How Peru is putting the spotlight on agrobiodiversity and its custodians

Sustaining the spotlight will require concerted efforts to create monitoring and rewarding systems

Impact story series

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Alliance Bioversity & CIAT

AGROBIODIVERSITY INDEX

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Three years since the development of the Payamakis Agrobiodiversity Zones in Peru, Rita Parcco, farmer and representative of this zone, tells us how agriculture has slowly shifted from subsistence to commercial, providing much needed boost to the economy in her village. At the same time, efforts to conserve native potato diversity have expanded. Parcco explains that, through a repatriation process, more than 200 native potato varieties have recently been returned to her community and ABDZ.

Peru has lessons to offer other nations when it comes to protecting agrobiodiversity. From a strong focus on native potato conservation, how did the country come to legally recognize agrobiodiversity and the knowledge systems that maintain those? After a remarkable process and huge undertaking, the legal figure of Agrobiodiversity Zones (ABDZs) came to life in 2016, and has its origins in social movements which led to "*the recognition of the Quechua language, attention to smallholder farmers, concerns about poverty alongside biological richness.*" *"All of this was fermenting long before the Convention on Biological Diversity in the 1990s,"* according to Dr. Marleni Ramirez, a researcher of the Alliance of Bioversity International and CIAT.

The Andean and Amazonian communities have collectively woven the social-ecological and cultural fabric of Peru for thousands of years, maintaining exceptional genetic diversity in the region—from some of the world's most important crops including the potato, maize, tomato, sweet potato, quinoa, and ají (chili pepper) to ancient domesticated animals such as the alpaca, llama, vicuña, and cuy.

More than potato conservation

"We work the land with *ayni* and *mink'a*. We prepare *chicha* (a traditional drink), food and we eat in the field. Just like my parents and grandparents, we continue our customs. In my land we first offer *chicha,* then food, coca leaves, liquor, seeds and a few other items as offerings to the *apus* (sacred mountains/spirits) and *pachamama* (the land), and pray that the next season of agriculture goes well," explains Parcco. The terms *ayni* and *mink'a* in the Quechua language mean mutual help and support system provided by communities operating as a single unit for their *chakras* (fields). These practices are not merely traditions, but systems of governance, reciprocity and land stewardship that have sustained agrobiodiversity across generations; it is upon hese living systems that Peru's Agrobiodiversity Zones were ultimately built.

Yet today, these systems do not operate in isolation. With interconnected global markets and changing economies, farmer communities of the world are under intensifying pressure that is putting farm diversity and heirloom races at risk, consequently threatening the knowledge to preserve this cultivated diversity. Climate change further threatens food security, leading to droughts, floods and pests, harshly affecting communities in remote and isolated areas. In the absence of access to multiple fall-back options, as well as local varieties, any shocks can prove disastrous, making it more difficult for communities to bounce back from food shortages.

It is within this context of cultural continuity and increasing vulnerability, that the recognition of Agrobiodiversity Zones (ABDZs) becomes significant. What differentiates the ABDZs from protected areas is that they are lands owned and managed by communities, explains Tulio Medina,

Agrobiodiversity Zones

According to Supreme Decree No. 20-2016 of MINAGRI, Agrobiodiversity Zones (ABDZs) are defined as geographically determined areas characterized by their richness in native, cultural, and ecological agrobiodiversity. In these areas, Indigenous peoples, through their cultural traditions and in interaction with biological, environmental, and socioeconomic elements, develop, manage, and conserve the genetic resources of native agrobiodiversity in their agricultural fields and in adjacent ecosystems.

To date, MIDAGRI has officially recognized 11 Zones of Agrobiodiversity, covering approximately 233,643 hectares, mainly located in the Andean region:

- Andenes de Cuyocuyo (Puno)
- Parque de la Papa (Cusco)
- Ccollasuyo (Cusco)
- Marcapata-Ccollana (Cusco)
- Pariahuanca (Junín)
- Paymakis (Apurímac)
- Circa (Apurímac)
- Andahuaylas (Apurímac)
- Laria (Huancavelica)
- Cotahuasi (Arequipa–Ayacucho)

specialist in genetic resources for agrobiodiversity and biosafety at the Ministry of the Environment. This recognition of the importance of the ABDZs as something to be officially and nationally protected, along with its custodians, makes the ABDZs unique, especially for a megadiverse country like Peru.

The creation of ABDZs not only recognizes the importance of protecting biodiversity but also the mechanisms that have made it possible – local knowledge, culture, access to land and food sovereignty that allow communities to govern their landscapes to their full ability. As stated by the Mayor of the Lambrama District upon the recognition of the Payamaki ABDZs, the hope is that the Paymakis communities can recover their ancestral knowledge and culture in the future. He also hopes that the recognition of the Paymakis as an ABDZ will strengthen local capacities through well-structured plans. In practice, declaring certain parts of Peru as ABDZs is not only bringing attention to the genetic diversity of cultivated species, but also reaffirming the cultural foundations, rooted in the communities, that enabled Peru to become a global centre of crop diversification and domestication.

ABDZs and Land Tenure

Manuel Ruiz, former Director of the Program of International Affairs and Biodiversity at the Peruvian Society for Environmental Law, and current consultant for FAO, who was a key actor in the development of the ABDZs, explains that since 2016, the ABDZs have been formally recognized through an official decree, establishing them as a legal figure. This comes with criteria that communities must meet to be designated as an ABDZ.

How did land tenure issues affect the process? Medina answers that, "*We found that almost 99% of communal property was not regularized. Many communities did not have property titles, or the titles were very old and imprecise.*", Medina says. He treats this as an incentive for regularization and formalization of rights to land, a legal requirement to attain the status of ABDZ. "*So the regulation ended up requiring that communities demonstrate that their property rights were at least in process. That has been one of the main barriers, and it continues to be so.*"

Alejandro Argumedo, a central figure for the formation of Parque de la Papa, a fundamental model of biocultural space for potato conservation that has existed since the early 2000s, believes that being part of ABDZs is not simply about tangible benefits to the communities, but potentially also "a *legal strategy to counteract extractive activities and promote a vision of the biocultural heritage of the ABDZs in other communities.*"

But do the ABDZs actually protect the land and communities from extractivist activities? Dr. Natalia Estrada Carmona of Alliance Bioversity-CIAT answers: "*Yes. If you read the decree, it creates a binding framework. Communities commit indefinitely to conserving agrobiodiversity".* Manuel Ruiz also adds: *"Indeed, if extractivist activities take place inside the ABDZ, the status would be lost. But protection from and remedies for extractive activities in neighboring areas by third parties is not taken care of in the regulation, which may become a challenge for communities and the ABDZ".*

Why success hinges on rewarding custodians

"*Because recognition alone is not enough, and how farmers see the zones benefiting them is absolutely key. Many farmers in Agrobiodiversity Zones don't even know what the zones are or what they imply. Hence, mechanisms of governance must be strengthened first of all: without functioning governance and incentives, the designation remains fragile and risks becoming symbolic rather than transformative*," according to Dr. Ramirez.

Addressing this gap requires stronger institutional backing, such as a stable source of financial inputs. Dr. Diego Sotomayor, Professor at Universidad Nacional Agraria La Molina, who further contributed to the implementation process of ABDZs, argues that a national law for agrobiodiversity conservation, with ABDZs as its cornerstone, would facilitate the allocation of public funds and provide stability for long-term conservation efforts.

Spotlighting farmers became central to the ABDZs already fifteen years ago. Dr. Isabel López Noriega of the Alliance of Bioversity International and CIAT, who was involved in the process early on, says that the experts at the time understood the repercussions of drastic changes both economic and ecological on farming communities. In response, the intention was to "*create incentives for the farmers who were maintaining this diversity and for them to continue doing so.*" They recognized that the development of

such protected areas as the ABDZs "*will attract funds, tourism, and give farmers recognition as custodians of this diversity*."

As a result of the formation of the ABDZs, its custodians have got access to new platforms of visibility and knowledge exchange. Ms. Parcco, who is also the President of the Paymakis ABDZ Management Committee, shared that she has travelled to Colombia and Lima alongside members of her community. Through these opportunities, she highlights the mutual learning taking place, beyond the language barriers: she feels there is support for learning new things from other communities and for her to explain how things work in her community.

While these learning opportunities are substantial, and provide excellent knowledge platforms, the process of implementing ABDZs also reveals areas where continued and targeted support can help communities respond to emerging challenges, such as livestock management and climate variability. Parcco explains that her community would like improvements for their small animals such as guinea pigs and chickens. "*Also, right now there is no rain, and some crops are already damaged. We want more support and for governments to see what we're missing, and help us improve, as we don't know how long we need to go without rain.*" Dr. Ramirez highlights that "*There have been meetings, consultations, expectations but very little has changed in daily life so far. Farmers often ask for roads, market access, education, things researchers and conservation projects cannot directly provide.*"

Parcco believes that the land they live in has productive soils, but to support their livelihoods, they need better houses, roads and a way to manage their seeds. These are important factors and incentives to attract any future custodians of the ABDZs. "*I took my children to study in the city. They no longer want to work in the chakras. If there are improvements in my town, especially the roads and the condition of my house, I'm sure they will return.*"

According to several other experts, youth satisfaction should be a priority. "*We need to make these territories attractive places for future generations,*" said Dr. Ramirez. "*Youth can drive innovation, monitoring, and entrepreneurship. The story is still being written, and it should be written with them*," says Dr. Estrada Carmona.

What can other countries learn from Peru?

Dr. Ramirez strongly believed that the legal recognition of the biocultural zones at the national level should inspire other countries. While some nations are experimenting with models provided by international institutions, these programmes are not owned by or funded by the national governments, showing Peru's commitment and ownership in this process. The making of the ABDZs was a highly collaborative and multidisciplinary process, involving farmers, scientists and policymakers. According to Ruiz, this is a prerequisite for a project to expand at this level.

Monitoring the success of such projects is also an equally important factor for adoption and adaptation. Dr. Estrada Carmona explains that monitoring is complex and requires resources which may be limited. "*Genetic diversity is alive—it changes, it moves, it's exchanged through cultural practices, actively maintained by communities. It's not like tracking a jaguar with a collar but also includes nutrition, culture, wellbeing, ecosystem functions. Monitoring all that holistically is very difficult, but not impossible with sufficient support, resources and collaborative work*".

Similarly, agrobiodiversity is more than a matter of numbers for communities such as the Paymakis. Their connection to the land and food is a lesson for modern consumerism, and an opportunity for governments to reshape narratives about where food comes from: the mountains that often take the form of Apus or Gods for those who know how to cultivate them.

While Peru is the first country to develop Agrobiodiversity Zones, and has provided the spotlight to the custodians and knowledge holders of its agrobiodiversity, creating specific rewarding models will be its key test against time. The success of the next phase lies in consolidating this recognition through legal and policy frameworks that ensure continuity and coordinated public support. Sufficient, stable-reliable, and empowerment-oriented funding from governments and the private sector and structured governance will be the key to success for harvesting the relationship between communities and agrobiodiversity.

This story is part of a narrated series linked to the Agrobiodiversity Index. It was written by Radhika Gupta, in collaboration with Silvia Martinez, Hector Andres López Mariaca, Roseline Remans, Natalia Estrada Carmona, and Sarah Jones. Illustrations © Radhika Gupta.

In memory of Dr. Marleni Ramirez, whose professional contributions played a crucial role in advancing the development of agrobiodiversity zones.