

# Risk and responsibility in Reduced Emissions from Deforestation and Degradation

Leo Peskett and Zoe Harkin

Investment in reduced emissions from deforestation and degradation (REDD) in developing countries relies on the ability to guarantee effective maintenance of forest cover over long timeframes, while also avoiding negative social and environmental repercussions. Given the complex and often unpredictable drivers of deforestation in developing countries, risk reduction is therefore of paramount importance. This paper looks at how REDD transaction mechanisms between buyers and sellers might be established and the implications that risk reduction mechanisms might have for different stakeholders in developing countries. It focuses on the likely implications for the interests and welfare of the forest-dependent poor.



Can risks for investors in REDD be reduced in a way that is in the interests of the poor?

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## Forest Policy and Environment Programme

FPEP conducts independent policy-oriented research on tropical forestry issues, seeking to inform policy change in ways which improve the livelihoods of the forest-dependent poor, whilst also securing the long-term future of forest resources.



## Policy conclusions:

- Ensuring benefit flows to all relevant stakeholders, including the poor, will be essential for the effective and long-term success of REDD strategies
- The form of REDD transactions from international to national levels, and benefit distribution within countries, are yet to be decided. Less centralised systems may be preferable for efficiency, reducing administration costs and avoiding state capture, but they will still present risks for the poor
- The exact implications of REDD strategies for the poor depend on the type of strategy, the nature of the actors who are delivering the benefits and agreements over how these benefits are delivered
- Contractual agreements for REDD need to be negotiated in an open and transparent way. The ability of different stakeholders to meet the terms of contracts, and especially redress mechanisms if emissions reductions are not delivered, will need particular attention
- Strengthening legal institutions at national and sub-national levels in a pro-poor way will be essential to ensure REDD benefits reach legitimate recipients and are subject to appropriate conflict resolution mechanisms
- Without clear land and carbon rights, REDD will be high risk for the poor; at the very least, there need to be binding arrangements for assessing and negotiating benefit distribution
- Benefit flows dispensed over time are likely to be much more beneficial for the poor and for future generations, than one-off payments. They must also be maintained over the duration of REDD projects.
- Support for upfront costs is likely to be required in order for national/local governments, companies, communities and individuals to access REDD benefit flows
- The use of carbon standards could reduce risks for buyers and sellers of REDD, bearing in mind that there can be trade-offs between high standards and ability of certain groups to meet these standards

## Introduction

Forestry carbon projects in developing countries are inherently risky investments. This is because forest carbon storage can easily be reversed through natural or human causes, affecting the permanence of carbon emissions reductions. They can also be difficult compared to other forms of carbon offset projects because of their wide geographic scope, difficulties in monitoring and enforcement, and factors such as the complex nature of land ownership and poor quality of governance in many developing countries. However, they also provide significant potential for securing additional and multiple benefits.

Growing international interest in paying developing countries for ‘Reducing Emissions from Deforestation and Degradation’ (REDD) relies on effective risk reduction mechanisms and safeguards in the REDD ‘supply chain’ at national and sub-national levels. The exact architecture of national REDD systems will depend to some extent on international decisions (e.g. whether the REDD mechanism is market or fund-based) as well as the ways in which REDD projects are implemented. Pilot projects funded by international donors and projects in the voluntary carbon markets are already considering different options for establishing REDD projects, transaction systems and risk reduction methods and tools.

Unless these systems are well designed, the quest for risk reduction in REDD by investors could result in lost market opportunities due to high transaction costs or negative impacts for those delivering REDD - national governments and sub-national entities such as local governments, companies, communities and individuals in developing countries. The potential implications for small producers and the poor are of particular concern, given their likely lack of bargaining power in the establishment of REDD, when there are powerful global and national forces at play.

This paper looks at how REDD transaction mechanisms between buyers and sellers might be established and the implications that risk reduction mechanisms might have for different stakeholders in developing countries.

## Benefit distribution systems in REDD

REDD ‘supply chains’ have to transfer payments from international buyers *down* to national and sub-national entities (e.g. local governments, companies, communities or individuals) in order to support policies and measures that will result in reduced emissions. The resulting emissions reductions can then be transferred *up* to international buyers, to be used in order to meet legally binding or voluntary emissions reductions targets. These flows of carbon and transactions are usually tracked and recorded in ‘registries’ held by international buyers and by

sellers at national government or project levels. To be effective over long timescales (which is necessary to achieve permanence), the payments must:

- incentives positive changes in behaviour;
- discourage deforestation and degradation through improved regulation, monitoring and enforcement;
- compensate opportunity costs resulting from REDD (i.e. the benefits now and those that would have occurred in the future, which will be lost when REDD is implemented)
- be effective in targeting all stakeholders involved in deforestation and degradation surrounding the REDD strategy, rather than just a sub-set of them;
- encourage REDD approaches that take into account traditional forestry systems and uses of wood and forest products;
- ensure benefits are maintained over long time frames; and
- alter development paths in the long term to encourage permanent shifts towards more sustainable uses of forests.

Transactions between developing countries and international buyers could occur either with the national government or directly with sub-national entities (see Figure One) – i.e. the primary ‘seller’ of carbon could either be the national government or a sub-national entity. Which one is more appropriate will depend on decisions taken by the international community over the architecture of a future REDD regime and decisions taken at the national level on mechanisms and management surrounding REDD. If the national government is the seller then it is likely that some proportion of payments will be retained by the government to fund administration of the national system (including establishing a forest carbon and monitoring system, changing regulations and compensating forgone revenues from alternative land uses). If a sub-national entity is the primary seller, then some revenues may need to be redistributed upwards to national governments, for example through taxes, in order to cover opportunity costs accrued at the national level (for example, timber revenues forgone) and REDD administration fees.

REDD payments could be used to implement a range of policies and other measures, depending on the drivers of deforestation, the stakeholders involved and whether the avoided deforestation is planned or unplanned. They can be grouped into five main categories:

- i. Strengthening existing policies and measures (e.g. law enforcement);
- ii. Direct policy changes (e.g. reclassifying land use zones or revoking concession licences);
- iii. Indirect policy changes (e.g. changes in agricultural programmes or infrastructure projects that reduce pressure on forests);
- iv. Economic incentives (either positive incentives such as payments for environmental services or

- disincentives such as taxes on certain activities); and
- v. Direct infrastructure changes (e.g. damming of canals on peat land).

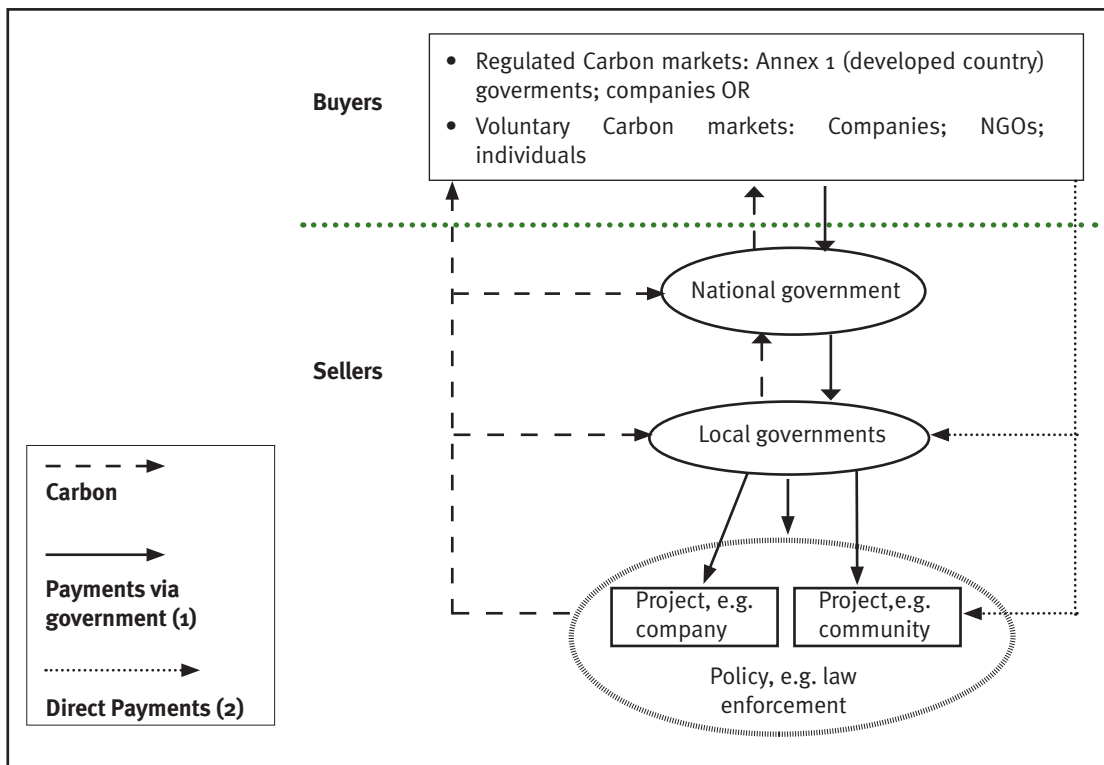
The allocation of payments will primarily depend on performance in reducing emissions relative to a 'business as usual' emissions reference scenario or a negotiated emissions reduction target. The reference scenario could be assessed at the national or sub-national level. For example, if a local government enters into a contract with a carbon buyer or has an agreement to deliver emissions reductions with the national government, the benefits the local government receives are likely to be based on a reference scenario that applies to the area under their jurisdiction. Other performance indicators (relating, for example, to quality of local governance, social and environmental impact assessment, or etc.) should also be taken into account, as REDD activities must be coupled with a stream of long-term positive co-benefits to ensure permanence of avoided emissions.

The implications for the poor will vary significantly between these different strategies, not just because of the changes in land use but also because of differences in transaction systems. For

example, payments made to a company holding an issued forest conversion license to cease or reduce deforestation are likely to entail benefit-sharing mechanisms between companies and local communities to cover lost employment opportunities or denied access rights. Such a mechanism may be managed by the company itself and this could raise issues for the poor such as the perpetuation of low wage labour and inequitable land distribution in deals which are potentially dominated by company interests (Mayers 2001). Rather different issues may arise over payments in areas where deforestation occurs on land where licences have not been issued (i.e. is unplanned). In this case benefit distribution is more likely to occur via local governments using incentives such as agricultural intensification in non-forest areas. Problems this might raise for the poor include, for example, increased conflict over land in areas zoned for agriculture, increased competition in local agricultural markets and heavier policing of forest across the area under local government jurisdiction.

Illegal activities raise a particular ethical dilemma in relation to the allocation of REDD benefits, as stakeholders acting illegally could end up benefiting from the system. In some cases this may be

**Figure 1: Possible transaction mechanisms in the REDD supply chain with payments flowing downwards from buyers in the regulated or voluntary carbon markets, and carbon flowing upwards.**



(1) with transactions occurring with national governments which then redistribute sub-nationally and  
 (2) with transactions occurring directly with sub-national entities (either local governments or directly with projects). Payments could be used to implement policies or infrastructure projects at a local level; as incentives (e.g. to companies with concession licences to engage in more sustainable forest management); and as compensation (e.g. if forest is re-classified after concession licences have been issued). In practice all of these options could be implemented in parallel within a given area. Carbon accounting could occur at the project, local and national level depending on the design of the system.

acceptable (for example, in the case of poor people who were forced into these activities because of lack of access rights), but in many cases it may not be. The implication is that REDD payments should be used to strengthen legal institutions and processes at sub-national levels, taking into account the legitimate interests of the poor.

The description of the REDD supply chain given above indicates that responsibility for delivering REDD is likely to lie primarily with the entity that has a contract with the buyer. However responsibility can be transferred further down the supply chain through further agreements, legislation and contracts. Indeed, this is very likely to occur. The responsibility of national governments is also likely to vary depending on the form REDD takes. National governments could be:

- sellers of REDD credits, which would be generated based on performance against a national reference scenario;
- buyers of emissions reductions from sub-national entities;
- an intermediary helping to negotiate contracts between international buyers and sub-national sellers; and/or
- the regulator of the REDD system (e.g. establishing relevant laws and safeguards).

Many of the current REDD proposals at the international level favour transactions occurring at the national level, in order to increase the scale of investment, reduce costs (through economies of scale) and reduce the risk of 'leakage' (i.e. the shifting of deforestation and degradation to other areas outside the project area as the result of REDD activities). While it is likely that greater efficiencies can be realised through national level baselines, monitoring and accounting, this does not necessarily mean that the transactions need to occur at this level. A decentralised system could well offer the most direct linkage between REDD activities and payments, by reducing the number of layers of administration. Providing that sub-national entities can effectively administer the transactions and devolve payments, a decentralised system is most likely to affect behaviour changes in positive directions. Both top-down, centrally planned systems and decentralised private sector engagement in forestry entail risks for the poor, such as lack of local participation and 'voice' in spacial planning decisions and inequitable benefit sharing arrangements between logging companies and communities. These risks will vary with context and will have to be managed on a case-by-case basis.

### Risk management in REDD

Carbon forestry projects involve high in-country risks for investors in three main dimensions:

- i. The risk that emissions reductions are not permanent, which is linked to problems in project design and operation, political risks, land

ownership and conflict etc.

- ii. The risk REDD results in the transfer of deforestation and degradation activities to other areas (leakage); and

- iii. The risk of negative social and environmental impacts associated with projects.

These risks will be of concern to investors and to any entity that transfers responsibility to deliver emissions reductions to other parties. This is because benefits from achieving emissions reductions, along with maintaining low reputation risk will depend on good performance in all three areas. This is particularly true for market-based REDD mechanisms which are likely to have more stringent performance requirements than fund-based mechanisms, primarily to ensure comparability in the carbon 'commodity' being traded.

Possible risk reduction options or safeguards can be put in place, but they will need to be carefully designed in order not to disadvantage small producers or the poor. It should also be recognised that it may be neither possible nor financially feasible to capture all leakage and risk within the REDD system. It may be preferable to define a certain level of 'acceptable risk'; otherwise administration costs may become prohibitive. This strategy apart, the risk mitigation options and their implications for stakeholders including the poor are discussed below.

### Devolving liabilities through contracts

If a national or local government, company or community takes on responsibility to reduce emissions through a contract with the buyer, it is possible that this responsibility will be devolved through further contracts to other groups or individuals. These are likely to specify factors such as:

- who is entitled to receive payments;
- activities to be implemented in order to receive payments;
- the form of payments;
- delivery schedules for carbon and payments; and
- safeguards in the event that the anticipated emissions reductions do not in fact occur. Safeguards could include replacement of emissions reductions (e.g. by sourcing from other project areas) or financial penalties to cover losses.

Asymmetric information between buyers and sellers can disadvantage sellers in the negotiation of contracts for payments for environmental services (Bracer et al. 2007). This means that contract negotiation processes and support mechanisms including provision of information for sellers (possibly provided through civil society organisations) will be essential for REDD. There is also a risk that the contract terms could be hard to satisfy, especially for smaller producers and poorer communities/

individuals. Possible ways to avoid this include the buyer taking on more of the risk (in exchange for a lower price for carbon) or establishment of carbon pooling arrangements, whereby risk of project failure is spread across a portfolio of projects. This latter option would require that buyers have a diverse portfolio of projects in order to cover the deficits of those that do not deliver. Assessment of the social implications of REDD on a site-specific basis will also be required when contracts are being established. This will ensure that REDD projects are not overly restrictive on land use options, such as shifting cultivation, that may be essential for the forest-dependent poor.

### Land rights

Clear land ownership and access rights are likely to be important in delineation of responsibilities for implementation of REDD activities, determining who the beneficiaries might be, and whose opportunity costs need to be met. For example, if a REDD strategy involves the re-classification of land use, compensation payments may be based on previous activities and made to those holding use or access rights. However, conflicts could arise surrounding the 'correct' beneficiaries of a REDD strategy and/or responsibility for any strategy failure. Where poor people have weak powers to assert their rights to land or where rights do not exist, they may be particularly disadvantaged in negotiating benefits, as they are often less able to assert their claims compared to more powerful elites. In-migration and land speculation resulting in conflict has also been known to occur in benefit mechanisms (EBI 2003) and are more likely in cases where rights are poorly defined. Strengthening local institutions to deal with conflicts and to help negotiate contracts where rights are weak or poorly defined, and the use of tools such as Rapid Tenure Assessment (Galudra et al. 2007) during the design phase of REDD projects could help reduce these risks and improve benefit flows for the poor in REDD.

### Carbon rights

The legal establishment of 'carbon rights' defines the carbon sequestration benefits of a forest as a tradable commodity, allowing them to be sold and transferred separately to the forest itself. Carbon rights can also delineate ongoing management responsibilities associated with a specific area of forest land (such as a requirement to 'maintain carbon stocks' for long periods, perhaps in excess of 100 years).

The main issues for sellers of carbon in developing countries include:

- how these rights are initially defined
- whether they can work in cases where land ownership is unclear
- whether legal institutions are strong enough to defend these rights and
- the liability arrangements if emissions reductions occur on their land in the future.

Conflict could arise in claims over carbon rights. Once carbon rights are sold, this is likely to restrict long-term land use options for the specified forest area. Careful consideration is needed to determine the impact of restricted land uses on the poor, stemming from carbon rights legislation. For example, if sale of carbon rights prevents forest-dependent communities from utilising forest products or harvesting timber, this could have significant impacts on livelihoods and erode permanence in the long-run.

Even in cases where carbon rights can be clearly established conflicts can occur. In New Zealand, for example, the national government decided to nationalise carbon rights which resulted in a perverse incentive for landowners who no longer saw the direct benefits of selling carbon (Box 1). This indicates that carbon rights need to be carefully defined in national regulations and need to be held by landowners.

#### Box 1: Issues in establishing carbon rights

Carbon rights are a form of property right that 'commoditise' carbon and allow trading. They separate rights to carbon from broader rights to the forest and land and they can also define management responsibilities and liabilities. They are usually registered on the land title and ideally should be perpetually enforceable or established over long time frames (say, 100 years) to ensure permanence for the buyer. Australia has been one of the first countries to establish carbon rights, which are an adaptation of traditional 'profit à prendre' rights (defined as the right to take profit from something on another person's land). These exist perpetually on the land title and define liability for re-emission, and therefore ensure permanence of emissions reductions.

The establishment of carbon rights in New Zealand illustrates the importance of defining such rights in a way that encourages carbon projects. In 2002, the Government of New Zealand decided to retain ownership over credits or debits for carbon from plantations on public and private land. This decision, among other market factors, contributed to a significant decline in plantation establishment and also a net reduction in New Zealand's forest production area. The policy was strongly opposed by the forest industry, which argued that landowners should hold the rights to forest carbon in their forests. In 2007 the policy was eventually reversed, with credits and associated liabilities devolved to forest owners as part of a new emissions trading scheme.

## Payment schedule

REDD payments can either be paid upfront or dispensed over time. For most sellers, upfront payment would likely be preferred because this will give the highest short-term gains. But if these sellers are redistributing benefits (i.e. they are also acting as a form of intermediary) dispersed redistribution may be preferable. If for example, a national government receives an upfront payment for REDD from an international buyer, dispersed redistribution of payments sub-nationally might be preferable for some beneficiaries to guarantee a long-term steady income from REDD. Dispersed payments might also be preferable for buyers because they are likely to increase permanence by ensuring benefits are maintained for a longer duration. However, it is questionable whether it would be economically viable to make REDD payments over the whole duration of the project (which could be over 100 years). This creates a risk for sellers in that benefit flows could cease before the end of a project's lifetime, in which case they would be bound contractually to protect the forest until the project finished, but would not receive commensurate benefits. Such a mechanism would only be viable if REDD policies and measures are effective in altering local development paths to those that permanently reduce pressure on forests without the need for additional and sustained cash incentives.

## Carbon standards and verification

The use of standardised and rigorous processes for quantifying carbon and assessing the social and environmental impacts of carbon projects is an essential requirement for reducing risks for buyers. Projects that include 'co-benefits' such as biodiversity conservation might help increase prices and these are often cited as a particular attraction of REDD (e.g. Stern 2006). As discussed in Peskett *et al.* (2007), whilst such standards can increase the potential of carbon forestry to benefit smaller producers, they can also inflate implementation costs due to greater complexities in project design, monitoring and evaluation, as well as the necessity for engagement of verifiers to assess compliance with the standard.

One way to reduce risk in any transaction is to only make payments after the desired change has been verified to occur. With an intangible commodity such as carbon reductions this has obvious appeal. This might lead to a higher price (which can benefit sellers) but upfront funding for projects becomes more of a problem, making it difficult for sellers without access to capital to access carbon markets. Depending on who bears the costs for meeting standards and covering upfront costs (e.g. if it is a local government or individuals competing for market access), these factors could significantly reduce the potential of REDD to benefit the poor.

These problems are further compounded by the fact that in existing carbon forestry projects, carbon revenues are often a very low percentage of overall value (Neeff and Henders 2007), meaning that projects have to be commercially viable even without the carbon payments. As REDD in many cases will involve preserving standing forest, these additional benefits are likely to be particularly problematic. With potentially limited options for generating income from timber and non-timber forest products, carbon revenues will therefore need to be a much higher percentage of overall income than in most other types of carbon forestry projects. Alternatively, REDD strategies could be restricted to the more profitable forms of sustainable forest management, but this could well limit options for the poor to engage directly in REDD markets. This would be the case, for example, if the poor were to be heavily dependent on NTFPs, offtake of which would be reduced in the SFM project.

Possible solutions to these problems include:

- the forward selling of emissions reductions prior to verification, which will transfer some risk to buyers and therefore result in lower prices but available upfront capital;
- seeking alternative financing sources, such as local development and commercial banks, international financial institutions, carbon funds and new financial instruments such as forest backed bonds (IISD 2006; Enviromarket 2007);
- utilisation of high resolution satellite imagery to monitor forest carbon storage, thereby functioning as a quasi-verifier and reducing on the ground costs; and
- implementation of provisions to either allow simplified procedures for implementation of standards (as is the case in the CDM), or to provide additional financing to help defray their costs.

## Payment resolution

For REDD to be successful, benefits need to reach all stakeholders who are affected by REDD-related policies and measures. In theory it may be most appropriate for each individual stakeholder to directly receive benefits that exactly meet or slightly exceed their opportunity costs. In practice, however, this will be hard to achieve because dealing with large numbers of individual contracts could entail high transaction costs and there are likely to be difficulties in identifying all stakeholders, especially where land and carbon ownership is unclear. To reduce risks it may therefore be preferable to use a mixture of direct and indirect benefit distribution mechanisms. For example, direct payments could be made to individuals where rights are clearly established, with indirect payments (e.g. to villages) also being made for establishing broader development projects such as improving schools and social services. Existing local institutions, such

as village committees, banks and credit unions could be used for channelling and redistributing payments. In all of these options, elite capture is the main risk for legitimate beneficiaries. This risk can only be reduced through strong democratic processes in local institutions and placing conditionalities on payments, such as transparent audit procedures.

## Insurance buffers

Given that permanence is unlikely to be maintained in 100% of REDD projects within a country, risk may be reduced by establishing insurance 'buffers' that withhold a proportion of REDD credits from sale. In a national system these would be held in the national registry and used when necessary to replace lost credits. They would also allow for corrections to the national REDD account due to leakage, should sub-national REDD projects result in increased deforestation and degradation beyond their boundaries. This could potentially affect sub-national projects adversely (e.g. companies or communities engaging in activities to reduce deforestation and degradation). If they are verifying these reductions at the project level, they would expect REDD benefits in proportion to the amount of emissions reductions they have achieved. But if leakage occurs in other areas, due to projects and other influences that are not their responsibility, then the national account and payments to projects will have to be corrected in their favour. If the cause of leakage cannot be identified, then projects would stand to lose benefits even if they have performed well. This would evidently be unjust, and would undermine effectiveness.

## Conclusions

There is still a lot of uncertainty about the form that REDD mechanisms might take in developing countries, but the fact that projects and pilots are

already being established means that it is essential to try and understand their implications now. The signs are that REDD mechanisms are likely to be very context specific, although bounded by certain international rules or at least the fundamental principles of market systems. The main implications for the poor concern the interests, roles and responsibilities of different stakeholders in the REDD supply chain, power relations between these different stakeholders and how these shape notions of risk and the resulting safeguard mechanisms.

Without adequate safeguards against risks such as non-permanence or assurance of the wider social and environmental impacts of REDD mechanisms, it is unlikely that investment in REDD will even begin. If the safeguards are too focussed on the interests of investors or those who devolve responsibilities to deliver emissions reductions then there is a danger that REDD will be inequitable, as certain stakeholders may end up being excluded from the system. The losers are most likely to be the poor. This may make REDD less sustainable in the long-run, as a failure to benefit or at least compensate all affected stakeholders could result in conflict and possible perverse incentives that slow or reverse emissions reductions. The implication is that there are unlikely to be any 'quick fix' options for the design of REDD mechanisms or safeguards; they must be developed in the context of wider sectoral reform and institutional strengthening at national and local levels.

*Leo Peskett is a Research Officer with the Forest Policy and Environment Programme (FPEP) at ODI. Zoe Harkin is a Senior Forestry Consultant at URS Forestry. For correspondence please contact: [l.peskett@odi.org.uk](mailto:l.peskett@odi.org.uk)*

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Overseas Development Institute

111 Westminster Bridge Road, London SE1 7JD

Tel +44 (0)20 7922 0300

Fax +44 (0)20 7922 0399

Email [forestry@odi.org.uk](mailto:forestry@odi.org.uk)

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