Developing soil knowledge, information and capacity to improve the productivity and sustainability of key cropping systems in Philippines

Key details

Location
Philippines

Duration

Start Nov 2024   **End** Sep 2029

Budget   AUD 3,500,000

Commissioned organisation
Griffith University

Partners
Mariano Marcos State University; Agusan del Sur State College of Agriculture and Technology ; University of Southern Mindanao; Provincial Agricultural Office, Tarlac; Provincial Agricultural Office, Ilocos Norte; Provincial Agricultural Office, Agusan del Sur; Office of the Provincial Agriculturist, Bataan

Project leader
Prof Chengrong Chen

ACIAR Research Program Manager
Dr Steven Crimp

Program   Soil and Land Management

Project code   SLAM/2023/146

Research need

The project aims to develop knowledge, an information system and capacity to increase productivity, sustainability and resilience of key cropping systems through improved soil management and health in the Philippines. The project also aims to build the foundations for a National Soil Strategy that supports the government, farmers and other stakeholders to manage soil as a national asset for sustainable agricultural production.

In the Philippines, in 2021, agricultural industries contributed 9.6% of national GDP and 24.2% to the national employment. There has been rapid economic growth in the Philippines in the past decade however farmers remain among the poorest groups in the country. The Philippine Government recognises the critical importance of soil as a national asset and the risks that soil degradation poses to smallholder livelihoods, the national economy, food security, and environmental and human health.

The Government of the Philippines also has ambition to develop and implement a National Soil Strategy to address soil degradation, improve the sustainability of soil management and enhance agricultural productivity. Previous research demonstrated that there is very limited availability and accessibility of soil information and soil knowledge in the Philippines, and limited capacity to generate and disseminate information and knowledge. These factors will restrict the ability to develop and implement an effective National Soil Strategy.

The project will explore available soil and agronomic knowledge, information and capacity within the Philippines and consider the changes needed in agronomic management to improve both agricultural productivity and soil health. The project will explore modern efficient methods of providing and managing soil information that can effectively support changes in agricultural practice and will develop knowledge, capacity and partnerships that can inform the development of a National Soil Strategy. The project will also seek to understand and build capacity to promote inclusive utility of new technologies and information and adoption of sustainable soil management.

Rice, rubber and vegetable production systems will be the focus of the project, due to their significance in the Philippines and the existing soil constraints and nutrient management issues associated with the systems.

Activities

- Develop and evaluate cost-effective soil nutrient testing methods to support increased soil and crop productivity in key cropping systems in the Philippines.
- Develop and evaluate soil health indicators and a matrix for the best soil management practices to enhance agricultural sustainability.
- Explore soil data availability and develop data ecosystem framework in 4 provinces (Agusan del Sur, Bataan, Talarc and Ilocos Norte) to build the foundations for soil information system and data management in the Philippines.

Expected outcomes

- A cost-effective soil nutrient testing system for key crops (rice, rubber, vegetables) that provides farmers with the information they need to improve crop productivity and yields.
- A soil health framework and management protocols for improving soil health and resilience against climate change-induced risks.
- A soil information system for managing and using soil data with the FAIR principle for better decision making on farming practice and policy.