PERU-Hub

PERUVIAN EXTENSION AND RESEARCH UTILIZATION

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The Challenge

Farmers in the Amazon region of Peru have limited access to agricultural innovation, new markets, and scarce opportunities for women and indigenous communities. They also lack access to reliable, actionable information like real-time weather reports and soil quality and land use suitability maps, all of which impact their ability to adapt to regional stresses like climate change, severe weather, legacy land degradation, and socioeconomic pressures.

The PERU-Hub Approach

Through a consortium of partners led by the Universidad Nacional Agraria La Molina, the PERU-Hub team will transform the agricultural field and demonstration stations of San Martin into knowledge and innovation centers to improve the income of farmers, women and native communities. PERU-Hub will expand use-inspired research in sustainable agricultural development, create technology transfer mechanisms, and support growth of entrepreneurship programs in the region. Our overarching goal is to serve as a global model for research utilization, education, and knowledge building in rural regions of developing countries, including those working to limit illegal deforestation of the Amazon and to sustain progress in coca-eradication.

An Integrated Monitoring Network

Accurate soil and weather data are essential to increasing farm productivity. The University of Oklahoma's contribution to the project is to develop local capacity for informed decision-making through an integrated soil-crop-weather monitoring network for the San Martin region. The network will be supported by the latest in real-time weather and soil data, citizen science-driven soil analysis, advanced remote sensing, digital mapping and visual analytics.

UNALM professor Julio Alegre and OU professor Tim Filley lead a demonstration at the May 2022 launch of PERU-Hub .

Alliance

A Mesonet for San Martin

The Oklahoma Mesonet is a world-class network of environmental monitoring stations. Robust and versatile, the Oklahoma Mesonet is designed to provide a dense collection of observations across the state at a high time resolution to provide decision makers and the public with high-quality weather information that is timely, local, and reliable. Taking this gold-standard approach, we are creating a Mesonet for the San Martin region. In addition to collecting meteorological observations, we will also gather data from nearby soil-based sensors measuring soil moisture, temperature, and electrical conductivity at multiple soil depths. The connected weather-soil network will provide unprecedented monitoring capabilities to the region for improved agricultural productivity.
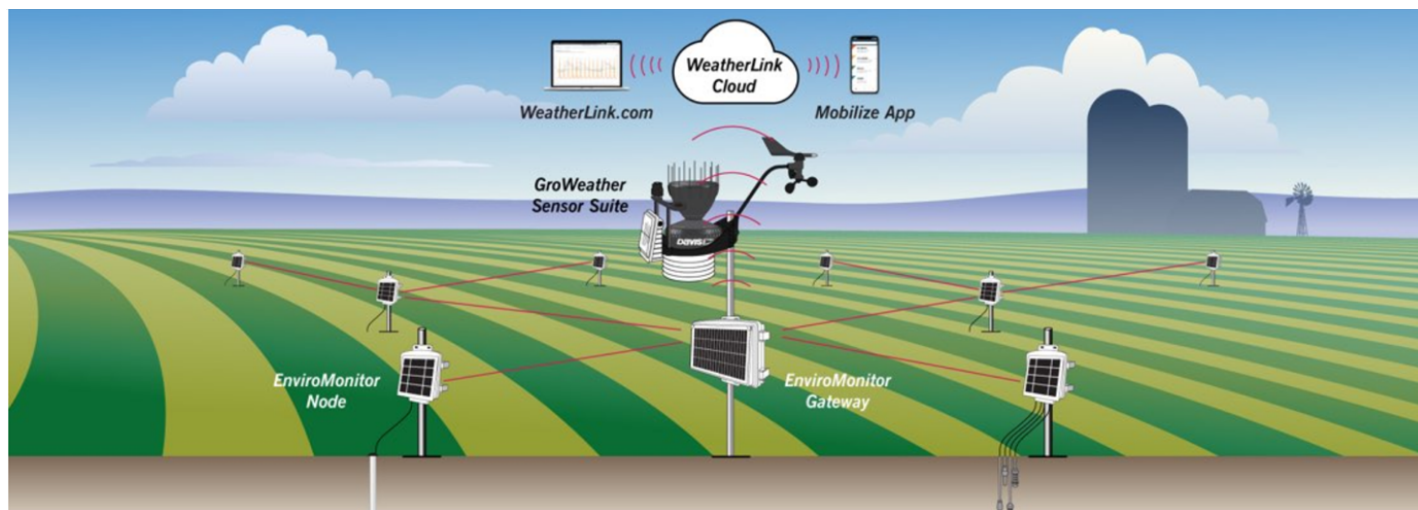
Soil Explorer San Martin

Sustainable agriculture and regional food security require healthy soil. The OU team is providing a baseline assessment of the health, vulnerability and crop suitability of soils within the areas supporting San Martin's evolving, and highly stressed, agricultural economy. We are adapting the on-line Soil Explorer mapping platform we developed for the Arequipa region of Peru to provide practical, location-specific information about soils, geology, and detailed agricultural land use maps accessible via the web, tablet or smart phone-based devices in English, Spanish, and Quechua.
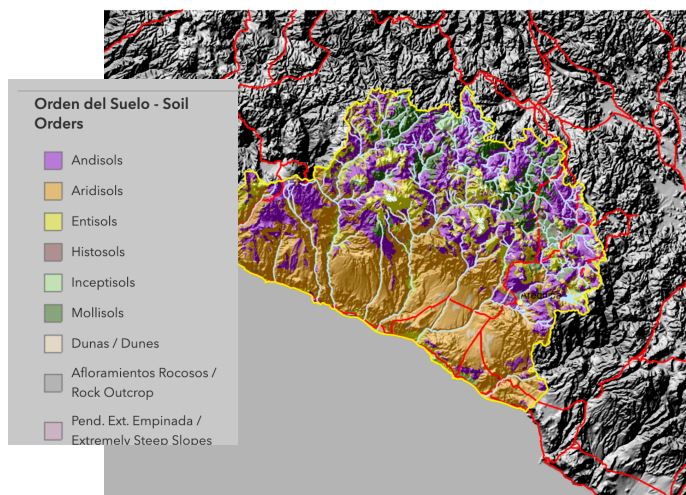
Capacity Building and Workforce Development

Another project goal is to create a vibrant technical workforce across the agricultural value chain. Towards that goal, we are training soil health technicians who will distribute custom-built soil monitoring kits (Pacha Kit) to farmer groups and provide them with technical support so that local farmers can assess the soil health of their own land.

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