

Transformation through adoption of trees and shrubs for salinity management in the Southern Indus Basin, Pakistan



Key details

Location

Pakistan

Duration

Start Mar 2024

End Aug 2025

Budget

AUD 250,197

Commissioned organisation

University of Canberra

Partners

Commonwealth Scientific and Industrial Research Organisation; Mehran University of Engineering and Technology; Murdoch University; Pakistan Agricultural Research Council; Pakistan Council for Research on Water Resources; University of Canberra

Project Leader

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Program

Water

Project code

WAC/2021/136

Overview

This project aims to develop essential knowledge products such as reports, policies, a database, and literature, to inform policy, programs and practices for growing trees and shrubs in saline landscapes in Pakistan.

Operating in the Southern Indus Basin of Pakistan with the goal of providing farming communities with the knowledge to support growing salt-tolerant trees and shrubs, the emphasis is on species and policies, programs and practices that can increase farm income and deliver complementary environmental and climate benefits. While salinity is a natural part of the Indus Basin landscape, it has grown substantially in recent decades due to increased irrigated agriculture.

Three contributing factors exacerbating salinity in the Indus Basin are its topography, large annual deposits of salt from the Indus River and its tributaries, and excessive pumping of saline groundwater leading to a

build-up of salinity in the soil. In contrast to the first two, the third of these factors directly results from human activity (secondary salinity) and is influenced by policy settings. Salinity is largely irreversible in most cases, and learning to adapt and live with it may be the only viable option for farming communities to improve their livelihoods.

This small research activity focuses on facilitating site-specific salinity management through accessible knowledge of forestry practices (planting trees and shrubs) that match local and regional agro-climatic zones, land/water quality profiles and local farming community needs and circumstances.

Project outcomes

- Consolidate existing knowledge on growing trees and shrubs in salinity affected landscapes.
- Develop strategies that build on existing practices of forestry agencies and farming communities for tree and shrub planting in salinity affected landscapes, in the context of a changing water and climate landscape.
- Identify policy strategies for promoting the planting of trees and shrubs for salinity management.
- Identify alternate livelihood options for farming communities living in the Southern IB through an improved understanding of growing and accessing salt tolerant trees and bushes to increase their farm income and achieve complementary environmental and climate benefits.



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