island of Danube River, at Braila, Romania. This work is financed by the European Union’s H2020 research and innovation program under grant agreement No 642258 (Moses Project).