

Management practice: Water management in arable lands



Water management in dry areas results in higher levels of crop yields.

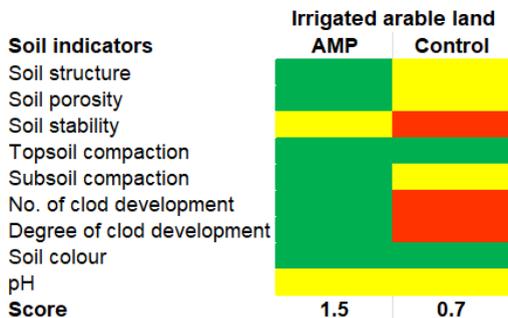
Together with an appropriate cropping system, the water management represent important conservation technologies for soil fertility. Also a good quality of irrigation water that is applied to crops will not negatively affect the soil indicators.

Soil threat: drought

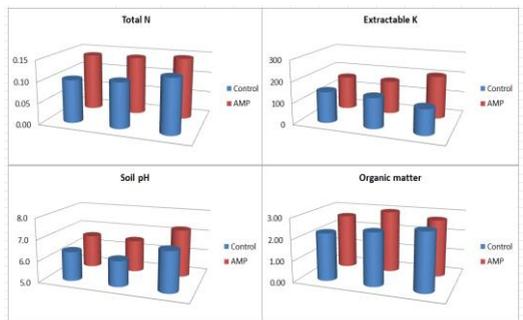


According to UNCCD Braila County from south-eastern part of Romania is located in arid region with an average annual temperature of 10.9°C, long-term average annual precipitations of 447 mm, potential evapotranspiration of 705 mm (750-800 mm in dry years) and an average climatic water deficit of 258 mm (350-400 mm in dry years). The biophysical aridity index places the Demonstration Site in area with moderate risk to desertification.

Scientific evidence



Visual Soil Assessment shows that application of irrigation on cultivated arable land has positive effects on almost all soil indicators when compared to a control plot.



Measurement of the relevant soil quality properties (e.g. organic matter content, soil pH, total Nitrogen content, extractable Potassium content), shows that, in general, better results were obtained under the AMP plot when compared with the control plot.

Location of demonstration site



Location of demonstration site:
Silistea, Maxineni, Movila Miresii villages,
Braila County, Romania

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Further details about Water management in arable lands:

Overview: Sustainable irrigation water management involves irrigation scheduling and irrigation technology. Advanced irrigation technologies and scheduling are expected to improve water use efficiency, and adopted in combination with other environmental friendly technologies at the farm level will increase the soil quality. Irrigation provides in the arid south-eastern part of Romania a powerful management tool against the scarcity of rainfall. Irrigation also makes it economically attractive to grow high-yielding crops.

Costs: There is an initial cost with the purchase of the irrigation equipment, but the farm income can increase as a result of higher crop yields due to irrigation application.

Establishment/maintenance activities and inputs: The most frequently used irrigation technique is sprinkler irrigation. Sprinkler irrigation is a method of applying irrigation water which is similar to rainfall. Water is distributed through a system of pipes usually by pumping. It is then sprayed into the air and irrigated entire soil surface through spray heads so that it breaks up into small water drops which fall to the ground. Sprinklers provide efficient coverage for small to large areas and are suitable for use on all types of crops. It is also adaptable to nearly all irrigable soils since sprinklers are available in a wide range of discharge capacity. Irrigation technique, together with other conservation practices, such as diversified crop rotation and covering the soil on more than 30% of surface with plant residues from the previous crop, will mitigate the soil structure degradation. In this way, in the long term, the soils remain protected from destructive factors, as e.g. erosive heavy summer rainfall events.

Use of practice: This practice is commonly used in the demonstration site area. Irrigation techniques and rates are established by specialists from agronomy and land reclamation fields.



ISQAPER
Interactive Soil Quality Assessment

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