



ICBA

agriculture for tomorrow

SUCCESS STORIES

PROVIDING SOLUTIONS FOR AGRICULTURE IN MARGINAL LANDS OF CENTRAL ASIA

TRANSFORMING SALINE AREAS IN CENTRAL ASIA INTO MULTI-USE CROP-TREE SYSTEMS

image courtesy of: World Bank

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ICBA – The International Center for Biosaline Agriculture is a non-profit, autonomous international agricultural research center with headquarters in Dubai, UAE. ICBA conducts research and development programs that aim to improve agricultural productivity and sustainability in marginal environments. The Center's multi-pronged approach to strengthening the agricultural sector to expand food production through improved and better access to technology, improved germplasm, policies, strategies and programs, is critical to achieve greater food, water, environment, and income security.



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Halophytes, low-cost biosaline technologies, and cropping systems, such as dual-purpose food-feed crops and shrub-tree crops adapted to poor quality water, are proven to enhance the productivity of saline soils and rangeland grazing.

Scarce freshwater in the Aral Sea basin means that communities have difficulties growing enough food and animal feed, and so are vulnerable to climate change. To turn this situation around, ICBA is introducing low-cost technologies in saline desert environments in Turkmenistan. These technologies will help farmers grow a wider range of crops, use poor quality water efficiently, produce more feed for livestock, and improve rangeland grazing.

In salt-affected and degraded areas, diversifying crops and introducing sustainable land management practices can boost agricultural productivity and improve farmers' incomes. In the Central Asian countries of Kazakhstan, Tajikistan, and Uzbekistan, ICBA, in collaboration with the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) and local partners, has shown that sorghum and pearl millet can be grown as a second crop after wheat, as well as in rotation with rice. Trials identified promising dual-purpose varieties that produce grain for food or feed for poultry, as well as feed for livestock. These dual-purpose varieties could fill gaps in the crop-livestock

systems in the three countries.

Seed of promising varieties is being produced and will be grown and evaluated under different management practices. The work has taken place on rangelands in Dashaouz, in northern Turkmenistan, and in the Central Korakum sandy desert environments in Karakuli, in southeast Turkmenistan. Early results indicate that by interplanting salt-tolerant crops and trees, and growing dual purpose salt-tolerant food-feed crops, communities could grow enough food for themselves and enough feed for their livestock. Dual-purpose food-feed crops, and shrubs and trees that use poor quality water efficiently, can improve the productivity of saline soils and rangeland grazing. By growing a variety of salt-tolerant crops and adopting practices to manage saline water sustainably, communities will be better prepared for changes in climate.

