

Science for a Sustainable Future

The Universidad Nacional de San Agustín (UNSA) in Arequipa, Peru, and Purdue University in Indiana, USA through Discovery Park's Center for the Environment (C4E) have partnered to create a bold new research, education, and innovation institute to work together on key challenges for a sustainable future for the citizens of Arequipa. The Arequipa Nexus Institute for Sustainable Food, Energy, Water, and the Environment (The Nexus Institute) launched its multiphase collaboration in March 2018.

The Challenges Ahead

Urbanization, agricultural intensification, and the mining of metal ores brought many economic and social benefits to Arequipa, and to Peru in general. These activities have also contributed to the degradation of the region's air, soil, and water resources. Landscape-level changes in the form of desertification, soil erosion, and rapidly melting glaciers further impact local livelihoods, economies, infrastructure, and ecosystems. Additionally, the region's changing and ambiguous natural resources ownership and use rights, inequitable development and high rates of poverty have resulted in increased food insecurity, overall socio-ecological vulnerability, and in some cases, social conflict.

These social, environmental and economic challenges are interconnected in complex ways and demand innovative, multi-team approaches for effective change. Any truly effective solutions must be future-adaptive, explicit about trade-offs, and be grounded in the unique social-ecological systems that define the region's ecological conditions, physical infrastructure, social institutions, economies, regulatory and policy environments, as well as human attitudes, lifestyles, and behaviors.

The Nexus Institute applies collaborative, data-driven, interdisciplinary science, technology, and innovation to help chart a new course toward a sustainable future.



Nexus Vision

To be a vibrant research, education, and innovation ecosystem where transformative solutions to grand challenges faced by Arequipa, Peru, and Latin America are explored.

Nexus Mission

To build capacity and the strategic, long-term collaborations needed to address key environmental, agro-economic, and social challenges that will support development of adaptive, profitable, and sustainable food-energy-water systems in the Arequipa region of Peru.

About Universidad Nacional de San Agustín (UNSA)

UNSA was founded on Nov. 11, 1828, as a public university in Arequipa, Peru. Its mission is to train high-quality professionals to be competitive, capable of being agents of change and development in society, and excellent researchers capable of solving the problems that impact the environment.

About Purdue University's Discovery Park

Discovery Park is a place where researchers move beyond traditional boundaries, collaborating across disciplines and with policy makers and business leaders to create solutions for a better world. Grand challenges of global health, global conflict, and security, and those that lie at the nexus of sustainable energy, world food supply, water, and the environment are the focus of researchers in Discovery Park.

Creating an Innovation and Capacity Building Ecosystem

Purdue University has a long tradition of global engagement promoting research, education, and capacity building. Purdue and UNSA partners will co-manage and co-develop customized workshops with technical training modules on food-energy-water systems, environmental management, and tools for microbiological, plant, geochemical, and GIS analysis to be held at both Purdue and UNSA.

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