

Newsletter 3: January 2015 [p4ges](http://www.p4ges.org) is a three year project involving a consortium of ten institutions in the UK, Madagascar, the USA, the Netherlands and Switzerland. **Our aim is to influence the development and implementation of international ecosystem service payment schemes in the interests of poverty alleviation.** The project is focused in the eastern rainforests of Madagascar in a REDD+ pilot project known as the Corridor Ankeniheny Zahamena. p4ges is funded by [espa](http://www.espa.org) (Ecosystem Services for Poverty Alleviation). This is a brief update aimed at our national and international advisory committees to keep them informed of the project's progress. Regular updates are also posted on our [website](http://www.p4ges.org). Quick summary of p4ges overarching objectives questions:

1. To understand effects on ecosystem service flows, to local and global beneficiaries, of the land-use changes incentivized under alternative PES approaches, and the trade-offs in these flows;
2. To estimate the magnitude and distribution of net local welfare impacts from the range of PES approaches (incorporating both the effects of payments and land-use change) and the likely influence of different local and regional institutional structures;
3. To quantify the land-use changes and the payments distributed in an existing payment scheme; and
4. To develop effective recommendations for improved international PES schemes that maximise their potential for delivering poverty alleviation, given biophysical, economic and political realities.

Progress in research

We are in the middle of the most intensive phase of field work. Most work packages are focusing on field work but some preliminary results have been produced and shared with stakeholders.

Instrumentation of hydrology plots: The hydrology team has installed 3 heavily instrumented plots near Andasibe (in collaboration with Association Mitsinjo) to investigate the relationship between land use (forest, reforestation and degraded land) and hydrological services. In each plot they installed a weather station, rainfall and throughfall gauges and sapflow sensors in order to quantify precipitation and evapotranspiration rates. At each site, they also installed soil moisture sensors at 4-6 depths and two to three 3 x10 m runoff plots with runoff troughs and collection drums to measure the amount of overland flow in order to assess the partitioning of precipitation into infiltration and overland flow. These plots are being managed in close collaboration with local people who collect data daily from the plots. They will operate for at least a year. As well as providing fundamental new knowledge about tropical hydrological processes they will provide information which will feed into the policy support tool '[water world](#)' to allow better estimates of the impact of deforestation or reforestation, both of which could be incentivized under Payments for Ecosystem Services, on issues important to local livelihoods and agricultural such as dry season stream flows.



Maafaka Ravelona from the hydrology team with equipment at the instrumented plot at Mitsinjo.



Landscape scale field work on carbon, biodiversity, hydrology and wild harvested products is ongoing:

As mentioned in the last newsletter, the biophysical teams have selected four zones of interest (ZOI) carefully located to be as accessible as possible while being representative of the range of altitudes, deforestation history and threat, and climate in the corridor as possible. In each zone they identify transects which represent the focus land uses (forest, tree fallow, shrub fallow, reforestation [Andasibe zone

only] and degraded land) and collect comparable data on the hydrological processes, carbon stored, biodiversity, and availability of wild harvested products. In the 1st ZOI visited (Andasibe), sites were selected using only local information, while for ZO13 and 4 analysis of high resolution remote sensing images was carried out to guide field reconnaissance and fine scale site selection which happened between May and early September. Field work is ongoing (much of the work is complete for two of the zones; teams are in the field in the western zone around Didy now).



In depth socio-economic research: The main socio-economic field work is focused in four 'in-depth sites' which were selected to allow us to estimate the opportunity cost of conservation restrictions in the area. We put very large field effort into mapping the location of all hamlets and households in each in-depth site so we can sample the households (stratified by location) to ensure our data does not contain biases towards more accessible households. This is challenging work as travelling in this area is difficult (steep terrain). So far we have conducted 200 household interviews and choice experiments in

Ampahitra and 150 in Antevibe and Ambodiavohangy and are nearly finished with our detailed follow-up interviews on agricultural practices (including mapping land holdings) and wild product harvesting with a sub-sample of 40-50 households in these sites. The final two sites (Amporoforo and Antenina) will be completed in the next 5 months.

Preliminary results: The first analysis of this data we have done focuses on the identification of 'People Affected by the Project'-a World Bank term denoting people identified as eligible for receiving compensation under social safeguards of World Bank loans and projects. We investigated the characteristics of households such as how socially connected they were (indicated by proximity to village centre and whether they contain a member of the local natural resource management committee or COBA), their wealth status (indicated by food security, and assets such as livestock), whether the household head is literate, their dependence on wild harvested products, the amount of swidden 'tavy' land they farm, and the location of their house in relation to the forest boundary. We found that those who the World Bank process had identified as PAPs tended to be located closer to the village centre and be better socially connected; they also tended to be more food secure (though not richer in terms of livestock) and have less tavy land (Figure 1). This could be interpreted as evidence of some degree of remote capture (although these are preliminary results). We also note that people may have been unwilling to self-identify as dependent on illegal agricultural expansion during the PAP process; this, as well as the extremely challenging geography, makes identification of

those eligible for safeguards (and the implementation of safeguard projects) to compensate for lost opportunities really challenging.

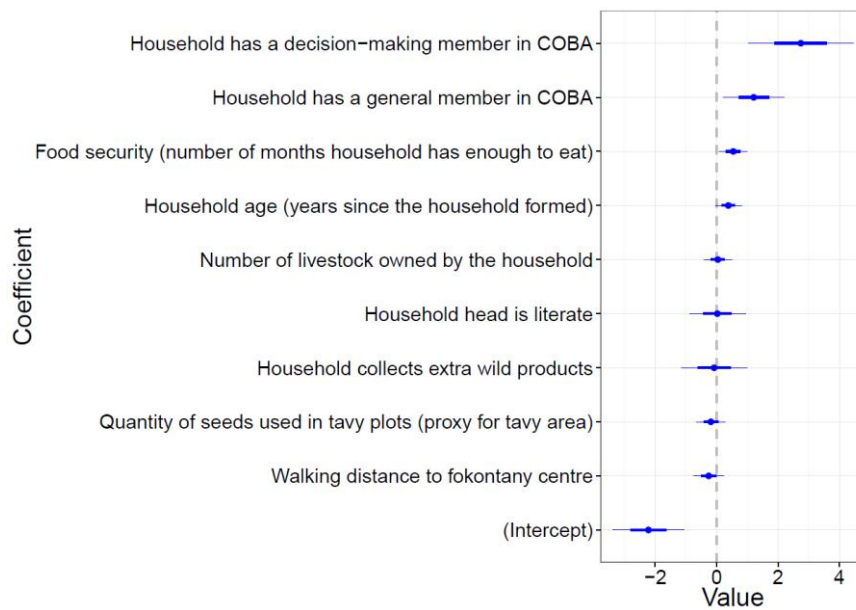


Fig 1: Coefficient plot from binomial Generalised Linear Model investigating which variables predict whether a household (HH) is likely to have been identified as containing 'People Affected by the Project' under the World Bank safeguarding process (based on 203 HH interviews randomly selected after mapping location of 468 HHs). NB COBA refers to Communauté de Base (legally recognised local natural resource management committees). Tavy is the Malagasy word for swidden agriculture, fokontany is the smallest administrative unit in Madagascar.

Other social research: Many different attempts to distribute benefits to communities have been made in the CAZ corridor. In the past these have been mostly funded from conservation funds however in future they could come (directly or indirectly) from carbon money. A vital question remains-how best to design schemes to ensure that local people benefit as much as possible from the investment? Our team are pulling together a database of a huge range of interventions, funded under different mechanisms (hard work!) to first look at the transaction costs of delivering different local development projects tied to conservation. They will then conduct follow up interviews in a selection of communities to understand how local people have benefitted from these conservation activities. This work will be in the 1st half of 2015.

Remote sensing and modelling: One aim of p4ges is to better understand the impact of different attempts to reduce deforestation. Using the detailed database of all conservation interventions in the corridor (mentioned above) and high resolution annual forest cover and change maps which the team are producing, we aim to get a much more nuanced understanding of how conservation investments affect deforestation.

Progress in impact activities

Relationship with stakeholders at local scale: Relationships in the study sites have been very good. However there have been security concerns at some sites with local people worried that our teams (outsiders coming in and often asking questions) could represent a security threat in some way. To ensure that we are fully transparent about why we are in the area and who we are, we have added photos of all field team members to the local information sheets and we give copies of these to village leaders and key contacts in each place we operate. This has been greatly appreciated-especially where multiple teams return to the same sites.



As well as informing people locally about the purpose of the research and asking local permissions, we have a large number of local people directly engaged

with the research. In some of the social-team's 'in-depth sites (for example Antevibe and Ambodiavohangy close to Zahamena National Park) we have local assistants (residents of the villages) who are working with a total of 40 households to collect weekly data on agricultural and non-agricultural incomes. The carbon, water and hydrology teams also depend on local expertise to identify sites with the appropriate land use history for their research and to assist with many aspects of data collection. As well as being essential to the research, these relationships are vital to ensuring results can later be shared effectively.

Relationships with stakeholders at the national scale:

In November 2014 team members from University of Antananarivo and Bangor University presented preliminary results about the challenges of effectively identifying people economically affected by REDD+ projects and so eligible for safeguard compensation to the World Bank in Antananarivo. There was also meeting with the national advisory committee on the 15th December 2014

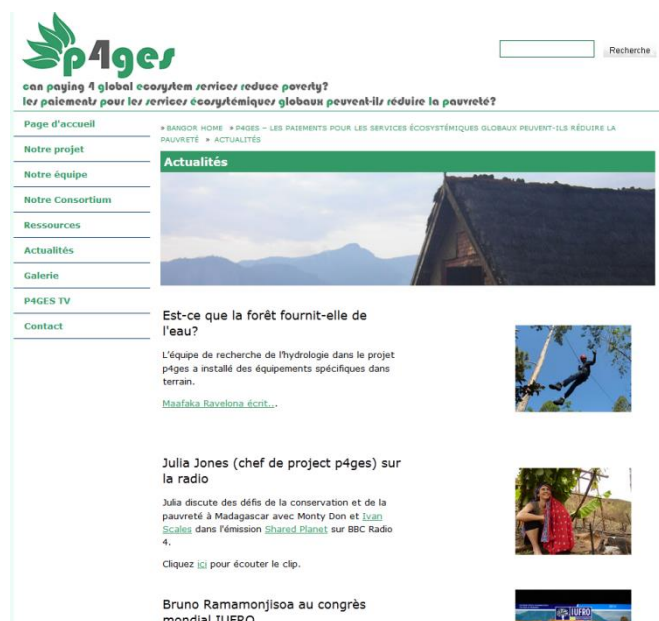


where preliminary results were presented. As part of the process of applying for renewal of permits, five detailed reports (on hydrological, carbon, biodiversity, economic and social research underway) in French were produced for the Ministry of Environment, Ecology and Forests and circulated to key partners including managers of the sites where we work.

Relationship with stakeholders at international scale:

Until we have more concrete results to present we are focusing on the research rather than dissemination but we keep our website up to date with regular blogs and videos which we promote via twitter. We plan to have a second international steering committee meeting in March 2015 to update our advisors and get any input from them on the project-especially ensuring impact of the research results. The overview and design of the project was presented by Celia Harvey at the Ecosystem Services Partnership meeting in Costa Rica in

September 2014 and Bruno Ramamonjisoa at the International Union of Forestry Research Organisations at Utah in October 2014. Rina Mandimbiniaina, Sarobidy Rakotonarivo, Mahesh Poudyal and Neal Hockley presented aspects of the social research elements at the espa-organised event in London in October 2014 and Mahesh Poudyal presented the work on safeguards at the ESPA science meeting in Delhi in November 2014.



Please look at our bilingual [website](http://www.p4ges.org) regularly for updates. If you have any questions about the project please don't hesitate to get in touch and we will ensure your enquiry goes to the most suitable person (info@p4ges.org)