



Soil and land management

Farmer options for crops under saline conditions in the Mekong River Delta, Vietnam

Overview

The availability of fresh water has decreased and the frequency of saline intrusions has increased during the dry season in the Mekong Delta, due to climate change-induced sea level rise, changed seasonal rainfall patterns and changed water flows in the Mekong River.

The 2016 dry season saw the greatest saline intrusion in the region's recorded history, with more than 140,000 hectares of the Delta affected. Severe crop losses were reported with up to 70% of rice salt-damaged and 30% of the crop yielding no grain. This created a significant loss of income to thousands of farmers and it is predicted that these events will increase in frequency, magnitude and spatial extent.

Farmers and supporting Department of Agriculture and Rural Development staff are seeking improved soil management techniques and profitable alternative crops to grow in the dry season. These options must be marketable and profitable for rural communities to sustain livelihoods as these farmers face the impacts of climate change.



KEY FACTS

ACIAR Project No. SLAM/2018/144
Duration: July 2019 to June 2024 (5 years)
Target areas: Vietnam
Budget: A\$2,313,287

Project Leader
Jason Condon, Charles Sturt University

Key partners

- Can Tho University
- Murdoch University
- NSW Department of Primary Industries
- University of New England

ACIAR Research Program Manager
Dr James Quilty



Objective

The project's goal is to increase production and profitability of saline-affected crop production systems in the Mekong Delta and to create a capacity legacy to enable these systems to adapt to ongoing climate change.

The objectives are to:

- Characterise the impact of saline water intrusion on crop-based farming systems (water, soil, crops, people and markets).
- Develop and evaluate crop diversification and soil management options for saline-affected areas.
- Describe and analyse market opportunities and policies for adaptive transformation of cropping systems in the Mekong River Delta.
- Develop and promote spatially targeted management practices that build adaptive capacity and optimise farm livelihoods in a changing environment.

Expected scientific results

- Increase capability of project partners to carry out research and develop new approaches to agronomic practice change, through the increased understanding of soil, salt, water and plant processes, and through the development and testing of new and adapted research methods.
- Increase scientific expertise of key partners in the Mekong Delta to understand, monitor and respond to the effects of salinity and other climate change impacts in valuable agricultural lands.
- Monitor soil and water at a local level so soil management and cropping practices can be adapted in response to changes to the resource conditions on a site-specific basis.
- Consolidate knowledge in training programs about the effects of salinity on water quality, soil function and crop productivity.
- Increase regional capacity of scientists and planners for evidence-based decision making due to the development and integration of community-based science, online survey and collection of spatial data for the rapid acquisition of field data and crop response.
- Generate ongoing beneficial scientific knowledge about suitable new crops and varieties, and improved soil management practices for farmers and other stakeholders.

Expected impact/outcomes

- Adoption of profitable non-rice crops as an alternative to dry season rice production under conditions of climate change.
- Provision of successful soil management practices to improve economic and environmental outcomes for growers.
- Improve capacity in research, technical and extension services.
- Improved knowledge, skills and capacity of farmers, farming cooperatives and communities.
- Stronger integration of data collection and analysis for planning and policy making.
- Reliable crop production, sustained or increased profitability under conditions of ongoing climate change.
- Improved resilience of agricultural production and rural communities.
- Improve market participation, income and food security for rural communities.
- Implement better land and water resource use under conditions of saline intrusion.
- Increase knowledge and skill for soil and agronomic management.
- Develop evidence-based policy and private sector investment related to alternative crops

