

**IRAN**

**Salinization of Agricultural Resources: A Natural Disaster in Irrigated  
Agriculture**

**Mohammad Kafi**

*President, Ferdowsi University of Mashhad (FUM), Mashhad*

*E-mail: mkafi36@yahoo.com*

We are living in a salty world. Nearly more than 97% of the water volume of the earth is very saline, and more than 15% of total land area is under salinization treat. In every agro ecosystem particularly in dry areas, that in the growing season of the crop, evapo-transpiration is more than precipitation and soil water reserve, then the irrigation is a necessity for economical crop production. More than 90% of the agricultural products of a country like Iran come from irrigated Agriculture. FAO estimated that irrigated land in developing countries will increase by 27 percent between 1996 and 2030. Apart from the volume of salt in the soil, irrigation causes an increase in soil salinity, and because most agricultural crop plants are salt-sensitive, the growth of them is severely inhibited when grown under saline conditions. The United States Department of Agriculture estimates that, worldwide, 10 million hectares of arable land are lost every year due to salinization as a result of improper irrigation. Numerous efforts have been devoted towards improving crop species for better utilization of saline soils and water but less succeeded. Conversely, halophytes are capable of tolerating a wide range of salinities, even more than seawater concentration. Salinization can occur in the soil, water and inside the plant. But the main cause of salinization in irrigated agriculture is water salinity. If the irrigation water has less salt then it can washout the dissolved salt of the soil as well. But saline water is able to salinize qualified soil resources. There are some strategies such as leaching, drainage systems, flooding and breeding more tolerant crop varieties for preventing or correcting salinization, but they can only postpone the salinization. Although some international organizations like ICARDA and FAO started some shared practices in salt affected countries, but there is still no clear strategies for reducing or managing salinity in agriculture. Salinity management cannot be done only at the farm level, it is necessary to develop a road map to implement a salinity management framework.

This framework contributes to shared objectives among all involved stakeholders. This paper aims to reassess agricultural production systems of the Middle East countries and other affected countries and discuss the possible strategies to make them more sustainable. The main focus is placed on soil, water and plant resources that could be implemented for food stuff production with fewer hazards.