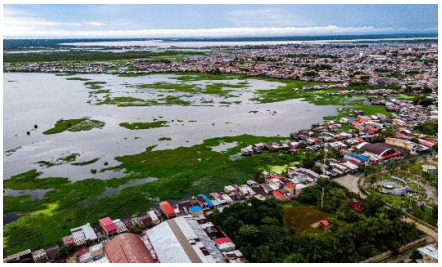
IANAS WATER PROGRAM

Amazon Initiative: Report on Continuing Activities of Field Work

In Preparation for the Project: "Management of Waters, Forests and Sand in the Amazon - security for ecosystem and human health"



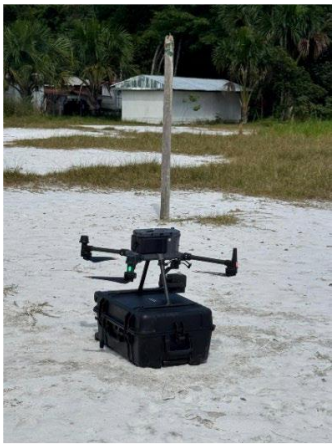
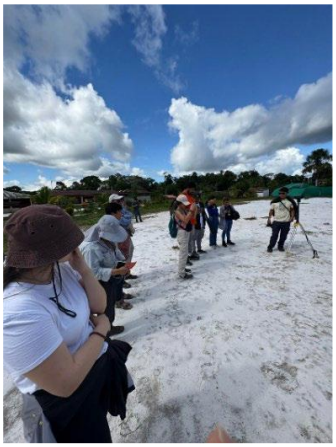
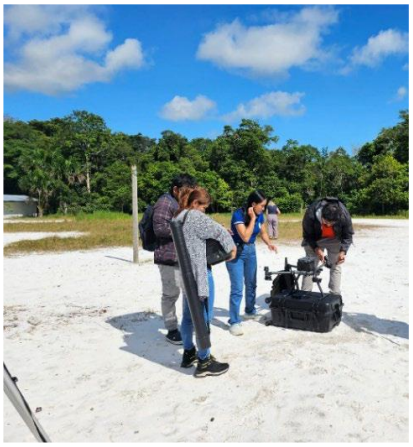
In the framework of the IANAS Amazon Initiative, the Water Program organized a campaign of field work in preparation for the elaboration of a megaproject of research and intervention on the management of waters, forest and sand in the Amazon. As a consequence of the collaboration formed by the Water Program with the National University of the Peruvian Amazon (UNAP), the Pontifical Catholic University of Peru (PUCP) and the Molina National Agrarian University (UNALM), a two-week session (January 27 to February 7, 2026) of continuing activities was carried out in the Peruvian Amazon in Iquitos and surrounding areas.

These field activities were planned and coordinated by the Peruvian Focal Point and Professor of the PUCP, Dr. Nicole Bernex; the Co-Chair of the Water Program, Dr. Katherine Vammen; and the Director of the Research Group "Variaciones Espacio-Tiempo de Atributos Forestales - VETAF" (Space-Time Variations of Forest Attributes), Dr. David Urquiza of UNEP, who also represents Max Planck-Biogeochemistry, Jena. Special research contributions were provided by Engineer Roy Rubio (in tele-detection), Engineer Jorge Solenac (in sustainable management of Amazon ecosystems) and Engineer Francisco Ramirez, Director of the Laboratory of Dendrology and Tropical Botany of the UNAP. Dr. Victor Carlotto, highly experienced environmental geologist, and Dr. María Isabel Manta, specialist in forests, soil and currently in analyses of forest fires, also joined the research team. Students from Geography and Environment of the PUCP, VETAF and Laboratory of Dendrology and Tropical Botany participated in design, collection and production of field data.

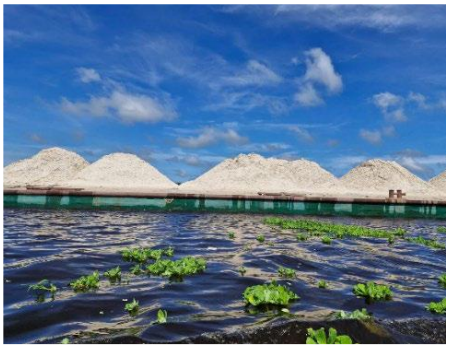
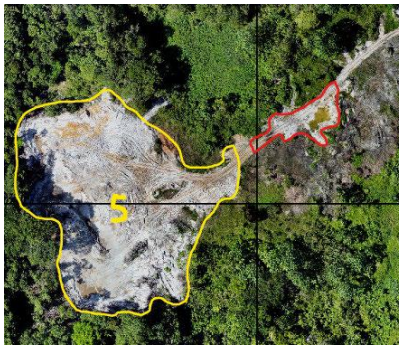
The objective of this first session of field work in the Peruvian Amazon was to generate and collect information required for the creation of a larger megaproject of research and intervention directed to better understanding the interrelation between waters, forests and sand. The continuing destruction of the special ecosystem of forests "varíllales" through the extraction of white sand used for construction following deforestation has consequences for water resources, biodiversity, ecosystems and human health. Varillales are special fragile ecosystems with a particular biodiversity of low-stature, thin trees and shrubs that grows on

acidic soils with few nutrients. These ecosystems can be found in different parts of the department of Loreto, Peru, and especially along the highway Iquitos-Nauta. The continuing urbanization of Iquitos is strongly promoting the continuation of extraction and a local economy with its own market circulation has been developed and is increasing with urbanization, which is yet to be analyzed.

The activities of the current field work consisted in reconnaissance in forest territory and in active and abandoned sand quarries in two different areas along the highway Iquitos-Nauta, in Nuevo Milagro and Nueva Esperanza, specifically for 1) Dron LIDAR inspection and analysis and 2) reconnaissance and validation of these same areas in order to identify the characteristics of deterioration after the process of extraction, also dominant tree species inside and in surrounding forest areas, and associated geological structures.

Prepared thematic conversations and interviews with the involved population and transporters of sand were executed with the objective of providing information on the commercial circulation and transport of extracted sand. The student teams focused on describing elements of the location of small and middle business establishments, transport facilities for volumes of sand and ports for loading and disembarking.

In order to establish continuing collaboration with educational facilities of the region, meetings were held with the Directors and teachers of the school system of “Fe y Alegría”, who have

developed a system of rural schools in Iquitos consisting of 17 primary schools, 5 secondary schools and a higher technical school. The students of Geography at the PUCP organized a network of simple meteorological measurements during one complete year in five of the schools with different forest coverage densities and are currently developing a program on environmental sciences including topics such as water, forests, climate and time, soil and sustainability related to ecosystem services in the territory for teachers of Fe y Alegría.

Thereafter, in March 2026, a workshop was held with 51 teachers of Fe y Alegría, in which two booklets were socialized: “Water Resources and the Amazonian Water Cycle” and “Climate Change in the Amazon”.

All these important collaborative activities will contribute to establishing a fundamental base for future project research cooperation and education on different levels.

* All photos were shared by collaborators of the activities.