

> STRENGTHENING LOCAL ORGANISATIONS AND BIODIVERSITY-BASED
VALUE CHAINS IN THE ANDEAN AMAZON

Leveraging the climate negotiations

Richard PASQUIS, Petra MIKKOLAINEN

In the Andean Amazon, forest communities use biodiversity without depleting natural resources and promote it within local organisations and value chains. This has three key benefits: preserving biodiversity, mitigating climate change and creating favourable conditions for adaptation to this change.

In this capacity, the communities should be eligible for funding granted under the United Nations Framework Convention on Climate Change, in order to strengthen these local organisations and value chains, which remain fragile.

The negotiations conducted in the context of the United Nations Framework Convention on Climate Change now take into account biodiversity and its conservation, through the REDD+ incentive mechanism (Reducing Emissions from Deforestation and Forest Degradation, and enhancing carbon stocks, especially through forest conservation). Forest conservation is thus the chosen method for protecting biodiversity. However this stance remains marginal and is limited to a conservation-based approach.

Another approach can be taken to preserving biodiversity in a context of climate change: the sustainable use of biodiversity products,

in other words using these products without depleting natural resources. This is demonstrated by the BioCAN programme conducted in the Andean Amazon (see box p. 4). BioCAN has supported eleven forest communities that foster biodiversity in various socio-cultural contexts. Thanks to their traditional knowledge, these communities manage and enhance forests in the long-term, using the services provided by biodiversity, whether products (known as “provisioning services”) or services that regulate ecosystem processes (balances between species, water cycles, etc.) and cultural services (spiritual and historical places, areas for gathering medicinal and sacred plants).

Three key benefits

In addition to preserving biodiversity, practices involving the sustainable use of biodiversity products help to mitigate climate change and to create the conditions for adapting to this change. The benefits are therefore threefold.

The first benefit, as revealed by BioCAN, is the effectiveness of these practices in terms of sustainability, and therefore of biodiversity preservation. The management plans negotiated within the communities regulate access to natural resources, making it possible to respect species dynamics. These management plans are applied in the Colombian Amazon trapeze area, for the cultivation, processing and sale of fruits: camucamu (*Myrciaria dubia*), a fruit with a high vitamin C and antioxidant content; cupuaçu (*Theobroma grandiflorum*), used in drinks and sorbets; and açai (*Euterpe precatoria*), which has antioxidant and anti-inflammatory properties.

Some communities protect endangered species. The Shipibo-Conibo people (Peru) breed alevins of endangered indigenous species: the red-bellied pacu (*Piaractus brachipomus*) and *Arapaima gigas*, the largest freshwater fish in South America. The Moxo people (Bolivia) have developed a best practice manual for hunting Yacare caimans (not hunting animals below a certain size or during the mating season, etc.), and they issue hunting quotas to the communities based on regular estimations of caiman populations.

The second benefit is that the sustainable use of biodiversity products helps to mitigate climate change by avoiding forest degradation and deforestation, and therefore the release of carbon. By using non-wood forest products as a matter of priority, the communities generate income and limit deforestation for the sale of timber. The Shuar and Achuar peoples (Ecuador) extract essences and latex from *Oenocarpus bataua*, *Ilex guayusa*, *Croton lechleri* and *Ocotea quixos* for the cosmetics and plant protection industries; the Waorani people (Ecuador) use the fibres of the *Astrocaryum chambira* palm for the small-scale production of baskets and hats; and settlers from the Veinte de Enero community on the edge of the Pacaya Samiria national reserve (Peru) extract and sell oil from the *Mauritia flexuosa* palm, which has a high vitamin A and E content.

Some communities work directly to preserve forests, or even to reforest specific areas. The Shuar and Achuar peoples (Ecuador) protect emblematic sites in order to develop ecotourism: salt pans where animals gather; breeding grounds for different animal species; areas with high numbers of

noble tree species; places where shamans collect medicinal plants; and spiritual sites, etc. For reforestation purposes, the Waorani people (Ecuador) produce wyra caspi (*Cedrelinga catenaeformis*) seedlings, a tree appreciated for its timber, its rapid growth and its ability to fix nitrogen.

In addition some communities manage large areas in different contexts: indigenous territories, for example the Waorani people (Yasuni biosphere reserve, 1 million hectares); nature reserves, as with the “Veinte de Enero” community (Pacaya Samiria national reserve, 2 million hectares); or natural areas, such as the Shuar Kanus agroforestry association (Cordillera del Condor between Ecuador and Peru, more than 1 million hectares). In these areas they maintain habitats, landscapes and ecosystems, and therefore the carbon stock.

The third benefit is that the sustainable use of biodiversity products creates favourable conditions for adaptation to climate change, by enhancing resilience – whether sociopolitical, ecological, economic or cultural –, which has become a priority for reacting and adapting to climate disturbances.

By organising themselves and establishing decision-making processes that take into account the viewpoints and interests of the different groups, the communities reinforce their institutions, their governance level and consequently their sociopolitical resilience. By fostering, planting or reintroducing certain species, they increase the heterogeneity and the internal dynamics of ecosystems, two conditions for ecosystem resilience; they keep them “on the alert”, which facilitates adaptation. By selling raw materials or products processed in consolidated, innovative value chains, they generate income. And by promoting traditional knowledge and strengthening social ties, they reduce the loss of knowledge, which is even more alarming than that of biodiversity, and thereby enhance cultural resilience.

Strengthening local organisations and value chains

Local organisations and biodiversity-based value chains nevertheless remain fragile. Only production activities are remunerated. Moreover, trade requirements are ill-adapted to conditions in the Amazon, characterised by a lack of infrastructure, insufficiently structured value chains, products dispersed over large areas, small volumes, high seasonality, and uncertain quality, etc. BioCAN

> Negotiating management plans to ensure sustainability

> Managing large areas

> Enhancing resilience

- tested several options in the institutional, economic and cultural fields for stabilising and strengthening these local organisations and value chains.

> Management training

- First, the programme accompanied collective action for community capacity building initiatives, a key element of the sustainability of traditional systems built upon adding value to biodiversity products. Income stabilisation, compliance with management plans and other community regulations will depend on this capacity building, especially when demand and therefore pressure on natural resources increase. The Waorani women (Ecuador) have thus developed hunting regulations and agreements in order to reduce pressure on natural resources generated by the possibility of selling game meat. To compensate for lost income, they have diversified into new activities: seedling production for reforestation; cocoa production with the principle of zero deforestation and the creation of a label (Wao chocolate). The success of this approach is due to the maturity of the group.

> Innovation in production, processing and marketing

- Training courses, particularly in management, were organised to build capacity among members of the Asokanus Association (Ecuador), which produces timber, and of the Veinte de Enero community (Peru), which produces oil from *Mauritia flexuosa* – this community subsequently created a production and marketing cooperative.

- In economic terms, the strengthening process involved innovation in production, processing and marketing, in order to increase producer incomes.

- In Ecuador, the use of local products (manioc, bananas, palm fruits) in fish farming has been developed by the Achuar, Shuar, Kichwa, Secoya and Waorani peoples. In Colombia, plantations of *Theobroma grandiflorum*, *Euterpe precatoria* and *Myrciaria dubia* have been created to supplement the gathering of these forest species from natural forests; these plantations are managed by the communities.

> The equitable distribution of benefits

- Innovation has also been seen in processing. In Colombia, fruits such as camu-camu, copoazú and açai have been dehydrated and packaged as capsules. In Peru, filtering and controlling the quality of oil from *Mauritia flexuosa* has helped to increase sales, since the product is better suited to market requirements. And in Ecuador, producers have joined forces with a private company to improve processing techniques for forest essences and latex.

- Finally, innovation has concerned marketing, for example labels that provide access to more lucra-

tive niche markets. An organic label, Ikiam, has been created for cosmetic products made from Shuar and Achuar plants (Ecuador).

Making local organisations and value chains more sustainable also requires the equitable distribution of benefits. This is seen in Peru, for income generated by the extraction of oil from *Mauritia flexuosa* and by the *Arapaima gigas* value chain; and in Bolivia, in the mechanism for distributing income generated by the production of caiman skins.

In terms of culture, several initiatives have been supported, especially in Peru. Takiwasi, a centre for the rehabilitation of drug users and for research into traditional medicine, called on the Quechua-Lamista and Awajún elders for their knowledge of medicinal plants. The elders thus acquired credibility with the younger generation, who now use their knowledge not only to heal but also to manage these plants in the long term. In addition, the experience of INDECOPI, the Peruvian National Institute for the Defense of Competition and Protection of Intellectual Property, has been promoted and disseminated in the other Andean countries: registering knowledge associated with biodiversity in order to protect it and to prevent the unfair filing of patents. An international debate was also organised with WIPO (the World Intellectual Property Organization), which presented its guide on intellectual property and the registration of traditional knowledge. This guide was subsequently distributed among the indigenous communities of the Andean Amazon.

Support for strengthening local organisations is particularly effective when it integrates several components, as shown by the support given to the Asmucotar Association for the camu-camu value chain (Colombia). Production was stabilised thanks to: agricultural techniques aimed at limiting the increased risks of seasonality caused by the rise and fall of water levels; community agreements on access to natural areas; and the consolidation of the association's management by producers. A harvesting and storage system has also contributed to this process. As a result of new dehydration methods that preserve nutrients better, and the production of capsules, product quality has been improved. This regularity and quality have resulted in the conclusion of a sales agreement with a private company, Selva Nevada. Memoranda of understanding have been established within the community, as well as model contracts with actors in the value chain, enabling the equitable distribution of benefits.

A few words about...

Richard PASQUIS

is a geographer at CIRAD, in the B&SEF (Tropical Forest Goods and Ecosystem Services) research unit. He was Chief Technical Adviser of the Andean Community BioCAN programme..
richard.pasquis@cirad.fr

Petra MIKKOLAINEN

was the Socio-Environmental Adviser for the BioCAN programme, as a staff member of FCG International. More specifically, she was responsible for gender and intercultural issues. She is currently an independent consultant.
petramikkolainen@gmail.com

Payments for ecosystem services

BioCAN thus demonstrates that it is possible to strengthen and support the structuring of local organisations and biodiversity-based value chains. However, for capacity building and the promotion of innovation to be effective, communities must have access to stable financial resources extending beyond the duration of the programme. The profits generated by the sale of products are not sufficient; other avenues need to be explored. Forest communities could be paid for the ecosystem services provided, especially those that contribute to mitigating climate change and to creating favourable conditions for adap-

tation to this change. In this respect, they could be eligible for funding under the Climate Convention.

It is in their role as managers of ecosystems and landscapes that the communities could be paid for their sustainable use of biodiversity products. As in the “Ecosystem-based Adaptation” (EbA) and “Landscape labelling” approaches recently proposed in climate negotiations, they implement integrated management of natural resources at the scale of the ecosystem or landscape, and make collective action central to governance. In return, the sustainable use of biodiversity could provide concrete results and inform the debate on the concepts and methodologies of EbA and landscape labelling approaches. <

This *Perspective* is based on the findings of the BioCAN programme (<http://ur-bsef.cirad.fr/en/principaux-projets/biocan-l-amazonie-vit>) conducted in the Andean Amazon (Bolivia, Colombia, Ecuador, Peru) from 2010 to 2013 by the Andean Community (CAN). Launched on the initiative of the CAN member countries, its general secretariat and the Government of Finland, it was financed by the Ministry for Foreign Affairs of Finland. The technical assistance services were provided by the FCG International – CIRAD consortium. The goal of the programme was to address current and future threats to biodiversity in the region, by promoting the sustainable use of biodiversity products by the forest communities. BioCAN selected eleven local organisations or biodiversity-based value chains, and tested different possibilities for strengthening them.

The BioCAN programme has resulted in several publications, including:

Pasquis R., Mikkolainen P., 2014. Alianza de autoridades ambientales y de la sociedad civil para

la conservación de la biodiversidad amazónica: lecciones aprendidas y retos para el futuro. BioCAN, Comunidad Andina, Ministerio de Asuntos Exteriores de Finlandia, Lima, Peru, 233 p.

<http://tinyurl.com/kjfeh5g> (part 1)

<http://tinyurl.com/lzenm35> (part 2)

Mikkolainen P., Pasquis R., 2014. BioCAN Biodiversity Programme for the Amazon Region of the Andean Community: Summary of Results. BioCAN, Comunidad Andina, Ministerio de Asuntos Exteriores de Finlandia, Lima, Peru, 63 p.

<http://tinyurl.com/lmjnxb>

Ortiz N., Pasquis R., 2012. “Importancia estratégica de la Amazonía de la Comunidad Andina y retos regionales para la gestión sostenible de la biodiversidad”. In: Gestión Ambiental en los países de la Comunidad Andina, Revista de la Integración, n° 9, Lima (Peru), p. 110-117.

<http://tinyurl.com/12o4m4t>



42, rue Scheffer
75116 Paris . FRANCE

perspective

Editor: Patrick Caron, Director General in charge of Research and Strategy

Coordination: Corinne Cohen, Department for Scientific and Technical Information

Translation: Anna Kiff

Graphic design: Patricia Doucet, Communication Service

Distribution: Christiane Jacquet, Communication Service

Email: perspective@cirad.fr

www.cirad.fr/publications-ressources/edition/perspective-policy-brief

FIND OUT MORE

Ghazoul J., Garcia C. & Kushalappa C. G., 2009. Landscape labelling: a concept for next-generation payment for ecosystem service schemes. *Forest Ecology and Management* 258: 1889–1895.

<http://tinyurl.com/mpmp9dm>

Karsenty A. et al., 2013. Paying for the environment? Can the REDD+ mechanism and the Payment for Environmental Services (PES) tackle the underlying causes of deforestation? CIRAD, GRET, Les Amis de la Terre, 7 p.

<http://tinyurl.com/n7bdok8>

Munang R. et al., 2014. Harnessing Ecosystem-based Adaptation to address the social dimensions of climate change. *www.environmentmagazine.org* - 56 (1), 7 p.

Secretariat of the Convention on Biological Diversity 2009. Connecting Biodiversity and Climate Change Mitigation and Adaptation: Report of the Second Ad Hoc Technical Expert Group on Biodiversity and Climate Change. Montreal, Technical Series No. 41, 126 p. <http://www.cbd.int/doc/publications/cbd-ts-41-en.pdf>