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## Case studies on

## Remuneration of Positive Externalities (RPE)/

## Payments for Environmental Services (PES)

Prepared for the Multi-stakeholder dialogue 12-13 September 2013 FAO, Rome

*We explore the mechanisms through which such service beneficiaries and purchasers could become investors in its conservation and sustainable use. Such mechanisms include eco-labelling, biodiversity offsets and other regulatory obligations, public procurement programmes, corporate social responsibility initiatives and the development of cultural tourism infrastructure, as well as direct support from government and institutions.*

*We examine the required enabling environment to support these investments, which potentially include changes in government policy to facilitate/encourage private sector involvement, the development of PACS-related institutions for monitoring, verification and enforcement, as well as donor and consumer awareness-raising and dialogue.*

# No free lunches: PES and the funding of agricultural biodiversity conservation

## Insights from a competitive tender for quinoa-related conservation services in Bolivia and Peru

### Overview

#### “Domesticating PES: Payments for Agrobiodiversity Conservation Services”

Conserving agrobiodiversity at socially desirable levels entails costs. Drawing on successful pilot testing of a PES-type “Payments for Agrobiodiversity Conservation Services” (PACS) scheme for threatened quinoa varieties in Bolivia and Peru, we identify and explore the role of the broad range of potential public and private sector beneficiaries and purchasers of the environmental goods and services generated by the maintenance of agricultural biodiversity (ABD).

The Andean Altiplano (high plains) have an average altitude of 3,800m and stretch from the Peruvian–Bolivian border region around Lake Titicaca (Northern Altiplano) to the Bolivian-Chilean border region around the Salar of Uyuni, the largest salt flat in the world (Southern Altiplano). Two study sites were chosen, one Peruvian site from the Northern Altiplano with communities located around Puno and one Bolivian site from the Southern Altiplano with communities located around Uyuni (see Figure 1) in order to compare findings across different community contexts (Narloch, 2011).

The pilot project ran from August 2009 to April 2011. The PACS scheme itself ran over the 2010/2011 agricultural season. The pilot project has been successfully completed. A US\$20,500 national operating budget per country (x 2) was available, of which US\$4,000 in each country was used for funding payments at the community level and threatened crop variety seed purchase.

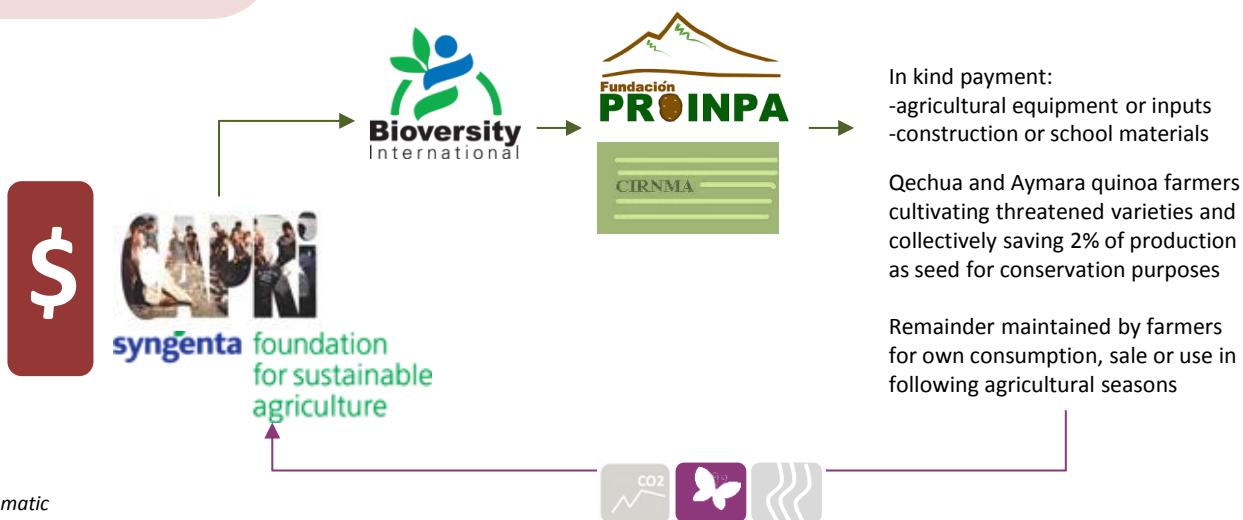


Figure 1. Schematic representation of the key players

## Background

*Poor farmers cannot be expected to be able to afford to conserve agrobiodiversity purely for the benefit of wider society without adequate incentives to do so.*

*And unlike for wild biodiversity, agrobiodiversity conservation requires continued active human intervention.*

Despite providing a key input into the agricultural development process and forming a cornerstone of global food security, agricultural biodiversity is being lost at an unprecedented rate, according to the FAO State of the World Reports for plant and animal genetic resources for food and agriculture (2007, 2010) and other sources. Causes of such loss include indiscriminate replacement, changes in production systems, changes in consumer preferences, market development and globalization, misguided government interventions (including harmful subsidies), disease epidemics, natural disasters and civil strife.

A key constraint to implementing conservation strategies is that while the benefits of agricultural biodiversity are increasingly recognised, their value is often not fully accounted for by individuals and society. This is because many components of agricultural biodiversity (ABD) provide a mixture of benefits to the farmer and to wider society. Markets capture only a part of this total economic value and thus underestimate the true value of these resources, thereby creating a bias against activities compatible with conservation and sustainable use. Much of the on-farm conservation of agrobiodiversity is being done by poor farmers around the world at their personal cost. Hence the costs of conservation tend to be local (i.e. at the farm level), while the benefits tend to be regional, national or even global. Yet poor farmers cannot be expected to be able to afford to conserve agrobiodiversity purely for the benefit of wider society without adequate incentives to do so. And unlike for wild biodiversity, agrobiodiversity conservation requires continued active human intervention.

Value chain development approaches, although often advocated as a conservation through use solution, cannot by themselves be expected to cover the full priority portfolio of threatened PAGR. This is because not all such resources have market development potential and, even where such approaches are successful, can ultimately result in the displacement of other threatened genetic resources (as is the case under the current quinoa export boom, which is mostly of white types). In such a context, the exploration of agrobiodiversity-focussed PES schemes capable of providing an appropriate complementary incentive mechanism through which farmers can capture some of the aforementioned public good values was deemed to merit further attention.

Project design was carried out by Bioversity in collaboration with the University of Cambridge, as well as with assistance of the national partners. Bioversity's programme of work related to the Economics of Agrobiodiversity Conservation and Sustainable Use directly supports the Convention on Biological Diversity's Strategic Plan for 2011-2020, which specifically calls for the development and application of positive incentives for the conservation and use of biodiversity (Target 3); as well as COP 8 Decision VIII/25 which is related to the development and evaluation of incentive measures and valuation tools (paras 7 and 10c).

The innovative pilot schemes that were implemented aimed to show the potential for PACS to serve as a least-cost and pro-poor agrobiodiversity conservation incentive scheme, especially in the context of poor rural communities in developing countries where most threatened and valuable local plant and animal generic resources (PAGR) can still be found (Narloch et al. 2011a).

*FAO. 2007. The State of the World's Animal Genetic Resources for Food and Agriculture. Food and Agriculture Organization of the UN, Rome, Italy.*

*FAO. 2010. Second Report on the State of the World's Plant Genetic Resources for Food and Agriculture. Food and Agriculture Organization of the UN, Rome, Italy.*

*Narloch, U., 2011. Payments for Agrobiodiversity Services: How to Make Incentive Mechanisms Work for Conservation. University of Cambridge, Department of Land Economy, mimeo.*

*Narloch, U., Drucker A.G. and Pascual, U. 2011a. Payments for agrobiodiversity conservation services (PACS) for sustained on-farm utilization of plant and animal genetic resources. Ecological Economics 70(11): 1837-1845.*

# The Providers of Environmental Services

Agrobiodiversity conservation and use provides a mixture of private benefits to the farmer (e.g. through the direct use values associated with the production of food, fodder and fibres), local public benefits to the farming community (e.g. through their indirect use values, such as contributing to risk management, agroecosystem resilience, maintenance of indigenous knowledge and socio-cultural practices) and national and global public benefits (e.g. through the maintenance of evolutionary processes and option values, as well as non-use values such as existence values).

The portfolio of 9 priority landraces to be included in the conservation tender was defined through expert consultation (including with government genebank managers) and a participatory process between farmers and the local development NGOs PROINPA (Bolivia) and CIRNMA (Peru) using community workshops and key-stakeholder interviews (see Soto et al. 2010 for full details).

The providers of the ABD conservation services were quinoa farmers associated with community-based groups. The communities within which such groups are found are of Quechua or Aymara ethnicity, with individual farming households cultivating land areas that are formally owned by the community. Traditional crop rotation practices are undertaken on communal lands, with collective decisions being made regarding which plots within a communal land area are to be planted with a certain crop species (or to be left as fallow land). In support of such collective action institutions, communities on the Altiplano have developed complementary ways of co-managing their farming systems, for example through the exchange of labor and agricultural equipment (VSF 2009). Furthermore, in association with a number of initiatives, many farmers have organized themselves to receive technical assistance and to participate in markets.

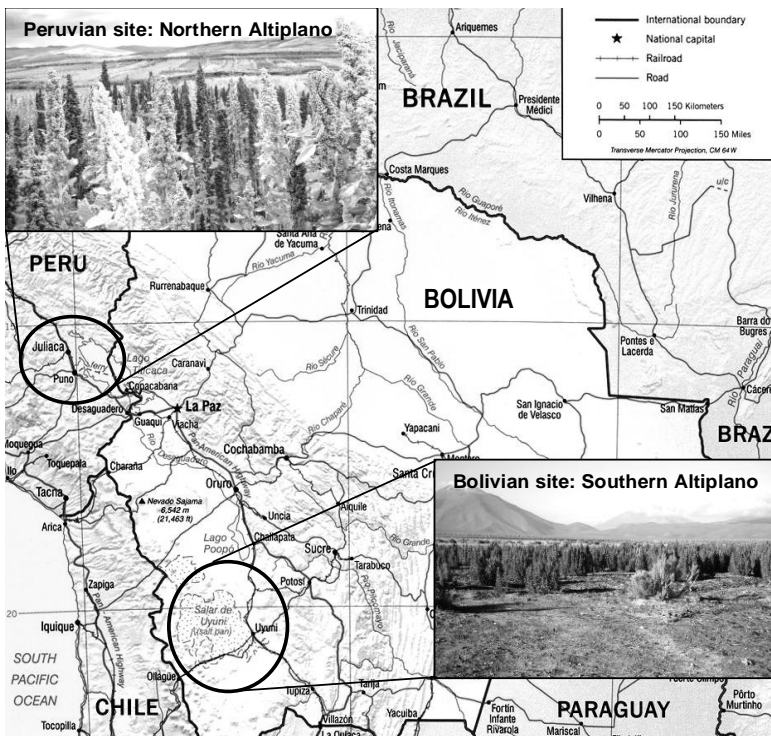


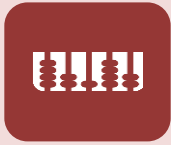
Figure 3. Location of the project sites in Peru and Bolivia, respectively.  
Source: Narloch (2011) based on map from US CIA (2006)



A video, a policy brief and factsheets in both English and Spanish, as well as links to related journal articles can be found at: [http://www.biodiversityinternational.org/research/sustainable\\_agriculture/pacs.html](http://www.biodiversityinternational.org/research/sustainable_agriculture/pacs.html)

Soto, J.L., Valdivia, E., Drucker, A., Narloch, U., Pascual, U. & Pinto, M. (2010). Pago por servicios de conservación de la biodiversidad y sus implicancias para la acción colectiva y los derechos de propiedad (Caso: quinua). *CienciaAgro Journal de Ciencia y Tecnología Agraria* 2(1): 188-198.

VSF (2009). *Quinoa y Territorio. Agronomes y veterinarias sans frontières, Ruralter, La Paz, Bolivia.*



MRV

### Innovation in MRV

*Relative to fixed price programs, the transaction costs of running conservation tenders can be relatively high, since the conservation agency has to coordinate invitation, bidding, selection, contracting, verification, and delivery of payments to a number – of possibly dispersed – land users (Latacz-Lohmann and van der Haamsvoort 1998).*

*However, dealing with groups of land users can reduce such transaction costs, as was the case in this project. For this reason, participating communities had to involve a minimum of two farmers in the bid offer.*

*A further means of reducing monitoring and verification costs was to motivate self-compliance through the contract terms stipulating that no payments would be made unless the whole contract was delivered in its entirety. This created a strong incentive for participating farmers to ensure that the other farmers in their group also delivered.*

*Latacz-Lohmann, U., van der Haamsvoort, C.P.C.M., 1998. Auctions as a means 886 of creating a market for public goods from agriculture. Journal of Agricultural Economics 49 (3), 888 334–345.*

*Narloch, U., Pascual, U. and Drucker A.G. 2011b. Cost-effectiveness targeting under multiple conservation goals and equity considerations in the Andes. Environmental Conservation 38(4): 417-425*

## Incentives for Agrobiodiversity Conservation

To define incentive types and levels, each interested farmer could freely define the conservation area per priority threatened landrace and the compensation payment required per land unit cultivated under this landrace (bid price). The five priority landraces previously identified in the Bolivian site were *Chillpi Blanco*, *Huallata*, *Hilo*, *Kanchis* and *Noveton* and the four in the Peruvian site were *Misa quinua*, *Chullpi anaranjado*, *Janko witulla* and *Cuchi willa*.

Based on this information community-based groups (CBG) representatives calculated the final bid offer by indicating for each of the chosen priority landraces: (i) the total conservation area, (ii) the number of farmers to take part in the conservation activity and (iii) the bid price per conservation land unit (a proxy for the opportunity cost of conservation) taking into account that 2% of production would have to be collectively saved as seed for conservation purposes, as well as the fact that some of their time would be taken up with monitoring and verification visits during the agricultural season. From this information the total bid value was derived (the product of conservation area and bid price), which reflects the total payment level required. CBGs were also asked to define their preferred participation mode, choosing between accepting conservation contracts only if all their landrace bid offers were selected in their entirety (conditional participation) and accepting conservation contracts for any of the landraces contained in their bid offers (partial participation).

Bids were received from 13 Peruvian CBGs by April 2010 and from 12 Bolivian CBGs by May 2010. Bid prices ranged from US\$ 1 (US\$ 23) to US\$ 36 (US\$ 107) per 100m<sup>2</sup> in the Bolivian (Peruvian) site, indicating scope for cost-savings through the targeting of least-cost conserving groups. Similarly, the landrace bid values resulting from the bid price and the conservation area per landrace are highly variable, ranging from US\$ 15 (US\$ 49) to US\$ 1,330 (US\$ 5,347) among the Bolivian (Peruvian) CBGs. Such conservation costs differences may be explained by the differences in agro-ecological conditions, tenure structure and other socio-economic factors between the two study sites (Narloch, 2011).

### Payment conditions

The CBGs were advised that payments would be made in kind and representatives could freely chose their in kind payment type, such as *inter alia*, agricultural equipment or inputs (e.g. seeds), construction or school materials, and that these would be provided by PROINPA/CIRNMA conditional on the fulfilment of the contract at the end of the 2010/11 harvest. The CBGs were also advised that the winners would be selected on the basis of “bid value” i.e. **those who could offer the greatest conservation service in terms of area and farmer numbers per conservation cost** (Narloch et al., 2011b). Winning participants were duly advised that they had been selected and conservation service contracts were drawn up by the project and signed by the individual CBG representatives. **Following successful completion of the contract (subject to monitoring and verification visits during the agricultural season), payments were made to the CBG during a formal hand-over ceremony.**

Post-project discussions with participants suggested that not only the community group members might benefit from such in kind payments, as access to the agricultural machinery could also benefit other community members. Funds and technical assistance were transferred through the executing national NGOs PROINPA and CIRNMA.

**The service purchasers** of the environmental services generated through this pilot were indirectly the Syngenta Foundation for Sustainable Agriculture (SFSA) and the CGIAR’s System wide programme on Collective Action and Property Rights (CAPRI), through the intermediaries of Bioersivity International, CIRNMA and PROINPA. Other potential service purchasers and beneficiaries have since been mapped and possible value capture mechanisms identified for follow-up (see table 1)

# Funding options

Table 1: Potential quinoa agrobiodiversity conservation service beneficiaries/purchasers and value capture mechanisms

	Type of beneficiary or service purchaser	Value capture mechanism	Challenges and opportunities
Quinoa products	<ul style="list-style-type: none"> <li>Local consumers</li> </ul> Retailers and consumers in local and provincial markets; local communities	<ul style="list-style-type: none"> <li>Supply and demand-side interventions as for distant consumers, but also including Seed Fairs, Diversity Days and other local diversity promotion events.</li> <li>Awareness-raising, inc. with regard to nutritional values</li> <li>Legislation resulting in such demand-side interventions. eg. Public procurement programs, School meals, the armed forces and hospitals</li> </ul>	<ul style="list-style-type: none"> <li>Potential to increase local demand for a perhaps wider range of threatened PAGR, but limited ability to pay (effective demand) within poor local communities.</li> <li>Need for wider uptake but existence of promising emerging examples</li> <li>Scale of such programs is potentially large.</li> </ul>
	<ul style="list-style-type: none"> <li>Distant consumers</li> </ul> Wholesalers, retailers and consumers in national and international markets	<ul style="list-style-type: none"> <li>Demand-side interventions: Niche product/value chain development; eco-labelling, certification and denomination of origin schemes</li> <li>Supply-side interventions: Improved managerial skills and labour quality, vertical co-ordination, access to processing facilities, insurance, etc.</li> </ul>	<ul style="list-style-type: none"> <li>Many positive but strategically uncoordinated examples of successful value chain development (VCD).</li> <li>Potential to attract purchasers through product innovation and differentiation for specific consumer groups.</li> <li>VCD potential for an important but limited number of threatened PAGR.</li> <li>Many existing labels competing for consumer attention. Additional certification/labelling processes can involve high transaction costs.</li> <li>Potential to explore Fair Trade certification approaches where a proportion of the premium price is not returned directly to farmers but could instead be retained by producer associations for PACS portfolio funding</li> </ul>
Ecosystem services (regulatory and supporting)	<ul style="list-style-type: none"> <li>Government agencies broadly defined: Agricultural, development and educational institutions at local, state and national levels</li> </ul>	<ul style="list-style-type: none"> <li>Provision of conditional rewards (in-kind and cash) and support VCD, increasing local demand and cultural infrastructure.</li> <li>Clearly articulated ABD conservation strategy, priorities and targets (Strategic Action Plans)</li> <li>Functional integrated (participatory and conventional) ABD status monitoring and verification system</li> <li>ABD conservation management capacity building</li> </ul>	<ul style="list-style-type: none"> <li>Rewards may be sourced in part from existing government programmes</li> <li>But poor awareness of threatened status of ABD and a lack of underlying institutions and skills (e.g. Strategic Action Plans, monitoring and verification systems, conservation management capacity)</li> </ul>
	<ul style="list-style-type: none"> <li>Development and conservation agencies (including development banks), NGOs, Foundations, Research institutions and others (national and international).</li> </ul> May also include private philanthropists, international conventions (such as the ITPGRFA and its Benefit Sharing Fund) and financial organisations (such as the Global Environmental Facility, a major funding mechanism of the CBD)	<ul style="list-style-type: none"> <li>Provision of conditional rewards (in-kind and cash) and investment funds for VCD, increasing local demand and cultural infrastructure.</li> <li>Support for:               <ul style="list-style-type: none"> <li>Clearly articulated ABD conservation strategy, priorities and targets (Strategic Action Plans)</li> <li>Functional integrated (participatory and conventional) ABD status monitoring and verification system.</li> <li>ABD conservation management capacity building.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Poor awareness of threatened status of ABD</li> <li>Tendency to favour (private good) VCD-related product development.</li> <li>Many successful examples of interventions, tools and methods, but strategically uncoordinated.</li> <li>Strong potential to support institutional and skills development</li> </ul>
	<ul style="list-style-type: none"> <li>Breeders</li> </ul> Companies and farming communities (maintenance of evolutionary processes)	<ul style="list-style-type: none"> <li>Access and Benefit Sharing agreements</li> <li>Participatory Variety Selection/Plant Breeding</li> </ul>	<ul style="list-style-type: none"> <li>Existence of better alternative sources of diversity for formal breeding programmes for some crops</li> </ul>
	<ul style="list-style-type: none"> <li>Agricultural input suppliers for specialised production systems: Seed, pesticide, herbicide, fertiliser, tractor, irrigation equipment and other similar companies</li> <li>Mining companies and others with significant environmental impacts to offset (Reputation/corporate social responsibility)</li> </ul>	<ul style="list-style-type: none"> <li>Provision of conditional rewards (in-kind and cash) and investment funds for VCD, increasing local demand and cultural infrastructure.</li> <li>Offsets (drawing on Business for Biodiversity Offsets Program-BBOP), potentially including participating farmer “refuge strip” requirements</li> <li>Government regulatory change and removal of harmful subsidies</li> </ul>	<ul style="list-style-type: none"> <li>Poor awareness of threatened status of ABD.</li> <li>Corporate social responsibility programmes focused on other types of socio-environmental impact.</li> <li>Existence of harmful subsidies and weak government regulation</li> </ul>

## Lessons learned – Engaging ES buyers

PP\$

Public-Private



Negotiation

Related research led by Bioversity has engaged a number of potential service buyers. For example, a successful partnership to promote Andean grains in Bolivia was established between the project's partners (PROINPA, the NGO "La Paz on Foot", the Italian NGO UCODEP and local farmers in the Titicaca Lake area) and the Bolivian Restaurant chain "Alexander Coffee" [www.alexander-coffee.com](http://www.alexander-coffee.com). The campaigns launched by this alliance have aimed to inform customers about agrobiodiversity in general, as well as provide nutritional information and recipes for Andean grains through educational leaflets placed on the tables of the Alexander Coffee shops. Likewise, this company has developed novel products prepared with Andean grains.

Results among Bolivian consumers have been encouraging, showing a potentially permanent increase in the consumption of these grains. International tourists who visited Alexander Coffee might find it difficult to consume a diversity of Andean grains in their home countries, because of lack of availability. The idea, however, was to at least to make them more aware of the agricultural richness of the Andean region, an aspect usually neglected by tourism companies operating in the region.

In addition to the aforementioned Alexander Coffee shop example, public-private partnerships have sought to promote greater consumption of Andean grains at the family level (particularly among children). This has been promoted through novel and more attractive recipes for cookies, cakes, juices and other products. Furthermore, in the context of public procurement programmes in Bolivia, Bioversity's related projects have succeeded in including food items containing amaranth in school meal programmes in the cities of Sucre and Serrano. New snacks contributed to making Andean grains more popular among children and more attractive than other less nutritious cereal-based items. An estimated income of at least US\$ 400,000 p.a. in the Department of Chuquisaca alone was generated for amaranth value chain actors as a result of the school meal policy.

With regard to securing both provisioning and cultural ecosystem services generated by the conservation of ABD, initiatives related to agritourism development based on the maintenance of traditional cultural practices (including food culture) have also been undertaken. One such example is the result of a 2006 partnership established between Bioversity International, *La Paz on Foot* and other organizations. This partnership was formed to assess and describe local ABD, its current conservation status, and to look for ways to enhance local families' income through community-based agro-tourism in Santiago de Okola [www.santiagodeokola.com](http://www.santiagodeokola.com), a community on Lake Titicaca. Approximately 400 tourists from Europe and the United States visited Santiago de Okola between 2007-2010, generating on average US\$1080 per family in 2010. They stayed with the families in a "home-stay" style arrangement, passing time and sharing meals with their host families.



<http://www.lapazonfoot.com/lapaz/tours.php?zid=1&did=4&id=9&lang=id1>



# Achievements

In Bolivia, participants stated that interaction between the group members had improved as a result of the project, in part as a result of discussions about the progress of the cultivated variety and visits to each other's plots. Discussion also related to the importance of maintaining such varieties for subsistence use (as their grandparents would have done) and not just for commercial production. Similarly, Peruvian farmers stated that they viewed their participation in the PACs scheme as having been "good" and "successful", as all contracts had been complied with. Additionally, the experience had allowed them to work more closely together as a group. Expectations had been met (since rewards were paid), although one community group noted that they would have preferred a cash reward.

Following the completion of the competitive tender and awarding of the conservation contracts additional field data was collected from the PACS scheme participants in both countries during monitoring and verification visits. In addition to socio-economic data regarding the participating farmer households and production systems, such visits permitted identification of the actual conservation plots, verification that these areas and the number of participating farmers met the contractual conditions and that the variety being grown was indeed the contracted variety. A few verification visits were also made to verify "force majeure" claims related to damage or loss to the conservation crop and towards the end of the agricultural season visits were made to provide technical advice regarding quality seed selection, as well as to estimate the actual quantity of seed (equivalent to 2% of production) expected to be delivered to a local seed bank for conservation purposes following harvesting. A final community visit was made in order to present the in kind payments. Post-tender visits (no longer part of the PACS contract) were also made in order to assess participant satisfaction with their involvement in the scheme and to track their use of the threatened variety seed arising from their production. A measure of impact is that many of the participants had decided to plant the threatened varieties in the following year too, despite there being no further payments available.

To develop national quality standards for the commercialization of target crops, allowing communities to enter into lucrative export markets, seminars and training courses were held involving representatives of the Ministries of Agriculture and Commerce, as well as from the private sector, to discuss ways of promoting quality while maintaining diversity. To that end, collaboration with the Bolivian Institute of Quality and Standardization (IBNORCA) permitted the development of technical regulations for Andean grains (cañihua and quinoa) (IBNORCA, 2002), the first of their kind in the country. These regulations facilitate quality standardization (in this case related to quinoa and its processed products), thus contributing to increased commercial flows including by eliminating possible customs barriers (Soto, 2008).

Furthermore, in 2011 the Peruvian government requested a Euro 1 million proposal for an upscaled programme for two southern Peruvian provinces covering two Andean grain crops. Although project approval is still pending, this request may also be seen in the context of future potential national ownership.



## Ownership

### Innovation

*PES schemes have, to date, largely ignored agrobiodiversity conservation issues per se. Instead they have tended to focus on forest landscapes, carbon sequestration, wild biodiversity and water management. In addition to the innovative nature of applying a PES approach to agrobiodiversity conservation per se, previous experiences of using a competitive tender approach in a developing country within such a context have also been limited.*

*The use of a competitive tender approach permits efficiency and social equity trade-offs to be made more transparent. For example, attempts to select CBGs with larger numbers of poorer farmers may come at the expense of selecting CBGs with higher numbers of women farmers.*

*Similarly, the application of fairness principles based on uniform payments (everyone paid equally regardless of effort) may result in fewer farmers and communities being selected to participate in the PACS scheme, which in turn may be considered to have negative distributional consequences (Narloch et al., 2013).*

Narloch, U., Pasucal, U. and Drucker, A.G. 2013. How to achieve fairness in payments for ecosystem services? Insights from agrobiodiversity conservation auctions How to achieve fairness in payments for ecosystem services? Insights from agrobiodiversity conservation auctions. *Land Use Policy* 35: 107– 118

IBNORCA. 2002. Norma Boliviana NB 312003-02 "Cereales-Quinoa en grano, definiciones (II ed.) La Paz, Bolivia.

SOTO, J.L. 2008. Support in the elaboration of technical regulations for quinoa and processed products. PROINPA Foundation, McKnight, IBNORCA Project. In: *Sustainable Quinoa Production Project Report. 2007-2008*. 3 pg.

## Future Outlook

The enthusiasm of the project participants to maintain the threatened genetic resources in future years, regardless of any further intervention and their interest in exploring market development opportunities for the case study genetic resources, suggests that the potential for PACS to support national biodiversity policy implementation and make a significant contribution to ABD conservation and use goals, as well as to improve poor farmer livelihoods, once it is up-scaled, continues to appear promising. Dissemination events in Bolivia and Peru generated interest amongst both government and non-government agencies alike, while the concluding statement of the VIII International Symposium on Genetic Resources for Latin America and the Caribbean (SIRGEALC, Quito, November 2011) specifically recommended that “these types of initiative should be promoted in the region and brought to the attention of international fora such as the CGFRA and the ITGRFA”.

In moving towards up-scaled implementation, a broad conservation strategy would likely be required, incorporating a mixture of incentive instruments, such as a market/value chain development (VCD) combined with PACS schemes built on governmental funds as well as private sector funding. However, until strategic national and global approaches to on-farm ABD conservation are elaborated and their implementation funded, including with priority given to the establishment of a functional ABD monitoring programme, the world will continue to lose ABD at an alarming rate because of a lack of informed decision-making and limited capacity to elaborate effective policy frameworks that facilitate optimal investment allocations and policy decisions.

Yet as the above analysis has shown, there are a range of potential beneficiaries and purchasers of the goods and services generated by the conservation on farm of ABD. Which purchasers will ultimately form a “coalition of the willing” and the precise combination of private and public purchasers playing an important role in investing in ABD conservation will vary with context and over time. However, on the basis of the types of potential beneficiaries and purchasers identified, together with the recognition of the specific ecosystem services associated with the conservation and use of ABD, the broad outlines of a potential dialogue and engagement strategy with potential service beneficiaries may already be identified. Such a strategy could be based around a “4Rs” approach. That is: Recognising (the need for ABD conservation interventions and that such interventions entail costs); Reducing (intervention costs to a minimum, to ensure donors that their support is being efficiently and strategically used. The role of a monitoring system is also important in this context); Realising (product value addition and the enhancement of demand, where possible); and Retaining threatened ABD with important public good values that currently do not have significant market potential by ensuring the existence of adequate direct support safety net mechanisms such as PACS.



*Bioversity International is a research-for-development organization working with partners worldwide to use and conserve agricultural and forest biodiversity for improved livelihoods, nutrition, sustainability and productive and resilient ecosystems. Bioversity International is a member of the CGIAR Consortium, a global research partnership for a food secure future.*

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