



PROJECT PERIODIC REPORT

Grant Agreement no.: 226310
Project acronym: REDD-ALERT
Project title: Reducing Emissions from Deforestation and Degradation through Alternative Landuses in Rainforests of the Tropics (REDD-ALERT)
Funding Scheme: FP7-ENV-2008-1: Collaborative Project for specific cooperation dedicated to international cooperation Partner Countries (CP-SICA)
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Periodic report: 2nd
Period covered: From 01/11/2010 to 31/10/2012



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Declaration by the scientific representative of the project coordinator

I, as scientific representative of the coordinator of this project and in line with the obligations as stated in Article II.2.3 of the Grant Agreement declare that:

1. The attached periodic report represents an accurate description of the work carried out in this project for this reporting period;
2. The project (tick as appropriate) ¹:
 - ☐ has fully achieved its objectives and technical goals for the period;
 - ☒ **v has achieved most of its objectives and technical goals for the period with relatively minor deviations.**
 - ☐ has failed to achieve critical objectives and/or is not at all on schedule.
3. The public website is up to date.
 - To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project (section 3.4) and if applicable with the certificate on financial statement.
4. All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section 3.2.3 (Project Management) in accordance with Article II.3.f of the Grant Agreement.

Name of scientific representative of the
Coordinator:

Dr Robin Matthews

Date: 31/12/2012

Signature of scientific representative of the
Coordinator:



For most of the projects, the signature of this declaration could be done directly via the IT reporting tool through an adapted IT mechanism.

¹ If either of these boxes below is ticked, the report should reflect these and any remedial actions taken.

Publishable summary

Project context and objectives

Reducing Emissions from Deforestation and Degradation (REDD+), in which countries with tropical forests are compensated by funds from international carbon finance for reducing their rates of deforestation, is currently being discussed at the UNFCCC and other international fora. The overall goal of the REDD-ALERT project is to contribute to the development and evaluation of REDD+ mechanisms and the institutions needed at multiple levels for changing stakeholder behaviour to slow tropical deforestation rates and hence reduce GHG emissions.

The specific objectives of the project are:

- a) To document the diversity in social, cultural, economic and ecological drivers of forest transition and conservation, and the consequences, in the contexts of selected case study areas in Indonesia, Vietnam, Cameroon, and Peru as representative of different stages of forest transition in Southeast Asia, Africa and South America.
- b) To quantify rates of forest conversion and change in forest carbon stocks using improved methods.
- c) To improve accounting (methods, default values) of the consequences of land use change for GHG emissions in tropical forest margins including peatlands.
- d) To identify and assess viable policy options addressing the drivers of deforestation and their consistency with policy approaches on avoided deforestation currently being discussed in UNFCCC and other relevant international processes.
- e) To analyse scenarios in selected case study areas of the local impacts of potential international climate change policies on GHG emission reductions, land-use and livelihoods.
- f) To develop new negotiation support tools and use these with stakeholders at international, national and local scales to explore a basket of options for incorporating REDD into post-2012 climate agreements.

Work performed since the beginning of the project and results so far

In WP1, the main secondary data including socio-economic statistics and GIS information were collected from the project study sites. Forest-cover change maps of the study sites in Vietnam, Indonesia, Cameroon and Peru were produced. Local people's perceptions about environmental change and drivers of forest change were studied and documented. A comparative analysis of 12 countries quantified the displacement and absorption of land use (land use embodied in imports and exports of agricultural, animal and forestry products) through time.

In WP2 major efforts focused on the synthesis of 'five-pool' carbon stock data and the conditions under which simplified protocols can be acceptable. Also, progress was made on the analysis of how different species-specific allometric equations really are – some statistical problems of current approaches were identified and a simple solution was derived. A further step was taken on the error propagation when land use classifications are combined with estimates of typical carbon stocks, both of which have uncertainty. The analysis found evidence of a strong scale dependence of the random component of both types of variation, while bias is scale-independent. Spatial aggregation can drive uncertainty of C stock data below reasonable thresholds – in the case study for which we had data, an aggregation up to a km² scale was found to be effective in reducing errors of performance-based incentives to less than 5%.

In WP3, literature reviews were conducted on (a) changes in soil CH₄ fluxes from the conversion of tropical peat swamp forests, (b) peat GHG emissions from land use and land-use change in Southeast Asia, (c) land-use change effects on soil emissions of NO and N₂O, and (d) the impact of land-use change on soil organic carbon (SOC) stocks. In Jambi, Indonesia, a field laboratory with a gas chromatograph, an IRGA, ovens, scales and other equipment was established to measure trace gas concentration of gas samples taken from soils and vegetation biomass C stocks. On the peatlands

in this area, carbon stocks, soil respiration, N₂O and CH₄ emissions were measured in a primary peat swamp forest, a logged and drained peat forest, and a seven-year old oil palm plantation on peat. Measurements of soil and vegetation C stocks and soil trace gas emissions were also conducted in mineral soils in Jambi along a gradient of forest disturbance including rubber and oil palm plantations. In deeply weathered mineral soils of three REDD-ALERT study regions soil samples were taken to determine the impact of land-use change on SOC stocks.

In WP4, desk reviews, interviews with stakeholders, workshops and policy exercises were carried out to assess policy options aimed at reducing emissions from deforestation in developing countries. The institutional analysis of global forest governance and forest policy options has been completed. An interactive policy simulation workshop with 20 international stakeholders took place on 16-17 November 2010. Field work was done in Indonesia, Vietnam, Cameroon and Peru in the period from February to May 2011 by four students from the Environment and Resource Management (ERM) Masters programme at VU University Amsterdam and a research assistant. Another five ERM Masters students analysed different aspects of REDD/forest governance for their thesis work in 2011. Results were published in a book 'Climate Change, Forests and REDD: Lessons for Institutional Design'.

In WP5, a literature review on IPCC-LULUCF Tier 3 modelling approaches that have been used by different (mainly Annex I) countries was done. A review of agent-based models was completed. Socio-economic field studies to determine the main actors in REDD+ benefit chains in Jambi, Indonesia, were completed. A socio-economic workshop was held in Peru to initiate collection of relevant data for modelling. Focus groups and socio-economic surveys in Cameroon were completed. A meta-analysis was done on above and belowground carbon stocks data for various land-uses in tropical regions to derive relationships between carbon stock changes and different environmental variables. A simple spreadsheet model was developed to provide stakeholders with a user friendly tool to evaluate and predict soil carbon losses and carbon dioxide emissions from tropical peat soils. Field work on identifying changes in soil organic carbon in peat lands after fire was completed.

In WP6 we published a major review of the payments for ecosystems literature and underlying concepts of commodification, compensation and co-investment. It led to a set of testable hypotheses about the way cross-scale REDD efforts may navigate the fairness/efficiency challenge, by applying commodification concepts at national scale, compensation mechanisms at provincial and cross-sectoral levels, and co-investment at local scales. In doing so a money for carbon credits approach at the national border is linked to exchanges in different currencies (referring to different livelihood capitals), with different time frames and approaches to risk and benefit sharing at local levels. The incorporation of REDD in a NAMA framework, as has effectively happened in Indonesia with the national commitment and plan for emission reduction including REDD as subset, creates opportunities to achieve that multi-paradigm approach. A new land use planning tool that makes use of the opportunity costs of emission reduction and the various options for addressing drivers of carbon stock change at the rule level, as well as possible use of direct economic incentives. The approach has now been selected by the Government of Indonesia to be part of the standard approach to the emission reduction planning.

Expected final results and their potential impact and use

The work on deforestation drivers has already shown that a significant proportion of reforestation in a number of countries is resulting in leakage of the carbon saved abroad. In Vietnam, for example, forest cover has increased from 25% in 1992 to around 38% in 2005, but around half of this increase has resulted in increases in food and timber imports, implying that this has been met by increased deforestation abroad. This is an important finding, as it highlights the need to take a systems approach to reducing emissions and increasing carbon sequestration by accounting for changes at least under all land uses and not only forestry, and ultimately under all

emission sectors and not only AFOLU. Dealing with any one land use component (such as forests) in isolation is likely to result in partial solutions at best as the Law of Unintended Consequences starts to operate. Related to this is the recognition that there is major competition between different land uses, particularly food and fuel production arising from an increasing global population and changes in dietary preferences. Use of REDD+ funds to fund agricultural research on sustainable intensification may be a cost-effective way of also reducing GHG emissions, for example.

The modelling and policy analysis work has indicated that there is unlikely to be one local solution to reduce deforestation or to restore forests, and that it is essential to take the local contextual diversity into account. Instead, it is likely that a mixture of state-level command-and-control, regulatory approaches, and emerging market-based instruments (e.g. eco-certification of products, corporate environmental responsibility, stewardship agreements, and other demand-driven interventions) will be necessary. Even so, there are likely to be winners and losers – land owners may benefit from increased rents, but the landless are likely to suffer from increased food prices and lower wages. Land tenure more important than financial incentives *per se*. Co-investment rather than payments for environmental benefits may be a better paradigm.

The work on C stocks and GHG emissions is likely to help narrow the confidence intervals on peat-based emissions and their reporting standards, providing sounder evidence for decision-making on land-use change associated with peat soils, although there is still considerable uncertainty remaining. The measurement of carbon stocks under different land uses in the study sites has indicated that there is regional variation in the significance of deeper carbon pools to existing stocks, but this is not yet universal. Likewise, the meta-analysis of carbon stock changes following land-use changes on tropical soils has indicated that many study sites from where this data was obtained is not necessarily representative of tropical soils in general. All of this has implications for accurate estimates of emissions from the AFOLU sector both as a basis for calculating REDD+ credits and for national inventory accounting.

The policy analysis work has shown that countries have reasons to scale up or scale down forest governance issues. The potential promise of REDD helped to generate global consensus on the need to deal with forests at a global level, but if the resources are not forthcoming, this may lead countries to revert to their original position of seeing forests primarily as a subject of national sovereignty and a source of income. However, it may be that '*glocal*' forest governance is the best approach – a process by which local through to global issues, trends, drivers and instruments are given due attention and an iterative multi-level governance framework is developed for sustainable long-term policy that goes beyond REDD. We are currently identifying generic measures that can help to embed REDD within domestic forest institutions and will show how these generic measures have contextual implications in the four study areas. This will be reported in the Final Project Report.

Project logo and public website

Project logo



Project website: <http://www.redd-alert.eu/>

List of beneficiaries

Beneficiary Number *	Beneficiary name	Beneficiary short name	Country	Contact
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Photos



Project participants at the Kick-off meeting in Bogor Indonesia, May 25-29, 2009.



Project participants investigating subsidence in peatlands converted to oil palm plantations in Indonesia.



Participants on the field trip at the 2nd Annual Project Meeting in Peru, 13-16 October 2010.

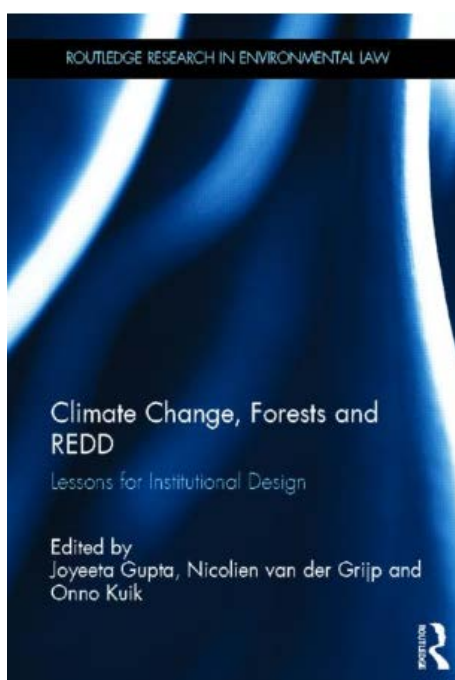


Participants at the 3rd Annual Project Meeting in Vietnam, 28-30 September 2011.



Forest cleared for agriculture in the Peruvian Amazon near Pucallpa

The following is an image of the book produced by the project – Gupta, J., van der Grijp, N. & Kuik, O. (Editors), 2013. *Climate Change, Forests and REDD: Lessons for Institutional Design*. Routledge Research in Environmental Law. Routledge, London and New York. 258 pp.





Dr Robin Matthews presenting results of the project at the side-event in the EU Pavilion at the UNFCCC CoP-18 conference in Doha, November 29, 2012.