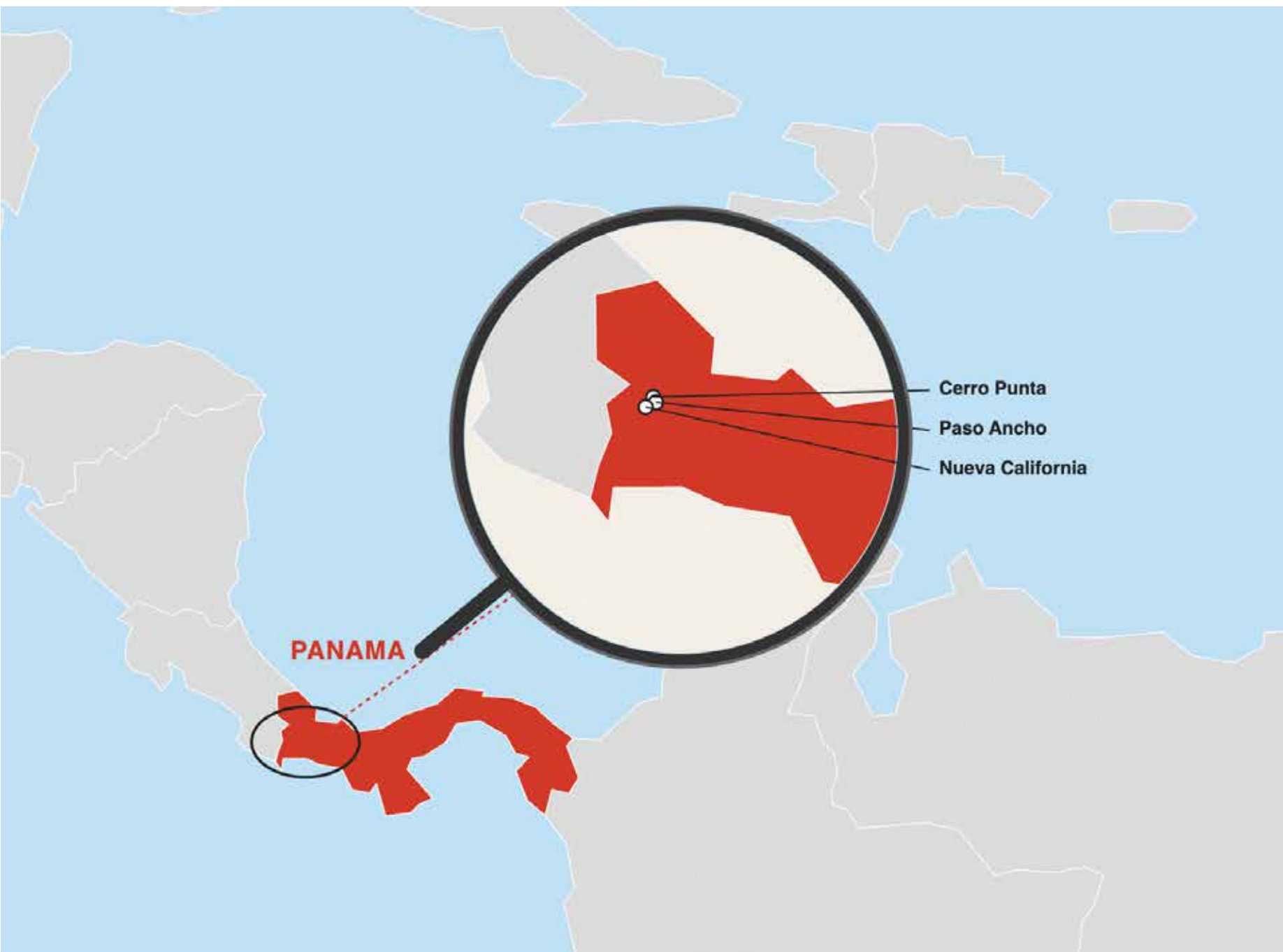


A locally led flood-mapping initiative became a shared plan for resilience

Collaborative Flood Management in Tierras Altas, Panama



In the flood-prone district of Tierras Altas in Western Panama, a Twilio-supported Collaborative Learning Project brought together Panama Flying Labs, local authorities, emergency responders, community organizations, and technical partners to combine drone imagery, satellite data, and local knowledge.

The project generated updated flood-risk information for Cerro Punta, Paso Ancho, and Nueva California, made it accessible through a shared digital portal, and used a co-creation process to translate the evidence into locally defined short-, medium-, and long-term actions. The initiative was led locally, building on local community knowledge, relationships, and decision-making, and supported by WeRobotics and additional local and global partners.

9,500

People impacted by the project, directly and indirectly

3

flood-prone communities supported

491

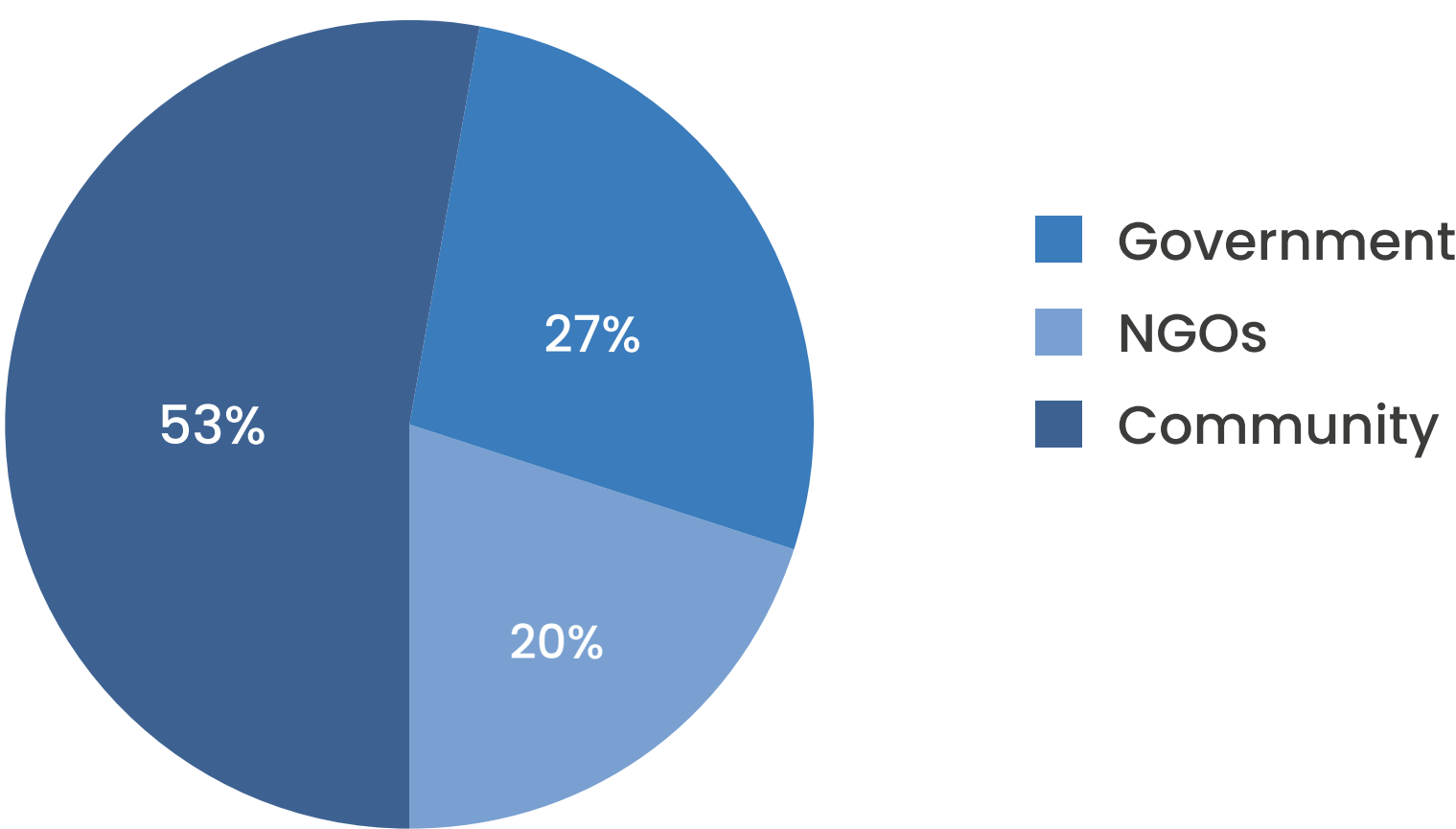
hectares mapped

16

government, civil society, and community stakeholders engaged

Collaboration in action: Panama Flying Labs coordinated the technical and community engagement process, working with SINAPROC, the Tierras Altas Municipal Council, the Mayor’s Office, the Red Cross, local firefighters, producers, and representatives of Cerro Punta, Paso Ancho, and Nueva California.

Face-to-face conversations helped document how floods affect homes, agricultural livelihoods, and emergency operations. During the final co-creation workshop, stakeholders used the evidence to define their own short-, medium-, and long-term priorities. Results were also shared with the wider community through Tierras Altas TV and a community WhatsApp group.



Outputs	Outcomes	Short Term Impact	Mid/Long Term Impact
The initiative created the following data products and outputs: - The Geo Guardianes de Tierras Altas digital portal, bringing together high-resolution orthomosaics and interactive flood-susceptibility maps of homes, waterways, slopes, roads, and other priority areas. - A co-created Action Plan, defining short-, medium-, and long-term priorities for strengthening flood preparedness and resilience.	These outputs supported the following actionable outcomes: - Created a shared evidence base for authorities, responders, and communities - Identified flood-exposed areas, vulnerable homes, and possible water-retention points - Supported stakeholders in defining short-, medium-, and long-term preparedness actions - Made flood-risk information accessible through a shared digital portal and community channels - Established a foundation for more targeted and coordinated emergency response	Before the project, Cerro Punta, Paso Ancho, and Nueva California lacked a precise, shared picture of homes and communities exposed along flood-prone basin margins. The initiative brought community knowledge, institutional experience, and geospatial evidence together, enabling local actors to better understand the risk, identify critical information gaps, and agree on practical priorities. The process also shifted communities and institutions from being recipients of technical information to actively interpreting the evidence and determining how it should be used.	The project demonstrated how locally led data collection and co-creation can turn fragmented knowledge into a shared approach to flood resilience. The partnerships, tools, and planning process developed in Tierras Altas provide a model that could be adapted across other flood-prone watersheds and communities in Panama. The potential economic value is also significant. Project interviews indicated that a single Search&Rescue operation can cost up to USD 250,000, while flooding one hectare of onion crops can cause approximately USD 20,000 in losses. More precise location-based information could enable authorities to target resources more effectively, reduce undirected searches and risks to responders, and better protect local livelihoods

What collaboration helped unlock

Community knowledge became actionable evidence

The project did not treat communities simply as beneficiaries or sources of information. Farmers, risk committees, responders, and local organizations helped interpret the data and shape the resulting priorities, ensuring that the proposed actions reflected local realities.

Preparedness gained a clearer economic case

By connecting flood-risk information with the real costs of rescue operations and agricultural losses, the initiative demonstrated the potential value of investing in better information before a disaster. More targeted decisions can help protect both lives and livelihoods while making better use of limited public resources.

The core learning: data creates value only when people and institutions can act together

The experience showed that maps and technology alone do not create resilience. Trusted relationships, data-sharing agreements, clear responsibilities, community-mobilization mechanisms, and systems for documenting disaster costs and losses determine whether information can be translated into coordinated action.

Discover the details:

- [Portal Geo Guardianes de Tierras Altas](#)
- Collaborative [Storymap](#)

