Monitoring and early alerts for the Pilcomayo River save resources and lives.

This is how we evaluate
the collaborative processes
in which we are involved.

RELEVANCE

Different extreme events (floods and droughts) that affect the Pilcomayo River can cause humanitarian and environmental crises in the river's watershed.
It has become urgent to move beyond post-facto humanitarian assistance and create more preemptive and holistic watershed protection and management policies and alert systems.
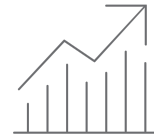
SCALABILITY

The early alert system has the potential to be replicated in other watersheds as well as applied to the monitoring of other types of natural resources (forests, biodiversity, water).

TIPPING POINT

Current conditions allow for collaborative monitoring of the river by indigenous groups, small-scale producers, and women, in coordination with government agencies. **Technologies suitable to the local context are also being developed to interpret climate information and circulate alerts.**

COLLABORATION DEFICIT

The lack of real-time information leads to poor coordination among local groups (indigenous people, producers, women), both with each other and with government agencies. Disaster alerts are not broadcast enough in the media.

This is how we add value to collaborative processes.

SOCIAL CAPITAL

Stakeholders include indigenous and criollo communities located along the river, Fundación para la Gestión e Investigación Regional (FUNGIR), and government agencies with jurisdiction over the watershed - Ejecutiva de la Comisión Trinacional de la Cuenca del Río Pilcomayo, Comisión Regional del Río Bermejo (COREBE-Argentina), Comisión Nacional del Río Pilcomayo - and that provide meteorological data - Servicio Nacional de Meteorología e Hidrología (SENAMHI-Bolivia), Dirección de Meteorología e Hidrología (DINAC-DMH-Paraguay), Servicio Meteorológico (SMN-Argentina), Instituto Nacional de Tecnología Agropecuaria (INTA-Argentina).

INNOVATION

Collaborative monitoring system involving governments and local populations.
Technology for intelligent climate management.
Climate-resilient business models.

UNIFYING VISION

Indigenous and criollo communities located along the Pilcomayo River carry out resilient means of livelihood in harmony with the river.

INCIDENCE

In January and February 2018, the early alert system for the Pilcomayo River warned riverside communities of imminent flooding and reduced the loss of human life and resources.

SHARED ACTION AGENDAS

Participatory and tri-national management of the watershed facilitates proper administration, conflict resolution, crisis management, and project execution.

Collaborative processes
that generate results.

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During the flooding in January 2018, the early alert system was a high-impact tool that averted a major disaster. The warning of an unusual rise in the water level provided 48 hours' notice to the most affected area, in the Salta province, and several days' notice to communities downstream (Formosa, Argentina and Boquerón and Presidente Hayes, Paraguay) that would be hit with floodwaters. The system engaged authorities from different levels of government with local residents, allowing them to jointly organize emergency assistance programs and evacuation centers.
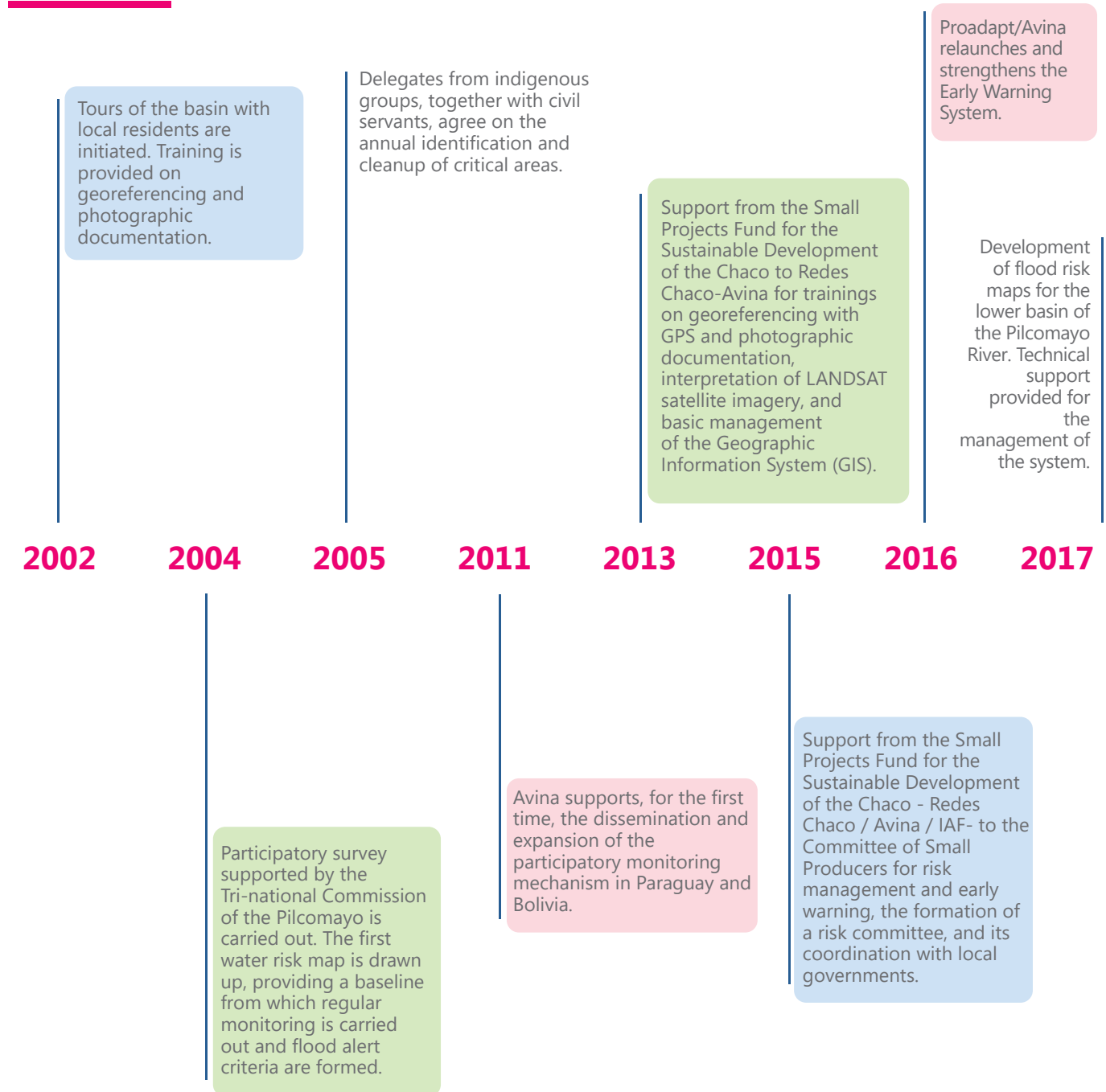
The early alert system drew on all available resources: maps that show possible displacement of the river during a flood, information about water levels and meteorological events provided by government agencies, satellite imagery, a collaborative network of residents along nearly 500 miles of the river that provide information about the river's movements, and technology that both facilitated dialogue between technicians and local residents as well as helped to spread information and alerts via social media and mobile apps. The system used an important and innovative tool, a free climate management mobile app called AdApp: http://www.granchacoproadapt.org/portal/noticias/ 527-adapp-la-aplicacion-movil-para-la-adaptacion-al -clima.

The early alert system turned out to be an effective model for collective organization, demonstrating

that climate resilience in vulnerable areas like the South American Chaco requires measures to mitigate the negative effects of climate change, actions to anticipate extreme events, and coordination among stakeholders to scale up impact.

Timeline.

2002

Tours of the basin with local residents are initiated. Training is provided on georeferencing and photographic documentation.

2004

Participatory survey supported by the Tri-national Commission of the Pilcomayo is carried out. The first water risk map is drawn up, providing a baseline from which regular monitoring is carried out and flood alert criteria are formed.

2005

Delegates from indigenous groups, together with civil servants, agree on the annual identification and cleanup of critical areas.

2011

Avina supports, for the first time, the dissemination and expansion of the participatory monitoring mechanism in Paraguay and Bolivia.

2013

Support from the Small Projects Fund for the Sustainable Development of the Chaco to Redes Chaco-Avina for trainings on georeferencing with GPS and photographic documentation, interpretation of LANDSAT satellite imagery, and basic management of the Geographic Information System (GIS).

2015

Support from the Small Projects Fund for the Sustainable Development of the Chaco - Redes Chaco / Avina / IAF- to the Committee of Small Producers for risk management and early warning, the formation of a risk committee, and its coordination with local governments.

2016

Development of flood risk maps for the lower basin of the Pilcomayo River. Technical support provided for the management of the system.

2017

Proadapt/Avina relaunches and strengthens the Early Warning System.

Relevant data.

80,000 people living in the Pilcomayo watershed (Argentina, Paraguay, Bolivia) benefited.

Flood alerts were issued between 4 and 15 days in advance.

Co-investment Partners

Allies

Redes Chaco, ACDI, Fundación Gran Chaco, Fundación Nativa y Sombra de Árbol.

Testimonial

Luis María de la Cruz,
Proadapt Technician

Verena Friesen,
Sombras de Árbol

"The model that we're developing allows residents, producers, technicians, government officials, and contractors to be in continuous contact, fostering dialogue and even the debate that's necessary to improve management of the watershed. This dynamic, enabled by a digital communication system via a smartphone app, has no comparison to our past experience, where residents had to travel to get together and share, debate, and propose solutions. Each one of those meetings was extremely costly and people rarely said what they really meant."

"The Pilcomayo River is the backbone of the South American Chaco that brings us high and low water levels. Both the abundance as well as the scarcity of water create risks, to which we have to know how to adapt. We have a very strong system that can receive and respond to alerts as well as provide information for monitoring [the river]."

Fundación
Avina