Production of Agricultural Water and Nutrients from Saline Water Sources

Objectives:
- Utilize nontraditional water sources (brackish waters) where fresh water sources are limited, non-sustainable, or nonexistent
- Develop a water treatment system that combines advanced membrane and ion exchange processing to:
  - Extract both phytotoxic constituents and nutrients from brackish water, minimizing waste.
  - Produce nutrient products for fertigation systems and water for irrigation and other uses.
  - Reduce dependence on imported nutrients, thereby reducing energy use and greenhouse gas emissions.
  - Reduce salinity in water and soil.

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Schematic process flow diagram showing innovative technology for producing irrigation water and nutrients from saline water sources. EDR: Electrodiaysis Reversal; CIX: Cation Exchange; AIX: Anion Exchange; RO: Reverse Osmosis.