

## May 2014 About this project

### Name

What types of investment can most cost effectively ensure ecosystem service provision? A randomised program evaluation (NE I00436X)

<http://www.espa.ac.uk/projects/ne-i00436x-1>

### Principal Investigator

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### Partners

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### Timeframe

July 2010–June 2012

### Objective

This project used a controlled experimental design, modelled on the natural sciences, in order to evaluate the impact of a locally-based Payments for Ecosystem Services (PES) scheme on water quality, biodiversity, forest cover, and the socio-economic welfare of the poor in Bolivia's farming communities.

### Summary

By borrowing approaches from experimental economics to generate new evidence, and to improve operational efficiencies, this ESPA funded work has catalysed widescale development benefits. Natura Bolivia developed the reciprocal watershed agreements scheme in a few pilot areas, but now it facilitates over 900 agreements which involve 700 people and protect 100,000 acres of forest. It is a great example of how the relatively small funding offered by ESPA projects can have really significant impacts.



# Good science, better impact

*By taking a rigorous scientific process to monitoring and evaluating impacts, Fundación Natura Bolivia succeeded in both reducing its costs of doing business and providing evidence that it works. And this has stimulated wider uptake of Natura's pioneering approach.*

In the Santa Cruz valleys of south-eastern Bolivia, the local people historically have had few opportunities for income. They often graze cattle and cut timber, but both of these activities have serious negative consequences downstream - contaminating water supplies and reducing the water available for farmers.

Fundación Natura Bolivia works at the local level to resolve this development problem. It has pioneered the use of **'Reciprocal Watershed Agreements'** (RWAs), bringing together local government, water cooperatives and local people. The principles are simple: if upstream water users keep their cows out of the water courses and stop cutting down forests in the watersheds, then the downstream users compensate them through in-kind payments to set up alternative income generation opportunities, such as beekeeping.

The ESPA funds supported evaluation of the scheme to generate robust evidence - i.e. does it really work and do people stick to their agreements?

One year after signing of contracts, Natura Bolivia found that 50% of landowners were fully compliant and doing everything they had agreed to, 45% were nearly there, while only 5% were seriously non-compliant.

Two years later the picture was much improved: 83% full compliance, 12% almost fully compliant, and only 3% remained seriously non-compliant and would have their agreements cancelled.

A second wave of contracts showed compliance at 85% after just one year - suggesting that the monitoring has the desired effect.

## Enhancing efficiency, building good evidence

ESPA funding required the use of rigorous monitoring systems to evaluate the impact of the watershed agreements. A large number of technicians are involved in the work, and the ESPA-funded research required them all to follow the same processes and protocols, wherever they were working.

Consequently, two things happened:

1. Fundación Natura Bolivia became much more efficient, at implementing the RWAs, and well-primed for massive scale-up; and
2. The monitoring produced plentiful, credible evidence about the impact of RWAs.

And the evidence is impressive. The monitoring results credibly suggest that the schemes really are working. RWAs are supporting 700 families in 65 poor communities to change their behaviour and protect forest and water courses that would otherwise be damaged and degraded.

The ESPA work also showed that reciprocity is key. Results support the Natura Bolivia concept that upstream and downstream users of the resource can work together and change social norms for conservation.

The clear and credible monitoring results make it easy to see the benefits, and to promote wider application of the approach. The ESPA funding has set in process a really large-scale and long-term programme.

## Taking the ESPA research forward

The ESPA research has been catalytic and transformational for Natura Bolivia and the work it does, in a number of ways.

**Transforming the institution** - The scientific approach required of the ESPA project helped to transform Natura Bolivia so that it could manage work at a larger scale much more efficiently. It enabled it to move from very localised, ad hoc work with individuals to using standardised processes that could be more easily managed over a wider scale. This transformation was key to Natura being able to receive funds from the European Union and other donors to expand and replicate the early, small-scale work.

**Building confidence** - The ESPA research results also enabled Natura to talk with more technical knowledge and certainty about the impacts of RWA programmes. This helped in discussions with donors, which have since extended the RWA concept to Colombia, Ecuador and Peru.

**From conservation to climate compatible development** - This technical confidence has also enabled Natura Bolivia to take RWAs forward for broader purposes. They are now working with the Bolivian Government, which is opposed to international carbon trading systems such as REDD, to use the RWA model as a mechanism for joint climate change mitigation (forest protection) and adaptation (changing development patterns, protecting water supply).

**Influencing laws** - The State of Santa Cruz is currently pushing through a new law on payments for ecosystem services, and the process is based on the RWA model and the ESPA research results. Santa Cruz is 50% larger than the UK and has enormous biodiversity - one park harbours 10% of the planet's bird species - so the biological impact of mainstreaming effective ecosystem protection is potentially massive.



## Development impacts

The development impacts of the Natura Bolivia scheme that ESPA has supported are simple - upstream populations have a broader range of livelihood activities, connected to markets and support downstream, and downstream populations have better farming opportunities and improved water supplies.

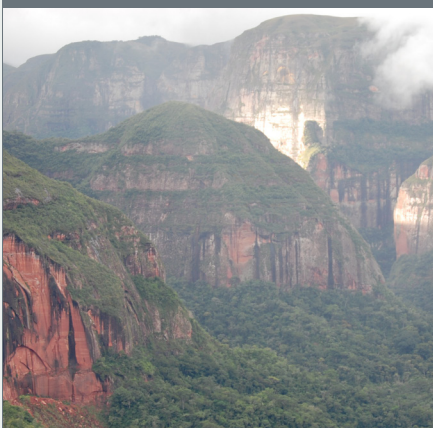
What the ESPA research has catalysed is the *scale* of these benefits. Natura Bolivia used to work at a local scale with individuals. The monitoring systems required for the ESPA research have better enabled the scheme to be implemented at a bigger scale - now these development benefits are being felt not just by a few pilot communities, but much more widely.

The scheme has been efficiently rolled-out over much wider areas (from 1000 acres pre-ESPA to more than 100,000 acres now). Introducing the scheme into new State and National laws means that benefits are being felt at a much wider scale by more people. And as the scale grows, RWA becomes a more interesting model for others to consider.

So, what ESPA invested in at a small scale has enabled the development impact to grow to become something much bigger.

## Comparative analysis - how does this approach stack up?

Seeing the results of the ESPA work, the Climate and Development Knowledge Network (CDKN) offered funding to consider how these small-scale, local schemes compare with different types of PES schemes in terms of long-term impacts. This research involves cross-country analysis looking at national-level schemes in several countries to see which works best.



For more information on Fundación Natura Bolivia's work, please go to: [www.naturabolivia.org](http://www.naturabolivia.org)

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