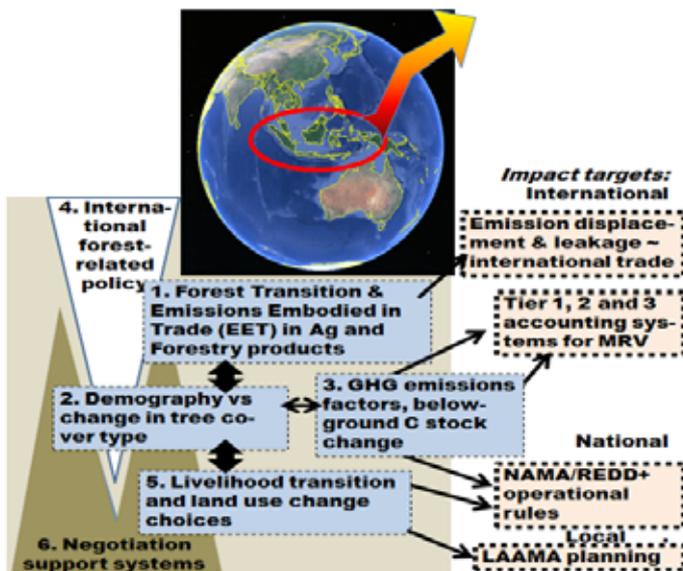


## Reducing emissions from all land uses in Indonesia: motivation, expected funding streams and multi-scale policy instruments



In the past decade, Indonesia became known as the country with the highest land-based carbon emissions. Now it is a leader in NAMA articulation. Debate has moved from denial to new ways of dealing with these issues, linking the effort to reduce emissions from deforestation and degradation, which is focussed on forests, with a broader approach to all land-based emissions as part of nationally appropriate mitigation actions. The Reducing Emissions from Deforestation and Degradation through Alternative Land Uses in Rainforests of the Tropics (REDD-ALERT) project has been part of this dynamic and now reflects on the lessons learnt.

### Key findings

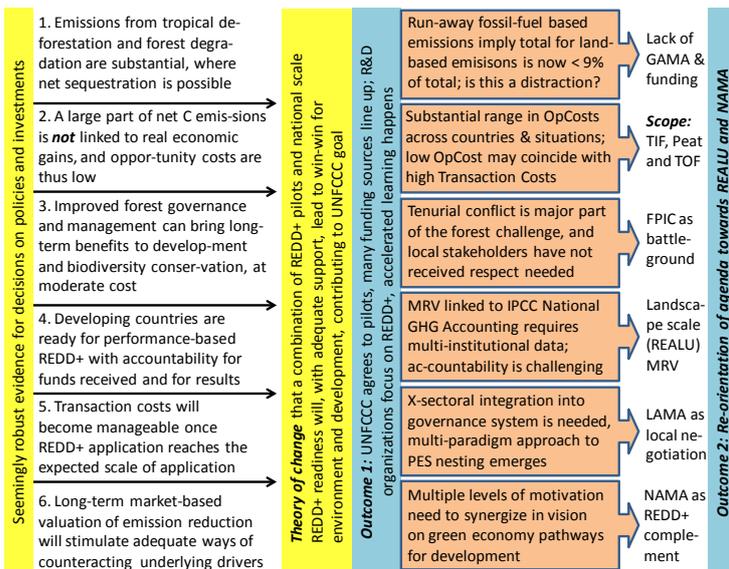
1. Nationally appropriate mitigation actions (NAMA) facilitate nesting of REDD+ through a 'landscape approach'.
2. A motivational pyramid helps understand the way economic compensation, trade and sovereignty interact in reducing emissions.
3. In relating local actions to global consequences, a combination of the PES paradigms of commodification, compensation and co-investment can be used.
4. Locally appropriate adaptation and mitigation actions (LAAMA) require new planning instruments.
5. At village level, scenarios will depend on the (gender-specific) response to new options and actors.

### Implications

- REDD+ as a theory of change requires a change of theory itself to include holistic, nested approaches to landscape management in national policy.
- REDD+ and the concept of carbon offsets has built-in contradictions where motivation includes global emission reduction; politically supported NAMA provides a much stronger basis for integrated actions.
- The required balance between fairness and efficiency at each scale transition might be best achieved by a combination of PES paradigms.
- Initial experience has been positive with the new LUWES method and its participatory planning cycles.
- Scenario simulation games and negotiation support are important as part of the learning process, without shortcuts.

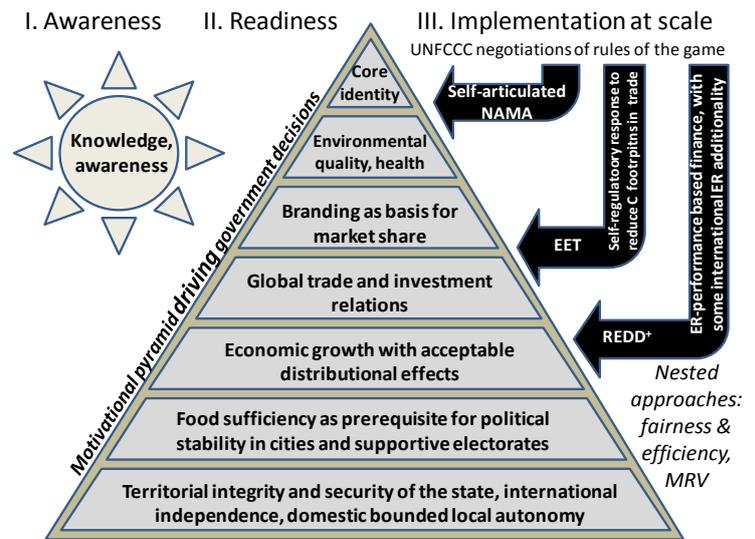
## 1. NAMA articulation facilitates nesting REDD+ in a landscape approach

At the time of the climate-change conference of parties in Bali in 2007, two policy instruments were agreed upon: 1) Reducing emissions from deforestation (which subsequently morphed into REDD+); and 2) nationally appropriate mitigation actions (NAMA). Many saw REDD+ as a fast-track, primarily economic instrument, and NAMA as a slower approach towards greater national sovereignty in identifying what is, and what is not, apt for each country. In fact, both approaches have been slow. The world is desperately short of *globally* appropriate mitigation actions, but NAMA in Indonesia have created the opportunity to address three issues that REDD+ alone cannot: 1) the multiplicity and interactions of drivers on the forest–agriculture interface; 2) the challenge of a forest focus in the absence of a globally agreed definition of ‘forest’ and delineation of the problems to be addressed; and 3) the importance of peat emissions, which require a landscape approach involving both forest and non-forest peatlands that are hydrologically linked. Two further issues identified in 2007—the design of efficient and fair benefit distribution mechanisms and the contested rights to land use and land-use decisions—are as complex for NAMA as they are for REDD+. Yet, progress has been made in Indonesia by seeing the REDD+ efforts as part of the national commitment to achieve emission reduction (26% by the country’s own means and an additional 15% with international support). The nesting of REDD+ in NAMA is further discussed by van Noordwijk et al 2013. Six years ago, REDD+ was an attractive ‘theory of change’ but lessons learnt subsequently suggest that this theory itself requires change (figure 1).



**Figure 1.** Summary of the initial steps in the argument that led to the ‘theory of change’ that supporting a REDD+ mechanism would be a strategic way to achieve UNFCCC targets, with development and biodiversity co-benefits, and the subsequent lessons learnt that led to reassessment of the opportunity and adjustment of the steps to be taken to achieve them

## 2. A motivational pyramid helps understand the way economic compensation, trade and sovereignty interact in reducing emissions



**Figure 2.** The three phases of REDD+ development (I. Awareness; II. Readiness; and III. Implementation at scale) interact with a motivational pyramid of government decisions, with REDD+, EET and NAMA as different entry points for, respectively, economic compensation for opportunities foregone, for participation in a global economy aiming for lower emission levels, and for identifying nationally appropriate ways to articulate the country as part of the solution to global climate change that contains risks for all (van Noordwijk et al 2013)

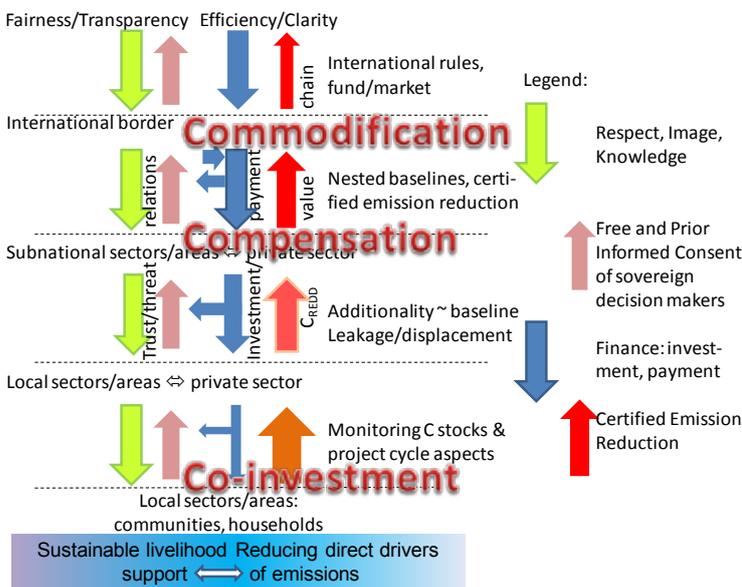
### Box 1. Acronym soup

- EET = Emissions embodied in trade
- FPIC = Free and prior informed consent
- GAMA = Globally appropriate mitigation actions
- IPCC = Intergovernmental panel on climate change
- LAAMA = Locally appropriate adaptation and mitigation actions
- LUWES = Land-use planning for low-emissions development strategies
- MRV = Monitoring, reporting and verification
- NAMA = Nationally appropriate mitigation actions
- PES = Payments for environmental services
- REALU = Reducing emissions from all land uses
- REDD+ = Reducing emissions from deforestation and (forest) degradation plus conservation
- R&D = Research and development
- TIF = Trees inside forest
- TOF = Trees outside forest
- UNFCCC = United Nations framework convention on climate change

### 3. Multi-scale approach bridges multiple paradigms

Emission reduction mechanisms must find a balance between the fairness aspects of the exchange of respect and recognition for commitment, and the efficiency aspects of exchanging money for verified emission reductions. With the three basic concepts of commodification, compensation and co-investment that jointly shape the PES concept (van Noordwijk et al 2012), we can see opportunities for a change of character of the interactions at three scale transitions:

1) local community scale, where co-investment applies to local government, which requires 2) compensation within a nationally differentiated economy; and 3) commodification rules that can apply at the national border, interacting with other nations (Minang and van Noordwijk 2013).



**Figure 3.** Two parallel exchanges—one in the fairness and the other in the efficiency domain—take place between multiple scales: local action to change land use and the global consequences and beneficiaries of resulting emission reductions. It is feasible to apply the three PES paradigms at different transitions between local and global scales

### 4. LAAMA planning instruments

Locally appropriate adaptation and mitigation actions (LAAMA) require new planning instruments because they have to deal with an often complex set of interacting stakeholders (Galudra et al 2013), influencing economic development as well as carbon emissions and haze affecting neighbouring countries (Ekadinata et al 2013). Initial experience with new participatory planning cycles is positive; the LUWES instruments that are being tested are proving to be flexible (Dewi et al 2011). More dynamic models with feedback responses though actor decisions are proving to be useful as well (Mulia et al 2013, Tata et al 2013).



**Figure 4.** LUWES as iterative participatory method

In lowland Sumatra, the depletion of natural forests and the increased protection of remnants has shifted the focus of conversion to rubber agroforests and land uses of intermediate intensity (Villamor et al 2013b). With current carbon assessment methods, the finest measurement scale still might lead to unacceptably high errors if this were used for an economic incentive system, and aggregation to a scale of 1 km<sup>2</sup> was found to reduce errors while maintaining most of the relevant spatial information (Lusiana et al 2013).

### 5. Village-level scenarios and gender

At village level, scenarios will depend on the response to new options and actors. Scenario simulation games (Villamor and van Noordwijk 2011) provide learning opportunities for local stakeholders, as well as for researchers who can better understand the way decisions in a social context may differ from the responses at individual household level. Relevant gender specificity of tendencies to conserve or convert remaining forests came to our attention (Villamor et al 2013a) and deserve further exploration.



**Figure 5.** Figure 5. In Equal Measure, a user guide to gender analysis in agroforestry. (Image by Lucerna, A. World Agroforestry Centre (ICRAF))

Such games and focus-group discussions can become forms of negotiation support, empowering local people to become informed actors who can freely withhold, or provide, consent to externally proposed interventions. Unfortunately, there is little opportunity for short cuts as the learning process is at least as important as the proposed contracts.

Direct engagement of local communities in forest and tree monitoring might not, in the short term, reduce costs for monitoring, reporting and verification but will enhance ownership of the process and the legitimacy of actions in the longer term, without loss of credibility of the data (Danielsen et al 2013).

## 6. Outlook

After the denial of high land-based emissions in Indonesia, the hope of economic compensation through REDD+ payments turned into a hype, followed by a crash scenario of widespread disappointment. We're not yet writing the post-mortem for REDD+, but a reincarnation is nevertheless needed as a proactive part of a broader landscape approach that is framed as land-based emission reduction in the NAMA context. Much what is needed to reduce conflict and improve planning does not require a large additional budget—it will probably reduce societal costs in the medium term and is a valid part of NAMA design. Starting from, or reaching into the motivational domain of self-articulation, pride and sovereignty gives a more solid base for actions—but the national process must be reiterated at local level rather than assuming that what is nationally appropriate can be directly scaled down to local conditions. Indonesia has been a pioneer in this process, but there is still quite a way to go.

## References

- Danielsen F, Adrian T, Brofeldt S, van Noordwijk M, Poulsen MK, Rahayu S, Rutishauser E, Theilade I, Widayati A, The An N, Nguyen Bang T, Budiman A, Enghoff M, Jensen AE, Kurniawan Y, Li Q, Mingxu Z, Schmidt-Vogt D, Prixia S, Thoutmontone V, Warta Z, Burgess N. 2013. Community monitoring for REDD+: international promises and field realities. *Ecology and Society* 18(3):41. <http://dx.doi.org/10.5751/ES-05464-180341>.
- Dewi S, Ekadinata A, Galudra G, Agung P, Johana F. 2011. *LUWES: Land-use planning for low-emissions development strategies*. Bogor, Indonesia: World Agroforestry Centre (ICRAF) Southeast Asia Regional Program.
- Ekadinata S, van Noordwijk M, Budidarsono S, Dewi S. 2013. *Hot spots in Riau, haze in Singapore: the June 2013 event analyzed*. ASB Policy Brief no. 33. Nairobi: ASB Partnership for the Tropical Forest Margins.
- Galudra G, van Noordwijk M, Agung P, Suyanto S, Pradhan U. 2013. Migrants, land markets and carbon emissions in Jambi, Indonesia: land tenure change and the prospect of emission reduction. *Mitigation and Adaptation Strategies for Global Change*. <http://link.springer.com/article/10.1007/s11027-013-9512-9>
- Lusiana B, van Noordwijk M, Johana F, Galudra G, Suyanto S, Cadisch G. 2013. Implication of uncertainty and scale in carbon emission estimates

on locally appropriate designs to reduce emissions from deforestation and degradation (REDD+). *Mitigation and Adaptation Strategies for Global Change*. <http://link.springer.com/article/10.1007/s11027-013-9501-z>.

- Minang PA, van Noordwijk M. 2013. Design challenges for achieving reduced emissions from deforestation and forest degradation through conservation: leveraging multiple paradigms at the tropical forest margins. *Land Use Policy* 31:61–70.
- Mulia R, Widayati A, Suyanto S, Agung P, Zulkarnain MT. 2013. Low carbon emission development strategies for Jambi, Indonesia: simulation and trade-off analysis using the FALLOW model. *Mitigation and Adaptation Strategies for Global Change*. <http://link.springer.com/article/10.1007/s11027-013-9485-8/fulltext.html>.
- Tata HL, van Noordwijk M, Ruyschaert D, Mulia R, Rahayu S, Mulyoutami E, Widayati A, Ekadinata A, Zen R, Dorsayo A, Oktaviani R, Dewi S [In press] Will REDD+ funding to reduce emissions from deforestation and (forest) degradation stop peat swamp conversion to oil palm in orangutan habitat in Tripa (Aceh, Sumatra, Indonesia)? *Mitigation and Adaptation Strategies for Global Change*.
- Van Noordwijk M, Leimona B, Jindal R, Villamor G B, Vardhan M, Namirembe S, Catacutan D, Kerr J, Minang PA, Tomich TP, 2012. Payments for Environmental Services: evolution towards efficient and fair incentives for multifunctional landscapes. *Annual Review of Environmental Resources* 37:389–420.
- Van Noordwijk M, Agus F, Dewi S, Purnomo H. 2013. Reducing emissions from land use in Indonesia: motivation, policy instruments and expected funding streams. *Mitigation and Adaptation Strategies for Global Change*. DOI: 10.1007/s11027-013-9502-y.
- Villamor GB, van Noordwijk M. 2011. Social role play games versus individual perceptions of conservation and PES agreements for maintaining rubber agroforests in Jambi (Sumatra), Indonesia. *Ecology and Society*. <http://www.ecologyandsociety.org/vol16/iss3/art27/>.
- Villamor GB, Desrianti F, Akiefnawati R, Amaruzaman S, van Noordwijk M. 2013a. Gender influences decisions to change land use practices in the tropical forest margins of Jambi, Indonesia. *Mitigation and Adaptation Strategies for Global Change*. DOI: 10.1007/s11027413-9478-7.
- Villamor GB, Pontius RG, van Noordwijk M. 2013b. Agroforestry's growing role in reducing carbon losses from Jambi (Sumatra), Indonesia. *Regional Environmental Change*. DOI: 10.1007/s10113-013-0525-4.

## Authors

Meine van Noordwijk, Fahmuddin Agus, Sonya Dewi, Herry Purnomo, Betha Lusiana, Grace Villamor

## Correct citation

van Noordwijk M, Agus F, Dewi S, Purnomo H, Lusiana B, and Villamor GB. 2013. *Reducing emissions from all land uses in Indonesia: motivation, expected funding streams and multi-scale policy instruments*. ASB Policybrief No. 34. Nairobi, Kenya: ASB Partnership for the Tropical Forest Margins. 4p.

The ASB Partnership for the Tropical Forest Margins is working to raise productivity and incomes of rural households in the humid tropics without increasing deforestation or undermining essential environmental services.

ASB is a consortium of over 90 international and national partners with an eco-regional focus on the forest–agriculture margins in the humid tropics, with benchmark sites in the western Amazon Basin of Brazil and Peru, the Congo Basin forest in Cameroon and DRC Congo, southern Philippines, northern Thailand, and the island of Sumatra in Indonesia.

The ASB Policybriefs aim to deliver relevant, concise reading to key people whose decisions will make a difference to poverty reduction and environmental protection in the humid tropics.

## Contact us at:

ASB Partnership for the Tropical Forest Margins,  
P.O. Box 30677 - 00100 Nairobi, Kenya  
Tel. +254 20 7224000  
Email: [asb@cgjar.org](mailto:asb@cgjar.org)  
<http://www.asb.cgjar.org>



Zentrum für Entwicklungsforschung  
Center for Development Research  
University of Bonn



Research  
Program on  
Forests,  
Trees, and  
Agroforestry