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From Frogs to National Policy: Connecting Biodiversity Monitoring Across Colombia

It is getting dark in the Colombian Amazon. After a long day at the Zoraida reserve, setting up camera traps and observing chontaduro palms, a group of visitors sets off again – this time for *raniar*, a night-time expedition in search of frogs. For biologist Jacobo and the people accompanying him, the late-night adventure is more than a way to explore the forest. It is a way of observing, recording and understanding the life around them. Across Colombia, people are doing the same in different ways and at different levels – from families and communities to municipalities, regional networks and national institutions. What may start as simple observation can therefore become a deeper understanding of the relationships within an ecosystem. And connecting these observations can turn local knowledge into a powerful tool for protecting biodiversity on a larger scale.

The family scale: where observation shows care

Eduardo Sánchez of El Grisón recalls how his community began observing a particular tree that attracted four species of primates when it was in fruit. Early each morning, they would also find it buzzing with bees. “We spent the whole of that year monitoring that tree" Eduardo explains. They learned when it flowered, how much food it provided and which animals depended on it. The next step was to collect its seeds, study how they germinated and grow new trees. For Eduardo and his community, monitoring starts with paying attention to the places and species that are part of everyday life.

> “We spent the whole of that year monitoring that tree.”

The municipal scale: where knowledge guides monitoring

This close connection to nature is also visible in Colombia’s high-altitude páramos, where vital ecosystems store and supply water to communities downstream. Here, changes in farming practices had created conditions for the return of species that had not been seen for a long time. Families began recording what they saw and heard, including birds they had previously known only by their local names. Monitoring between harvests helped reveal signs of life that might otherwise have gone unnoticed, giving families a clearer picture of how their practices were affecting biodiversity.

This inspired local councils and businesses to become involved. One of them is Bavaria, one of Colombia’s major beverage companies, which has a direct interest in protecting the ecosystems and water sources on which communities and its business depend. Samira Fadul, Head of Sustainability Strategy at Bavaria, explains how the company supports families to reforest parts of their land: “Together we have created biodiversity corridors between areas, meaning they are no longer isolated and animals can move between them. Camera traps allow us to record in real time how these corridors affect wildlife, and artificial intelligence helps us to quickly identify the species.” This knowledge doesn’t just document what is there – it guides action on the ground.

The regional scale: weaving networks in the Amazon

Individual observations become even more powerful when communities connect them. The Amazon Community Monitoring Network, REMBA, brings together grassroots organisations, families, schools and researchers with deep ties to their territories. Through the network, people are developing skills to identify birds and fungi, record tapirs, agoutis and jaguars, and use camera traps to observe wildlife. Training in biodiversity monitoring helped them collect, record and report their observations. Their data can feed into Colombia’s national biodiversity information system, while remaining useful for local decision-making. In this way, monitoring creates a bridge between communities and the wider region: people generate knowledge about their own territories, use it to guide action and share it with others.

The national scale: from local knowledge to public policy

These different sources of knowledge come together at the national level. This includes not only community monitoring, but also the knowledge and information held by Indigenous Peoples – knowledge that has often been overlooked in national biodiversity systems. For Camilo Niño at the National Commission on Indigenous Territories (CNTI), bringing their information into national systems is important not only for understanding biodiversity, but also for identifying the threats facing Indigenous territories, including territorial conflicts, extractive activities and violence. Protecting biodiversity, in this context, is inseparable from protecting people and their territories. Camilo explains: "Indigenous territories are essential for biodiversity conservation and climate action. They cover around 35 million hectares, equivalent to 30% of the country's mainland territory. By cross-referencing the CNTI's territorial data with the Colombian Biodiversity Information System (SIB Colombia), we found that our territories are home to more than 1.1 million biological reportings and 26% of all species recorded nationally."

The same principle applies to restoration. Working alongside Colombia's Institute of Hydrology, Meteorology and Environmental Studies (IDEAM), efforts are underway to bring information on restoration activities together in a national system. The aim is to understand where restoration is taking place, measure its impacts and strengthen decision-making on biodiversity and climate. "The more information we share, the greater our capacity to move forward together towards a resilient and sustainable country," says Ghisliane Echeverry Prieto, Director-General of IDEAM.

Connecting the scales

Seen together, these four levels form one picture. What families observe in their daily lives, what municipalities learn from local monitoring, what regional networks document across landscapes and what Indigenous Peoples contribute through their own knowledge systems can all strengthen national biodiversity governance. Connecting these different sources of knowledge makes it possible to see patterns, understand change and make better decisions to help protect Colombia's biodiversity for generations to come.

These efforts are supported by the GIZ project *Strengthening National Implementation of Global Biodiversity Targets*, implemented on behalf of the German Federal Ministry for Economic Cooperation and Development (BMZ) and the Norwegian Agency for Development Cooperation (NORAD). Besides Colombia, the project works in seven other countries: Brazil, the Democratic Republic of Congo, Indonesia, Laos, Madagascar, Namibia and Peru. Activities include the development and support of national information hubs, community-based monitoring and sub-national biodiversity monitoring systems.

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