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A political economic analysis of lessons for REDD+

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Center for International Forestry Research

CIFOR advances human wellbeing, environmental conservation and equity by conducting research to inform policies and practices that affect forests in developing countries. CIFOR is one of 15 centres within the Consultative Group on International Agricultural Research (CGIAR). CIFOR's headquarters are in Bogor, Indonesia. It also has offices in Asia, Africa and South America.

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Abbreviations and acronyms

AGO	Attorney General's Office
APBD	Regional budget (*Anggaran Pendapatan dan Belanja Daerah*)
APBN	State budget (*Anggaran Pendapatan dan Belanja Negara*)
APP	Asia Pulp & Paper Co. Ltd.
APRIL	Asia Pacific Resources International Ltd.
ASOSAI	Asian Organization of Supreme Audit Institutions
BKSDA	Bureau of Forest Resource Conservation (*Balai Konservasi Sumber Daya Alam*)
BLU	Public Service Unit (*Badan Layanan Umum*)
BLU-BPPH	Forest Development Funding Agency Public Service Unit (*Badan Layanan Umum – Badan Pembiayaan Pembangunan Hutan*)
BP-DAS	Bureau of Watershed Management (*Balai Pengelolaan Daerah Aliran Sungai*)
BPK	Supreme Audit Board (*Badan Pemeriksa Keuangan*)
BUMD	Regional state-owned enterprise (*Badan Usaha Milik Daerah*)
BUMN	National state-owned enterprise (*Badan Usaha Milik Negara*)
CIFOR	Center for International Forestry Research
CO_2	Carbon dioxide
DAK-DR	DR-Special Allocation Fund (*Dana Alokasi Khusus – Dana Reboisasi*)
DBH-DR	DR- Shared Revenues (*Dana Bagi Hasil – Dana Reboisasi*)
DJR	Reforestation Guarantee Deposit (*Dana Jaminan Reboisasi*)
DR	Reforestation Fund (*Dana Reboisasi*)
FAO	Food and Agriculture Organization
F-MRV	Financial monitoring, reporting, and verification
FWI/GFW	Forest Watch Indonesia/ Global Forest Watch
FY	Fiscal year
GERHAN	National Movement for Land and Forest Rehabilitation (*Gerakan Nasional Rehabilitasi Hutan dan Lahan* – a.k.a. GN-RHL)
GMT	Green metric tonne
GN-RHL	National Movement for Land and Forest Rehabilitation (*Gerakan Nasional Rehabilitasi Hutan dan Lahan* – a.k.a. GERHAN)
GOI	Government of Indonesia
Gt	Gigatonne
Ha	Hectare

HPH	Commercial timber concession (*Hak Pengusahaan Hutan*)
HTI	Industrial timber or pulpwood plantation (*Hutan Tanaman Industri*)
HTR	Community-based timber plantation (*Hutan Tanaman Rakyat*)
IBRA	Indonesian Bank Restructuring Agency
IHH	Forest product royalty (*Iuran Hasil Hutan*)
IHPH	Timber concession fee (*Iuran Hak Pengusahaan Hutan*)
IMF	International Monetary Fund
IPK	Wood utilisation permit for timber clearing (*Izin Pemanfaatan Kayu*)
IPTN	PT Industri Pesawat Terbang Indonesia
INTOSAI	International Organization of Supreme Audit Institutions
IUPHT	Forest plantation licence (*Izin Usaha Pemanfaatan Hutan Tanaman*)
IWRF	Indonesia Water Revolving Fund
KPK	Corruption Eradication Commission (*Komisi Pemberantasan Korupsi*)
LULUCF	Land use, land use change and forestry
m^3	Cubic metre
MHB	PT Menara Hutan Buana
MHP	PT Musi Hutan Persada
MoF	Ministry of Forestry
MoFEC	Ministry of Forestry and Estate Crops
MRV	Monitoring, reporting and verification
NGO	Nongovernmental organisation
PEACE	PT Pelangi Energi Abadi Citra Enviro
PNBP	Non-tax state revenues (*Pendapatan Negara Bukan Pajak*)
PPATK	Financial Intelligence Unit (*Pusat Pelaporan dan Analisis Transaksi Keuangan*)
PSDH	Forest resource rent provision (*Provisi Sumber Daya Hutan*)
RAPP	PT Riau Andalan Pulp and Paper
REDD+	Reducing emissions from deforestation and forest degradation and enhancing forest carbon stocks
Rp	Indonesian rupiah
SMEs	Small and medium enterprises
TNI	Indonesian national armed forces (*Tentara Nasional Indonesia*)
TPI	Indonesian Selective Logging System (*Tebang Pilih Indonesia*)
TPTI	Indonesian Selective Logging and Replanting System (*Tebang Pilih dan Tanam Indonesia*)
UNFCCC	United Nations Framework Convention on Climate Change
UN-REDD	United Nations REDD initiative
US$	US dollar
USAID	United State Agency for International Development
WALHI	Indonesian Forum for Environment (*Wahana Lingkungan Hidup Indonesia*)
Yr	Year

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A note on terminology

For many terms, particularly those that are specific to Indonesia's forestry sector, this study uses acronyms and abbreviations that are derived from Indonesian. The authors have chosen to use Indonesian acronyms and abbreviations in this way, rather than to introduce new Anglicised acronyms and abbreviations, specifically when the former are already used widely in English-language policy discussions, print media and academic publications. Most notably, the paper refers to the Reforestation Fund by the abbreviation DR, short for *Dana Reboisasi*. Similarly, the paper refers to timber concessions as HPHs (short for *Hak Pengusahaan Hutan*) and the Supreme Audit Board as BPK (short for *Badan Pemeriksa Keuangan*), among many other terms for which abbreviations are used. In each instance, the abbreviation and the Indonesian term for which it stands are clearly stated both in the List of Abbreviations and Acronyms and in the text when the term is first used.

Executive summary

In the global effort to mitigate climate change, the initiative for reducing emissions from deforestation and forest degradation (REDD+) offers an unprecedented opportunity for tropical forest countries to create new revenue flows by protecting standing forests and rehabilitating degraded forests. With nearly 90 million hectares under forest cover, Indonesia has the world's third largest area of tropical forest, as well as extensive carbon-rich peatlands. However, Indonesia is also the world's largest emitter of CO_2 from deforestation and forest land use change. Through REDD+, Indonesia has a unique opportunity to generate revenue, reduce the loss of forest cover and, in doing so, make a significant contribution to reducing global carbon emissions.

Prior analysis shows that reducing Indonesia's deforestation rate by 5 per cent could generate REDD+ payments of US $765 million a year, while a 30 per cent reduction could generate more than US $4.5 billion a year (Purnomo *et al*. 2007). With such large sums potentially flowing through REDD+ payment schemes, Indonesia's ability to achieve REDD+ targets will require effective institutions for good financial governance. This study analyses the financial management and governance practices with which the Government of Indonesia (GOI) has administered the country's Reforestation Fund (*Dana Reboisasi*, generally referred to by the abbreviation DR) over the past two decades. This experience offers critical lessons for REDD+ related to the need for:

- strengthening financial management and revenue administration;
- dealing with corruption, fraud and loss of state assets;
- monitoring, reporting and verifying financial transactions;
- removing misaligned and perverse incentives;
- ensuring accountability and mitigating moral hazard; and
- distributing benefits equitably.

Indonesia's Reforestation Fund during the Soeharto era

Established in 1989, the Reforestation Fund is a national forest fund financed by a volume-based levy paid by timber concessionaires. It was created with a stated mandate to support reforestation and the rehabilitation of degraded land and forests. Over the past 20 years, the DR has had aggregate (nominal) receipts of approximately US $5.8 billion, making it the single largest source of government revenues from Indonesia's commercial forestry sector.

During the Soeharto era, the Ministry of Forestry used the DR to promote the development of industrial timber and pulpwood plantations, allocating more than US $1.0 billion in cash grants and discounted loans to commercial plantation companies. The Ministry distributed a significant portion of the DR funds and forest conversion licences to companies with close ties to political elites, allowing a few well-connected actors to capture sizeable forest rents. Many of the recipient companies fraudulently 'marked up' their costs and overstated the areas planted in order to secure DR allocations above the levels they were formally entitled to. Others invested little in managing the plantation sites that were established, causing the programme to fall well short of its area and productivity targets. The Ministry also disbursed US $600 million to finance politically favoured projects that had little to do with the Reforestation Fund's mandate of promoting reforestation and forest rehabilitation.

As part of the US $43 billion financial rescue package provided by the International Monetary Fund (IMF) in the wake of the 1997–1998 monetary crisis, the Government of Indonesia agreed to transfer administration of the Reforestation Fund to the Ministry of Finance and to commission a comprehensive third-party financial audit. Conducted by Ernst & Young in 1999, this audit documented systematic financial mismanagement, fraudulent practices by recipients of DR subsidies and routine diversion of funds for uses that were not consistent with the Reforestation Fund's mandate. Ernst & Young documented losses of US $5.2 billion in public funds during the five-year period FY 1993/4–FY 1997/8, approximately 50 per cent of which were incurred after receipts from the DR levy had entered the Ministry of Forestry's accounts. As of December 2009, however, the final audit report produced by Ernst & Young had not been released for public review or discussion.

Post-Soeharto reforms – building on steps forward, avoiding steps backward

During the *Reformasi* period of the past 10 years, the Government of Indonesia has taken important steps to surmount the deeply rooted political and governance problems that beset the Reforestation Fund in the Soeharto era. At the same time, some of these problems have continued throughout the post-Soeharto period and significant challenges remain. Many tropical forest countries that implement REDD+ may face similar challenges. These countries, and the agencies currently developing REDD+ payment schemes, can learn from Indonesia's experiences, expanding and building on the positive aspects while avoiding the negative aspects.

Financial management and revenue administration

During both the Soeharto and the post-Soeharto periods, weak financial management and inefficient administration of revenues by government institutions at all levels undermined effective use of the Reforestation Fund. Major public investments in plantation development and rehabilitation of degraded forest lands have repeatedly fallen well short of their objectives. In the absence of effective mechanisms for oversight and accountability, large sums intended to fund development of plantations have been lost to fraud, diverted for other uses or wasted on poorly managed projects.

The transfer of the Reforestation Fund to the Ministry of Finance in 1998 – 1999 introduced important checks and balances and integrated the DR with the state budget. However, recent audits by Indonesia's Supreme Audit Board (BPK) have documented continued widespread irregularities and weak internal controls in DR funds administered by the Ministry of Forestry, resulting in repeated disclaimer opinions in audits of the Ministry's financial reports. The recently formed Forest Development Funding Agency Public Service Unit (known by the abbreviation BLU-BPPH) – which manages at least US $2.2 billion in DR funds – had failed as of at least mid-2009 to disburse *any* of the US $500 million budgeted for plantation development during 2008 and 2009. Similarly, district and provincial governments have collectively received US $500 million in DR funds since 2001, but many still do not have the skills or personnel to manage funds effectively.

Indonesia's experience with the Reforestation Fund highlights a critical need to strengthen capacity for financial management and revenue administration at all levels. As existing administrative structures are ill-equipped to manage the current flow of fiscal resources from the DR, it can be expected that the influx of substantial REDD+ funds will place significant new stresses on these institutions. Improvements are needed in budgeting, accounting, internal financial controls and reporting. It will be important to put in place systems that clearly set out how revenues will be shared, in accordance with the roles and responsibilities of the various agencies involved at national, provincial, district and local levels. Increased transparency and public accountability will also be critical.

Dealing with corruption, fraud and loss of state assets

Corruption and fraud undermined major Reforestation Fund investments in plantation development and forest rehabilitation during the Soeharto era, resulting in losses of hundreds of millions of dollars in state funds and depletion of Indonesian forests. These problems, deeply rooted in political systems and compounded by opaque governance, are proving difficult to eradicate. There are signs that corruption and misuse of DR funds have become more decentralised during the post-Soeharto period, as Indonesia's provincial and district governments have assumed increased authority to administer forestry revenues.

In the post-Soeharto era, the GOI has made major efforts to stamp out corruption, notably by creating Indonesia's high-profile Corruption Eradication Commission (*Komisi Pemberantasan Korupsi*, KPK) and Corruption Court. These institutions investigate, prosecute and try high-level corruption cases independently of the normal law enforcement and judicial processes. In recent years, they have successfully prosecuted numerous cases of forest-related corruption involving officials at all levels. The convictions of Soeharto cronies Mohamed 'Bob' Hasan and Probosutedjo for abuses related to the Reforestation Fund represent landmark cases in the prosecution of forest-related corruption and fraud.

But the vast majority of corruption and fraud cases continue to go unpunished, as they are handled by the normal law enforcement and judicial institutions. What now needs to be done is to mainstream anti-corruption efforts by building capacity and raising accountability among the corruption/financial crime units of the National Police, the Attorney General's Office and the courts. To pre-empt potential corruption related to REDD+ schemes, steps should also be taken to raise transparency and accountability of government agencies that administer fiscal resources related to forests and carbon. As part of REDD+ 'readiness', resources should be invested to further strengthen the capacity of the Corruption Eradication Commission and the Corruption Court – as well as Indonesia's Financial Intelligence Unit (PPATK), which oversees the implementation of the nation's anti-money laundering laws – particularly to handle criminal cases related to forests and carbon.

Monitoring, reporting and verifying financial transactions

Throughout the post-Soeharto *Reformasi* era, and especially during the Yudhoyono administrations (2004–present), the Government of Indonesia has taken steps to improve transparency and accountability in the administration of the Reforestation Fund and other sources of state finance. The capacity of the Supreme Audit Board (BPK) has been strengthened with its designation as the sole external auditor for the Government of Indonesia. Between 2004 and 2008, BPK conducted 29 audits related either directly or indirectly to the Reforestation Fund and published each on its website (www.bpk.go.id).

Sound financial management, financial good governance and effective enforcement of financial law are needed to ensure that REDD+ funds will be well managed and that REDD+ revenues will flow sustainably. If funds allocated to REDD+ projects are lost to corruption, diverted for other uses or simply managed poorly, investors may shift to other countries or other markets where financial management and governance are better. Countries will further need to ensure that REDD+ projects meet high performance standards and cost efficiency targets.

Administering REDD+ funds responsibly will require high levels of transparency and accountability from the outset. In particular, governments will need to put in place effective systems for financial monitoring, reporting and verification (F-MRV) in addition to the MRV of carbon emissions averted. This should include regular third-party audits of the accounts through which REDD+ funds are administered, as well as financial audits of the projects that are supported by those funds. In its capacity as sole auditor, BPK is well placed to play a central role in designing and implementing an MRV process for REDD+ financing mechanisms in Indonesia.

Capital subsidies and perverse incentives

During both the Soeharto and the post-Soeharto periods, the use of the Reforestation Fund to allocate capital subsidies for commercial forestry development has created perverse incentives for unsustainable forest management. It has done so by encouraging overharvesting of selective logging concessions and clearing of 'degraded' natural forests. DR subsidies have included cash grants and discounted loans to promote commercial plantation development and DR levies on natural forest timber that are well below the stumpage value of the wood harvested (i.e. US $2.00 per tonne for small-diameter pulpwood).

In 2007, the Ministry of Forestry announced a major new policy initiative of develop 9.0 million hectares of new commercial plantations by 2016. To the extent the Ministry's renewed allocation of DR subsidies to support this initiative encourages the removal of natural forest cover, these incentives could compromise the government's ability to meet carbon emission reduction targets agreed under REDD+. So, too, could the GOI's efforts to promote expansion of the nation's pulp and paper, oil palm and biofuel industries.

Governments putting in place REDD+ schemes will need to align policies across forestry and other sectors, and synchronise these with broader economic policies. Strengthening coordination between agencies administering REDD+ and those responsible for land allocation, forest use and industrial licensing will be essential. Improved coordination with private and public sector financial institutions could also help reduce investments in major projects that are likely to generate high levels of carbon emissions.

In Indonesia, it will be critical to establish strong coordination and accountability between agencies administering REDD+ payments and those overseeing the Reforestation Fund. Given the Ministry of Forestry's current plans to allocate some US $2.2 billion in DR funds to finance commercial plantations through a recently formed financial vehicle – the Forest Development Funding Agency Public Service Unit (known by the abbreviation BLU-BPPH) – alignment of the BLU-BPPH's plans with Indonesia's national REDD+ programme will be especially important.

Accountability issues and moral hazard

The use of Reforestation Fund subsidies to promote plantation development, coupled with weak mechanisms for accountability, has contributed to high levels of moral hazard in Indonesia's forestry sector. One result is that although the GOI allocated US $1.0 billion in DR subsidies during the 1990s, only limited areas of commercially productive plantations have actually been developed. The Ministry of Forestry has failed to hold most DR subsidy recipients accountable either for the plantations they failed to develop or for the loans they have failed to repay. As with the GOI's multibillion dollar write-off of forestry debt held by the Indonesian Bank Restructuring Agency (IBRA) in 2003–04, such low levels of accountability have effectively encouraged forestry companies to engage in high-risk investments and irresponsible financial management – practices that are likely to continue in the future, especially when their activities are funded by public money.

It is conceivable that many of the forestry companies (or their affiliates) that benefited from the Reforestation Fund subsidies and/or the IBRA debt write-off will also be among those seeking to secure credits for carbon emission reductions under Indonesia's forthcoming REDD+ mechanism – a possibility that should raise red flags. It will be important to review the track records of prospective REDD+ participants and to consider the implications if project owners fail to meet their obligations under REDD+ payment schemes.

For REDD+, moral hazard appears to be a point of particular concern in forestry projects involving permanent credits. The use of insurance policies, for instance, to ensure that emission reductions remain permanent once such credits have been issued, could inadvertently encourage project owners to renege on their obligations in ways that lead to permanence reversal (i.e. through the clearing of forest cover). Although most carbon insurance schemes apparently assign partial liability for permanence reversal to the project owner, it is not entirely clear how or by whom liability will be determined, or how disputes over liability will be resolved.

Some observers assume that host governments will ultimately need to provide guarantees for liability claims in the event project owners fail to meet the obligations or disappear. However, as Indonesia's experience with the Reforestation Fund has demonstrated, the possibility that the GOI could be required to guarantee that REDD+ participants will fully meet their obligations raises important questions about the degree to which public institutions may ultimately assume private risk.

Equity and benefit distribution

Particularly during the Soeharto era, the distribution of benefits from the Reforestation Fund was highly inequitable. Powerful actors captured economic rents while forest-dependent communities were often displaced from their customary domains. Conflicts between local people and forestry companies have often undermined DR-financed plantation projects. To the extent that REDD+ provides financial incentives for large emitters of forest-based carbon to reduce emissions, a substantial portion of funds could go to large forestry enterprises, pulp and paper producers and oil palm companies. Many of these companies are closely tied to state elites and are, therefore, in a good position to access economic rents from REDD+, particularly when payments are distributed by government agencies.

In Indonesia and other tropical forest countries, inequitable distribution of REDD+ payments could increase existing disparities in the forestry sector, and could displace and impoverish forest-dependent peoples. The risks are particularly high when state agencies assert control over forests that have been managed by rural communities for generations. Unless governments take proactive measures to recognise forest people's rights and to facilitate equitable benefit sharing with rural communities from the outset, allocation of forested land for REDD+ projects could spark conflicts. Although REDD+ may reduce deforestation and forest degradation, this could be at the cost of the well-being and livelihood security of forest-dependent communities.

Financial governance and REDD readiness: Global implications

Indonesia's experience in dealing with governance and financial management issues related to the Reforestation Fund has much to offer both to current global discussions on establishing REDD+ mechanisms, and to countries thinking of putting in place national carbon-credit schemes. Indonesia's experience shows that transparency and accountability are critical components of good financial governance and revenue administration, and that legally empowered financial oversight institutions – such as the nation's Supreme Audit Board and Corruption Eradication Commission – can play an important role in providing checks and balances.

To manage REDD+ funds responsibly, governments will need institutions that can facilitate effective coordination among national, provincial and local agencies, as well as accountability with civil society, donor organisations and investors. However, sustaining the political will to put in place and enforce rules and regulations, tackling the daunting task of transforming agencies at all levels, setting up transparent systems and assigning roles, rights and responsibilities are significant challenges.

In readiness for REDD+, countries are already building capacity in land use planning and carbon accounting. Indonesia's experience with the Reforestation Fund shows that it is just as important to start building capacity in budgeting, accounting, fiscal management and other aspects of administering REDD+ funds. Building capacity for financial governance across all levels of government will take commitment, resources and time. But fostering transparency and good governance is a win–win strategy, not only for managing a nation's forest resources and generating new revenue flows from REDD+, but for all state endeavours.

Recommendations

To strengthen both the Government of Indonesia's administration of the Reforestation Fund and the management of future REDD+ payment mechanisms by Indonesia and other tropical forest countries, the study offers the following recommendations.

- Build capacity to manage finances and administer revenues.
- Strengthen institutions to deal with corruption and fraud.
- Develop effective systems for financial monitoring, reporting and verification.
- Revise policies to remove misaligned and perverse incentives.
- Impose robust due diligence and accountability on recipients of public finance.
- Promote equitable distribution of benefits and minimise negative impacts on forest communities.

1 Introduction

In the global effort to mitigate climate change, there is a growing consensus that wealthy countries should compensate poor countries for reducing carbon emissions. Schemes to pay poor countries for Reducing Emissions from Deforestation and Forest Degradation (REDD+) are now being negotiated under the United Nations Framework Convention on Climate Change (UNFCCC). REDD+ aims to provide incentive structures and implementation mechanisms that will lead to significant reductions in tropical deforestation and forest degradation, which currently account for 20 per cent of all carbon emissions caused by humans (Kanninen *et al.* 2007, Angelsen 2008, Angelsen *et al.* 2009). For tropical forest-rich countries, REDD+ offers an unprecedented opportunity to create new revenue flows by protecting standing forests and rehabilitating degraded forests.

With nearly 90 million hectares under forest cover, Indonesia has the world's third largest area of tropical forest, as well as extensive carbon-rich peatlands (FAO 2008; Rieley *et al.* 2008). But Indonesia is also the world's largest emitter of carbon dioxide (CO_2) from deforestation and forest land use change. Through REDD+, Indonesia has a unique opportunity to generate revenue, reduce the loss of forest cover and, in doing so, make a significant contribution to mitigating global climate change.

This study aims to support Indonesia's REDD+ 'readiness' process by examining the country's experience with its Reforestation Fund (*Dana Reboisasi*, DR) over the past two decades. Established in 1989, the DR is a multibillion dollar fund administered by the Government of Indonesia (GOI) with a mandate to support reforestation and rehabilitation of degraded forest lands. In many respects, the DR represents an important institutional antecedent for REDD+ payment schemes in Indonesia, which can provide historical insights into the government's capacity to manage and allocate a large stream of funds in the nation's forestry sector. This experience offers critical lessons for REDD+ related to the need for:

- strengthening financial management and revenue administration;
- dealing with corruption, fraud and loss of state assets;
- monitoring, reporting and verifying financial transactions;
- removing misaligned and perverse incentives;
- ensuring accountability and mitigating moral hazard; and
- distributing benefits equitably.

Although the analysis focuses on Indonesia's experience with the DR, the lessons drawn are highly relevant to other tropical forest countries participating in REDD+, particularly those expected to administer REDD+ payments through a national forest fund.

1.1 Indonesia and the emerging REDD+ regime

The architecture of the global REDD+ regime is still in the design phase, and options being considered vary widely. Carbon crediting approaches, for instance, would provide REDD+ credits either to national governments or to sub-national actors (i.e. local governments, communities, private landholders or project developers) based on verifiable emission reductions below an established baseline. Such credits are already tradable in voluntary carbon markets. Alternatively, fund-based approaches are largely focused on the creation of an international carbon fund that would make payments to national governments – each of which might manage its own fund to distribute payments to national and sub-national entities. Under such systems, incentive payments could be based either on verifiable emission reductions below an agreed baseline or on implementation of policy reforms or other interventions.

Whichever approach, or combination of approaches, is ultimately adopted, the amount of capital that is expected to flow through REDD+ payment mechanisms is potentially quite significant. Analysts estimate that a 50 per cent reduction in deforestation world-wide would require REDD+ incentives of between US $17.2 billion and US $28.0 billion annually, depending on assumptions about carbon prices (Kindermann *et al.* 2008). With an assumed annual discount rate of 5 per cent, this would amount to aggregate payments of approximately US $216 billion to US $352 billion over the course of a decade.

Indonesia is critically important to the global fight against climate change. The nation's forests and peatlands are under considerable pressure from legal and illegal logging; the development of industrial pulpwood plantations; expansion of the oil palm and biofuels industries; land-clearing for smallholder agriculture; and particularly in *El Nino* years, uncontrolled fires (World Bank 2007).[1] Recent studies estimate that carbon dioxide emissions (CO_2e) associated with Indonesia's forests and peatlands amount to more than 2.5 gigatonnes (Gt) annually, and could be as high as 4.5 Gt per year (PEACE 2007). Although these figures are contested, they indicate that Indonesia is the world's largest emitter of CO_2 from forestry and land use change; and the world's third largest emitter of CO_2 from all sources if fossil fuels are also considered, surpassed only by China and the United States (PEACE 2007).

As the host of the COP-13 meeting in Bali in December 2007, President Susilo Bambang Yudhoyono made a commitment for Indonesia to play a lead role in the design and implementation of carbon emission reduction initiatives among tropical forest-producing countries. In May 2009, Indonesia became the first country to formally enact regulations for administration of its national REDD programme (Reuters

1 Estimates of Indonesia's deforestation rate vary widely – a fact which has complicated ongoing negotiations over the nation's carbon emissions baseline. According to some sources, the country has lost natural forest cover at a rate of more than 1.8 million ha per year, or roughly 2 per cent annually at current levels, since at least 1990 (FWI/GFW 2002, Holmes 2002, Stibig et al. 2007). The Government of Indonesia has estimated that Indonesia's deforestation rate was 2.8 million ha per year during 1997–2000, and 1.1–1.2 million ha per year during 2000–2005 (Ministry of Forestry 2008, Fogarty 2009). Hansen et al. (2008) assert that the average deforestation rate during 2000–2005 was 700000 ha/yr.

8 May 2009). At the G-20 meeting in September 2009, President Yudhoyono further committed Indonesia to reduce emissions from land use, land use change and forestry (LULUCF) by 26 per cent in 2020 from the business-as-usual levels, and by 41 per cent with international assistance. Through successful participation in REDD+, Indonesia has a unique opportunity to bring its high rate of forest cover loss under control and, in doing so, to make a significant contribution to reducing global climate change.

Participation in REDD+ could also bring a substantial new stream of revenues to Indonesia's national treasury and to rural communities, thereby promoting economic stability, poverty reduction and development. One estimate suggests that a 5 per cent reduction in Indonesia's deforestation rate could generate annual REDD+ payments of US $765 million, while a 30 per cent reduction could generate more than US $4.5 billion per year (Purnomo *et al.* 2007).[2] However, securing access to REDD+ payments on a sustainable basis will not be easy for Indonesia or other forest-rich countries. By design, REDD+ payment mechanisms will be performance-based: if carbon emissions are not verifiably reduced below an agreed national baseline, REDD+ payments in principle will not flow.

1.2 REDD+ and the challenges of financial management and governance

Given the large sums of money involved, robust systems for financial management and governance will be critical to the success of REDD+. In simplest terms, if funds allocated for REDD+ are not administered effectively or are diverted from their intended purpose, REDD+'s ability to generate verifiable carbon emissions will likely be compromised. This, in turn, could result in substantial losses of state resources and could conceivably undermine the sustainability of future payment flows. If funds are mismanaged or are used ineffectively, there is a good chance that donor organisations and investors will shift their money to countries where REDD+ funds are managed according to higher standards of financial accountability and are used more effectively to generate verifiable carbon emissions.

Within this context, REDD+ faces an underlying contradiction in that many of the most likely recipients of REDD+ funds are nations that do not have a positive track record in the governance of public financial resources. Of the 19 countries currently participating in the United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries (or UN-REDD) and the World Bank-sponsored Forest Carbon Partnership Facility, 10 rank in the bottom third (most corrupt) of Transparency International's Corruption Perception Index for 2008, based on surveys in 180 countries (Transparency International 2008).[3] Corruption and financial fraud are particularly widespread in the forestry sectors in many of these countries. To the extent that REDD+ funds are lost to corruption or fraud, recipient countries risk falling short of minimum forest cover protection targets, which in turn could undermine

2 These figures are based on an assumed carbon price of US $5 per tonne CO2 equivalent.

3 The initial list of countries to receive 'readiness' start-up financing through UN-REDD includes: Bolivia, Democratic Republic of Congo, Indonesia, Panama, Papua New Guinea, Paraguay, Tanzania, Vietnam and Zambia. The initial list of countries to receive REDD 'readiness' financing through the Forest Carbon Partnership Facility includes: Bolivia, Costa Rica, Democratic Republic of Congo, Gabon, Ghana, Guyana, Kenya, Lao PDR, Liberia, Madagascar, Mexico, Nepal, Panama and Vietnam.

the long-term sustainability of carbon-based revenue flows.

On a more mundane level, many developing countries have limited administrative capacity to manage public financial resources. Although this may be particularly the case in decentralised political systems, in which administrative authority has been devolved to local or regional governments, many centralised political systems also have performed poorly in this area. Developing country governments often lack the trained personnel and institutional structures needed to administer state revenues effectively. Many, for instance, have only limited capacity for budgeting, accounting, maintaining internal controls, managing fund flows, reporting financial data and auditing. For REDD+, limited capacity in these areas raises fundamental concerns about whether the funds allocated will be used accountably and in the most effective and cost-efficient manner to reduce deforestation and forest degradation.

It must be noted that the correlation between likely REDD+ recipients and weak financial management and governance is not purely coincidental. Indeed, institutional breakdowns and governance failures – in both the forestry and the financial sectors – often play a key role in facilitating, if not driving, the processes of deforestation and forest degradation that REDD+ aims to curtail. Seen in this light, it is hardly a realistic option for the international community to guide REDD+ payments only to countries with strong financial management and governance structures already in place. Yet it is also clear that the injection of potentially hundreds of billions of dollars into the forestry sectors of tropical countries through REDD+ payment schemes may have little effect in slowing deforestation – and in some cases, could seriously exacerbate the problem – if it is done without effective systems for financial management and governance.

It is significant that more than 40 countries have national forest funds that predate the REDD+ process (Rosenbaum and Lindsay 2001) (see Appendix A). As many of these countries are now embarking on REDD+ preparedness, such funds offer potentially important lessons for how governments can manage REDD+ revenues effectively and use these to finance sustainable forestry practices.[4] These forest funds encompass a range of institutional models, and the variety of organisational structures, income sources, uses and oversight mechanisms provide a wealth of experience from which REDD+ 'readiness' processes can draw upon.

1.3 Indonesia's Reforestation Fund and lessons for REDD+

Not unlike REDD+, Indonesia's Reforestation Fund was initiated by the Soeharto government with the stated aim of ensuring that the country's forests would be sustained over the long term. The DR is financed by a volume-based levy that timber concessionaires are required to pay on every cubic metre of wood they harvest from the nation's natural forests. Over the past 20 years, the DR has had aggregate (nominal) receipts of approximately US $5.8 billion, making it the single largest source of government revenues from Indonesia's commercial forestry sector – although it may soon be surpassed by REDD+-related revenues. During both the Soeharto and the post-Soeharto periods, the GOI has used the

4 Of the 41 countries with national forest funds reviewed by Rosenbaum and Lindsay (2001), 9 countries are currently participating in either UN-REDD or the Forest Carbon Partnership Facility. These include Bolivia, Costa Rica, Indonesia, Lao PDR, Madagascar, Nepal, Tanzania, Vietnam and Zambia.

DR to fund major public investments in reforestation and rehabilitation of degraded forest lands. In each case, however, these programmes have fallen well short of their stated objectives, and implementation has been undermined by serious problems related to financial management and governance.

During the Soeharto era, the DR was administered as an off-budget fund by the Ministry of Forestry, which exercised a high degree of discretion over how the money was managed and to whom disbursements were made. Throughout the decade preceding the end of Soeharto's New Order government in May 1998, the Ministry used the DR to promote industrial plantation development, allocating more than US $1.0 billion in cash grants and discounted loans to commercial plantation companies. In the absence of effective mechanisms for oversight and accountability, large amounts of DR funds were lost to fraud, diverted for other uses and/or squandered on poorly managed plantations. Consequently, despite the significant public investment from Indonesia's Reforestation Fund, the overall productivity of the plantation areas developed has fallen well short of the Ministry of Forestry's targets. Moreover, the Ministry also disbursed at least US $600 million to finance politically favoured projects that had little to do with the DR's mandate of promoting reforestation and forest rehabilitation.

During the post-Soeharto period, the GOI has taken meaningful steps to rectify many of the problems associated with the administration of the DR and other sources of state finance during the New Order period. These have included placing the DR under the administrative authority of the Ministry of Finance and consolidating it with the state budget; endowing the Supreme Audit Board with far-reaching authority to audit the DR and other public financial assets; creating a Corruption Eradication Commission which has successfully prosecuted several dozen corruption cases involving senior officials; and prosecuting two high-profile cases of DR-related fraud involving close associates of Soeharto. Under Indonesia's regional autonomy process, the GOI has also adopted a more equitable mechanism for sharing DR revenues, with 40 per cent now being distributed among provincial and district governments and 60 per cent administered by the national government. Collectively, these reforms send promising signals for REDD+, as they demonstrate that the GOI is actively seeking to ensure that past abuses of the DR and other sources of state finance do not recur.

Despite these measures, however, the GOI's use of the Reforestation Fund during the post-Soeharto period to finance the rehabilitation of degraded land and forests has continued to be hindered by weak financial management and governance, albeit in somewhat different ways than during the Soeharto era. Recent government audits of the DR have found that both the national government and regional governments have routinely under-spent the funds budgeted for reforestation and rehabilitation projects – frequently by more than 50 per cent – and the areas planted have generally fallen well short of their targets. There are also strong indications that DR-related corruption continues to be widespread; however, it has now become decentralised. As during the Soeharto era, poor record-keeping and financial reporting make it difficult to assess the extent to which DR funds have been used for their intended purpose and to evaluate whether the GOI – and, by extension, the people of Indonesia – have received a reasonable return on this investment of public funds.

Since late 2006, the Ministry of Forestry has signalled that it plans to resume using DR funds to finance industrial plantation development through a new financial intermediary: the Forest Development Funding Agency Public Service Unit (known by the abbreviation BLU-BPPH). As part of its forestry sector revitalisation initiative, the Ministry has targeted the development of some 9.0 million ha of new commercial timber and pulpwood plantations by 2016. According to the government's plan, the BLU-BPPH will disburse approximately US $2.2 billion in DR funds to finance forestry investments – an injection of capital that could have far-reaching implications for Indonesia's future national REDD+ programme. At the same time, the BLU-BPPH has encountered considerable difficulties in administering the funds placed under its authority. Through at least the first half of 2009, the agency had reportedly not yet released any of the approximately US $500 million budgeted for disbursal in 2008 and 2009.

1.4 Structure of the study

The paper is organised into seven sections. Following this introduction, Section 2.0 traces the role the Reforestation Fund played as an off-budget discretionary fund during the Soeharto era, and examines how it was used to provide direct and indirect subsidies to companies with close ties to the state's political power structure. Section 3.0 describes steps taken during the post-Soeharto *Reformasi* period to improve governance of the DR and other sources of state finance, as well as the challenges the Ministry of Forestry has faced in recovering DR-related debt. Section 4.0 describes the restructuring of the DR under Indonesia's ongoing regional autonomy process, and examines the challenges associated with fiscal balancing and the continued misuse of DR funds during the post-Soeharto era. Section 5.0 describes recent efforts by the Ministry of Forestry to use DR funds as a source of discounted finance for its forestry sector revitalisation initiative and traces the development of the Forest Development Funding Agency Public Service Unit. Section 6.0 summarises financial governance lessons from Indonesia's experience with the DR and reflects on their potential relevance for current discussions related to REDD+. Section 7.0 offers a set of recommendations intended to strengthen Indonesia's administration of the Reforestation Fund and implementation of the country's future REDD+ payment mechanism.

2 Administration and uses of the Reforestation Fund during the Soeharto era

Indonesia's experience with the Reforestation Fund is firmly rooted in the political economy of commercial timber extraction under Soeharto's New Order regime (ca 1966–98). During the first years of the Soeharto period, the state asserted wide-ranging administrative control over the nation's forest resources; and during the 1970s and 1980s, the Forestry Department allocated some 60 million ha to commercial logging companies under the HPH (*Hak Pengusahaan Hutan*) timber concession system (Barr 1999, Brown 1999).[5] A significant portion of the HPH licences were distributed through informal patronage networks to state elites and their business partners as part of a broader strategy to consolidate the regime's political power structure (Brown 1999, Ross 2001). By setting the fees, royalties and taxes that concession-holders were required to pay well below the stumpage value of the timber harvested, the New Order state structured Indonesia's forest fiscal system to ensure that HPH-holders would have access to economic rents, or supra-normal profits (Ruzicka 1979, Gillis 1988, Ramli and Ahmad 1993).

During the early 1980s, the Soeharto government took a series of steps to concentrate control over timber rents in Indonesia's forestry sector. Most significantly, the GOI phased in a national ban on log exports, effectively pushing concession-holders to invest in plywood production and concentrating HPH ownership into the hands of a few large forestry conglomerates (Barr 1998). The Ministry of Forestry also introduced a volume-based levy on timber production called the Reforestation Guarantee Deposit (*Dana Jaminan Reboisasi*, or DJR), which would later become the Reforestation Fund (*Dana Reboisasi*, DR). As discussed in the following sections, the DR – with annual receipts that at times exceeded US $500 million – quickly grew into a multibillion dollar off-budget fund over which the Ministry was able to exercise a high level of discretionary control. Through the end of the New

5 Initiated in the late 1960s, Indonesia's HPH timber concession system was established to facilitate large-scale commercial logging in the rich forests of the country's so-called 'Outer Islands' – that is, Sumatra, Kalimantan, Irian Jaya (now Papua) and other islands outside Java, Madura and Bali. The Ministry of Forestry allocated HPH concession licences to private and state-owned forest enterprises for a period of 20 years. Concession-holders were required to manage the HPH sites under a 35-year rotational selective logging system, and were required to carry out enrichment planting in areas logged so that timber extracted would regenerate. By the late 1990s, however, it had become clear that very few HPH licence-holders had managed their concession sites in a manner that would support commercial timber extraction on a sustainable basis.

Order period in 1998, the Ministry used the DR to channel lucrative subsidies to forestry companies linked to state elites and to finance politically favoured projects both within and outside the forestry sector.

2.1 Origins and structure of the Reforestation Fund

Introduced in 1980, the Reforestation Guarantee Deposit, or DJR, was initially structured as a performance bond for timber concession-holders with the stated aim of promoting reforestation and forest rehabilitation.[6] Timber companies were required to post the bond – initially set at US $4.00 per cubic metre ($m^3$) – based on the volume of logs harvested during a particular year. At least in principle, the government would refund the bond to the companies once it was confirmed that they had carried out enrichment planting in the areas they had logged, as required in the HPH contract. In the event a timber concession-holder failed to replant, the Ministry of Forestry was authorised to use the DJR funds to carry out replanting at the company's concession site (Ross 2001).

In practice, however, the DJR proved to be ineffective as an incentive for HPH-holders to carry out reforestation and forest rehabilitation on any meaningful scale. A media report in 1990 suggested that only 30 of 120 concessionaires contacted had carried out replanting activities in the areas they had logged (Wangkar *et al.* 1990). Most companies apparently found that it was economically more profitable simply to relinquish the DJR performance bond to the government than to rehabilitate degraded concession sites. Of the companies that did conduct replanting activities, many complained that they were not fully reimbursed by the Ministry of Forestry, which apparently often refunded only a portion of the DJR funds posted by timber concessionaires (Suhardjo *et al.* 1988, 1989).

As a result, only a small percentage of the funds collected under the Reforestation Guarantee Deposit were actually spent on reforestation and forest rehabilitation, and the DJR 'grew into an important source of revenue for the department' (Ross 2001). According to Ross, this rapidly growing pool of funds became the subject of an intense struggle between a cadre of professional foresters promoting more sustainable concession management practices, on the one hand, and Soeharto's political allies within the Ministry of Forestry, on the other. As the latter gained a decisive upper hand, their desire to maximise the value of rents flowing into the Ministry – which could then be redistributed to other actors and used to finance politically favoured projects – provided a strong disincentive for the Forestry Department to enforce its own selective logging regulations under the HPH timber concession system (Ross 2001).

6 Implicit in the introduction of the DJR was an acknowledgement by the Ministry of Forestry that commercial timber extraction under Indonesia's HPH concession system was not resulting in sustainable forest management. Indeed, by the late 1970s, it had become clear that a significant portion of the country's timber concession-holders were harvesting substantially larger volumes of timber from their HPH sites than they were legally permitted to cut (cf Sacerdoti 1979). Many companies were logging areas outside those approved in their annual work plans, which frequently meant that concessions were being managed on a much shorter rotation than the 35 years specified in the HPH regulations (Kartodihardjo 1999). In many cases, concessionaires also harvested trees with diameters smaller than the legal limit of 50 cm, suggesting that the incremental regrowth of these stands would be much slower than the rate on which the HPH silvicultural model was predicated (i.e. 1 m3/ha/year) (Kartodihardjo 1999). Moreover, apparently very few HPH-holders were carrying out enrichment planting in their logging sites. At least rhetorically, the introduction of the Reforestation Guarantee Deposit was meant to fix these problems. To emphasise that the HPH system was intended to promote long-term management of the nation's forest resources, the Forestry Department simultaneously renamed the Indonesian Selective Logging System (Tebang Pilih Indonesia, TPI) as the Indonesian Selective Logging and Replanting System (Tebang Pilih dan Tanam Indonesia, or TPTI).

In 1989, the DJR was restructured into a non-refundable levy and renamed the Reforestation Fund. The volume-based fee was raised to US $7.00 per m^3 of timber harvested at the time the DR was created; subsequently it was raised to US $10.00 per m^3 in 1990, and to an average of US $16.00 per m^3 in 1993, with variation according to region, species and grade of timber. By comparison, current DR fees – which were set in 1999 and have apparently remained unchanged since then – are roughly at the same level, ranging from a minimum of US $2.00 per tonne for pulpwood to a maximum of US $20.00 per tonne for ebony (Tambunan 2007a) (see Table 1). Until Indonesia's monetary crisis in 1997–98, the DR was payable in US dollars. However, following the sharp devaluation of the Indonesian currency, companies were allowed to pay the DR levy in rupiah, although it continues to be denominated in US dollars.

2.2 Contribution of the DR levy to state forestry revenues

The introduction of the Reforestation Fund, and the subsequent increases in the DR levy, catalysed a significant increase in the New Order state's capture of timber rents.[7] During the final decade of the Soeharto era, the Government of Indonesia collected approximately US $2.6 billion in nominal receipts to the Reforestation Fund, while interest accrued on the principal amounted to an additional US $1.0 billion (Ernst & Young 1999). On an annual basis, DR receipts and interest during the last five fiscal years of the New Order period ranged from US $395 million in 1997/8 to US $540 million in 1995/6 (see Table 2).

As with the DJR deposit before it, the DR levy was by far the largest source of government revenue obtained from Indonesia's commercial forestry sector during the final years of the Soeharto

Table 1. Rates of the DR levy according to Regulation No. 92/1999

Region, species and grade of timber	Rate (US$)	Unit
Kalimantan and Maluku		
Shorea sp.	16.00	m^3
Mixed tropical hardwood	13.00	m^3
Sumatra and Sulawesi		
Shorea sp.	14.00	m^3
Mixed tropical hardwood	12.00	m^3
Irian Jaya and Nusa Tenggara		
Shorea sp.	13.00	m^3
Mixed tropical hardwood	10.50	m^3
Indonesia		
Ebony	20.00	tonne
Teak from natural forest	16.00	m^3
Fancy wood	18.00	m^3
Sandalwood	18.00	tonne
Pulpwood	2.00	tonne

Source: Government Regulation No 92/1999

7 As Ross (2001) points out, 'the rise in the reforestation deposit [and DR levy] lifted the government's timber taxes and royalties from 3,520 Rupiah (US $2.74) per cubic meter of wood in 1986 to 53,550 Rupiah (US $25.50) in 1995. Rent capture rose commensurately, from 6 percent in 1986 to at least 30 to 40 percent in 1995.'

period. As Table 3 shows, annual receipts from the DR levy far surpassed the amounts collected from next two largest sources of forestry revenue: the Forest Royalty (*Iuran Hasil Hutan*, IHH), a volume-based royalty on commercial timber harvested; and the Forest Concession Fee (*Iuran Hak Pengusahaan Hutan*, IHPH), a one-time fee paid by timber concessionaires. Indeed, the combined contributions of the DR levy and the interest that accrued on the principal in the DR account amounted to between 66 and 70 per cent of the Ministry of Forestry's official revenue earnings during the last five fiscal years of the New Order period.

A significant feature of the Reforestation Fund during the Soeharto era is that the DR levy did not flow to the State Treasury to be included in the government's annual budget. Rather, the DR levy was deposited into an off-budget fund managed directly by the Ministry of Forestry (Ascher 1999). The stated rationale for this was that the funds were ear-marked specifically to finance reforestation and forest rehabilitation activities, for which the Forestry Department was the technical implementing agency.

The general acceptance of this premise by authorities in other sectors – who no doubt recognised the political perils of challenging Soeharto's efforts to control the economic resources flowing through the New Order state – effectively meant that there would be no serious external oversight of how the Forestry Department administered the Reforestation Fund. As detailed in the following sections, the regime's leadership designed the DR account to function as

Table 2. Reported receipts of DR levy and DR interest, FY 1993/4–1997/8

Fiscal year	DR levy	DR interest	Total	Average exchange rate (Rp per US$)	Total (US $'000)
		(million Rp)			
1993/4	752 050	244 206	996 256	2 106	473 056
1994/5	793 712	275 990	1 069 702	2 184	489 790
1995/6	836 921	396 263	1 233 184	2 281	540 633
1996/7	847 671	407 301	1 254 972	2 368	529 971
1997/8	1 322 068	513 508	1 835 576	4 639	395 684
Total	**4 552 422**	**1 837 268**	**6 389 690**		**2 429 134**

Sources: Ministry of Forestry and Bank of Indonesia, various years, processed

Table 3. Reported contributions of the DR levy and DR interest to total forestry sector revenues, FY 1993/4–1997/8 (million Rp)

Fiscal year	Forest Concession Fee (IHPH)	Forest Royalty (IHH)	Reforestation Fund (DR levy)	DR interest	Other fees	Total	DR levy + DR interest as % of total
1993/4	21 675	383 650	752 050	244 206	11 320	1 412 902	70.51%
1994/5	38 132	473 293	793 712	275 990	14 549	1 595 677	67.04%
1995/6	29 268	585 134	836 921	396 263	6 745	1 854 331	66.50%
1996/7	19 514	622 145	847 671	407 301	1 694	1 897 136	66.09%
1997/8	18 180	814 967	1 322 068	513 508	1 273	2 678 496	68.85%

Sources: Ministry of Forestry, various years a 'slush fund' with which it could finance politically favoured projects both within and outside the forestry sector with little, if any, accountability either to the Indonesian public or to the technocrats in the Ministry of Finance (Ascher 1999).

2.3 Financial subsidies for industrial plantation development

For 10 years beginning in 1990, the Ministry of Forestry used the Reforestation Fund to subsidise the development of industrial timber plantations under the Ministry's HTI (*Hutan Tanaman Industri*) programme. Under Regulation No. 7/1990 on Industrial Timber Concession Licences, the Ministry allocated capital subsidies to plantation projects carried out wholly by state-owned forestry enterprises (PT Inhutani I–V) and by joint ventures between private companies and one of the Inhutanis (Wangkar *et al.* 1992). For joint venture projects, the Ministry provided subsidised finance according to the following structure:

- 14 per cent of the project's total cost supported through an equity contribution from the DR fund, made in the form of a cash grant;
- 21 per cent of the project's total cost supported through an equity contribution from the private company;
- 32.5 per cent of the project's total cost supported by a no-interest loan from the DR fund;
- 32.5 per cent of the project's total cost supported by a loan from the DR fund at commercial interest rates.

Under this scheme, private sector companies establishing industrial timber plantations through joint ventures with one of the Inhutanis were required to raise only 21 per cent of the overall investment from non-DR sources, with the remaining 79 per cent covered by DR funds. Loans from the DR fund required collateralisation from the private sector partner in the joint venture. The DR fund loans at commercial interest rates were generally payable after the first harvest of the plantation. The no-interest loans were, in turn, subordinate to the DR loans at commercial rates – and therefore payable once the commercial loans had been repaid.

During the decade 1990–99, the Ministry of Forestry officially allocated some Rp 2.4 trillion in DR financing to support plantation investments by 93 joint ventures and each of the five Inhutanis (BPK 2008a). As Table 4 shows, equity grants from the DR fund accounted for approximately 40 per cent of this total, while no-interest loans accounted for an additional 47 per cent. Conservatively converted at the mid-1997 exchange rate of Rp 2,400 per US$, this amounted to disbursements of roughly US $1.0 billion, exclusive of foregone interest earnings. It is significant that 87 per cent of the DR funds allocated to support HTI plantation development took the form of cash grants and no-interest loans; recipient companies were, understandably, far less interested in securing the DR loans with commercial interest rates.

A substantial portion of the DR subsidies were allocated to companies owned by members of the Soeharto family and their business associates and to the Inhutani state-owned forestry corporations. As Table 5 shows, some Rp 1.5 trillion – approximately two-thirds of the total DR disbursements for plantation development – were distributed to 10 HTI companies associated with these elite actors. With the Ministry of Forestry exercising a high level of discretion in distributing DR subsidies, the allocation of cash grants and no-interest loans from the Reforestation Fund effectively consolidated the capital accumulation strategies of the sector's most powerful

Table 4. Reforestation Fund disbursements for HTI plantation development by joint ventures and state-owned forest enterprises, 1990–99

Type of allocation	Joint ventures (million Rp)	% of total	Inhutani I–V (million Rp)	% of total	Total (million Rp)	Approx. total (US $'000)
DR cash grant	577 367	23.9	382 670	15.8	960 038	400 015
DR 0% interest loan	1 060 085	43.9	79 032	3.3	1 139 117	474 632
DR commercial loan	293 487	12.1	25 071	1.0	318 558	132 732
Total	**1 930 940**	**79.9**	**486 774**	**20.1**	**2 417 714**	**1 007 381**

Note: Approximate total in US $ is based on assumed average exchange rate of Rp 2,400 per US$. DR loan figures include interest and penalties incurred as of July 2007.

Source: BPK (2008a)

Table 5. Distribution of DR subsidies to companies linked to state elites

Company	Principal owners	Cash grant	0% Interest loan	Commercial loan	Total
		(billion Rp)			
PT Musi Hutan Persada	Prajogo Pangestu; Siti Hardiyanti Rukmana (Soeharto's daughter)	54.8	127.3	164.6	346.7
PT Inhutani III	Ministry of Forestry	214.2	0.0	0.0	214.2
PT Surya Hutani Jaya	Bob Hasan; Soeharto family	36.5	84.6	86.4	198.5
PT Menara Hutan Buana	Probosutedjo (Soeharto's half-brother)	66.7	100.9	0.0	167.6
PT ITCI Hutani Manunggal	TNI (military); Bambang Trihatmodjo (Soeharto's son); PT Nusamba (Soeharto family and Bob Hasan)	46.0	95.1	0.0	141.1
PT Tanjung Redeb Hutani	Bob Hasan; Soeharto family	42.7	82.2	0.0	124.9
PT Inhutani I	Ministry of Forestry	63.6	39.2	3.3	106.1
PT Inhutani V	Ministry of Forestry	28.3	28.8	15.3	82.4
PT Inhutani II	Ministry of Forestry	60.0	10.9	6.3	77.2
PT Adindo Hutani Lestari	Gen. Prabowo Subianto (Soeharto's son-in-law); Siti Hediati Prabowo (Soeharto's daughter)	25.7	41.8	0.0	67.5
Sub-total of top 10 companies		**638.5**	**610.8**	**275.9**	**1 526.2**
All other companies		**321.5**	**528.3**	**42.6**	**891.4**
Total		**960.0**	**1 139.1**	**318.5**	**2 417.6**

Sources: BPK (2008a); Brown (1999); Barr (1998) actors. As discussed below, this often came at the direct expense of forest-dependent communities, who were frequently displaced from the HTI concession sites held by these companies.

2.4 Perverse incentives for forest conversion

In addition to the allocations of discounted finance from the Reforestation Fund, the Ministry of Forestry also provided HTI licence-holders with access to large volumes of low-cost timber by allowing them to clear the remaining natural forest from their plantation concession sites. Technically, the areas cleared were supposed to be classified as 'degraded' Production Forest, with less than 20 m^3 per ha of commercial species with a diameter of 30 cm or more (Groome Poyry 1993).[8] Frequently, however, the volume of merchantable timber was substantially greater than this (Kartodihardjo and Supriono 2000). HTI licence-holders (or, in many cases, contractors with which they were affiliated) were permitted to clear these areas with a Wood Utilisation Permit (*Izin Pemanfaatan Kayu*, or IPK permit). The Ministry of Forestry set royalty levels on the timber and pulpwood harvested by IPK permit-holders at rates that were well below the stumpage value of the wood. Royalty payments on small-diameter pulpwood, for instance, were (and continue to be) approximately US $2.00 per green metric tonne (GMT).

Within this context, HTI licence-holders had a strong incentive to locate their plantation development activities on sites that still had significant amounts of forest cover. Indeed, the larger the commercial volume of standing timber or pulpwood, the larger the economic rents the licence-holder could obtain from these sites. Moreover, the costs of land-clearing were generally covered by discounted financing from the Ministry's allocation of DR funds for plantation development; the HTI licence-holder, therefore, typically had to use little, if any, of its own funds for this phase of its operations.[9] In many cases, the HTI licence-holders reportedly never planted their sites once they were cleared, suggesting that their principal motivation may have been gaining access to low-cost timber from the natural forest and/or securing the DR financial subsidies. In this way, the use of DR funds to subsidise Indonesia's HTI plantation programme – ostensibly to promote reforestation and forest rehabilitation – effectively resulted in a significant net loss of natural forest cover and a corresponding loss of economic rents to Government of Indonesia.

It is not known how much natural forest cover was lost as a result of HTI plantation development activities, or how much rent was transferred to HTI licence-holders (or contractors with IPK permits) through this process. However, if it is assumed that approximately 85 per cent of the 1.54 million ha (net) of plantations reportedly established with DR subsidies during the 1990s was previously forested, then it can be estimated that approximately 1.3 million ha of natural forest was lost through conversion to industrial timber plantations.[10] Table 6 provides estimates of the commercial volumes of timber and pulpwood harvested from these sites and

8 Under Indonesia's Basic Forestry Law of 1967, areas falling within the boundaries of the State Forest Zone could be classified as Protection Forest, Production Forest, Conservation Forest or Recreation Forest. The conversion of 'degraded' Production Forest from natural forest to timber plantations did not require a reclassification of these areas; rather, they generally remained classified as Production Forest and stayed within the boundaries of the permanent forest estate.

9 In many cases, HTI licence-holders were able to remove sufficiently large volumes of timber from their plantation concession sites that they hardly needed the added financial incentives provided by the DR subsidies. As one anonymous reviewer of this study has emphasised, in such cases financial subsidies from the Reforestation Fund were simply 'icing on the cake'.

Table 6. Scenarios showing estimated natural forest loss, commercial volumes harvested and economic rent transferred under the HTI programme during the 1990s

	Scenario 1	Scenario 2	Scenario 3
Net planted area (ha)	1 547 000	1 547 000	1 547 000
Natural forest loss (ha) – assumed 85% of net planted area	1 314 950	1 314 950	1 314 950
Average commercial volume (m^3/ha)	40	80	120
Total commercial volume harvested (m^3)	52 598 000	105 196 000	157 794 000
• Pulpwood (GMT) – assumed 80%	38 253 091	76 506 182	114 759 273
• Timber (m^3) – assumed 20%	10 519 600	21 039 200	31 558 800
Estimated rent transfer			
US $10 per GMT for pulpwood	382 530 909	765 061 818	1 147 592 727
US $50 per m^3 for timber	525 980 000	1 051 960 000	1 577 940 000
Total rent transfer (US$)	**908 510 909**	**1 817 021 818**	**2 725 532 727**

the value of economic rents transferred to HTI plantation companies and IPK permit-holders, under three different scenarios. It must be emphasised that these figures are rough estimates provided for indicative purposes and should be treated with caution.

If it is conservatively assumed that the average commercial volume of wood removed from these sites was 40 m^3 per ha, then rent transfer from natural forest conversion under the HTI programme is estimated to have totalled approximately US $908 million. Correspondingly, if it is assumed that the average commercial volume removed was 120 m^3 per ha, then the total value of rent transferred may have been US $2.7 billion during the 1990s – or roughly 2.7 times the total value of DR funds disbursed by the GOI to finance HTI plantation development.

The disbursement of DR funds to finance the development of HTI plantations was suspended by the Minister of Forestry and Estate Crops (MoFEC) in early 1999 to fulfil a conditionality set by the International Monetary Fund.[11] With this suspension, the Forestry Department effectively withdrew from financing the development of industrial timber and pulpwood plantations, leaving this in the hands of the private sector. As discussed in Section 5.0, the Ministry maintained this suspension until December 2006, when it began using DR funds to support a new initiative to promote the expansion of both industrial-scale and community-based timber plantations.

2.5 Irregular disbursements and fraudulent misuse of DR funds

In addition to the formal subsidies allocated to plantation companies, the Ministry of Forestry also incurred considerable losses of DR funds due to irregularities in the disbursement of DR financing and to fraudulent practices on the part of recipient companies. In many

10 It is possible that the forested area actually cleared by HTI licence-holders was substantially larger than this estimate, as the total area of forest land allocated for plantation development was significantly greater than that actually developed. Citing Ministry of Forestry statistics, David Brown noted in 1999 that 'HTI [licence-holder]s have so far replanted only 25 percent of the lands under their control, or 1.9 million out of 7.6 million hectares' (Brown 1999).

11 This was done with the issuance of Minister of Forestry and Estate Crops Decree No. 922/Menhutbun-VI/1999, followed by Letter No. 549/II-Keu/2000 from the Secretary-General of the Ministry of Forestry concerning the temporary restriction of the disbursement of DR monies to support HTI plantation development.

cases, firms receiving the plantation subsidy were able to manipulate the process through which the DR monies were allocated so as to further reduce the portion of such projects funded by their own capital (Ernst & Young 1999, BPK 2008a). Most commonly, recipient companies overstated the net area to be planted at their HTI sites when they applied for the DR funds and/or 'marked up' the costs that they expected to incur in establishing their plantations.[12] Some companies simply did not spend all of the DR funds allocated to them for plantation development, diverting the unspent funds for other uses.

A 1999 audit of the Reforestation Fund conducted by international accounting firm Ernst & Young concluded that overestimation of HTI planted areas and similar irregularities resulted in losses from the DR fund amounting to approximately 15.2 per cent of total disbursements between 1993/4 and 1997/8 (Ernst & Young 1999). Specific cases of HTI-related fraud from the Soeharto period are discussed in Section 2.6.

The Ernst & Young audit also identified several cases in which recipients of DR financing invested portions of these funds in commercial paper or placed them in time deposits to earn interest, rather than using the funds for plantation development. PT Surya Hutani, for example, invested Rp 7.5 billion of funds it had received from DR financing in commercial paper during 1993–94. Similarly, PT Musi Hutan Persada placed Rp 14.4 billion from DR disbursements in a time deposit during 1993, and PT Tusam Hutani Lestari placed Rp 6.7 billion in a time deposit in 1997. In each case, it was concluded the companies violated their agreements with the Ministry of Forestry by not using those funds for reforestation activities (Ernst & Young 1999).

In some cases, forestry companies were also able to obtain subsidised financing from the Reforestation Fund before they had received their HTI plantation licence. PT Menara Hutan Buana, for instance, received a cash grant from the DR of Rp 5.4 billion on 29 March 1995 to cover the government's equity contribution to the company's planned plantation project. However, the company did not submit its application for a HTI plantation concession licence until 7 April 1995 and received approval for the licence on 27 February 1998 (Ernst & Young 1999). Similarly, PT Adindo Hutani Lestari received a grant from the DR of Rp 2.9 billion and an interest-free loan of Rp 2.9 billion in July 1995. However, it only received its HTI licence on 12 March 1996 (Ernst & Young 1999).

2.6 Under-performance of DR-funded plantations

Although the Ministry of Forestry allocated some US $1.0 billion in DR financing to subsidise the HTI programme during the 1990s, the Ministry achieved very mixed results

12 Financial 'mark-up' schemes were common in Indonesia's commercial forestry sector during the Soeharto era. As described in Barr (2001), some pulp and paper producers marked up investment costs when constructing their mills in order to secure lines of credit that were far in excess of what they really needed. In using such fraudulent practices,

> they report to investors and lending institutions a set of inflated investment costs for projects for which they are seeking financing. By obtaining funds from banks and investors at the marked-up level, the owners of an expanding pulp or paper company are able to reduce the amount of capital that they, themselves, must commit to the project, typically on the order of 30 percent of the total cost of the investment. In cases where the mark-up is particularly high, companies are sometimes able to avoid committing any of their own funds and, instead, to emerge from the investment process with financing to spare. Such excess funds are frequently injected into the new mills in the form of working capital to generate what is known in the industry as 'profit before operating'.

Similar practices were used in the development of commercial forestry plantations.

Table 7. HTI plantation development by companies receiving DR subsidies, 1990–99

Type of company	Gross area (ha)	Net plantable area (ha)	Realised planted area (ha)	Realised area as % of net plantable area
93 joint ventures	2 957 874	2 070 512	1 296 084	63
State enterprises				
PT Inhutani I	163 670	114 569	57 602	50
PT Inhutani II	100 420	70 294	66 713	95
PT Inhutani III	377 980	264 586	88 513	33
PT Inhutani IV	n.a.	n.a.	n.a.	n.a.
PT Inhutani V	56 547	39 583	38 797	98
Inhutanis – subtotal	**698 617**	**489 032**	**251 625**	**51**
Total	**3 656 491**	**2 559 544**	**1 547 709**	**60**

Source: Ministry of Forestry data cited in BPK (2008a)

in its efforts to establish a commercial plantation base to sustain the nation's forest industries over the long term. On the one hand, joint ventures and state-owned forest enterprises receiving the subsidies reportedly planted a total of 1.54 million ha (net) of timber and pulpwood plantations (BPK 2008a). On the other hand, substantial portions of these plantations have proven to be of limited productivity, and large areas were lost before the first rotation could be harvested. By mid-2009 – 19 years since the first plantings and a full decade since the DR subsidies for HTI plantation development were suspended – Indonesia's wood-based industries had obtained only a very small portion of their raw material supply from these plantations.

According to official statistics, the 93 joint venture enterprises that received DR subsidies planted 1.29 million ha (net) (BPK 2008a; see Table 7). This amounted to approximately 63 per cent of the assumed net plantable area available in the 2.9 million ha (gross) of HTI plantation concessions allocated to these ventures. Similarly, four of the five state-owned Inhutani enterprises planted 251,000 ha (net). This amounted to just over 50 per cent of the assumed net plantable area within the 698,000 ha of HTI plantation concessions allocated to PT Inhutani I, II, III and V (data for PT Inhutani IV were not available).

Despite the large-scale investment of public funds, there has never been a thorough audit of the HTI plantations developed with DR subsidies to determine whether the GOI – and, by extension, the people of Indonesia – received a reasonable return on its investment. More limited studies and anecdotal reports suggest that a significant portion of the areas planted proved to be poorly stocked and of limited productivity (cf Ministry of Forestry 2007). A recent World Bank review of Indonesia's forestry sector concludes, for instance, that 'less than half of these lands [on which plantations have been "realised"] are performing well in producing timber' (World Bank 2007). The review further states that:

> A few large, professional plantation companies are able to achieve high yields from plantation lands (Hardjono 2006 suggests 150–180 m^3 produced over 7 years), using improved growing stock and modern management methods.[13] However, due to financial crisis, forest fires,

> poor management or abandonment over the years, a large portion of the 'realized planted area' is not yielding substantial amounts of timber (World Bank 2007).

Similarly, a 2006 study of seven DR-funded plantation enterprises in Kalimantan found that virtually all of those companies' sites planted in the 1990s had 'rather poor general conditions mainly due to the lack of maintenance' and productivity levels of 100 m^3 per ha or less (Pirard and Cossalter 2006).[14] As these studies suggest, many companies that received subsidised DR financing to establish HTI plantations apparently invested very little to maintain the areas they had planted once the DR subsidies were halted in 1999. In part, this was due to the 1997–98 financial crisis, which sharply curtailed investments across all segments of the economy. For plantation companies, this meant that areas planted before the crisis often were not fertilised or weeded, and productivity levels frequently declined as the trees had to compete with invasive pioneer species (Pirard and Cossalter 2006). Large areas of timber and pulpwood plantations were also lost to the massive fires that occurred in Kalimantan and Sumatra during 1998 and 1999.

In addition, the operations of many plantation companies have been disrupted by conflicts with local people. In a significant number of cases, these conflicts have stemmed from the fact that the HTI plantations were often developed on lands that had theretofore been managed by forest-dependent communities under *adat*, or customary, tenure systems. Under the Soeharto government, state security forces routinely assisted plantation companies to remove villagers or other land users – often through the use of violence – from the areas they planned to develop (Fried 1995, 2000).[15] However, in the years following the collapse of the Soeharto government and especially during the regional autonomy period, local peoples have frequently taken direct action to regain control of sizeable areas of land that had been allocated for HTI plantation development. Such conflicts have often involved the seizure of plantation land and/or the destruction of planted areas through arson or timber theft. Collectively, these factors have meant that much of the area planted with DR subsidies during the 1990s has not been available for harvest at the end of the planned rotation period, and that sites harvested often have had yields considerably lower than initially planned.

Although comprehensive data on the status of Indonesia's HTI plantation estate are not available, official statistics for areas developed by the Inhutani state forest enterprises suggest that substantial portions of the sites planted during the

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13 It should be noted that many of the most productive commercial plantation sites in Indonesia have been developed by companies affiliated with the nation's largest pulp and paper producers – namely, Asia Pulp & Paper ( ) and Asia Pacific Resources International Ltd (APRIL) – which did not receive DR subsidies from the government (Barr 2001).

14 A 2005 analysis of Indonesia's wood-based industries co-sponsored by the Ministry of Forestry suggests that this figure may significantly overestimate average productivity levels at the country's HTI plantation sites. Taking into account the fact that a substantial portion of Indonesia's plantations have failed outright, Brown et al. (2005) conclude that '[a]lthough well-run firms in Indonesia can produce over 100 m^3 of timber per hectare in seven years, the average is now – surprisingly – only 12–15 m^3 per hectare over the growing cycle'.

15 It must be noted that the use of violence by both state and private security forces to help plantation companies to secure land from local communities has not been specific to projects financed by the DR. Neither did the use of such practices end with the fall of Soeharto's New Order regime. Harwell (2003) documents the use of violence by the Mobile Brigade (Brimob) of the National Police Force and private security contractors in assisting the Sinar Mas Group, the parent conglomerate of Asia Pulp & Paper (APP), to secure land in Riau Province through a series of attacks on villagers between 1997 and 2002. More recently, NGOs have reported that on 18 December 2008, APP-subsidiary PT Arara Abadi used security forces to evict local people from land the company sought to obtain for plantation development. According to a report circulated by Watch Indonesia! and WALHI (2008), 'Hundreds of police and paramilitaries attacked the Sumatran village Suluk Bongkal in Riau Province with tear gas and guns [and] a helicopter dropped incendiary devices on the village' in an effort to evict villagers from the disputed land.

Table 8. Status of HTI plantation areas established by Inhutani state forestry enterprises, as of December 2007

State forestry enterprise	Gross area (ha)	Net area (ha) @ 0.7 x gross area	Area planted (ha)	Area lost to fire, drought and failed planting (ha)	Area lost to occupation (ha)	Area harvested (ha)	Area remaining (ha)
Inhutani I	163 676	114 573	57 602	34 120	n.a.	3 098	20 384
Inhutani II	100 420	70 294	66 713	11 178	n.a.	25 163	30 372
Inhutani III	377 980	264 586	88 513	24 293	41009	n.a.	23 210
Inhutani IV	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Inhutani V	56 547	39 583	38 797	18 904	14790	5 002	200
Total	**698 623**	**489 036**	**251 625**	**88 495**	**55799**	**33 263**	**74 166**

Source: BPK (2008a)

1990s have been lost. Of the 251,000 ha planted by Inhutani I, II, III, and V, with approximately US $200 million in subsidised finance from the Reforestation Fund, at least 57 per cent was lost before the first rotation could be harvested (BPK 2008a). This included 88,000 ha lost to fire, drought and failed plantings, and 55,000 ha lost to land conflicts and occupation by local communities (see Table 8). By the end of 2007, only 33,000 ha had been harvested, amounting to only 13 per cent of the area reportedly planted.

The loss of such substantial areas and the generally poor performance of Indonesia's HTI plantation programme have meant that the nation's forest industries have continued to rely on wood harvested from natural forests for many years longer than they might have had the plantations proved to be productive. In addition, the very limited volumes of wood harvested from HTI plantations by companies receiving the DR subsidies have meant that many of those companies have encountered difficulties in repaying the loans from the Reforestation Fund according to the agreed schedule. This issue is examined in further detail in Section 3.0.

2.7 Allocation of DR funds for non-forestry uses

Under the procedures delineated in Presidential Decision 28/1990, the Ministry was able to exercise a significant degree of discretionary control over how the DR funds would be utilised, with minimal oversight from the Ministry of Finance. Although the DR was established for the stated purpose of supporting reforestation and forest rehabilitation, money from the fund could be allocated, with Presidential approval, for other purposes. As Ascher (1999) argues, the Reforestation Fund was deliberately structured to give Soeharto a means to distribute economic rents that would circumvent the political constrictions of the state's formal budget:

> The real issue was how the rent captured by the Forestry Ministry, rather than the treasury, would be directed. It was clearly directed to investments that the conventional budget authorities did not support. … In the reforestation fund, President Suharto (sic) had found another off-budget vehicle for pursuing projects that would be difficult or at least awkward to undertake through the conventional budget process.

During the 1990s, allocations from the DR fund to finance non-forestry projects, either in whole or in part, included:

- the transfer in June 1994 of Rp 400 billion – or US $190 million – to the state aircraft company PT Industri Pesawat Terbang Nusantara (PT IPTN), headed by Soeharto associate (and later President) B. J. Habibie, approved under Presidential Decree 42/1994.
- the allocation of a grant of Rp 527 billion – or US $250 million – in 1995 to finance the controversial 'One Million Hectare Peatland Development Project' in Central Kalimantan, approved under Presidential Decree 83/1995.[16]
- the allocation of Rp 100 billion – or US $47.5 million – in April 1996 to the family welfare scheme Takesra, via Yayasan Dana Sejahtera Mandiri, approved under Presidential Decrees 3/1996 and 21/1996.
- the allocation of Rp 250 billion – or US $109 million – in February 1997 to PT Kiani Kertas, owned by Soeharto business partner Mohamad 'Bob' Hasan, to finance construction of the company's pulp mill in East Kalimantan, approved under Presidential Decree 93/1996.
- the allocation of Rp 35 billion – or US $15 million – to finance the Indonesian delegation's participation in the 1997 SEA Games, approved by Order of the State Secretary No. R.160/1998.
- the allocation of Rp 23 billion – or US $10 million – to PT Gatari Hutama Air Service, owned by Hutomo Mandala Putra (a.k.a. Tommy Soeharto), President Soeharto's youngest son, to finance a helicopter charter service for the Ministry of Forestry and refurbishment of the company's helicopters (Ernst & Young 1999).

In addition, disbursements from the Reforestation Fund were also used to finance numerous construction projects supported by the Ministry of Forestry. These included the Ministry's Manggala Wana Bhakti office complex in Central Jakarta; the Bogor headquarters of the Center for International Forestry Research (CIFOR); and various housing complexes for Forestry Department officials (Ernst & Young 1999).[17] At times, DR funds were also made available to cover shortfalls in the state budget. In August 1997, during the early months of Indonesia's 1997–98 financial crisis, Rp 400 billion of DR funds were reportedly deposited 'in Bank of Indonesia Certificates (SBI) at lower than commercial interest rates, in a partially successful attempt to prop up the falling rupiah exchange rate' (van Klinken 1997).

Collectively, such practices meant that several hundred million dollars of DR funds were channelled for uses other than those for which the Reforestation Fund was officially designated – namely, reforestation and forest rehabilitation – during the Soeharto era.

2.8 Non-standard accounting practices and weak fiduciary controls

To a significant degree, the various abuses of the Reforestation Fund during the

16 The One Million Hectare Peatland Development Project involved the clearing and drainage of vast areas of peatlands in Central Kalimantan in an effort to convert these for intensive rice cultivation. The project is widely viewed as a major environmental disaster, particularly as it involved enormous carbon emissions. According to Rieley and Page (2008), 'The failed Mega Rice Project disrupted the peat swamp forest ecosystem over an area of at least one million hectares and it became fire prone. Eighty per cent of this landscape burned in 1997 releasing about 0.15 billion tonnes of carbon.'

17 The infrastructure project budget for CIFOR's head office (1995/6) amounted to Rp 43.8 billion (Ernst & Young 1999)

New Order period were facilitated by the Ministry of Forestry's use of non-standard accounting practices and the weak application of fiduciary controls over the DR account. The 1999 Ernst & Young audit found that the account's records and bookkeeping were poorly organised; that the cash-based accounting system fell well short of professional norms; and that there was a general absence of internal controls to identify inconsistencies and irregularities in transactions related to the account. Coupled with a general lack of transparency and external accountability, the Ministry's use of such practices appears to have created ample opportunities for misappropriation of funds, corruption and fraud.

On a very basic level, the Ministry apparently did not have an effective system in place to reconcile the amount of money received through payments of the DR levy by concession-holders with the amount that those companies were obliged to pay, based on actual log production volumes.[18] Moreover, the Ministry's bookkeeping and accounting system apparently maintained only a rudimentary record of the funds that did enter the DR account. Receipts from the DR levy were reportedly recorded in a handwritten ledger, which was not systematically linked to supporting documents showing either the source of these revenues or how the funds were administered once they entered the account. In 1999, Ernst & Young described the state of the Ministry's books for the DR account as follows:

> The Reforestation Fund uses a manual cash book system, and there is no clear audit trail from the cash book to the summarized reports. In addition, there are no transactional document references on the cash book which enable easy retrieval of the supporting documents. Therefore it is virtually impossible to substantiate and verify all the transactions in the cash book.

The Ministry's failure to use standard accrual accounting methods, according to Ernst & Young (1999), also meant that the system was not able to monitor transactions extending across multiple fiscal years very effectively.

> Since the RF [Reforestation Fund] only adopts cash accounting (i.e. reporting by way of cash expenditures and receipts), there is no recognition/classification of transactions into balance sheet and profit & loss accounts. The reporting only recognizes expenditures and receipts related to a specific financial year, [as] accrual accounting is not performed. As a result, transactions or expenditures which represent balance sheet accounts such as loans and investments which can transcend from one financial year to the next are not able to be properly tracked and controlled. … This exposes the RF to substantial losses on loans and investments which are not actively monitored.

Furthermore, the Ministry apparently did not have a reliable system in place to reconcile the balances stated in its financial reports for the Reforestation Fund and the balances of the bank accounts within which the DR funds were deposited. Ernst & Young (1999) concluded that the absence of effective

18 Highlighting this problem, the Ernst & Young audit suggested that the absence of such a system may have resulted in significant revenue losses for the government: 'There appears to be no proper coordination between the Finance Bureau which administers the RF [Reforestation Fund] bank accounts and the unit which is responsible for controlling the reporting and collection of the RF. As a result, there is no verification of the moneys received in the bank account to the reports submitted by the concessionaire holders (sic) and/or wood processing companies. We view this as a breakdown in the monitoring process of the receivables which can potentially lead to lost revenue to the government, as unpaid RF is not actively followed up' (Ernst & Young 1999).

internal controls posed a serious risk that funds could be lost due either to accounting errors or to corruption and fraud:

> Due to inadequacies in accounting records and system, difficulties were encountered in clarifying the difference [between reported balances and balance confirmed by banks]. This is a serious breakdown in internal controls, as reconciliation procedures which appear reasonable are in fact inaccurate and cannot be relied upon. The risk of error and deliberate fraud is considerably increased when reconciliation procedures are not performed accurately. This is amplified by the lack of an audit trail which does not enable practical identification of the difference. Such a difference may indicate a possibility for misappropriation of funds which require to be investigated (sic).

It is possible that the Ministry of Forestry's failure to employ a more robust bookkeeping and accounting system for the Reforestation Fund, with effective internal controls and routine audits, was largely due to a lack of institutional capacity on the Ministry's part. Indeed, the scale of incoming revenues associated with the DR levy was far larger than the fiscal receipts theretofore generated by either of the sector's other two main revenue sources – namely, the IHPH Timber Concession Fee and the IHH Forest Products Royalty. According to this line of reasoning, the US $300–500 million in annual receipts from the DR levy was simply too large for the Ministry to absorb, as it had neither the institutional structure nor the human resources needed to exercise strong fiduciary control over these funds.

At the same time, it is undeniable that the New Order state's leadership had a strong incentive to ensure that the DR funds were managed in a highly flexible manner that often defied the generally accepted norms of professional accounting practices. To the extent that the DR account's cash book could not be reconciled with supporting documents, Ministry officials overseeing the account could utilise funds in a highly discretionary manner with little tangible evidence that their actions were in any way improper. Similarly, the absence of an effective mechanism to reconcile the financial reports with the balances in specific DR-related bank accounts meant that senior officials could draw on the funds in those accounts with little chance of detection. While such practices could certainly be expected to raise red flags in an independent, third-party audit, such an audit of the Reforestation Fund was not conducted until Ernst & Young carried out its assessment in 1999.

Viewed on a larger scale, the poor record-keeping and weak accounting practices that characterised the Ministry's oversight of the Reforestation Fund were, in fact, symptomatic of a much wider disorganisation that has pervaded forest management under Indonesia's HPH timber concession system. Throughout the New Order period (and, in many respects, continuing since then), data collection and record-keeping associated with each stage of commercial timber extraction in Indonesia – from forest inventories, for instance, to harvest planning, timber production reports, forest royalty payments, industrial wood supply plans and forest regeneration monitoring – have been poorly organised. The very limited availability of reliable information has made it extremely difficult for either external observers or stakeholders within the sector to obtain a clear understanding of what is really happening to the nation's forest resources. In this way, the generally low quality of forest record-keeping has played a critical role in enabling high levels of illegal activity to occur within the sector.

3 State finance and DR administration during the post-Soeharto period

The financial crisis that struck Indonesia and other Asian countries in 1997–98 set in motion a series of economic and political transitions that would have a direct effect on how the Reforestation Fund is administered. Most immediately, in January 1998 the International Monetary Fund (IMF) entered into a US $43 billion bailout loan agreement with the Government of Indonesia, based on a 50-point list of conditionalities. The structural adjustment process thus initiated was largely aimed at recapitalising Indonesia's failing banking system and restoring long-term economic growth. Through these reforms, the IMF sought to deregulate large segments of the Indonesian economy and to improve governance of the state's fiscal resources.

Within Indonesian society, these economic reforms were accompanied by a political reform movement – commonly known as *Reformasi* – which ultimately led to the resignation of President Soeharto in May 1998. With broad popular support, the social and political forces promoting *Reformasi* pushed for democratisation of the nation's political system and for increased transparency and accountability on the part of political leaders and state institutions (O'Rourke 2002). In particular, many of the reforms introduced during *Reformasi* were aimed at curbing the high levels of 'corruption, collusion, and nepotism' that had dominated Indonesia's political and economic institutions during the New Order period.

During the post-Soeharto period, successive administrations – those of B. J. Habibie (1998–99), Abdurrahman Wahid (1999–2001), Megawati Soekarnoputri (2001–04) and especially Susilo Bambang Yudhoyono (2004–present) – have, to varying degrees, taken steps to improve the management and governance of publicly owned financial resources. Three important pillars of state finance reform during the *Reformasi* period have been the introduction of a Treasury Single Account, the strengthening of the government's Supreme Audit Board and the creation of an effective Corruption Eradication Commission and a Corruption Court. The following sections examine the implications of each of these reforms for the administration of the Reforestation Fund over the past decade.

3.1 Bringing the DR on-budget and creating the Treasury Single Account

In an effort to end the misuse of DR funds, the IMF stipulated in its 1998 loan agreement that the Reforestation Fund would be placed under the administrative control of the Ministry of Finance (IMF 1998). This shift of the DR away from the Forestry Department was intended to ensure that the Reforestation Fund would be administered in a more accountable and less politicised manner than it had been during the last decade of the Soeharto period. A significant step in this direction came with the incorporation of the DR into the State Treasury, which meant that DR receipts and expenditures would be formally included in the state budget (*Anggaran Pendapatan dan Belanja Negara*, APBN) for the first time.

Bringing the DR on-budget represented an important early step in the GOI's broader effort to create a Treasury Single Account, as designated in Law 1/2004 on State Treasury. The consolidation of the state's financial resources into a Treasury Single Account was deemed necessary to address a number of weaknesses in Indonesia's state finance system that had carried over from the New Order period. The existence of large extra-budget funds – such as the Reforestation Fund – meant that the state budget did not accurately reflect the public sector's financial position at any given point in time (Nasution 2008). As a result, government spending was sometimes duplicated and funds were used for unintended purposes. In many cases, state agencies collected and utilised their own levies, or otherwise engaged in rent-seeking activities, without the formal knowledge of the Ministry of Finance (Nasution 2008). As a result, large amounts of public money were managed by government agencies and individual officials at all levels of the state apparatus without ever entering the State Treasury and budgeting process.

In establishing the Treasury Single Account, the Ministry of Finance charged Indonesia's Supreme Audit Board (*Badan Pemeriksa Keuangan*, BPK) with assessing extra-budgetary funds and quasi-fiscal revenue sources to document how much public money existed outside the State Treasury. BPK was also tasked with identifying bank accounts associated with government institutions and individual officials which may be holding public money. By the end of 2007, the Supreme Audit Board had found 32,570 bank accounts open outside the State Treasury, collectively containing Rp 36.75 trillion, US $685 million and EUR 462,000 (World Bank 2009).

As part of this effort, BPK audited the Ministry of Forestry's management of government-owned accounts for the periods FY2006 and FY2007. Released in April 2008, BPK's audit report documents numerous weaknesses in the Ministry's internal financial controls and widespread irregularities in its account management practices (BPK 2008b). Among the audit's key findings, BPK reported:

- 379 accounts with an aggregate balance of at least Rp 81.8 billion[19] that had been opened without formal authorisation from the State Treasurer;
- 74 accounts containing Rp 1.7 billion that had been closed without proof of the transfer of funds and without detailed evaluation and verification by the Ministry of Forestry;
- 58 accounts containing Rp 3.8 billion that had not been fully identified, but which the Ministry of Forestry recommended for closure and declared not to be owned by the Ministry;
- accounts containing Rp 8.8 billion from 'collection fees' (*upah pungut*) associated with the Ministry of Forestry's collection of the PSDH (Forest Resource Rent Provision) and Rp 1.3 billion in 'bridging funds' that had not been accounted for –

19 This figure refers to the aggregate balance held by 226 of the 379 accounts, as of 31 December 2007. For the remaining 153 accounts, the balance on 31 December 2007 could not be identified (BPK 2008b).

neither of which, according to BPK, the Ministry was legally authorised to administer.

Of the 379 accounts opened without formal authorisation from the State Treasurer, at least two were directly associated with the Reforestation Fund. As of 31 December 2007, one account held accumulated DR receipts of Rp 7.7 billion, while the other held receipts from DR payments in arrears of Rp 12.0 billion (BPK 2008b). It is likely that many of the other accounts also held funds that had originated from DR receipts, given the significant contribution made by the DR levy to the Ministry's overall revenues.

3.2 Building transparency and accountability through the Supreme Audit Board

In addition to transferring the Reforestation Fund to the Ministry of Finance and bringing it on-budget, the 1998 agreement between the IMF and the GOI stipulated that Finance would commission an independent third-party audit of the DR. This audit was carried out by the international accounting firm Ernst & Young during 1999, with the final report delivered to the Ministry of Finance in December of that year. As detailed in Section 2.0, the Ernst & Young audit documented widespread irregularities in the collection, administration and use of the DR during the Soeharto era, and concluded that state losses from the DR during FY 1993/4–1997/8 amounted to at least US $5.2 billion (Ernst & Young 1999).[20] The audit was not released publicly, however; by mid-2009, there had been little public discussion – either within Indonesia or among the international community – of the report's findings and recommendations for improving the manner in which the DR is administered.

The general lack of transparency framing the Ernst & Young audit stands in marked contrast to the GOI's efforts during the post-Soeharto period to strengthen transparency and accountability in the management of state finance. In particular, Law 15/2004 on Auditing of the Management and Accountability of State Finance vests the state's Supreme Audit Board with a strong mandate to ensure transparency and accountability for all aspects of state finance. Indeed, BPK is given far-reaching legal powers for 'auditing state revenues, their origins, amounts, and sources as well as auditing accounts where state funds are deposited and how they are spent' (Nasution 2007). BPK is authorised to audit 'not only … the State Budget (APBN) and the Local [Regional] Government Budget (APBD), but also the activities of State-Owned Enterprises (BUMN) and Local [Regional] Government-Owned Enterprises (BUMD), foundations, pension funds, as well as publicly listed companies … [and government] assistance or subsidies to private social organizations' (Nasution 2007).

20 Of this estimated figure for total losses, Ernst & Young concluded that the GOI lost at least US $2.6 billion through its failure to assess adequately the actual volumes of timber harvested during the five-year audit period. Ernst & Young derived this figure by comparing the total reported log production volume (147,145,435 m3) during the audit period (on which actual DR receipts were based) with the auditors' estimation of a more realistic log production volume (302,602,260 m3) based on the reported area of timber harvest. They then calculated the DR receipts that would have been recorded if these had been based on this more realistic production figure. According to the audit report, a major factor contributing to the GOI's underassessment of the log production volumes has been the Ministry of Forestry's long-standing assumption that commercial timber yield is 35 m3 per hectare after taking into account a recovery factor of 56 per cent. Ernst & Young assumed a timber yield of 60 m3 per hectare, based on a recovery rate of 70 per cent, in making its calculation of the 'realistic' timber production volumes. The clear implication is that by using the lower yield figure, the Ministry effectively enabled timber concession-holders to substantially under-report the volumes of timber harvested and, in doing so, to avoid making significant amounts of DR payments. As Repetto and Gillis (1988), Ramli and Ahmad (1992) and other forest economists have argued, access to such rents provided a strong incentive for timber companies to ignore the HPH concession regulations related to sustainable forest management.

Significantly, the post-Soeharto government's legislation on auditing of state finance formally endows BPK with a high level of institutional independence and autonomy – both of which were lacking during the New Order period.[21] In accordance with international standards, BPK is incorporated as an independent entity with the same institutional status as the executive and legislative branches of government, and is formally empowered to act as sole external auditor for the Government of Indonesia. BPK holds authority not only to determine which state institutions or sources of state finance it will audit, but also to select its audit methods and to present undistorted audit reports (Nasution 2007). BPK is also legally required to publish its full audit reports on its website immediately after submitting them to the legislative branch, and to report any suspected criminal activity to relevant law enforcement agencies. To ensure that BPK is governed with high levels of accountability, its own annual financial statements are subject to audit by an independent public accounting firm, and its internal controls are periodically assessed by peer institutions from other countries (Nasution 2007).[22]

Particularly under the Yudhoyono administration, BPK has introduced significant improvements in the governance of state financial assets across all sectors of the economy and all levels of government. It has conducted financial audits of dozens of state agencies, including politically powerful institutions such as the Armed Forces, the National Police, Bank Indonesia, the Supreme Court, ministries and sectoral line agencies, provincial and district governments, state-owned enterprises and the central government itself. Significantly, these audits are all publicly available on the BPK website (http://www.bpk.go.id). It is notable that in a considerable portion of these audits – including the central government's financial reports for consecutive fiscal years during 2004–07 – BPK has provided only a disclaimer opinion. Indeed, in most of its audits BPK has identified structural weaknesses in these agencies' financial management systems and, not infrequently, has detected irregularities in the collection, administration and use of government revenues.

During this period, BPK carried out 29 audits that relate either directly or indirectly to the Reforestation Fund (see Table D-1 in Appendix D). These audits have focused on:

- annual financial reports of the Ministry of Forestry;
- management of government accounts by the Ministry of Forestry;
- non-tax revenues from the PSDH and the DR received by the Ministry of Forestry and by select provinces and districts (in East Kalimantan, West Kalimantan, South Kalimantan, Central Kalimantan, Jambi, Riau and Papua);

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21 Dr. Anwar Nasution, BPK's Chair, described this lack of independence and autonomy during the Soeharto period as follows: 'As was the case in other state institutions during the authoritarian regime in the past, BPK used to be under the control of the Government. During that time, the Government controlled BPK by limiting the objects of its audits, controlling its organization, budget and personnel, as well as monitoring the selection of auditing methods and the contents of its audit reports. The Tax Law issued by the New Order regime prevented BPK from auditing state tax revenues. Such control in the past made BPK a "rubber stamp" for the legitimization of the Government's actions. To avoid disruption of "national stability", BPK's audit reports were tailored to suit the Government's interests. The public sector during the authoritarian regime was not transparent as indicated by a great number of non-budgetary funds, a large number of companies and foundations linked to the Government, which were not recorded in the State Budget (APBN), without any permit from the Ministry of Finance and beyond the acknowledgement of DPR/DPRD and the People' (Nasution 2007).

22 This is done through BPK's membership in the International Organization of Supreme Audit Institutions (INTOSAI) and its regional body, the Asian Organization of Supreme Audit Institutions (ASOSAI).

- HTI finance administered by the Ministry of Forestry and HTI development activities financed by the DR in select provinces (East Kalimantan, Central Kalimantan, West Kalimantan and Lampung);
- land and forest rehabilitation activities financed by the DR in select provinces (Riau, South Sulawesi, Central Kalimantan, West Kalimantan, Central Java and West Java);
- financial reports of the Sarana Wana Jaya Foundation and the Manggala Wana Bhakti building management board.[23]

It is notable that BPK issued disclaimer opinions for its audits of the Ministry of Forestry's financial reports in 2006 and 2007 (the most recent years available). In its assessments, BPK documented widespread irregularities and inconsistencies in the Ministry's financial management practices; weak internal controls; and numerous cases in which the Ministry's administration of revenues and other state assets failed to meet legal and regulatory requirements. In one way or another, many of the concerns highlighted by BPK involve the Ministry's administration of DR revenues. Following are some of the most significant concerns in BPK's 2007 audit report.

- The Ministry of Forestry reported receipts from Non-Tax State Revenues (*Pendapatan Negara Bukan Pajak*, PNBP) of Rp 2.1 trillion – of which DR receipts accounted for 62 per cent. However, the Forestry Department did not reconcile these figures with the Ministry of Finance, and it did not have an adequate system of controls to ensure that those responsible for making such payments did so in the right amounts and to the correct accounts.
- The Ministry of Forestry reported having outstanding receivables from the PSDH and DR amounting to Rp 222.9 billion. However, the Ministry did not maintain accurate and up-to-date reports from the Provincial Forestry Services, which play an important role in the collection of PSDH and DR payments, and it is therefore not possible to verify whether the amounts reported are accurate.
- The Ministry of Forestry reported having transferred Rp 479.6 billion in PSDH and DR payments in arrears to a state collection agency. However, the figures reported did not reconcile with those reported by the Ministry of Finance.
- The Ministry of Forestry reported the balance of receivables from DR financing for HTI plantation development to be Rp 1.2 trillion. However, this figure could not be reconciled with data reported by the state banks (Bank Mandiri, Bank Negara Indonesia and Bank Rakyat Indonesia) managing the accounts for these loans.
- BPK identified Rp 60.1 billion in DR receivables that had been removed from the Ministry of Forestry's accounts without following appropriate procedures.[24]

23 Founded in 1973, Yayasan Sarana Wana Jaya was one of several foundations established by the Soeharto government to manage revenues outside the state budget. In December 1983, the Minister of Forestry issued a decree stipulating that Sarana Wana Jaya was authorised to manage and utilise the interest generated by the Reforestation Guarantee Deposit (DJR), and later the Reforestation Fund (DR). Between 1983 and 1989, the foundation had receipts of Rp 185.7 billion from interest generated by the DJR and the DR (BPK 2006). Of this, some Rp 80.1 billion was used to construct the Manggala Wana Bhakti office complex, which houses the Ministry of Forestry in Central Jakarta.

24 These DR receivables – together with an additional Rp 5 billion in PSDH receivables – were supposed to have been paid by PT Artika Optima Inti, a timber concessionaire with operations in Maluku, which reportedly declared bankruptcy in June 2007. BPK maintains that under such circumstances, government regulations require that the company pays the outstanding DR and PSDH receivables in full; or the Ministry can transfer the receivables to a state collection agency; or the Ministry can formally authorise the debt to be written off, in accordance with established legal procedures (which presumably involve approval from the Ministry of Finance). In the case of Artika Optima Inti, the Ministry of Forestry apparently removed the receivables from its books without following these procedures.

BPK documented similarly widespread irregularities and weak internal controls in its audits of DR funds administered by provincial and district governments. Those related to the use of DR funds to finance land and forest rehabilitation projects implemented both by regional governments and by the Ministry of Forestry under Indonesia's fiscal balancing arrangements are examined in more detail in Section 4.0.

3.3 Anti-corruption initiatives and the prosecution of DR cases

Another key component of the GOI's efforts to improve governance of public assets during the post-Soeharto period has been the implementation of reforms aimed at fighting corruption at all levels. The foundation for these reforms was laid in the first year of the *Reformasi* period with the adoption of Law 31/1999 on the Eradication of Corruption. Most significantly, the anti-corruption law established the legal framework for the creation of a Corruption Eradication Commission (*Komisi Pemberantasan Korupsi*, KPK) and a Corruption Court.

KPK, which became operational in late 2003, has been given far-reaching legal powers to investigate and prosecute suspected corruption cases, particularly those involving high-level officials and powerful state institutions. The creation of KPK has effectively established a dedicated alternative channel for pursuing corruption cases that circumvents the National Police and the Attorney General's Office – both of which have faced recurring problems of corruption within their own ranks and of political interference in cases involving senior officials (van Klinken 2008).[25] Similarly, the creation of Indonesia's Corruption Court has provided an alternative institutional mechanism for trying corruption cases, which by-passes the regular judicial system. Unlike the normal district courts (which continue to handle a majority of corruption cases), the Corruption Court is administered by a group of *ad hoc* non-career judges who operate behind institutional 'firewalls' designed to reduce their susceptibility to corruption and political interference (van Klinken 2008).

Under the Yudhoyono administration, these institutions have pursued an aggressive – and, in many respects, highly effective – anti-corruption agenda. During 2005–08, KPK won convictions in 100 per cent of the 52 cases that it prosecuted through the Corruption Court (KPK 2008, *Tempo* 11–17 December 2007, cited in van Klinken 2008). During 2008, KPK also recovered more than Rp 407.8 billion in state assets through the successful prosecution of corruption cases (KPK 2008). These cases including high-profile prosecutions of the Governor of Bank Indonesia (BI) and several other senior BI officials; six active members of Parliament; the former governors of East Kalimantan and Riau Provinces; the regent of Pelalawan (Riau),

25 Specifically, KPK is authorised to: (1) conduct wiretapping and record conversations; (2) order authorised institutions not to allow an individual to travel outside the jurisdiction; (3) request information from banks or other financial institutions on the financial status of suspects or convicted individuals being checked by KPK; (4) order banks or other financial institutions to block accounts suspected of holding corruption proceeds of a suspect, convicted individual or other related party; (5) order the superior or employer of a suspect to temporarily suspend the suspect from his/her office; (6) request data on the wealth and tax information of a suspect or a convicted individual from the relevant institutions; (7) temporarily freeze a financial transaction, trade transaction or other agreement; (8) temporarily revoke a permit, licence or concession conducted by or held by the suspect or convicted individual which is suspected to be, based on sufficient preliminary evidence, connected to a corrupt act that is being processed; (9) request the assistance of Interpol Indonesia or a law enforcement agency of a foreign country to conduct searches, arrests and the confiscation of evidence in foreign jurisdictions; (10) request the assistance of the Police or other related agencies to perform arrests, detainments, searches and confiscations in the course of processing a corrupt act (KPK 2007).

26 In June 2009, KPK also won a conviction in its prosecution of Aulia Pohan, the father-in-law of President Yudhoyono's son, for bribery and corruption during his tenure as a Director of Bank Indonesia. Although the conviction is expected to be appealed, many observers have applauded the fact that KPK was able to prosecute a relative of the President in the Corruption Court without apparent political intervention.

Garut (West Java), West Lombok (NTB) and Yapen Waropen (Papua) districts; the mayors of Medan and Makassar, among many others (KPK 2008).[26]

To a significant degree, KPK has been able to pursue these cases because the Yudhoyono administration, which signed the UN Convention Against Corruption in 2006, has made fighting corruption a central part of its political agenda. Critics have claimed, however, that KPK and the Corruption Court have been used by the administration to control the political opposition and have, at times, handled cases in a discriminatory manner (van Klinken 2008, Simamora and Maulia 2009). Others have voiced concerns that due to capacity constraints, KPK is able to pursue only a limited number of high-profile cases – leaving the vast majority of corruption cases to be handled by the normal law enforcement and judicial systems.[27] In any event, corruption continues to be a deeply rooted problem in Indonesia, despite the important recent gains registered by KPK and the Corruption Court.[28]

During the early years of the post-Soeharto period – before KPK was operational – the GOI carried out several high-profile investigations and prosecutions involving fraudulent misuse of *Dana Reboisasi* funds. By far the most prominent case was that of Mohamad 'Bob' Hasan, President Soeharto's former business partner and ex-Minister of Industry and Trade (*Tempo* 2001c). Hasan was convicted in February 2001 of embezzlement of DR funds and other government money allocated to PT Mapindo Pratama for an aerial forest mapping project during the 1990s (*HukumOnline.com* 2001). Arguably the most powerful individual in Indonesia's forestry sector during the Soeharto era, Hasan was accused of defrauding the Indonesian government of US $243 million for Mapindo's failure to deliver the aerial images of timber concessions covering 30.6 million ha (*Kompas* 2000a, 2000b). This included some US $87 million disbursed from the Reforestation Fund. Hasan was sentenced to six years in prison and required to pay both a fine of Rp 15 million and a penalty of US $243 million as compensation for the funds he allegedly stole from the government.

In another high-profile case, Probosutedjo, a prominent businessman and half-brother of former President Soeharto, was convicted in April 2003 of defrauding the state of Rp 100.9 billion by over-reporting the cost of his company's HTI plantation investment (Darmawan 2003). Probosutedjo was the principal owner of PT Menara Hutan Buana (MHB), a plantation company based in South Kalimantan which received DR financing of Rp 144 billion during the 1990s, making it the second largest recipient of DR subsidies during the New Order period. In 2001, state prosecutors charged that MHB had reported to the Ministry of Forestry that it had planted 70,000 ha when, in fact, the company had planted only 40,000 ha (*Kompas* 2003). Probosutedjo was sentenced to four years in prison and ordered to pay a fine of Rp 30 million in addition to repaying the Rp 100.9 billion in no-interest loans allocated from the Reforestation Fund (*Tempo* 2003b). Probosutedjo's conviction was upheld by the Indonesian Supreme Court in October 2005.[29]

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27 Montlake (2008) notes that KPK 'is fairly small, with 600 employees and an annual budget of $18 million. By contrast, the police force employs around 350,000 people in a country of 235 million.'

28 Transparency International ranked Indonesia's as the world's seventh most corrupt country in its Global Corruption Barometer 2009 survey.

29 At the time his conviction was upheld, Probosutedjo made headlines by publicly voicing dismay that he was not acquitted despite having given his lawyer Rp 6 billion (approximately US $600,000) to bribe the Chief of Indonesia's Supreme Court and other court officers (Komandjaja 2005). The Supreme Court Chief, Bagir Manan, was later convicted of corruption and sentenced to six years in prison.

During 2001–03, the GOI also initiated legal action against owners of other prominent forestry conglomerates that had received DR funds during the Soeharto period, although these cases would ultimately be unsuccessful. In June 2001, Prajogo Pangestu – owner of the Barito Pacific Group and a business partner of President Soeharto's daughter – was formally named a suspect for alleged fraud related to DR funds extended to his plantation company, PT Musi Hutan Persada (MHP) (*Tempo* 2000, 2001a, 2001b). The largest recipient of DR funds for HTI development during the 1990s, MHP reported that it had developed 193,500 ha of Acacia plantations at its HTI concession site in South Sumatra. In 2001, state prosecutors alleged that, in fact, the company had planted only 118,000 ha, resulting in state losses of Rp 331 billion in DR funds (*Tempo* 2001a, 2001b). Prajogo adamantly denied the allegations of fraud, however, and in a highly controversial decision, Indonesia's Chief Prosecutor in the Attorney General's Office abruptly halted the prosecution of the case in August 2003, citing lack of evidence (*Tempo* 2003a; Rohadian *et al.* 2004).[30]

In recent years, DR-related corruption cases pursued by KPK have tended to focus on more general abuses related to improper allocation of timber harvesting licences and forest conversion permits. In several cases, such practices led to significant losses of state revenues, resulting in part from a failure to pay the DR levy by companies receiving these fraudulent licences and permits.

In March 2007, for instance, the Corruption Court convicted Major General (ret.) Suwarna Abdul Fatah, the former Governor of East Kalimantan, and Waskito Soerjodibroto, the former Director General of Forest Production at the Ministry of Forestry and Estate Crops, and two other provincial forestry officials for corruption related to the misallocation of forest conversion permits for the East Kalimantan One Million Hectare Oil Palm Development Program (KPK 2007). Suwarna and his accomplices reportedly allowed 11 companies affiliated with the Surya Dumai Group to clear large areas of forest land without paying either the PSDH royalty or the DR levy, resulting in an estimated losses of state revenue of Rp 346.8 billion (*HukumOnline.com* 23 March 2007).

In September 2008, the Corruption Court convicted Tengku Azmun Jaafar, regent of Pelalawan District in Riau Province, of corruption related to the fraudulent allocation of timber extraction and plantation licences to 15 companies (KPK 18 September 2008). Azmun was found guilty of issuing the fraudulent licences to companies that did not have technical capacities in forestry, several of which were affiliated with Azmun and his close associates (*Kompas* 2008a). Many of these fraudulent licences were then traded to a subsidiary of PT Riau Andalan Pulp and Paper (RAPP), flagship company of the APRIL Group (KPK 18 September 2008). KPK estimated that these acts of corruption and fraud resulted in state losses totalling Rp 1.2 trillion, including the losses of the timber harvested and the companies' failure to pay the PSDH royalty and the DR levy. In August 2009, KPK announced that it was expanding its investigation in Riau to focus on the possible issuance of illegal logging and land-clearing permits by the regent of Siak District (Tanjung 2009).

30 A similar case against Ibrahim Risjad, part owner of the Salim Group, was also abruptly halted by the AGO's Chief Prosecutor in September 2003. Risjad was accused of defrauding the state of Rp 40 billion in DR funds for overstating plantation establishment figures at the HTI concession site for his company, PT Aceh Nusa Indrapuri.

3.4 Divestment, restructuring and write-off of DR-related debt

Despite the government's efforts to strengthen accountability in the management of state finance, the Ministry of Forestry has encountered significant difficulties in recovering loans from the Reforestation Fund made to HTI plantation companies during the 1990s. Of the Rp 2.4 trillion disbursed by the Ministry of Forestry to subsidise the development of industrial timber and pulpwood plantations during the Soeharto era, more than Rp 1.1 trillion was allocated as no-interest loans and Rp 318 billion was allocated as loans with commercial interest rates (BPK 2008a). As these loans have come due in recent years, the amount of outstanding obligations has grown quite significantly, with penalties accumulating for companies that have either missed payments or defaulted on their debts.

By 15 July 2007, some Rp 1.2 trillion of DR-related debt – including principal, interest and penalties on loans held by 85 plantation companies – had reached maturity (BPK 2008a). Although the real value of this debt had diminished significantly due to the devaluation of the Indonesian rupiah following the 1997–98 financial crisis, the amount of money involved was nonetheless still quite significant. Converted at the mid-2007 exchange rate of approximately Rp 9,000 per US dollar, Rp 1.2 trillion amounted to US $133 million. Additional debts were scheduled to mature in subsequent years.

Since 2004, the Ministry of Forestry has pursued a two-pronged approach to secure repayment of DR-related debts as they matured (BPK 2008a). On the one hand, the Ministry has taken steps to divest the government's share in HTI joint ventures that had received DR financing by selling the equity stakes held by the Inhutani forestry enterprises. On the other hand, the Ministry has attempted to reschedule DR-related debts held by plantation companies that would agree to repay those debts over an extended period of time.

In pursuing its divestment strategy, the Ministry has pressured the private partners in HTI joint ventures to purchase the Inhutani equity holdings, thereby transforming the ventures into fully privately owned enterprises (BPK 2008a). In principle, the proceeds from such equity sales would then be transferred to the State Treasury to offset the joint venture's DR-related debt obligations. Understandably, however, most private sector partners in HTI joint ventures have shown little interest in purchasing the Inhutani equity shares. To do so would require them to invest their own funds (or to borrow new funds at commercial rates) in plantation projects that were often poorly maintained and have limited productivity – and therefore of limited value.

By July 2007, the Ministry had reportedly succeeded in fully divesting the Inhutani shares held in only seven joint ventures holding DR-related debt (in addition to three others that had not received DR loans). This resulted in the full repayment of Rp 497 billion in DR obligations that had matured by that point – nearly 90 per cent of which was held by two companies, PT Musi Hutan Persada (Rp 340 billion) and PT Menara Hutan Buana (Rp 100 billion) (BPK 2008a). As noted earlier, the state's recovery of DR obligations from these two companies was facilitated by the prosecution (in the case of MHB) and the threat of prosecution (in the case of MHP) of the company's principal owner.

The Ministry of Forestry has achieved a somewhat higher rate of success in securing debt rescheduling agreements with recipients of DR loans, although this has resulted in less debt repayment by total value. By July 2007, the

Ministry had entered into rescheduling agreements with 32 HTI joint ventures holding a combined Rp 334 billion in obligations that had reached maturity by then (of which Rp 276 billion was still outstanding) (BPK 2008a). In some cases, these debt rescheduling agreements were linked to partial divestment of Inhutani equity shares. At the same time, the Ministry had failed to secure debt rescheduling agreements with 42 HTI joint ventures holding some Rp 260 billion in obligations that had reached maturity (of which Rp 208 billion was still outstanding) (BPK 2008a). It is not clear what steps the Ministry of Forestry has taken to secure repayment of DR obligations held by the five Inhutani enterprises, which held at least Rp 97 billion in outstanding DR obligations by July 2007.

In sum, the Ministry of Forestry has succeeded in collecting Rp 626 billion, or 51 per cent, of the Rp 1.2 trillion in DR-related loans, interest and penalties that had matured by 15 July 2007 (BPK 2008a; see Table 9). Of the Rp 583 billion (or roughly US $65 million) in DR obligations that then remained outstanding, the Ministry has rescheduled only 47 per cent. This suggests that there is a high likelihood that the Ministry will write off at least Rp 208 billion, i.e. the amount that has been neither collected nor rescheduled. The amount of DR obligations that are ultimately written off may, in turn, grow to the extent that obligors fail to meet the terms of their debt rescheduling agreements and/or default on newly maturing debt.

The Supreme Audit Board notes that through this process, the Ministry of Forestry has apparently made little effort to call in debts that were past maturity by seizing the assets of companies that had defaulted on their loans (BPK 2008a). In part, this has been due to the contradictory nature with which authority for taking such actions has been structured. In most cases, state banks functioned as financial intermediaries when the DR loans were initially issued. Under the terms of these loans, a company receiving the DR subsidies was required to provide the bank with collateral in the form of the plantation company's standing stock and movable assets. In addition, the company's owners were required to provide a corporate guarantee, which effectively permitted the bank to seize additional assets held by the owners in the event they failed to fully repay their DR loans and any interest and/or penalties that accrued.

In its 2008 audit report, the Supreme Audit Board notes that the banks have generally failed to carry out asset seizures, choosing instead simply to send letters (often repeatedly) to debtor companies informing them of their defaults (BPK 2008a). According to BPK, representatives from the state banks have explained their failure to take more decisive action by asserting that it is the Ministry of Forestry that holds the

Table 9. Status of DR-related obligations as of 15 July 2007

Type of debt	Amount to reach maturity (million Rp)	Amount paid (million Rp)	Amount outstanding (million Rp)
Principal	1 048 450	583 623	464 827
Interest	32 598	22 140	10 458
Penalties	129 332	20 811	108 521
Total	**1 210 381**	**626 575**	**583 806**

Source: BPK (2008a)

authority to execute claims on guarantees held by the state banks. They maintain that although the banks play a significant role in implementing such seizures, they can only do so if the Ministry authorises them to do so – and it has not given such authorisation for the collection of the DR loans. This suggests that the issue fundamentally may be the absence of political will and/or lack of coordination between the Ministry and the state banks.

BPK suggests the banks may also have a strong financial disincentive to take strong action to secure repayment when DR-related loans come due. Indeed, in serving as financial intermediaries for the disbursement of DR funds, the banks are entitled to receive a handling fee from the Ministry of Forestry amounting to 0.5 per cent of the total amount disbursed, on a monthly basis. As BPK (2008a) explains:

> This means that if there is a return/repayment of loans by debtor companies, then there will be a reduction in the amount of outstanding obligations, meaning that the value of handling fees will also decrease. However, as long as DR loans are not yet resolved by the recipient companies, then the bank continues to have the right to receive handling fees from the Forestry Department for the outstanding DR loans.

Senior officials at the Ministry of Forestry have repeatedly voiced frustration over the fact that BPK, as well as Indonesian civil society organisations and the news media, have continued to call attention to the large amounts of outstanding DR-related debt. As recently as May 2009, then Forestry Minister M. S. Kaban indicated that he had written to the Minister of Finance and the State Secretary, and would soon make a proposal to Parliament for the full write-off of outstanding DR debt that had fallen into arrears (*Tempo Interaktif* 26 September 2006, 6 May 2009). The Minister argued that the outstanding DR debt is a legacy issue that has carried over from the Soeharto era and that the Ministry has few prospects for recovering the funds after so much time has passed. Moreover, he emphasised that the large DR-related receivables on the Ministry's balance sheet continue to pose a burden for the Forestry Department, especially as they have contributed to BPK's repeated disclaimer opinions in its annual audits of the Ministry's financial statements.

The possibility that the GOI could potentially write off some Rp 583 billion (or roughly US $65 million) or more in outstanding DR obligations is not without precedent in Indonesia's forestry sector. In late 2002, for instance, the Indonesian Bank Restructuring Agency (IBRA) effectively wrote off US $2.3 billion of forestry debt in its portfolio by selling these obligations at 'fire sale' prices, generally recovering only 20 cents on the dollar (Barr and Setiono 2003). Much of this is believed to have been sold back to the original owners at steeply discounted rates. At the time, the international donor community raised concerns about the GOI's write-off of forestry-related debt, claiming that it would 'place pressures on the nation's forests, and create a climate of moral hazard' (Consultative Group on Indonesia 2003). Indonesian civil society groups have articulated similar arguments in voicing strong opposition to the Ministry's recent proposals to write off DR-related debt (Indonesia Corruption Watch and Greenomics 2006).

4 Fiscal balancing and DR revenue sharing under regional autonomy

In the years following Soeharto's resignation in May 1998, the Indonesian state experienced an intense internal struggle over how administrative and regulatory authority should be distributed among the national, provincial and district governments (Barr *et al.* 2006a). After 32 years under the New Order state's highly centralised political structure, provincial and district governments began to assert increasing control over political and economic affairs within their own jurisdictions. The struggle for regional autonomy was driven, to a very significant degree, by a desire on the part of regional governments to obtain a larger share of the economic rents generated by natural resource extraction, including commercial forestry (McCarthy *et al.* 2006). Arguing that resource rents should be used to support development within the regions in which they were generated, provincial and district governments sought to rechannel these to local actors.

In the early post-Soeharto period, the central government's capacity to maintain its position of dominance over the country's regional governments was much diminished, and national decision-makers had little choice but to negotiate a new power-sharing arrangement (McCarthy *et al.* 2006). This culminated in May 1999 in the introduction of Indonesia's regional autonomy and fiscal balancing laws. Law 22/1999 on Regional Governance transferred wide-ranging administrative authority, together with responsibility for important governance functions, to the nation's regional governments – particularly those at the district and municipal levels. Law 25/1999 on Fiscal Balancing provided a general framework for the redistribution of revenues between Indonesia's national and regional governments. Although these regional autonomy laws would be refined over time – and in some important aspects, scaled back or even reversed – they have provided the legal-regulatory basis for the significant decentralisation of administrative authority and devolution of state power that Indonesia has experienced over the past decade.

4.1 Fiscal balancing and the redistribution of DR revenues

As the single largest source of government revenue from the forestry sector, the DR levy was a point of central concern in Indonesia's fiscal balancing process (Resosudarmo *et al.* 2006). Law 25/1999 stipulated that the Reforestation Fund would be administered under a category of revenues referred to as the Special Allocation Fund (*Dana Alokasi Khusus*, or DAK). In general terms, the DAK consisted of revenues that the central government would allocate to regional governments to finance 'special needs' – that is, projects specific to particular regions that would not normally be financed through general allocation funds transferred to all regions. Disbursements of the DR through the Special Allocation Fund, known as the DAK-DR, were supposed to be used to finance activities related to forest and land rehabilitation. Significantly, Law 25/1999 stipulated that 40 per cent of the funds collected from the DR levy would be allocated to the 'originating regions' (*daerah penghasil*) within which they were generated, and 60 per cent would be administered directly by the central government.

In October 2004, the status of the DR was changed to Shared Revenue (*Dana Bagi Hasil*, or DBH), with the adoption of Law 33/2004 on Fiscal Balancing between the central government and regional governments. This change was reportedly made to facilitate more efficient administration of the Reforestation Fund by allowing DR funds to be transferred to the regional governments together with other natural resource revenues, including the Forest Resource Rent Provision (PSDH) and the Timber Concession Licence Fee (IHPH). With this reclassification, however, the central government continued to receive a 60 per cent share of the total DR revenues, while the 40 per cent allocated to the regions was shared among provincial and district governments.[31]

According to GOI statistics, the nominal amount of DR revenues allocated to Indonesia's regional governments during the first few years of fiscal balancing ranged between US $48 million (in 2006) and US $84 million (in 2005) (see Table 10). The central government's DR revenue receipts during this period ranged between US $191 million (in 2006) and US $258 million (in 2004 and 2005), notwithstanding an apparent decline to US $82 million in 2007 and US $78 million in 2008 (which may reflect partial or incomplete data).[32] Nevertheless, the allocation of DR funds to regional governments under the fiscal balancing arrangement marked a sharp departure from the New Order period, when virtually all of the DR revenues flowed to the Ministry of Forestry in Jakarta.

31 This formula for DR revenue sharing was not immediately accepted by Indonesia's regional governments. Particularly during the initial phase of regional autonomy in 1999–2002, many timber-producing districts actively contested the central government's efforts to administer the DR funds and other forestry royalties according to the procedures outlined in Indonesia's fiscal balancing law (Barr et al. 2006b). The regents of several districts in West Kalimantan, East Kalimantan and Riau provinces, for instance, instructed timber companies operating within their jurisdictions to suspend DR and PSDH payments to the central government and to transfer these funds, instead, to the districts within which the timber was harvested (Barr et al. 2006b). Many district heads also issued large numbers of small-scale logging and forest conversion permits, frequently locating these in areas overlapping with HPH timber concessions previously allocated by the Ministry of Forestry, from which DR payments originated. The central government vigorously opposed such practices on the part of district officials. In a series of high-profile actions taken during 2002–04, the Ministry of Forestry initiated investigations of regents in several of the abovementioned districts and threatened to prosecute those found to be exceeding their legal authority (Barr et al. 2006b). Over time, the Ministry also systematically recentralised administrative authority in the forestry sector by revising the sector's main laws and regulations. In particular, the introduction of Government Regulation 34/2002 on Forest Administration and the Formulation of Plans for Forest Management, Forest Utilization and the Use of the Forest Estate, in June 2002, effectively put an end to the allocation of timber and forest conversion permits by regents and reconsolidated the Ministry's control over the allocation of timber concession licences. Issued at the same time, Regulation 35/2002 on the Reforestation Fund also reaffirmed the central government's control over the administration of the DR levy (McCarthy et al. 2006).

32 It is likely that the amounts reported in Table 10 do not reflect an even 60:40 split between the central and regional governments because the central government portion incorporates receipts from both the DR levy and DR interest.

Table 10. Distribution of DR revenues to central and regional governments, 2001–08

Year	Average exchange rate (Rp per US $)	Central government DR revenues		Regional government DR revenues	
		Rp (million)	US $ (million)	Rp (million)	US $ (million)
2001	10 266	2 365 450	230.4	700 560	68.2
2002	9 261	2 120 690	228.9	620 678	67.0
2003	8 571	1 974 099	230.3	462 826	53.9
2004	9 290	2 398 278	258.1	476 057	51.2
2005	9 830	2 541 343	258.5	828 572	84.2
2006	9 020	1 729 344	191.7	441 696	48.9
2007	9 419	781 200	82.9	520 800	55.2
2008	9 757	762 780	78.1	508 520	52.1

Notes: Central government DR revenue figures for 2001–06 include DR receipts and interest; 2007–08 interest is not included. Regional government DR revenues for 2001, 2006–08 are based on funds allocated; the figures reported for 2002–05 are based on actual transfers.

Sources: Central government, 2001–06 (Ministry of Forestry 2007a) and 2007–08 (State Budget). Regional governments, 2001, 2006–08 (Ministry of Finance) and 2002–05 (Ministry of Forestry 2007a)

4.2 Allocation of DAK-DR and DBH-DR funds to regional governments

Under Indonesia's fiscal balancing arrangement, DR funds have been allocated significantly to regional governments to support the rehabilitation of degraded land and forests. In 2009, approximately US $49 million has been ear-marked for allocation to districts and municipalities in 20 of Indonesia's 33 provinces and special administrative regions (see Table 11). The distribution of these funds across regions is highly concentrated, however, with nearly 75 per cent of the total amount being allocated to the country's four largest timber-producing provinces: East Kalimantan (25.9%); Central Kalimantan (19.8%); West Papua (15.2%); and Papua (13.0%).

The manner in which DR funds have been collected and redistributed to regional governments under Indonesia's fiscal balancing arrangement was initially specified by Government Regulation 35/2002 on the Reforestation Fund, issued in June 2002. According to Regulation 35, timber concession-holders are required to make payments of the DR levy based on estimates of potential production or cruising results (later changed to actual production reports), on an annual basis. As Resosudarmo *et al.* (2006) explain, the Ministry of Forestry is responsible for reconciling the DR payments for the companies operating within each province with its own timber production data. Based on recommendations from the Forestry Department, the Ministry of Finance then determines the aggregate value of DAK-DR funds that will be ear-marked for district and municipal governments within each province – representing 40 per cent of the DR receipts from each originating region – and these amounts are summarised in a formal decree issued annually.

The distribution of DAK-DR funds (and now DBH-DR 'shared revenues') among districts and municipalities within each province is coordinated by the provincial government (Subarudi and Dwiprabowo 2007). To determine the amount of DAK-DR funds that will be allocated to individual districts and municipalities, provincial governments are expected to use the following criteria articulated in guidelines established by the central government:

Table 11. Central government DAK-DR and DBH-DR allocations to regional governments for fiscal years 2001–09 (million Rp)

Province	2001	2002	2003	2004	2005	2006	2007	2008	2009
Nanggroe Aceh Darussalam	22 834	16 017	697	610	983	27 745	28 216	27 941	1 840
North Sumatra	26 369	28 904	3 171	5 817	9 011	5 735	5 547	5 588	6 125
West Sumatra	14 293	9 062	13 509	27 898	13 743	11 342	3 061	3 083	6 854
Riau	81 673	65 463	100 495	100 573	86 092	16 686	10 262	10 338	15 554
Riau Islands	0	0	0	0	68	0	0	0	0
Jambi	16 768	19 011	10 108	10 824	21 526	4 113	3 883	3 912	5 025
South Sumatra	6 508	5 024	346	187	116	0	0	0	2 057
Bangka Belitung	384	343	278	125	52	0	0	0	0
Bengkulu	4 073	2 753	292	511	244	2 033	1 942	1 956	0
Lampung	0	0	0	40	0	0	0	0	34
DKI Jakarta	0	0	0	0	0	0	0	0	0
West Java	0	0	0	0	0	0	0	0	0
Banten	0	0	0	0	0	0	0	0	0
Central Java	0	0	0	0	0	0	0	0	0
DI Yogyakarta	0	0	0	0	0	0	0	0	0
East Java	0	0	0	0	0	0	0	0	0
West Kalimantan	21 038	31 668	5 227	30 567	19 350	20 295	21 080	21 235	27 669
Central Kalimantan	174 306	129 805	82 701	73 985	129 381	45 612	103 104	103 380	98 070
South Kalimantan	10 355	4 766	13 630	11 351	2 454	2 897	3 606	3 632	3 480
East Kalimantan	190 737	182 705	163 753	131 539	176 082	135 433	137 720	131 321	128 141
North Sulawesi	2 153	3 880	241	448	168	1 398	1 109	1 118	1 578

Province	2001	2002	2003	2004	2005	2006	2007	2008	2009
Gorontalo	3 048	4 507	603	155	469	1 423	4 715	4 750	4 470
Central Sulawesi	14 272	9 941	3 616	4 879	7 191	12 740	8 044	8 103	7 625
South Sulawesi	9 798	9 685	3 578	1 392	1 425	0	0	0	0
West Sulawesi	0	0	0	0	454	8 277	10 785	10 059	6 573
Southeast Sulawesi	3 012	1 980	1 303	852	763	0	0	0	4 733
Bali	0	0	0	0	0	0	0	0	0
West Nusa Tenggara	376	1 878	1 914	1 000	185	1 876	0	0	0
East Nusa Tenggara	0	0	0	0	0	0	0	0	0
Maluku	11 735	17 196	22 083	18 201	11 189	15 939	16 642	16 764	17 106
North Maluku	18 084	7 297	12 320	24 699	38 959	14 655	20 016	20 163	17 168
Papua	68 747	106 286	22 962	10 097	6 373	45 798	58 523	54 764	64 679
West Papua	0	0	0	20 305	8 528	67 699	82 545	80 413	75 459
Total	**700 562**	**658 170**	**462 826**	**476 057**	**534 806**	**441 696**	**520 800**	**508 520**	**494 240**

Sources: Minister of Finance Decrees 491/KMK.02/2001; 471/KMK.02/2002; 480/KMK.02/2003; 605/KMK.02/2004; 611/KMK.02/2005; 14/PMK.02/2006; 40/PMK.07/2007; 158/PMK.07/2007; 195/PMK.02/2008

- projected DR receipts of each district/ municipality;
- area of degraded forests and critical lands in priority watersheds or sub-watersheds;
- level of degradation in watershed and sub-watershed ecosystems;
- likelihood for continuity of rehabilitation activities carried out in the previous fiscal year.

Most provincial governments employ a scoring system to decide how funds should be divided among districts and municipalities; however, the structure of the scoring process and the relative weight of the various indicators vary among provinces (Resosudarmo *et al.* 2006). To obtain these funds, district and municipal governments are also required to submit proposals outlining how the DAK-DR funds will be used to promote rehabilitation of degraded land and forests; at least in principle, they are accountable for the planned activities. Once the provincial government has determined how the DAK-DR funds are to be distributed, the Ministry of Finance transfers these funds directly to the individual district and municipal governments.

The use of DR funds to finance the rehabilitation of degraded land and forests during the post-Soeharto period has achieved very mixed results. In many (and perhaps all) provinces, the implementation of rehabilitation activities under both district-financed projects and those funded by the Ministry of Forestry has fallen well short of targets, both technically and financially (BPK 2008b–e). Indeed, substantial portions of the DAK-DR/DBH-DR funds allocated to district governments since 2001 and central government DR funds allocated for the GN-RHL programme (also known as GERHAN) since 2003 – by some estimates, at least Rp 2.3 trillion, or over US $250 million – have gone unspent (Tambunan 2007b). As a result, the areas of degraded land and forest rehabilitation that have been realised in many provinces have been only a fraction of the planned areas on which the allocations of the DR funds were based (BPK 2008c–i). Moreover, the quality of rehabilitation work conducted has been highly variable, and many sites have not been rehabilitated effectively or have been poorly maintained since rehabilitation activities were carried out (BPK 2008c–i).

Comprehensive data on DR-funded land and forest rehabilitation projects across Indonesia are, unfortunately, not available in the public domain. However, in 2007 the Supreme Audit Board conducted official assessments of rehabilitation projects in seven provinces and one special administration region: Riau, Central Kalimantan, West Kalimantan, South Sulawesi, East Java, Central Java, West Java and DKI Jakarta (BPK 2008c–i). Among the four provinces that received DAK-DR and DBH-DR funds,[33] these assessments found that actual expenditures realised during the period 2001–06 ranged between 41.5 per cent (West Kalimantan) and 57.0 per cent (Central Kalimantan) of the amounts budgeted (see Table 12). Significantly, the BPK assessments indicate that data on the realised areas of land and forest rehabilitation carried out by district governments were not available in any of the four provinces. It is not clear whether the district and provincial governments generally do not collect such data, or whether they simply chose to withhold it from the BPK when the audits were conducted.

33 East Java, Central Java and West Java did not receive DAK-DR/DBH-DR allocations during this period.

Table 12. Expenditures and areas realised for DAK-DR and DBH-DR land and forest rehabilitation projects in Riau, Central Kalimantan, West Kalimantan and South Sulawesi, 2001–06

Province	No. of units	Period	Budget (million Rp)	Expenditures (million Rp)	%	Planned area (ha)	Realised area (ha)	%
Riau	11	2001–06	482 592	212 968	44.1	n.a.	n.a.	n.a.
C. Kalimantan	4	2001–05	244 033	139 150	57.0	n.a.	n.a.	n.a.
W. Kalimantan	11	2001–06	147 821	61 411	41.5	n.a.	n.a.	n.a.
S. Sulawesi	23	2003–06	7 239	n.a.	n.a.	n.a.	n.a.	n.a.

Source: BPK (2008c–f)

During the first several years of decentralisation, the national government was often late in disbursing DAK-DR funds to district governments, frequently only releasing the funds towards the end of the fiscal year for which they were allocated. Ministry of Forestry officials generally attributed such delays to the length of time needed to reconcile its own timber production data with figures reports by companies operating within those districts (Resosudarmo *et al.* 2006).[34] Officials in many recipient districts complained, however, that receiving the DR funds so late in the year made it difficult to budget accurately and frequently delayed or disrupted planned rehabilitation projects. Indeed, reforestation and forest rehabilitation are seasonal activities that require timely delivery of seeds, fertilisers and other inputs so that planting can occur just prior to the rainy season. When funds were not available to purchase these on time, the DR monies often had to be carried over to the following year (Resosudarmo *et al.* 2006).

It is also significant that under regional autonomy, much of the responsibility for rehabilitating degraded lands and forests has been decentralised to district governments (in the case of DAK-DR/DBH-DR funds) and to regionally based technical agencies of the Ministry of Forestry, in collaboration with provincial and district forestry services (GN-RHL funds are discussed below). These agencies often have limited institutional capacity, with relatively small numbers of technically trained personnel and few tools available for carrying out rehabilitation projects according to national government guidelines (Resosudarmo *et al.* 2006). Just as significantly, they often have limited capacity to administer the substantial sums of DR funds allocated to them – sometimes amounting to hundreds of billions of rupiah per year. For agencies with otherwise small budgets, spending such large sums through projects involving the active participation of local communities and farmer groups is generally not an easy task.[35]

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34 As noted in Section 2.8 above, however, the 1999 Ernst & Young audit found that during the Soeharto period, the Ministry of Forestry did not have an effective system in place to reconcile its own production data with those of the companies from which it collected the DR levy – and as a result, Ministry officials were not able to verify whether companies were actually paying the amounts they were obliged to pay.

35 Effective implementation of land and forest rehabilitation projects by district governments has been further constrained by regulatory restrictions prohibiting the use of DAK-DR funds to finance 'supporting activities' for such projects (Resosudarmo et al. 2006). This has meant that district governments have been obliged to obtain alternative sources of funding for activities such as the 'socialisation' of projects among stakeholders; the provision of extension or technical guidance to project participants; and the monitoring of project activities and outcomes. In districts with large land areas and/or where project sites are highly dispersed geographically, such activities can add substantially to the overall cost of rehabilitating degraded areas. When alternative sources of funding have not been forthcoming, the absence of such activities presumably has undermined the effectiveness with which land and forest rehabilitation activities have been implemented (Resosudarmo et al. 2006).

The failure of many district and provincial governments to spend the budgeted DAK-DR / DBH-DR funds on schedule has led to tensions between some regional governments and the Ministry of Forestry. In January 2008, for instance, the Ministry temporarily suspended the allocation of DAK-DR / DBH-DR funds to East Kalimantan, Indonesia's largest timber-producing province, apparently due to the failure of the provincial and district governments to manage DR funds effectively in recent years (*Kompas* 2008b).

4.3 Central government financing of the GN-RHL programme

Since 2003, the central government has used its portion of the DR funds to finance a major policy initiative referred to as the National Movement for Land and Forest Rehabilitation (*Gerakan Nasional Rehabilitasi Hutan dan Lahan*, GN-RHL or GERHAN), initiated through a joint decree issued by the Coordinating Ministers for Social Welfare, Economic Affairs and Political Affairs.[36] The main objectives of the GN-RHL programme are to rehabilitate degraded land and forests in the following areas: priority watersheds; degraded protection and production forests; areas susceptible to floods, landslides and drought; areas surrounding lakes, dams and reservoirs; and mangrove and coastal forests. For the period 2003–07, the GN-RHL programme was assigned a five-year target to achieve land and forest rehabilitation on 3.0 million ha (see Table 13).

The GN-RHL programme has been financed by the central government's 60 per cent share of receipts from the DR levy and is coordinated by the Ministry of Forestry (Resosudarmo *et al.* 2006). The Ministry has implemented rehabilitation activities through the Department's local Bureaus of Watershed Control (*Balai Pengendalian Daerah Aliran Sungai*, or BP-DAS) and Bureaus of Forest Resource Conservation (*Balai Konservasi Sumber Daya Alam*, or BKSDA), in collaboration with the provincial and district forestry services. As the local representatives of the Department of Forestry, the BP-DAS and BKSDA are responsible for determining which sites within their areas will be rehabilitated, as well as making seeds and seedlings available, providing technical information and conducting evaluation and monitoring.

The GN-RHL programme has placed an emphasis on establishing multi-year silvicultural systems both within and outside the State Forest Zone (*Kawasan Hutan*). Rehabilitation activities are generally carried out on a multi-year contractual basis by national and regional corporations, sometimes working in collaboration with local communities. For portions of the State Forest Zone that have special security

Table 13. Five-year target for land and forest rehabilitation under the GN-RHL programme, 2003–07

Year	Target area (ha)	% of total
2003	300 000	10.0
2004	500 000	16.7
2005	600 000	20.0
2006	700 000	23.3
2007	900 000	30.0
Total	**3 000 000**	**100.0**

Source: BPK (2008c–i)

36 Joint Decree of the Coordinating Minister of Social Welfare, Coordinating Minister of Economic Affairs and Coordinating Minister of Political and Security Affairs No. 09/Kep/Menko/Kesra/III/2003, No. 16/M. Ekon/03/2003, No. Kep. 08/Menko/Polkam/III/2003 on the Formation of a National Coordination Team for Environmental Improvement through Reforestation and Rehabilitation.

Table 14. Expenditures and areas realised for GN-RHL land and forest rehabilitation projects in Riau, Central Kalimantan, West Kalimantan, South Sulawesi, West Java, Central Java and East Java, 2003–06

Province	No. of units	Period	Budget (million Rp)	Expenditures (million Rp)	%	Planned area (ha)	Realised area (ha)	%
Riau	15	2003–2006	156 637	77 160	50.2	39 715	24 458	61.5
C. Kalimantan	6	2004–2006	221 927	93 380	42.0	93 743	44 650	47.6
W. Kalimantan	14	2004–2006	229 655	137 595	59.9	n.a.	36 225	n.a.
S. Sulawesi	28	2003–2006	324 189	166 669	51.4	77 161	59 361	76.9
W. Java	21	2003–2006	233 867	108 126	46.2	302 528	200 005	66.1
C. Java	20	2003–2007-I	567 982	282 920	49.8	659 954	173 369	26.2
E. Java	21	2003–2006	299 281	169 413	56.6	274 594	n.a.	n.a.

Source: BPK (2008c–i)

functions, Regulation 89 indicates that rehabilitation activities will be carried out independently ('*secara swakelola*') by the Indonesian Armed Forces (*Tentara Nasional Indonesia*, or TNI). For areas outside the State Forest Zone, rehabilitation activities will be carried out through temporary contracts with farmer groups (BPK 2008b–e).

Since the programme's inception in 2003, implementation of GN-RHL projects has encountered many of the same problems as DAK-DR land and forest rehabilitation projects, as described above. In many provinces, funds allocated for land and forest rehabilitation under the GN-RHL programme have been routinely under-spent and the areas of rehabilitation implemented have fallen well short of targets. In the seven provinces where BPK conducted audits of the programme, the Supreme Audit Board found that expenditures realised on GN-RHL projects during the period 2003–06 ranged between 42.0 per cent (Central Kalimantan) and 59.9 per cent (West Kalimantan) of budgeted amounts. Similarly, the realised areas of land and forest rehabilitation ranged between 26.2 per cent (Central Java) and 76.9 per cent (South Sulawesi) (see Table 14).

4.4 Corruption and misuse of DR funds under regional autonomy

As with the implementation of the HTI plantation programme during the Soeharto era, the rehabilitation of degraded land and forests during the regional autonomy period has been undermined by widespread corruption and misuse of DR funds. Indeed, many of the irregularities in the disbursement and utilisation of DR funds that were commonplace under the New Order government have continued through the regional autonomy period – albeit in a manner that is now far more decentralised. Media reports and the BPK audits for some provinces indicate that DR funds have frequently been channelled for uses other than those for which they were formally allocated. Although such reports are often anecdotal, collectively they suggest that poor governance of DR funds during the post-Soeharto period has sharply limited the effectiveness of reforestation and rehabilitation initiatives carried out by both the central and regional governments.

Particularly common are reports of DR funds being allocated to finance fictitious projects – that is, projects for which funds are allocated but which are never actually implemented. In Pelalawan, Siak, Kampar and Rokan Hilir districts of Riau Province, for instance, DR funds were reportedly used to support reforestation activities twice in the same location (*Kompas* 2004, Tanjung 2006). Similarly, in West Kalimantan government agencies charged with implementing DR-funded projects have reportedly implemented these only partially on a routine basis (Eriandi 2008, Nurmasari 2008); and in 2007 it was announced that the Provincial Police were investigating losses of DR funds amounting to Rp 80 billion since 2000 (*Sinar Harapan* 2007).[37] By under-spending their budgets, they have apparently been able to redirect the unused portion of the allocated funds for other purposes (cf Sinar Indonesia 2005a, Waspada 2007). It is likely that in some cases, DR funds redirected in this way have been used by government agencies to pursue institutional goals, while in other cases, they have been siphoned off by corrupt officials for personal gain (Surya 2005, *Kedaulatan Rakyat* 2005a, *Belagu.com* 2008, *BersamaToba. com* 2008).

Reports of officials 'marking up' the costs of the projects they are charged with carrying out are also common. They have frequently done so either by inflating the unit costs of key inputs or by padding the budgets submitted with their applications for DR funds with expensive consultancies and pre-implementation 'feasibility' studies, or by over-stating the areas planted (cf *Kapanlagi.com* 2007). In some cases, government agencies involved in administering DR funds have entered into no-bid and/or sole-supplier contracts with private sector companies to provide services or inputs (such as seeds or fertiliser) for the projects being implemented (cf *Suara Merdeka* 2005, *Kedaulatan Rakyat* 2005b, 2005c; Raswa 2005). Although details are generally scant, such arrangements would appear to create opportunities for key agencies and/or well-placed officials to receive lucrative bribes or kickbacks from these deals.

In July 2007, Indonesian Corruption Watch also raised concerns that some Rp. 2.3 trillion of DAK-DR allocated to regional governments during 2002–05 had been deposited in Bank of Indonesia certificates to generate interest and/or invested in the capital market (Tambunan 2007b). If true, these allegations suggest that substantial amounts of the DR funds are not being invested to rehabilitate Indonesia's forest resources, but rather may be used by officials at various levels to generate investment returns. It is not clear whether such investments are being made in the name of individual officials or the government institutions they represent. The Ministry of Forestry stated that the deposited funds are owned by 28 regional governments, to which DAK-DR funds had been transferred (*Bisnis Indonesia*, 28 June 2007). The current global financial crisis highlights the unanticipated risks that often arise when public monies, such as DR funds, are invested in capital markets.

A recent and still unfolding (as of December 2009) corruption case allegedly involving senior officials at the

37 Following an investigation into the (mis)use of DR funds for GN-RHL projects in West Kalimantan in 2004, a member of the NGO Peduli Kapuas Hulu was quoted in the media as follows: 'Based on our assessment in the field, the disbursed GN-RHL funds have generated no obvious results. This is especially the case for funds disbursed in 2004. Which amount to billions of rupiah. We have asked the relevant government agencies, but it's not at all clear what they have achieved with the funds allocated … We find ourselves asking: Where are the project sites? Do the activities involve any significant number of people? What area of degraded land has been reforested with the funds disbursed? We also would like to know what kinds of trees were planted? Do they provide any benefits for the local people? In addition, we want to know if the target sites are truly degraded forest lands? Were the projects implemented in accordance with the procedures set forth by the government?' (Pontianak Post Online 2005).

Ministry of Forestry and members of Parliament suggests that reforestation-related fraud and corruption are still serious problems at the national level as well. In June 2009, an investigation by the Corruption Eradication Commission documented irregularities in the Ministry's procurement of an integrated radio communications system involving the fraudulent misuse of monies earmarked for the Ministry's GN-RHL programme in 2006–07 (Nilawaty 2009a, Dipa *et al.* 2009). According to press reports, KPK has compiled evidence suggesting that some Rp 180 billion (or approximately US$ 20 million) of budgetary funds allocated for land and forest rehabilitation projects under the GN-RHL programme had been channelled to a communications supplier, PT Masaro Radiokom, through a no-bid contract (Nilawaty 2009a, 2009b). PT Masaro reportedly never delivered the specified radio communications system, resulting in state losses of Rp 180 billion (Nilawaty 2009a).

To secure this contract, the company's Director Anggoro Widjojo allegedly paid Rp 125 million and 220,000 Singapore dollars in bribes to nine members of Parliament's Commission IV, which oversees approval of the Ministry of Forestry's budget, in February and November 2007 (Dipa *et al.* 2009). In August 2008, KPK also seized US $20,000 in cash from the office of the Secretary-General of the Ministry of Forestry, which investigators reportedly believe to be associated with the contract (Anggadha and Rahardjo 2009, Elandis 2009, Nilawaty 2009a). KPK has alleged that the former Head of the Ministry's Planning and Finance Bureau is likely to have played a role in arranging for PT Masaro's contract to by-pass the Ministry's normal tender and open-bid procedures (Nilawaty 2009a, *Reformasihukum.org* 2009, Siswanto and Anggadha 2009). As of December 2009, KPK's investigation into this case is still ongoing and the Corruption Eradication Commission is working with Interpol to secure the arrest of Anggoro Widjojo, who has reportedly fled the country (Mahbubirrahman 2009, Syaifullah 2009, Antara News 2009).[38]

38 The case has assumed a heightened level of intrigue since early August 2009, when the suspended head of KPK, Antasari Azhar, who is being detained on suspicion of involvement in the murder of a businessman, made public allegations that Anggoro Widjojo had bribed several senior KPK officials (The Jakarta Post 11 August 2009). Antasari claimed to have held a secret meeting with Anggoro in Singapore in October 2008 in order to obtain evidence concerning allegations of graft among senior Corruption Eradication Commission staff. Officials at KPK have vehemently denied Antasari's allegations, claiming that he is trying to undermine the Commission's credibility in order to settle scores with his former colleagues (Rayda and Arnaz 2009). On 23 November 2009, President Yudhoyono formally exonerated the KPK officials involved, based on recommendations from Team 8, an independent commission authorised to review the case. The political implications of this high-profile dispute between the National Police and KPK are described in Harwell (2009).

5 Forestry industry 'revitalisation' and the reassertion of Ministry of Forestry control

In recent years, the Ministry of Forestry has announced plans, yet again, to use the Reforestation Fund to provide financial incentives for commercial plantation development in support of forest industry 'revitalisation'. The Ministry of Forestry and the Ministry of Finance have jointly established two new institutional structures to oversee the administration and use of the central government's share of DR revenues for this purpose. These include the creation of a Forest Development Account (*Rekening Pembangunan Hutan*) and a Forest Development Funding Agency Public Service Unit (*Badan Layanan Umum – Badan Pembiayaan Pembangunan Hutan*, BLU-BPPH), which is mandated to administer the DR as a 'revolving fund'. The establishment of these institutions has allowed the Ministry of Forestry to regain considerable authority over how DR funds will be administered and utilised.

5.1 Forestry sector 'revitalisation' and new incentives for plantation development

Under the Ministry of Forestry's sectoral development plan for the period 2004–09, forest industry revitalisation has been one of five key programmes. This initiative emerged from recognition within the Ministry that Indonesia's wood processing industries are facing a growing shortage of legal and sustainable timber supplies, threatening the competitiveness of whole segments of the country's commercial forestry sector. A Ministerial planning document described the problem as follows:

> Diminishing supplies of raw materials from natural forests, the low development realization rate of pulpwood and lumber industrial forest plantations (HTI), and production inefficiencies have all caused a decline in forest product production leaving many wood processing companies with financial losses and debts. Some of these companies are suspected of consuming illegal timber from natural forests in their production processes. Consequently, not only are future supplies of roundwood for the timber industry under threat, but environmental destruction from deforestation and forest degradation is becoming increasingly severe (Ministry of Forestry 2007b).

In June 2006, the Ministry established a Forest Industry Revitalisation Working Group, which was tasked with 'discussing a policy framework for forestry sector revitalisation and consulting with stakeholders to prepare forestry sector revitalization processes' (Ministry of

Table 15. Projected annual development of HTR timber plantations 2007–16

Year	Planted area				Total area (ha)	Total planted area (ha)	Budget (million Rp)	Budget (million US$)
	Annual allocation of 1.4 million ha	Annual allocation of 1.4 million ha	Annual allocation of 1.4 million ha	Annual allocation of 1.2 million ha				
2007	200 000				200 000	200000	1 600 000	177.8
2008	200 000	200 000			400 000	600000	3 200 000	355.5
2009	200 000	200 000	200 000		600 000	1200000	4 800 000	533.3
2010	200 000	200 000	200 000	170 000	770 000	1970000	6 160 000	684.4
2011	200 000	200 000	200 000	170 000	770 000	2740000	6 160 000	684.4
2012	200 000	200 000	200 000	170 000	770 000	3510000	6 160 000	684.4
2013	200 000	200 000	200 000	170 000	770 000	4280000	6 160 000	684.4
2014		200 000	200 000	170 000	570 000	4850000	4 560 000	506.7
2015			200 000	170 000	370 000	5220000	2 960 000	328.9
2016				180 000	180 000	5400000	1 440 000	160.0
Total					**5 400 000**		**43 200 000**	**4 800.0**

Source: Ministry of Forestry, quoted in Sugiharto (2007a) and Obidzinski (2008)

Forestry 2007b). The Working Group's efforts culminated in August 2007 with the release of a 'road map' for the revitalisation of Indonesia's forestry industry (Ministry of Forestry 2007b). The road map included a detailed action plan for the restructuring, re-engineering and revitalisation of the nation's wood-based industries. In addition, the plan called for a very significant expansion of Indonesia's industrial plantation base in order to fill the supply gap for timber and pulpwood (Ministry of Forestry 2007b).

Anticipating the release of the sectoral 'road map', the Ministry of Forestry announced in December 2006 that it would promote the development of some 9.0 million ha of new timber and pulpwood plantations by 2016. Significantly, these plantations are intended to support the expansion of Indonesia's pulp industry from a capacity of 8.5 million tonnes per year in 2007 to some 18.5 million tonnes in 2020; and an expansion of paper and paperboard capacity from 6.5 million tonnes in 2007 to 16.0 million tonnes in 2020 (Ministry of Forestry 2007b).[39]

The Ministry's plantation development target includes 3.6 million ha to be developed as HTI industrial timber plantations and 5.4 million ha to be developed by smallholders through various models for community-based plantations (*Hutan Tanaman Rakyat*, or HTR) (Sugiharto 2007b). According to the Ministry's plan, the vast majority of these plantations are to be established on 'degraded' forest lands, which generally include logged-over areas within current and former timber concession sites. As with the HTI programme during the Soeharto era, plantation licence-holders are given access to standing timber on these sites with royalties set well below the stumpage value of the wood.

39 In January 2009, the Minister of Forestry provided a significant additional measure of support to the country's pulp and paper producers by rescinding a previous decree, issued in 2004, which required pulp companies to have stopped using wood harvested from the natural forest at their own plantation concession sites by 2009. Under the new regulations, pulp producers are now permitted to convert natural forest areas until 2014 (Inilah.com 2009). Much of the new forest areas being converted are located on peatlands, suggesting that this policy poses significant contradictions for Indonesia's national REDD+ programme.

Commercial plantation licence-holders are given land use rights for 100 years, while communities are assigned use rights for 60 years, extendable for up to 35 years (Obidzinski 2008).

The Ministry's plan for HTR community plantation development calls for the establishment of between 200,000 ha and 770,000 ha annually during 2007–16, reaching an aggregate area of 5.4 million ha by the end of this 10-year period (see Table 15). To finance the development of these areas, the Ministry has budgeted some US $4.8 billion to be spent between 2007 and 2016. Much of this is expected to be drawn from the Reforestation Fund and allocated to companies and communities implementing HTR projects in the form of discounted loans. The Ministry also plans to allocate DR financing for the development of new HTI industrial-scale timber and pulpwood plantations. Although it is still unclear how the financing for these projects will be structured, it can be anticipated that the planned 3.6 million ha of industrial plantations will require a capital investment in the range of US $3.1 billion to US $3.6 billion.[40]

5.2 The Forest Development Account

On 5 February 2007, the Minister of Forestry and the Minister of Finance issued a joint regulation supporting the creation of a Forest Development Account (*Rekening Pembangunan Hutan*) to facilitate the use of DR funds to support forest and land rehabilitation.[41] The Forest Development Account was initially capitalised in September 2007 with a transfer of Rp 5.0 trillion (approximately US $555 million) of the DR monies that had theretofore been administered by the Ministry of Finance.[42] Thereafter, funds could flow into the Forest Development Account from a number of other sources, including:

1. DR funds remaining from the central government's share of annual DR receipts after the Ministry of Forestry's share had been allocated;
2. DR funds received for repayment of loans/credit with interest from debtors, proceeds of divestment, dividends and proceeds from confiscated timber;
3. DR funds held by third parties;
4. interest and/or service fees originating from the Forest Development Account;
5. surpluses from the Ministry of Forestry's 'working unit' (*Satker Departemen Kehutanan*) in charge of forestry development spending.

Financial oversight of the Forest Development Account is conducted by the Director General of the Treasury at the Ministry of Finance, which is obliged to issue a monthly statement of the account's position to the Ministry of Forestry. The Ministry of Forestry may draw funds from the account to support land and forest rehabilitation activities. To do so, the Ministry of Forestry must submit a five-year work plan accompanied by a budget detailing how the funds will be used. Upon approval, the Ministry of Finance will then transfer the funds from the Forest Development Account to the Ministry of Forestry's 'working unit' in charge of forestry development spending.

40 These estimates are based on an assumed standard investment cost of between US $880 per ha (as is applied by the Ministry of Forestry in its projections for HTR investments) and US $1,000 per ha, a commonly applied 'rule of thumb' for plantation development in Indonesia.

41 Minister of Finance Decree No. 06.1/PMK.0l/2007 and Minister of Forestry Decree No. 02/MENHUT-II/2007 regarding Reforestation Fund Management for Forest Development (dated 5 February 2007).

42 Minister of Finance Decree No. 121/PMK.05/2007 concerning the Opening of the Forest Development Account and the Initial Placement of Reforestation Funds in the Forest Development Account (dated 28 September 2007).

The Ministry of Forestry's 'working unit' is charged with managing the funds under its administration as a 'revolving fund'. It is permitted to disburse loans to legal entities – including state-owned enterprises, regionally owned enterprises, private corporations and joint ventures among these types of entities – as well as to cooperatives and forest farmers groups. To be eligible for such loans, legal entities and cooperatives are required to hold a plantation licence (*Izin Usaha Pemanfaatan Hutan Tanaman*, IUPHT) and have forestry expertise; furthermore, they may not be included on any banking sector 'black lists' and must not be in arrears on corporate tax payments.[43] Loans are reportedly made at commercial rates. In cases where legal entities fail to repay, borrowers are subject to a fine totalling 2 per cent of the principal annually, together with accrued interest. For forest farmer groups and cooperatives, failure to repay can subject borrowers to unspecified collective sanctions (*tanggung renteng*).

5.3 The Forest Development Funding Agency Public Service Unit (BLU-BPPH)

On 2 March 2007, less than one month after the Forestry Development Account was opened, the Minister of Finance announced the formation of the Forestry Development Funding Agency Public Service Unit (BLU-BPPH), which would function as the Ministry of Forestry's 'working unit' in charge of forestry development spending (Ministry of Forestry 2007c).[44] In collaboration with the Ministry of Forestry, the Ministry of Finance established the BLU-BPPH to create a more robust institutional structure to administer the DR-financed revolving fund and to oversee the financing of forestry sector development activities (Purnomo *et al.* 2007). This body is incorporated as a 'Public Service Unit' (*Badan Layanan Umum*, or BLU), a relatively new type of legal entity reportedly designed to provide public services in a semi-commercial manner but without a profit motive. Such entities first emerged following the introduction of Law 1/2004 on the State Treasury and Regulation 23/2005 on the Financial Administration of Public Service Units.

Broadly defined, the stated purpose of Public Service Units according to Regulation 23/2005 is 'to improve the provision of services to the public, within the context of promoting the general welfare and enhancing public life, by providing flexibility in financial administration based on economic principles of efficiency and productivity, and the formulation of healthy business practices'. In the public discourse on BLUs, it is often emphasised that this novel institutional structure offers a 'new paradigm' for government agencies to move beyond their traditional regulatory and administrative functions, which are often characterised by high degrees of bureaucracy and inefficiency (Supriyanto and Suparjo 2006). With the creation of a BLU, it is argued, such agencies are able to assume more dynamic and transformative roles as public service providers and as investors. Some observers have questioned, however, whether the formation of BLUs is part of a strategy to counteract the consolidation of state finance into the Treasury Single Account (World Bank 2009).

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43 It is not clear whether a company's failure to repay previous DR loans for HTI plantation development is considered in the Ministry's current due diligence process, or whether it has resulted in any DR loan recipients being included on banking sector 'black lists'.

44 Minister of Finance Decree No 137/KMK.05/2007 dated 2 March 2007 concerning Launching of The Forest Development Funding Agency Public Service Unit (BLU-BPPH).

Essential characteristics of Public Service Units, as specified by Regulation 23/2005, include the following.

1. Public Service Units are established as government agencies which are linked to the State Treasury. This effectively means that a BLU can receive transfers of funds from the state budget. It also means that the BLU must submit financial statements detailing revenues generated by the BLU's own activities so that those can be recorded in the state budget. However, those funds are retained by the BLU and are not transferred to the Treasury. Such an arrangement stands in contrast, for instance, to state-owned enterprises (*Badan Usaha Milik Negara*, BUMN), which are legally separate from the State Treasury.
2. BLUs are administered on an autonomous basis 'according to principles of efficiency and productivity'. The Ministry of Finance holds ultimate authority for financial oversight, while technical oversight is exercised by the BLU's parent agency – namely, the ministry of the sector within which the BLU operates, or the institution or regional government under which it was formed. Work plans, budgets and accountability are to be consolidated with those of the BLU's parent agency.
3. BLUs are not profit-oriented, and they enjoy tax exempt status. All receipts, in the form of either income or contributions, may be used directly by the BLU.
4. Officers of a BLU may be drawn from the private sector, and a BLU may engage private sector institutions to administer the funds under its control. In this way, while BLUs are government agencies, they may be run in a semi-privatised manner by corporate officers who are not civil servants.

Since 2005, several dozen Public Service Units have been established in a wide range of sectors. These fall under three general categories, as defined by Law 1/2004:

1. BLUs that provide essential goods or public services (including, for instance, hospitals, educational institutions, licensing services and so forth).
2. BLUs that administer special jurisdictions (such as the City of Jakarta) and economic development zones.
3. BLUs that administer special funds including the management of 'revolving funds', funds for small and medium enterprises (SMEs) and credit unions for civil servants.

The Forest Development Funding Agency Public Service Unit falls into this third category.[45] With the launch of the BLU-BPPH in March 2007, the Ministry of Finance emphasised that it would provide a solution for financing development in Indonesia's forestry sector (Ministry of Finance 2007c; Qomariyah 2007). By vesting the new entity with far-reaching authority to administer the central government's share of DR revenues, the Ministry noted that the BLU-BPPH is expected to allocate some US $2.2 billion to fund forestry activities over the next several years.

> Under its strategic plan, BLU-BPPH will disburse Rp 20.4 trillion [US $2.2 billion][46] in reforestation funds to SOEs [state-owned enterprises] and regional government enterprises, private companies, cooperatives and smallholder groups operating in the forestry sector. These funds will be

45 Similar BLUs have been established to coordinate investments in a range of other sectors as well, including agriculture, fisheries, public works, technological development and telecommunications.

46 This and subsequent US dollar figures are based on an assumed exchange rate of Rp 9,000 per US$, a close approximate average for the 2007 calendar year.

> used for reforestation of 5.4 million hectares from 2007 to 2022. In the 2007 fiscal year, the government plans to allocate Rp 1.4 trillion [US $155 million] (indicative ceiling) to BLU-BPPH to be channeled for development of replanted forests, including smallholder timber estates. These funds will be taken from the Rp 10.3 trillion [US $1.1 billion] held in reforestation funds at the beginning of fiscal year 2007 that will be allocated in stages according to the work plan for forest development, forest rehabilitation and Ministry of Forestry lands (Ministry of Finance 2007c).

The fact that the BLU-BPPH is charged with managing the Forestry Development Account as a revolving fund suggests that it may use the DR deposits to leverage potentially significant amounts of additional capital (see Appendix E). Although details of the BLU-BPPH's plans are not yet clear, experience with revolving funds in other sectors and other countries offers useful insights into how such leveraging could occur. For instance, a USAID-funded feasibility assessment of the Indonesia Water Revolving Fund anticipated that the revolving fund would allow a multiple of eight times the amount contributed by government grants to be raised to finance water and sanitation projects (see Box E-1). Revolving funds typically achieve such multiples by attracting co-financing arrangements with bilateral and multilateral lenders and with commercial banks. They often do so by using the government funds to provide credit risk guarantees and liquidity enhancements. In some cases, revolving funds also allow government agencies to raise additional capital by gaining expanded access to bond markets.

During at least the first two years following its incorporation, the BLU-BPPH has been much slower to become fully operational than planned. According to the Agency's plans, the BLU-BPPH had budgeted Rp 1.39 trillion (approximately US $154 million) for disbursement in 2008 and Rp 3.09 trillion (approximately US $343 million) for disbursement in 2009.[47] By February 2009, however, the BLU-BPPH had not yet released any funds (*Tempo Interaktif* 17 February 2009). In response to questioning from Parliament, then Minister of Forestry M. S. Kaban attributed this inactivity to a variety of 'administrative challenges' associated with the start-up of the BLU's operations. These challenges included delays both in the transfer of funds to the BLU from the Ministry of Finance and in the release of the Ministry of Finance's anticipated regulation on management of revolving funds (Yuliastuti 2009a). In addition, the Minister of Forestry indicated that the BLU-BPPH had encountered delays in receiving the requisite approvals and designation of sites from district governments where the DR-funded plantation projects would be implemented (Yuliastuti 2009a).

At the time this report was prepared in June 2009, the BLU-BPPH reportedly had still not yet disbursed any funds. Whatever the reasons for these delays, they have meant that through at least mid-2009, the newly formed Forest Development Funding Agency Public Service Unit was managing approximately US $500 million in unspent funds.

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47 In 2008, the BLU-BPPH reportedly had planned to disburse Rp 697.21 billion to develop 149,000 ha of HTR small-holder plantations and Rp 696.38 billion to develop 121,000 ha of HTI industrial-scale plantations. In 2009, the BLU-BPPH had planned to allocate Rp 1.69 trillion to develop 226,000 ha of HTR plantations and Rp 612.10 billion to develop HTI plantations (the area of which is not clear) (Yuliastuti 2009b).

5.4 Financial governance of the BLU-BPPH

In its public statement on the launch of the BLU-BPPH, the Ministry of Finance recalled the long history of corruption and misuse associated with the DR, and emphasised the need for the Forest Development Funding Agency to be administered in an accountable manner.

> The [BLU-BPPH's] financial management must be accompanied by good governance, including a professional, transparent and accountable mechanism for channeling of revolving funds; application of sound financial management principles in management of the funds; adequate internal control mechanism, monitoring and evaluation of funds disbursement; and regular disclosure of information to stakeholders on performance and financial position. These controls are expected to prevent any reoccurrence of the misappropriation of reforestation funds in past years (Ministry of Finance 2007).

In the same statement, the Ministry of Finance also made a point to emphasise that the Forest Development Funding Agency 'is allowed *flexibility in financial management* as stipulated in Government Regulation 23/2005 concerning Financial Management of Public Service Units, in keeping with sound, transparent and accountable business practice' (Ministry of Finance 2007, emphasis added). This point is noteworthy in that Regulation 23/2005 goes to some lengths to provide BLUs with a very significant degree of flexibility in the area of financial management, ostensibly 'to ensure healthy business practices and to improve public service delivery'. Stating explicitly that the framework established for the financial management of BLU's is 'an exception from general administrative practices for public finance', Regulation 23/2005 explains that 'flexibility is given in the area of implementing budgets, including the management of revenues and expenditures, the management of cash, and the provision of goods and services' (Art. 1, explanatory notes).

Although the term 'flexibility' is mentioned repeatedly throughout the text of the regulation, Regulation 23/2005 offers little detail as to what this sort of administrative flexibility means in practice, or what mechanisms exist to ensure that BLUs provide sufficient oversight in how public funds are managed. By all appearances, considerable space is left for the officers of individual Public Service Units to interpret what is meant by these guidelines. In the case of the BLU-BPPH, little information is publicly available concerning what governance structures have been adopted and whether these are being implemented effectively.

For Indonesia, the question of whether the substantial amounts of public money flowing into the Reforestation Fund will be managed accountably depends, to no small degree, on whether the BLU-BPPH is administered according to principles of sound financial management and good governance. It is conceivable, however, that the financial implications of the BLU-BPPH's institutional governance practices could extend well beyond the specific amounts of DR funds placed under the Agency's management. To the extent that the BLU-BPPH uses the DR funds to leverage substantially larger amounts of capital from donor agencies, bilateral and multilateral lenders and/or commercial banks, the GOI can be expected to assume significantly increased levels of risk on the Agency's behalf.

6 Implications of Indonesia's DR experience for REDD+

This study has reviewed Indonesia's experience with the Reforestation Fund since the DR levy was introduced in 1989. It has traced the various institutional arrangements through which the DR has been administered by successive government administrations and has highlighted numerous instances in which the use of the DR for its intended purpose – reforestation and rehabilitation of degraded forests – has been undermined by poor financial management and weak governance practices. Although many of the most notable abuses of the DR occurred during the Soeharto era, significant issues related to the financial management and governance of the fund continue through the post-Soeharto *Reformasi* period to the present.

This section summarises key lessons from Indonesia's experience with the DR and examines the potential implications of each for REDD+ payment schemes. For Indonesia and other tropical forest countries, REDD+ represents an unprecedented opportunity to secure compensation by generating verifiable carbon emission reductions through curbing deforestation and forest degradation. Although the architecture of a future REDD+ mechanism is still in the design phase, it promises to generate substantial new revenue flows both for Indonesia's national treasury and for stakeholders from the national to local levels. One estimate suggests that Indonesia could receive REDD+ payments of some US $4.5 billion per year if it is successful in reducing its current deforestation rate by 30 per cent – an amount that far exceeds the GOI's annual revenues from the DR levy (Purnomo *et al.* 2007). Given that it potentially involves such large amounts of money, Indonesia's ability to participate successfully in REDD+ will depend, to no small extent, on the GOI's capacity to exercise sound financial management and good governance practices in its administration of carbon monies.

The lessons summarised below are intended to strengthen Indonesia's REDD+ 'readiness' process by identifying important elements of the nation's experience with the DR which can inform current discussions concerning REDD+. The aim is to help ensure that negative aspects of Indonesia's experience with the DR are not repeated under REDD+, while positive aspects of this experience are expanded and built upon. It must be emphasised that the Government of Indonesia has carried out very significant reforms to improve financial governance of public funds, including the DR, since the end of the Soeharto era in 1998 – and is continuing to do so. As such, this study does not argue that the GOI's future experience in administering REDD+ funds is somehow destined to replicate the abuses and shortcomings that have characterised the nation's experience with the DR over the past two decades. However, the potential negative consequences that could occur if the DR experience is repeated (perhaps on a larger scale) are sufficiently alarming that it is important to consider the downside risks and to review steps that can be taken to avoid these as REDD+ payment mechanisms are established.

It must also be acknowledged that at both the national and the global levels, the institutional structures through which REDD+ funds will be managed have not yet been fully developed. In Indonesia, it is quite possible that future REDD+ funds will be administered through very different fiscal arrangements to those used by the GOI, during either the Soeharto or the post-Soeharto periods, to administer the Reforestation Fund. By mid-2009 (when this report was prepared), it had not yet been determined whether the GOI would administer REDD+ funds as tax or non-tax revenues, and whether they would be shared across levels of government as grants, balancing funds or regionally generated revenues.

The following sections summarise six areas in which Indonesia's DR experience holds implications for REDD+. Although the discussion focuses on Indonesia, most of the points articulated are relevant to the introduction of REDD+ schemes in other countries as well.

6.1 Financial management and revenue administration

During both the Soeharto and the post-Soeharto periods, effective utilisation of the DR has been undermined by weak financial management and inefficient revenue administration by institutions at all levels of government, despite important improvements during recent years.

During the last decade of the New Order period, the Ministry of Forestry's administration of the DR was characterised by extensive mismanagement, facilitated by the use of non-standard accounting practices and weak fiduciary controls. Through this period, the Ministry of Forestry used the DR as an off-budget 'slush fund', through which large amounts of public revenues were allocated for non-forestry projects and political purposes that had little to do with the DR's official mandate. The GOI's transfer of the DR to the Ministry of Finance as part of the IMF-led structural adjustment process at the end of the Soeharto era introduced important checks and balances and improved overall accountability by bringing the Reforestation Fund on-budget.

At the same time, BPK audits conducted in recent years have identified significant problems in the financial management and governance of DR funds during the post-Soeharto period, many of which appear to be points of ongoing concern. In its recent audits of the Ministry of Forestry's financial reports, BPK has documented weak internal controls and widespread irregularities in the Ministry's administration of state revenues. Given that receipts from the DR levy are the Forestry Department's single largest source of revenues, it is hardly surprising that many of these problems are related either directly or indirectly to the Ministry's administration of DR funds. Significantly, BPK has repeatedly given disclaimer opinions in its recent audits of the Ministry of Forestry's financial reports.

Going forward, the Forest Development Funding Agency Public Service Unit – which is expected to administer at least US $2.2 billion in DR funds – is explicitly authorised to employ highly flexible financial management practices, which may diverge from the general administrative practices for public finance. As yet, however, little is known about how the BLU-BPPH will manage the funds it is charged with administering. This raises important questions as to whether the central government's share of the DR will be managed accountably, in accordance with generally accepted practices, in the coming years. Although the BLU-BPPH was legally incorporated in early 2007, it failed to disburse any of the Rp 1.39 trillion budgeted for 2008 and has fallen well behind schedule in spending the Rp 3.09 trillion budgeted for 2009.

Under Indonesia's fiscal balancing arrangements, approximately US $500 million in DR receipts has been allocated to district governments (and to a far lesser extent, provincial governments) since 2001 to fund the rehabilitation of degraded land and forests. In many regions, however, district governments apparently have had insufficient capacity to administer such large budgetary allocations, and substantial amounts of DR funds – frequently 50 per cent or more of the amounts budgeted – have gone unspent. In some districts, forest rehabilitation projects financed by the DR have been poorly implemented due to delays in the approval or disbursement of funds by the agencies involved; in some cases, it appears that DR funds may have been diverted for other uses. Local offices of the national and provincial forestry services have also dramatically under-spent the DR funds allocated for the national GN-RHL programme, resulting in land and forest rehabilitation projects in many provinces falling well below their targets. Such failures suggest that many district governments and local forestry bureaucracies simply have not had the institutional bandwidth to administer effectively the substantial amounts of funds allocated for DR-financed projects.

Indonesia's recent experience with the DR suggests that the financial management systems that currently exist in the nation's forestry sector may be ill-equipped to manage the significant influx of new revenues that can be expected as REDD+ payments come on-stream. Indeed, many of the agencies likely to manage REDD+ funds are already struggling to administer the existing flow of fiscal resources from the Reforestation Fund, and REDD+ can be expected to place considerable new stresses on these institutions. Without significant improvements in capacity and coordination among key institutions at all levels of government, it is not difficult to envisage a scenario in which the funds allocated for REDD+ – as well as future allocations of DR funds – are administered with inefficiencies and dysfunctional practices similar to those that have characterised the administration of the Reforestation Fund for the past two decades. If this were to occur, it would pose a major risk to the sustainability of REDD+ revenue flows for Indonesia.

Capacity-building in the area of financial management will clearly need to be a high priority during the REDD+ 'readiness' process. This must undoubtedly involve extensive staff training and professional development, as well as the enhancement of organisational structures and the improvement of technical capabilities in key areas related to the administration of REDD+ funds. Just as investments are already being made to build capacity in land use planning and carbon accounting, there is a pressing need to strengthen capacity in budgeting, financial accounting, fiscal management and other aspects of revenue administration.

Interventions aimed at strengthening inter-agency coordination in the administration of REDD+ revenues – both within and across levels of government – are also very much needed. A key challenge rests in determining not only how REDD+ revenues should be shared among key agencies and across levels of government, but also how roles and responsibilities should be distributed among these institutions, particularly as these relate to the management of REDD+ payment mechanisms and revenue flows.[48] As Indonesia's experience with the DR has shown, the division of administrative authority between key state agencies (in this case, the Ministries of Forestry and Finance) can play an important role in providing checks and balances to ensure that state funds are managed accountably. It will also be essential to support effective mechanisms for mutual accountability and coordination among agencies managing REDD+ funds at district, provincial and national levels.

6.2 Corruption, fraud and loss of state assets

Corruption and fraud have undermined major DR-funded investments in reforestation and forest rehabilitation during both the Soeharto and the post-Soeharto periods, resulting in substantial losses of state financial assets and forest resources.

During the New Order period, the systemic lack of transparency and accountability in the Ministry of Forestry's administration of the Reforestation Fund resulted in at least US $600 million being channelled to politically favoured projects that were unrelated to reforestation or forest rehabilitation. It is believed that a portion of these funds was embezzled by the political elites and their associates who sponsored these projects. In addition, although the Ministry of Forestry distributed some US $1.0 billion in financial subsidies under its HTI plantation programme, many of the recipient companies fraudulently inflated their investment costs and/or overstated the areas planted in order to secure larger amounts of DR funds than they should have received. Some DR subsidy recipients also cleared their HTI concessions of standing timber and either never replanted the sites or failed to do so in the manner necessary to develop productive commercial plantations. While the Ministry disbursed at least Rp 1.2 trillion of DR funds as discounted loans during the Soeharto period, a significant portion of recipient companies have defrauded the state by failing to repay their debts, and nearly one-half of this amount – approximately US $65 million – remains outstanding.

During the post-Soeharto period, corruption and fraud have continued to undermine DR-funded land and forest rehabilitation projects, although perhaps on a smaller scale and in a more decentralised manner than in the past. In recent years, there have been widespread reports of district and provincial officials misappropriating DR funds to finance fictitious forest rehabilitation projects and/or under-spending their DR funds and diverting the remaining portions for unauthorised uses. In some regions, officials have also reportedly 'marked up' the costs of the DR projects they oversee in order to illicitly inflate their budgets; in others, officials have demanded bribes or kickbacks in exchange for key inputs, such as seeds or fertilisers.

48 To no small extent, these will be shaped by how the Government of Indonesia ultimately decides to administer REDD+ funds, which may be quite different from the Reforestation Fund. Whereas DR funds, during the post-Soeharto era, have been incorporated into the State Treasury as non-tax revenue, the GOI has not yet determined whether REDD+ funds will be administered as tax or non-tax revenues, and/or whether they will be distributed as grants, balancing funds or regionally generated revenues.

Corrupt officials are further believed to have defrauded the state by placing large amounts of DR funds (an estimated Rp 2.3 trillion during 2002–05) in time deposits or investment accounts, rather than using these funds for reforestation or forest rehabilitation.

There are signs that corruption and fraud continue to undermine the administration of funds allocated for reforestation and rehabilitation of degraded lands at the national level also. An ongoing KPK investigation (as of December 2009) suggests that senior officials in the Ministry of Forestry and Parliament may have been involved in the fraudulent diversion of some Rp 180 billion (US$ 20 million) in budget funds ear-marked for the GN-RHL programme to a no-bid contract for an integrated radio communications system in 2007. It should be noted that at least one Ministry official who has formally been named as a suspect in this case has held offices that are likely to play a central role in decisions related to the administration of any future REDD+ funds that may be managed by the Forestry Department.

On a positive note, anti-corruption initiatives carried out by the GOI during the *Reformasi* period have sent strong signals that the government has become increasingly serious about curbing corruption and fraud related to the DR and other sources of state finance. The successful prosecutions of Bob Hasan and Probosutedjo for DR-related fraud, in 2001 and 2003, respectively, represent landmark cases as two of the highest-profile Soeharto cronies to be convicted for crimes committed during the New Order period. Perhaps more significantly, the creation of Indonesia's Corruption Eradication Commission and the Corruption Court have established an effective institutional mechanism for investigating, prosecuting and trying high-level corruption cases independent of the normal (often corrupt) law enforcement and judicial processes. Recent tensions between KPK and elements within the National Police, however, have underscored the limits to KPK's power and potential threats to its independence and effectiveness (Harwell 2009).

As part of the REDD+ 'readiness' process, steps should be taken to improve transparency and accountability among key institutions that will be involved in administering REDD+ funds. More generally, resources should be invested in building the capacity of KPK, the Corruption Court and other agencies involved in the eradication of corruption and financial crimes related to forests and carbon. Notably, this should include the GOI's Financial Intelligence Unit (*Pusat Pelaporan dan Analisis Transaksi Keuangan*, PPATK), which oversees the implementation of Indonesia's anti-money laundering laws. Strong political will is needed to ensure that these institutions are able to retain the institutional independence and authority necessary to function effectively in the face of powerful interest groups.

In each case, capacity-building efforts should focus on ensuring that these agencies are well prepared both to implement corruption prevention measures and to take enforcement actions if there are signs that REDD+ payment schemes become subject to corruption or other forms of criminal behaviour. Similar efforts should be taken to build capacity in the normal law enforcement and judicial institutions, which continue to handle the vast majority of corruption and fraud cases in Indonesia. Relevant agencies include, for instance, the corruption and financial crime units of the National Police, the Attorney General's Office and the courts, among others.

6.3 Financial monitoring, reporting and verification

During the post-Soeharto *Reformasi* era, and particularly during the Yudhoyono administration, the GOI has taken important steps to raise levels of transparency and accountability in the administration of the DR and other sources of state finance, especially with the strengthening of the Supreme Audit Board.

The empowerment of BPK to serve as an independent auditor of state institutions, with far-reaching legal powers, has meant that the Ministry of Forestry and other state entities involved in administering DR funds are now subject to routine audits. It is significant that BPK has conducted at least 29 audits related either directly or indirectly to the administration of DR funds during 2004–08, all of which are publicly available on the BPK website. These reports have provided an important public service by documenting numerous irregularities in the administration of the Reforestation Fund and by offering recommendations for how these should be addressed.

The fact that the DR and other sources of state finance are now subject to routine audits by BPK stands in marked contrast to the highly opaque manner with which these funds were managed during the Soeharto era. Under the New Order government, the Ministry of Forestry's administration of the Reforestation Fund was subject to little, if any, external oversight – which allowed the Ministry to exercise high levels of flexibility and discretion in its use of DR funds. Significantly, the single independent, third-party audit of the GOI's collection, administration and use of the Reforestation Fund during the New Order period – carried out by Ernst & Young in 1999, at the request of the IMF and the Ministry of Finance – has not yet been released publicly (as of December 2009).

As the institutional architecture for REDD+ is being constructed, it is imperative to safeguard against fraud and corruption – and to ensure that REDD+ projects meet high performance standards and cost-efficiency targets – by building in high levels of transparency and accountability from the outset. It will be particularly important that the efforts now being made to design effective mechanisms for 'monitoring, reporting and verification' (MRV) of carbon emissions averted be accompanied by rigorous application of MRV principles to REDD+ financing mechanisms. This should include improved financial reporting and regular third-party audits of the accounts through which REDD+ funds are administered, as well as the projects which are supported by those funds. It should also include the development of official protocols for ensuring that transparency and accountability are incorporated into all aspects of REDD-related financial management, and training of key staff at multiple levels to ensure these principles of financial good governance are put into practice.

In its capacity as the sole external auditor for the Government of Indonesia, BPK is well placed to play a central role in designing and implementing an MRV process for REDD+ financing mechanisms. Substantial input from Indonesian and international civil society organisations, particularly those involved in promoting transparency and accountability in public finance, will also be essential. To achieve optimal results, proactive steps should be taken to include these institutions in REDD+ 'readiness' processes related to financial administration as early as possible.

It is important to recognise that sound financial management, financial good governance and effective financial law enforcement are quickly emerging as key elements of competitive advantage in the new global carbon economy. From the perspective of sustainable financing, each is needed to ensure that existing funds are well managed and that future REDD+ revenues will flow in an uninterrupted manner. Indeed, it must be considered that REDD+ is a global initiative financed in the pilot phase largely by contributions of public monies from international donor countries and multilateral institutions. For these donors to remain committed, they will need to be able to assure their own stakeholders that the funds invested in REDD+ are being administered according to principles of financial good governance and are achieving their intended objectives. Beyond the pilot phase, REDD+ projects are likely to be financed through carbon markets. If funds allocated for REDD+ projects in Indonesia are lost to corruption, diverted for other uses or simply managed poorly, investors could easily shift to other countries or other markets where higher standards of financial management and governance are applied.

6.4 Misaligned and perverse incentives

Particularly during the Soeharto period – and possibly recurring under the current administration – DR subsidies for HTI plantation development have provided perverse incentives for unsustainable forest management by encouraging overharvesting of selective logging concessions and clearing of 'degraded' natural forests.

Under the HTI programme, the New Order state allocated more than 4.3 million ha of forested land and disbursed approximately US $1.0 billion in subsidised DR financing for the development of industrial timber and pulpwood plantations. Although the stated objective was to promote reforestation, the vast majority of plantations were developed through the conversion of supposedly 'degraded' natural forests, some of which had substantial volumes of standing timber before they were cleared. By providing HTI licence-holders with heavy financial subsidies and access to low-cost timber from the areas cleared, the Ministry put in place a powerful set of incentives for the wholesale removal of natural forest from the millions of hectares allocated for plantation development.

By any measure, the incentive structures introduced ran directly counter to the Ministry's prevailing discourse of sustainable management of Indonesia's natural forests, based on a rotational selective logging concession system. In some cases, it is likely these subsidies gave timber companies a perverse incentive to overharvest their selective logging concessions so that they, too, could be considered sufficiently 'degraded' to be converted to HTI timber or pulpwood plantations.

In principle, REDD+ aims to provide positive incentives to reduce deforestation and forest degradation. However, the current administration's policy of promoting the development of 9.0 million ha of new timber and pulpwood plantations by 2016 – as well as significant new investments in pulp and paper capacity and expansion of the oil palm and biofuels sector – poses significant challenges for Indonesia's national REDD+ initiative. To the extent that areas allocated for plantation development (whether for timber, pulp or oil palm) are currently forested, the conversion of these sites would likely have a direct negative effect on Indonesia's efforts to reduce carbon emissions below whatever national baseline is ultimately agreed upon.

Moreover, the allocation of government subsidies – whether from the DR or other sources – to support investments in these land uses could potentially put upward pressure on the cost of REDD+ incentives needed to encourage carbon-friendly behaviour. The fact that the BLU-BPPH already has budgeted some Rp 4.48 trillion – or approximately US $500 million – for investments in forest plantations suggests that considerable financial resources have already been ear-marked for land use options that could pose direct challenges for REDD+. Clearly, careful analysis of the implications of such misaligned incentives represents a critical step in Indonesia's REDD+ 'readiness' process.

From another perspective, it is anticipated that REDD+ could provide some stakeholders with a perverse incentive to expand forest conversion activities, at least over the short term. At the sub-national level, it is conceivable that government agencies or corporate actors could significantly expand their plans for clearing forested lands – including significant areas of forested peatlands – as a strategy to maximise access to REDD+ payments (cf Engel and Palmer 2008, Palmer and Obidzinski 2009). In fact, doing so would appear to be a rational response to the 'paying the polluter not to pollute' approach that is embedded in REDD+'s use of financial incentives. Indeed, in the absence of effective counter-incentives or enforcement actions prohibiting such behaviour, the quickest way for a potential recipient to gain access to REDD+ payments may be to demonstrate that its activities pose a credible and significant threat to standing forests. The apparent readiness of the BLU-BPPH to allocate funds for plantation development suggests that these actors could find it relatively easy to secure finance for such plans in the event REDD+ payments are not forthcoming.

To limit the effects of such perverse behaviour, it will be essential to integrate REDD+ with Indonesia's forestry sector development plans and broader economic policies – and to consider making adjustments in these policies and plans where they encourage new forest conversion. Strengthening coordination between agencies administering REDD+ and those responsible for land allocation, forest utilisation and industrial licensing will be an essential step towards harmonising policy measures likely to affect whether Indonesia meets its national forest cover targets.[49] Improved coordination between proponents of REDD+ and private and public sector financial institutions could also help reduce investments in projects that are likely to generate high levels of carbon emissions. Given its stated plans to finance major investments in commercial forestry plantations, coordination with the BLU-BPPH will be especially important.

49 Over the past two decades, sustainable management of Indonesia's forests has often been undermined by poor coordination among the Ministry of Forestry and government agencies responsible for administering land use and development activities in other sectors (World Bank 2007). In the pulp and paper sector, for instance, the Ministry of Industry has reportedly sometimes issued licences for the development or expansion of pulp mills before the Forestry Department has allocated sufficient areas of plantation concessions to support the new processing capacity (Barr 2001). Similarly, mining concessions have sometimes been issued in areas that overlap with national parks or protection forests.

6.5 Capital subsidies and moral hazard

The use of DR funds to subsidise commercial plantation development, coupled with weak mechanisms for accountability, has contributed to high levels of moral hazard in Indonesia's forestry sector which could encourage irresponsible practices on the part of REDD+ participants.

Recipients of DR subsidies often engaged in high-risk investment practices that apparently would have been less likely had their own money been at stake. In many cases, companies reportedly failed to fully plant large portions of their HTI plantation concessions; and many did little to manage their plantations or to ensure that productivity targets were achieved. Some companies also developed their plantations on sites that did not have secure land tenure and/or that were vulnerable to catastrophic fires, such as those that occurred in large parts of Sumatra and Kalimantan during 1997–98. The fact that many of the largest recipients of the DR had strong political connections to the Soeharto government undoubtedly further encouraged them to disregard the risks involved in the plantation projects they undertook. With little oversight by regulatory agencies, well-connected companies faced minimal consequences if they failed to use the DR funds for their designated purpose. As a consequence, the GOI's disbursement of approximately US $1.0 billion in DR subsidies ultimately generated only limited areas of commercially productive plantations.

Although the shortcomings of Indonesia's HTI plantation programme are often attributed to the patronage politics of the Soeharto era, the government's failure (or inability) to hold DR subsidy recipients accountable continues to the present. According to the 2008 BPK audit of the Reforestation Fund, the Ministry of Forestry has collected only 51 per cent of the Rp 1.2 trillion in DR-related loans, interest and penalties that had matured by 15 July 2007. The remainder either has been rescheduled (with little guarantee of payment) or is likely to be written off – a step recently advocated by the Minister of Forestry. The Ministry's failure to hold DR subsidy recipients accountable either for the plantations they failed to develop or for the loans they failed to repay represents a significant loss of state assets. Moreover, as with the GOI's multibillion dollar write-off of forestry debt conducted by IBRA in 2003–04, it also effectively encourages forestry companies to engage in high-risk investments and irresponsible financial management in the future, especially when their activities are funded by public money.

It is quite conceivable that many of the forestry companies (or their affiliates) that benefited from the DR subsidies and/or the IBRA debt write-off will also be among those seeking to secure credits for carbon emission reductions under Indonesia's forthcoming REDD+ mechanism. At the risk of overgeneralising, the broad lack of accountability shown by this group of actors in the recent past – and the general failure of the GOI to hold them accountable – should raise red flags with respect to their potential participation in REDD+. Specifically, it will be important to review the track records of prospective REDD+ participants and to consider carefully the implications if project owners fail to meet their obligations under REDD+ payment schemes.

Proponents of REDD+ frequently claim that possible lack of compliance on the part of project owners is not likely to be a major cause for concern, as REDD+ is designed to be performance-based – meaning that if verifiable carbon emission reductions are not achieved, payments will not flow. However, ongoing discussions about permanence risks and liability management do indicate that 'some approaches involve advancing up-front loans based on the credit-worthiness of the project and expected future streams of payments' (Dutschke 2008). This appears to be particularly the case with forestry projects in which temporary carbon emission reduction credits are converted to permanent credits. It is generally acknowledged that insurance is needed to mitigate the risks that permanence at the project sites could be reversed (for instance, through removal of forest cover) after permanent credits have been issued, and various insurance arrangements are being considered. Once such projects are insured, however, it is conceivable that project owners could have an incentive either to convert the forests under their management and/or to abscond with the funds received from the sale of the permanent credits.

To minimise the risks of moral hazard, most carbon insurance schemes apparently assign liability to the project owner if permanence reversal is due to the owner's failure to meet its obligations during the commitment period. However, it is not entirely clear how or by whom liability will be determined, or how disputes over liability will be resolved. Although there is still no consensus on these issues, some observers further assume that governments will ultimately need to provide guarantees that any claims on the owners' liability will be fulfilled if they are not covered by the planned insurance schemes:

> In case the project owners fail to meet the obligations or disappear, and permanent credits have been created, the ultimate liability will fall back on the government, most likely the one of the selling country (Dutschke 2008).

Clearly, the issues of permanence and liability management under REDD+ are complicated, and much remains to be sorted out. In Indonesia's case, however, the possibility that the GOI could be required to provide some sort of guarantee that project owners will meet their obligations under REDD+ raises important questions about the degree to which public institutions may ultimately assume private risk. If the country's experience with the DR is any guide, it will be essential to anticipate the possible consequences if project owners fail to meet their obligations under REDD+ and to consider what tools may be available to the GOI and other regulatory bodies to ensure high levels of compliance. It is worth noting that at least two of the major recipients of DR subsidies during the 1990s – PT Menara Hutan Buana and PT Musi Hutan Persada – paid their DR obligations in full only after the GOI initiated prosecution (in the case of MHB) and a threat of prosecution (in the case of MHP) of the companies' principal owners.

6.6 Equity and benefit distribution

Particularly during the Soeharto era, the state's inequitable distribution of benefits from the Reforestation Fund facilitated economic rent-seeking by the sector's most powerful actors, while further weakening the position of forest-dependent communities.

With the distribution of large areas of forested land and lucrative financial subsidies under the HTI programme during the 1990s, the Ministry of Forestry channelled very substantial economic rents to a relatively small number of public and private plantation companies. This often came at the direct expense of forest-dependent communities, which were frequently displaced from lands and forests that fell within their customary domains. In recent years, the Ministry has taken steps to incorporate rural smallholders into DR-funded plantation development efforts through its HTR community plantation programme. However, implementation of the HTR programme has been extremely slow, and by early 2009 (nearly 2.5 years since the programme was first announced) none of the budgeted resources had been released.

To the extent that REDD+ is structured to provide financial incentives to the largest emitters of forest-based carbon, it is likely that a substantial portion of the funds disbursed could be allocated to large-scale forestry enterprises, pulp and paper producers and oil palm companies. Many of these companies have close ties to state elites and are, therefore, well positioned to secure access to REDD+ funds, particularly those distributed by government agencies. Moreover, as large-scale entities, they also have the apparent advantage of lower transaction costs than would be involved in coordinating the participation of large numbers of smallholders.

Inequitable distribution of REDD+-related payments, however, could have the detrimental effect of increasing the disparity levels that already exist in Indonesia's forestry sector, potentially leading to the further displacement and/or impoverishment of forest-dependent peoples. Such risks are particularly high given the significant and long-standing contradictions that exist between Indonesia's national forestry law and customary, or *adat*, tenure institutions (Fay and Sirait 2004). In many regions, the state-controlled Forest Zone directly overlaps with forest lands that have been managed by rural communities for generations; and local people frequently have little power to enforce exclusionary rights over these areas when they have been allocated by the government to other land users (Contreras-Hermosilla and Fay 2005).

Unless proactive measures are taken from the outset to facilitate equitable benefit-sharing with rural communities, efforts by the state and/or private investors to secure forested land for REDD+ projects could catalyse tenure conflicts between these actors and local communities. As Indonesia's experience with HTI plantation development demonstrates, such conflicts represent an important risk factor that could affect the ability of REDD+ projects to achieve their overall objective of reducing carbon emissions. At the same time, it is entirely possible that REDD+ projects could succeed in bringing about reductions in deforestation and forest degradation, while also undermining the well-being and livelihood security of rural communities.

7 Recommendations

This section outlines six general recommendations which emerge from the study's examination of Indonesia's experience with the Reforestation Fund and analysis of potential implications for REDD+. Each of the following recommendations is intended to strengthen both the GOI's administration of the DR and the implementation of Indonesia's future REDD+ payment mechanism.

Recommendation #1: Build capacity for financial management and revenue administration

Specific measures could include:

- conducting a formal assessment of existing capacity for financial management and revenue administration at key agencies expected to administer DR and REDD+ funds, with analysis of strengths, weaknesses, opportunities and threats;
- reviewing findings and proposed actions related to financial management and revenue administration articulated in BPK's audits of the Ministry of Forestry and other institutions likely to be involved in administering DR and REDD+ funds;
- strengthening capacity in budgeting, financial accounting, fiscal management and other aspects of revenue administration at key institutions through staff training and professional development, investments in technical and organisational improvements and information sharing;
- strengthening inter-agency coordination in the administration of DR and REDD+ revenues, both within and across levels of government;
- clarifying how roles and responsibilities should be distributed among government institutions, particularly as these relate to the management of DR and REDD+ payment mechanisms and revenue flows;
- supporting effective mechanisms for mutual accountability and coordination among agencies managing REDD+ funds at district, provincial and national levels;
- identifying effective models for improving accountability in the management of public finance through the use of 'checks and balances' involving the sharing of authority among key institutions.

Recommendation #2: Strengthen institutions to eradicate corruption and fraud

Specific measures could include:

- ensuring that effective 'checks and balances' exist to provide adequate oversight of how DR and REDD+ funds are administered and utilised;
- introducing enhanced due diligence and review requirements for expenditures of

DR and REDD+ funds above an agreed-upon threshold level;

- encouraging continued political will and budgetary support for vigorous prosecution of high-level corruption and fraud cases by independent institutions such as the Corruption Eradication Commission (KPK) and the Corruption Court;
- strengthening the capacity and institutional mandates of KPK, the Corruption Court and other relevant agencies to investigate and prosecute corruption and fraud cases related to forests and carbon;
- promoting the mainstreaming of anti-corruption initiatives (both generally and specifically related to forests and carbon) through professional development, information sharing and inter-agency coordination with Indonesia's normal law enforcement and judicial institutions;
- supporting enhanced coordination with Indonesia's Financial Intelligence Unit (PPATK) by law enforcement and anti-corruption agencies to curtail money laundering from forest/carbon-related corruption and fraud;
- strengthening collaboration and information-sharing between government agencies and civil society organisations involved in anti-corruption and fraud initiatives;
- ensuring that agencies involved in administering DR and REDD+ funds have an effective whistle-blower policy;
- documenting and widely publicising cases of corruption and fraud related to forests and carbon.

Recommendation #3: Support financial monitoring, reporting and verification

Specific measures could include:

- including the design and implementation of financial MRV arrangements into the REDD+ 'readiness' process and any planning processes for future use of the DR;
- strengthening the capacity of Indonesia's Supreme Audit Board (BPK) to audit the administration of DR and REDD+ funds by agencies at each level of government on a regular basis, and ensure that sufficient budgetary resources are available for routine audits of DR- and REDD+-funded projects;
- promoting enhanced public reporting of both financial and operational data by agencies administering DR and REDD+ funds and by projects financed by these sources;
- releasing the 1999 Ernst & Young audit of the Reforestation Fund into the public domain, and facilitating a public discussion of the audit's key findings and lessons learned;
- supporting active involvement in financial MRV of the Reforestation Fund and REDD+ by Indonesian and international civil society organisations, particularly those involved in promoting transparency and accountability in public finance;
- through collaboration with REDD+ proponents at the global and national levels, promoting the development of 'best practice' guidelines for financial MRV related to REDD+ and sharing this widely for adoption in other national contexts.

Recommendation #4: Adjust policies to remove misaligned and perverse incentives

Specific measures could include:

- reviewing Ministry of Forestry's sector development plans and assessing the extent to which DR financing for the 9.0 million ha plantation programme will undermine REDD+ by encouraging forest degradation and conversion;
- raising the DR levy for commercial wood harvested from forested areas cleared for plantation development to rates that are closer to stumpage value (current rates for pulpwood are US $2.00 per tonne);

- integrating REDD+ with Indonesia's macro-economic policies and sector development plans within both the forestry sector and other sectors affecting forests;
- strengthening coordination between agencies administering REDD+ and those responsible for land allocation, forest utilisation and industrial licensing to reduce new investments that will promote forest conversion;
- improving coordination between proponents of REDD+ and private and public sector financial institutions, including BLU-BPPH, to reduce investments in projects likely to generate high levels of carbon emissions;
- monitoring and assessing potential indicators that REDD+ may provide some private sector and state actors with a perverse incentive to clear forested lands as a strategy to maximise access to REDD+ payments.

Recommendation #5: Impose robust due diligence and accountability mechanisms for recipients of public finance

Specific measures could include:

- for institutions involved in the design of REDD+ payment mechanisms and future DR-funded programmes, assessing carefully the moral hazard implications if project owners fail to meet their obligations during the commitment period;
- for institutions involved in administering DR and REDD+ funds, introducing rigorous due diligence requirements to review past performance and to assess anticipated reliability of prospective project sponsors before DR- and REDD+-funded projects are approved;
- supporting enhanced accountability by including individuals and companies that have failed to repay DR loans and other forest-related debt in the past on a forestry sector 'black list', with stringent restrictions on participation in future DR- and REDD+-funded projects;
- strengthening the terms of personal and corporate guarantees that future recipients of DR and REDD+ funds are required to provide;
- supporting political will and institutional capacity on the part of GOI institutions to recover DR and REDD+ funds in the event recipients fail to meet obligations;
- facilitating a broad public consultation process before the GOI enters into any agreements to guarantee private liabilities associated with future DR- and/or REDD+-funded projects.

Recommendation #6: Promote equitable distribution of benefits and mitigate negative impacts on smallholders

Specific measures could include:

- supporting participatory and accountable decision-making processes by integrating principles of free, prior and informed consent into DR- and REDD+-funded projects from the outset;
- strengthening requirements for rigorous environmental and social impact assessments to be conducted by independent third parties before proposed DR and REDD+ projects are approved and funded;
- where significant potential negative impacts are identified, requiring DR- and REDD+-funded projects to adopt social and environmental safeguards to ensure that such impacts are avoided and/or mitigated;
- to the extent that forest-dependent people are interested in participating in DR- or REDD+-funded projects, designing such projects to ensure that benefits are shared equitably with participating communities and are not captured disproportionately by large-scale and/or elite actors;
- proactively including legitimate representatives of forest peoples' organisations in designing DR-funded programmes, REDD+ payment schemes and other climate change mitigation programmes.

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Appendix A

Table A-1. List of countries with national forest funds, as reviewed in Rosenbaum and Lindsay (2001)

Country	Fund	Description
Albania	Fund of the Directory General of Forest and Pasture	Reserves a percentage of revenues from government forests to support forest-related activities.
Bolivia	National Fund for Forest Development (FONDOBOSQUE)	Reserves revenues from multiple sources for forest projects.
Brazil	Reforestation Fund	Uses income from a reforestation tax for reforestation projects.
	Carajás Forest Fund	
Bulgaria	Concessions Cost Recovery Fund	Reserves a portion of the income from concessions to cover administration costs.
Burkina Faso	Fonds forestier	Holds donations and other income for use on forest, wildlife and fishery projects.
Cameroon	Fonds Spécial de Développement Forestier	Formerly took money from multiple sources; now apparently takes money from annual budget allotment to use for forest purposes.
Canada	Forest Resource Improvement Association of Alberta	Quasi-public provincial entity that collects forest-related dues, levies and fees and spends them on reforestation and forest management.
	Forest Renewal BC (British Columbia)	Quasi-public provincial entity that receives a portion of forest royalties from Crown lands and spends on environmental, economic and social projects related to forests.
Congo (Brazzaville)	Fonds d'aménagement et des ressources naturelles	Receives income from multiple sources; finances work in forestry, wildlife and aquaculture.
Costa Rica	Forest Fund	Receives income from multiple sources; spends on forest administration and other activities promoting sustainable forest development.
	National Forest Financing Fund (FONAFIFO)	Focusing on small and mid-sized landowners, the fund takes income from various sources including a hydrocarbon tax. Can reimburse forest owners for provision of environmental services.
Croatia	Simple Biological Reproduction Account	Collects a portion of income from timber sales plus the proceeds of a general tax on industry (representing value of environmental services) for financing reforestation
Cuba	National Fund for Forest Development (FONADEF)	Promotes activities to conserve and develop forest resources, particularly inventories, management, protection and research.
Cyprus	Communal Forest Funds	Individual funds for each communal forest receive income from forest produce to finance forest management.
Dominican Republic	Special Fund	Receives income from multiple sources, including the sale of special postal stamps; spends on conservation of forest resources, reforestation and agroforestry, fire and disease prevention, and extension work.
	Forest Trust Fund	Receives income from donations and from compensation for environmental services; spends on sustainable forest development in priority areas.

Country	Fund	Description
France	Fonds Forestier National	Takes income from a tax on forest products and supports research, tree nurseries, forestry promotion, public education, public sector afforestation and forest protection, and private afforestation.
Gambia	National Forestry Fund	Receives income from multiple sources for protection, development and sustainable use of forests and promotion of community forestry.
Guatemala	Special Forest Fund	With income from multiple sources, the fund is spent on forest development, industrial forestry, management of natural forests, agroforestry, watershed restoration, reforestation, research, agroforestry education and other purposes.
Guinea	Fonds Forestier	A general forest development fund tapping several forest-related income sources.
Indonesia	Reforestation Fund	Gets income from a tax on logs, chips and other raw materials; spends on reforestation, plantation development in non-productive forests and rehabilitation of other lands.
Laos	Forest and Forest Resource Development Fund	Receives income from national budget and other sources; may be spent on a broad range of forest activities, including public education.
Lesotho	Forest Fund	Receives all fees collected under the Forest Act; may be spent on forest management and research, including assistance to private and community forests.
Lithuania	Forest Fund	Receives income from state forests plus forest-related fines and penalties; spends on state forest management and administration.
Madagascar	Fonds Forestier National	A special account under private management.
Malawi	Forest Development and Management Fund	Receives income from multiple sources; spends on forest management with emphasis on working with local communities.
Malaysia	Forest Development Funds	Individual funds created in each state. Receive income from various sources and spend on state forest management and administration.
Mauritania	Fonds National de Développement Forestier	Receives income from taxes and fees and spends on reforestation and forest protection.
Mozambique	Forest and Wildlife Development Fund	No specifics given in statute.
Nepal	User Group Funds	Participants in community forest programmes keep funds that receive income from forest activities, donations and government support; to be spent on forest management and community development.
Norway	Forest Trust Fund	Receives income from assessments on transfers of forest products. The money collected must be used to benefit the forest from which the forest products originated.
Philippines	Special Deposit Revolving Fund	Receives income from forest-related fees; spends on various forestry projects.

Country	Fund	Description
Senegal	Fonds Forestier National	Receives income from sales of forest products from government forests, plus other sources; spends on government forest projects and on support to private and community forestry.
Solomon Islands	Forest Trust	Receives income from multiple sources including forest-related fines, licence fees and levies; spends on tree planting and tending, reforestation and other purposes.
South Africa	National Forest Recreation and Access Trust	Specialised fund dedicated to recreation; notable for public participation and transparency provisions.
Sri Lanka	Forest Department Fund	Specialised fund devoted to law enforcement activities such as paying rewards and compensating forest officers injured in the line of duty.
Tanzania	Tanzania Forest Fund	As proposed in draft law, the fund would be a semi-independent trust, getting income from various sources and spending on forest development, including education, research and community forestry.
Tanzania (Zanzibar)	Forestry Development Fund	Income from various sources to be used for a broad range of forest projects; fund establishment requires approval of Ministry of Finance.
Tunisia	Fund for Sylvo-pastoral Development	Supports private and collective efforts to improve forests and pasture lands outside of the state's forest domain.
United States	Knutson-Vandenberg Fund	Takes receipts from timber sales on national forests and dedicates them to forest management and environmental projects in the forest generating the income.
	Reforestation Trust Fund	Takes income from tariffs on imported solid wood products to fund reforestation and stand improvement on public forests.
	Rural Fire Disaster Fund	Assists sub-national governments with forest fire fighting.
	Land and Water Conservation Fund	Takes income from offshore oil and gas royalties and supports purchase of public lands by national and sub-national governments.
	America the Beautiful Act	Example of establishment of urban tree-planting fund administered by an independent NGO.
	Woodland Incentive Program fund, Maryland	Taxes land transfers to support small landowner forest management.
	Chesapeake Bay Trust, Maryland	Takes income from donations and sales of special automobile licence plates; supports reforestation to improve water quality.
	Forest Resource Trust, Oregon	Supports private lands reforestation in return for share of any future forest income; also markets resulting carbon sequestration.
Uruguay	Forest Fund	Receives income from various sources; spends on loans to forest land owners and light industry, forest land purchase and public forest management. Spending follows long-term plan.
Vanuatu	Forestry Fund	Receives forest-related government income, general revenues and donations; spends on forest plantations, afforestation and reforestation.

Country	Fund	Description
Vietnam	Forest Regeneration Fund	Receives income from a fee charged on all harvests; spends to plant new forests, restore damaged forests and manage and protect existing forests.
Zambia	Forest Revenue Fund	Receives income from licences, fees and concessions.
	Forest Development Fund	Promotes the wood processing industry and afforestation and reforestation programmes within the forest sector.
	Fund for Joint Forest Management	Supports local forest management efforts.

Source: Rosenbaum and Lindsay (2001)

Appendix B

Table B-1. History of Indonesia's Reforestation Fund, 1980–2009

Year	Event	Remarks
Soeharto era		
1980	Reforestation Guarantee Deposit (DJR) introduced, initially structured as a performance bond for timber concession-holders with stated aim of promoting reforestation and forest rehabilitation.	DJR proved to be ineffective as an incentive for timber concession-holders to carry out reforestation. Most found it more profitable to relinquish the DJR performance bond than to rehabilitate degraded concession sites.
1989	Reforestation Fund (DR) introduced as a volume-based levy to support reforestation and rehabilitation of degraded forests.	Managed by the Ministry of Forestry (MoF) as an off-budget slush fund, DR became the single largest source of revenue with annual receipts exceeding US $500 million.
1990–1999	DR used to subsidise industrial timber plantation development.	MoF subsidises private and state-owned commercial plantation development with US $1.0 billion in cash grants and discounted loans. Much of these funds were lost to fraud and corruption, and plantations developed fell far short of targets.
1994–1998	US $600 million from DR allocated to finance non-forestry projects linked to political elites.	Non-forestry projects included: • US $190 million for the state aircraft company PT Industri Pesawat Terbang Nusantara • US $250 million for the One Million Hectare Peatland Development Project in Central Kalimantan • US $47 million for the Takesra family welfare scheme • US $109 million for the construction of Bob Hasan's PT Kiani Kertas pulp mill in East Kalimantan • US $15 million for the Indonesian delegation's participation in the SEA Games • US $10 million for Tommy Soeharto's helicopter service company, PT Gatari Hutama Air Service
Post-Soeharto era		
1998–1999	During the Asian financial crisis, IMF rescue package included conditionalities for: • transfer of DR to Ministry of Finance; • third-party financial audit of DR.	Key elements of financial governance established, including checks and balances, and consolidation of DR receipts and expenditures with the state budget. Audit report by Ernst & Young completed in December 1999, but not yet released in public domain (as of December 2009).
1999	Disbursement of DR funds to finance the development of HTI plantations suspended by the Minister of Forestry and Estate Crops (MoFEC) to fulfil IMF conditionality.	Significant driver of natural forest conversion suspended.
1999	Fiscal balancing law redistributed DR receipts 60% to national government and 40% to provincial and district governments, as part of Special Allocation Fund.	Fiscal balancing leads to increased equity in the distribution of DR receipts across levels of government. However, state institutions at district and provincial levels are ill-equipped to manage the funds received.

Year	Event	Remarks
2001	Soeharto crony Bob Hasan convicted of DR-related fraud, sentenced to six years in prison and fined US $243 million.	Conviction of Bob Hasan represents a major step in holding Soeharto cronies accountable for corruption and fraud committed during the New Order period.
2003–2004	Government write-off of multibillion dollar forestry debts held by Indonesian Bank Restructuring Agency (IBRA).	Write-off highlights low levels of accountability among forestry debtors and encourages high-risk investments in the future.
2004	Soeharto's half-brother Probosutedjo convicted of DR-related fraud, sentenced to four years in prison and fined Rp 30 million.	Conviction of Probosutedjo represents a major step in holding Soeharto cronies accountable for corruption and fraud committed during the New Order period.
2004	Role of Supreme Audit Board (BPK) strengthened with designation as sole auditor of government finances, including DR.	Emergence of BPK represents significant step towards increased transparency and accountability in GOI's administration of the DR and other sources of state finance. During 2004–2008, BPK conducts at least 29 financial audits related either directly or indirectly to the DR; all are published on BPK website.
2005	Corruption Eradication Commission (KPK) and Corruption Court created.	Successful prosecution of high-profile cases of DR-related corruption and fraud. Anti-corruption not yet mainstreamed in law enforcement and judicial institutions.
2007–2008	Audits by BPK find that national and regional governments have routinely under-spent DR allocations, often by 50% or more.	National and regional governments continue to demonstrate weak financial management and revenue administration, resulting in poor implementation of DR-funded projects.
2007	Audit by BPK finds that MoF is still holding US $65 million in DR-related debt from discounted loans to plantation companies during 1990s.	MoF's failure to collect outstanding DR debts demonstrates inability or lack of political will to hold forestry companies accountable.
2007	Ministry of Finance transfers national government share of DR receipts to newly formed Forest Development Funding Agency Public Service Unit (BLU-BPPH). MoF announces BLU-BPPH will disburse US $2.2 billion from DR to fund development of 9.0 million ha of plantations by 2016.	Financial incentives to develop plantations could accelerate removal of natural forest cover and jeopardise carbon emission reduction targets. Lack of transparency and mandate for 'flexibility' in fiscal management by BLU-BPPH could put progress in transparency and accountability at risk.
2009	As of June 2009, BLU-BPPH had not yet released US $500 million budgeted for disbursement during 2008–2009.	Questions arise as to whether BLU-BPPH has the administrative capacity to manage effectively large sums of forestry revenues. It is not yet clear whether BLU-BPPH will play a role in administering REDD+ funds.

Appendix C

Table C-1. List of companies to receive DR subsidies for HTI plantation development during 1990–99 and status of DR-related debt, as of 15 July 2007

No	Joint venture	State-owned enterprise	Bank	Province	Hti total area (ha)	Area planted by end of 2007 (ha)	Amount of dr disbursed			Amount to reach maturity by 15 July 2007	Amount paid by 15 July 2007	Amount outstanding by 15 July 2007	Remarks	Assessment from Independent assessor agency	
							Govt equity contribution	Zero interest loan	Commercial loan					Technical	Financial
1	PT Fendi Hutani Lestari	PT Inhutani I	Bank Mandiri	NTT	48 000	10 278	20 096 000 000	11 853 177 000	–	–	–	–	Paid	n.a	
2	PT Dirga Rimba	PT Inhutani I		East Kalimantan	n. a	n. a	148 500 000	–	–	–	–	–	Paid	n.a	
3	PT Kelawit Hutani Lestari	PT Inhutani I	Bank Mandiri	East Kalimantan	9 180	5 585	3 683 000 000	2 408 171 373	–	2 479 516 270	2 478 492 128	1 024 142	Paid by July 15 2007	n.a	
4	PT Intraca Hutani Lestari	PT Inhutani I	Bank Mandiri	East Kalimantan	42 050	4 982	2 810 000 000	3 042 478 000	–	3 042 478 000	3 042 478 000	–	Paid by July 15 2007	n.a	
5	PT Estetika Rimba	PT Inhutani I		East Kalimantan	5 000	1 124	148 500 000	–	–	–	–	–	Paid	n.a	
6	PT Menara Hutan Buana	PT Inhutani II	Bank Mandiri	South Kalimantan	268 585	205 701	66 764 774 000	100 931 585 000	–	100 931 585 000	100 931 585 000	–	Paid by July 15 2007	n.a	
7	PT Finanntara Intiga	PT Inhutani III	Bank BNI	West Kalimantan	299 700	58 440	20 437 424 000	27 625 807 000	–	27 625 807 000	27 625 807 000	–	Paid	n.a	
8	PT Indadi Setia	PT Inhutani III		West Kalimantan	23 560	3 341	569 956 000	–	–	–	–	–	Paid	n.a	
9	PT Silva Inhutani Lampung	PT Inhutani V	Bank Mandiri	Lampung	43 100	21 755	9 566 762 150	22 209 996 195	–	22 318 608 212	22 318 608 212	–	Paid by July 15 2007	n.a	
10	PT Musi Hutan Persada	PT Inhutani V	Bank Mandiri	South Sumatra	296 400	270 982	54 863 638 061	127 371 464 448	164 640 674 991	340 867 332 243	340 867 332 243	–	Paid by July 15 2007	n.a	
Sub-total I					**1 035 575**	**582 188**	**179 088 554 211**	**295 442 679 016**	**164 640 674 991**	**497 265 326 725**	**497 264 302 582**	**1 024 142**			
11	PT Aceh Nusa Indrapuri	PT Inhutani IV	Bank BNI	Aceh	111 000	31 329	17 638 109 000	40 948 098 000	–	23 441 931 926	–	23 441 931 926	Reschedule	Not feasible	Not feasible
12	PT Sinar Belantara Indah	PT Inhutani IV	Bank Mandiri	North Sumatra	6 200	6 723	2 493 339 000	5 177 580 000	–	355 023 456	–	35 502 345 603	Reschedule	Feasible	Feasible
13	PT Rimba Lazuardi	PT Inhutani IV	Bank Mandiri	Riau	12 600	13 765	4 999 946 789	11 648 614 903	–	76 968 986	–	76 968 986	Reschedule	Feasible	Feasible
14	PT Hutan Mahligai	PT Inhutani I	Bank Mandiri	East Kalimantan	5 000	10 261	4 302 139 000	8 653 418 000	–	9 987 438 278	–	9 987 438 278	Reschedule	Feasible	Not feasible
15	PT Gunung Medang RU	PT Inhutani IV	Bank Mandiri	Aceh	7 300	4 008	1 874 110 000	3 344 938 000	–	1 106 235 157	–	1 106 235 157	Reschedule	Not feasible	Not feasible
16	PT Rimba Swasembada S	PT Inhutani IV	Bank Mandiri	West Sumatra	6 675	2 945	1 778 315 000	3 181 997 690	–	1 222 800 732	–	1 222 800 732	Reschedule	Feasible	Feasible
17	PT Rimba Wawasan Permai	PT Inhutani IV	Bank Mandiri	Aceh	8 120	2 050	1 563 808 000	3 210 032 000	–	2 513 551 375	–	2 513 551 375	Reschedule	Not feasible	Not feasible
18	PT Rimba Penyangga Utama	PT Inhutani IV	Bank Mandiri	Aceh	6 150	2 174	1 996 141 000	3 558 536 000	–	4 334 589 861	–	4 334 589 861	Reschedule	Not feasible	Not feasible
19	PT Rimba Rokan Hulu	PT Inhutani IV	Bank Mandiri	Riau	12 500	9 079	2 892 522 000	5 831 453 800	–	5 791 627 454	–	5 791 627 454	Reschedule	Not feasible	Not feasible
20	PT Rimba Seraya Utama	PT Inhutani IV	Bank Mandiri	Riau	12 600	5 533	3 647 274 800	6 050 002 000	–	6 995 718 145	–	6 995 718 145	Reschedule	Not feasible	Not feasible

No	Joint venture	State-owned enterprise	Bank	Province	Hti total area (ha)	Area planted by end of 2007 (ha)	Amount of dr disbursed			Amount to reach maturity by 15 July 2007	Amount paid by 15 July 2007	Amount outstanding by 15 July 2007	Remarks	Assessment from Independent assessor agency	
							Govt equity contribution	Zero interest loan	Commercial loan					Technical	Financial
21	PT Rimba Dwipantara	PT Inhutani III	Bank Mandiri	Central Kalimantan	9 930	2 756	1 142 632 000	1 329 526 000	–	1 524 797 162	–	1 524 797 162	Reschedule	Not feasible	Not feasible
22	PT Kusuma Puspawana	PT Inhutani III	Bank Mandiri	West Kalimantan	9 614	4 098	2 585 600 000	4 650 663 000	–	5 777 838 498	–	5 777 838 498	Reschedule	Feasible	Feasible
23	PT Kusuma Perkasawana	PT Inhutani III	Bank Mandiri	Central Kalimantan	9 614	5 298	3 579 420 000	6 450 184 000	–	8 502 200 739	–	8 502 200 739	Reschedule	Feasible	Feasible
24	PT Pola Inti Rimba	PT Inhutani III	Bank Mandiri	Central Kalimantan	4 900	5 054	2 797 775 000	5 007 130 000	–	7 023 492 949	–	7 023 492 949	Reschedule	Not feasible	Not feasible
25	PT Kirana Rimba	PT Inhutani II	Bank Mandiri	South Kalimantan	4 000	1 921	314 835 200	1 201 824 000	–	1 846 358 873	–	1 846 358 873	Reschedule	Not feasible	Not feasible
26	PT Kalpika Wanatama	PT Inhutani II	Bank Mandiri	Maluku	11 242	15 233	5 690 082 000	10 076 939 000	–	14 768 013 707	–	14 768 013 707	Reschedule	Feasible	Feasible
27	PT Taman Daulat Wananusa	PT Inhutani I	Bank BNI	East Kalimantan	13 400	5 848	3 105 409 000	6 382 544 000	–	6 973 463 955	–	6 973 463 955	Reschedule	Feasible	Not feasible
28	PT Belantara Persada	PT Inhutani I	Bank Mandiri	East Kalimantan	17 150	5 384	1 816 545 000	3 036 399 000	–	2 719 258 772	–	2 719 258 772	Reschedule	Not feasible	Not feasible
29	PT Bhineka Wana	PT Inhutani I	Bank Mandiri	East Kalimantan	9 945	5 388	3 317 363 860	4 793 142 350	–	6 203 809 507	–	6 203 809 507	Reschedule	Feasible	Feasible
30	PT Surya Hutani Jaya	PT Inhutani I	Bank Mandiri	East Kalimantan	183 300	197 410	36 553 011 250	84 860 979 900	86 406 729 000	36 573 153 506 45	28 049 282 844	8 523 870 662	Reschedule	Not feasible	Not feasible
31	PT Tanjung Redeb Hutani	PT Inhutani I	Bank Mandiri	East Kalimantan	180 330	89 230	42 770 825 000	82 260 970 000	–	55 916 182 959	10 958 891 500	44 957 291 459	Reschedule	Feasible	Feasible
32	PT ITCI Hutani Manunggal	PT Inhutani I	Bank Mandiri	East Kalimantan	161 127	112 144	46 030 975 420	95 151 761 000	–	11 025 947 197	7 775 947 454	3 249 999 743	Reschedule	Not feasible	Not feasible
33	PT Sumalindo Hutani Jaya	PT Inhutani I	Bank Mandiri	East Kalimantan	10 000	14 195	5 903 278 800	6 739 424 250	6 447 827 200	6 436 506 229	4 436 506 229	2 000 000 000	Reschedule	Not feasible	Not feasible
34	PT Belantara Subur	PT Inhutani I	Bank Mandiri	East Kalimantan	16 475	8 839	4 107 120 000	7 285 679 000	–	3 078 332 618	2 030 000 000	1 048 332 618	Reschedule	Feasible	Feasible
35	PT Rimba Berlian Hijau	PT Inhutani III	Bank Mandiri	Central Kalimantan	13 700	7 411	2 657 570 000	6 113 439 000	–	2 681 473 894	1 681 473 894	1 000 000 000	Reschedule	Feasible	Feasible
36	PT Berkat Hutan Pusaka	PT Inhutani I	Bank Mandiri	Central Sulawesi	13 400	8 742	3 566 876 343	8 280 866 085	–	11 924 667 745	1 000 000 000	10 924 667 745	Reschedule	Not feasible	Not feasible
37	PT Adindo Hutani Lestari	PT Inhutani I	Bank Mandiri	East Kalimantan	201 821	44 409	25 703 477 000	41 835 735 000	–	47 503 609 431	1 000 000 000	46 503 609 431	Reschedule	Not feasible	Not feasible
38	PT Rimba Elok	PT Inhutani III	Bank Mandiri	Central Kalimantan	18 820	6 233	2 976 919 000	5 381 246 000	–	589 208 741	466 577 830	122 630 911	Reschedule	Feasible	Feasible
39	PT Kirana Cakrawala	PT Inhutani II	Bank Mandiri	Maluku	21 265	25 573	6 535 408 000	13 518 072 000	–	3 690 628 534	400 000 000	3 290 628 534	Reschedule	Feasible	Feasible
40	PT Tusam Hutani Lestari	PT Inhutani IV	Bank Mandiri	Aceh	97 300	25 283	10 398 900 000	17 404 713 000	–	190 903 267	140 903 267	50 000 000	Reschedule	Not feasible	Not feasible
41	PT Arangan Hutani Lestari	PT Inhutani V	Bank Mandiri	Jambi	9 400	1 531	1 160 482 000	1 739 909 000	–	1 580 633 453	50 000 000	1 530 633 453	Reschedule	Not feasible	Not feasible
42	PT Sam Hutani	PT Inhutani V	Bank Mandiri	Jambi	35 955	15 940	7 205 688 000	16 129 403 000	10 840 380 000	39 972 556 940	25 000 000	39 947 556 940	Reschedule	Feasible	Not feasible
43	PT Lingga Tejawana	PT Inhutani III	Bank BNI	West Kalimantan	13 600	1 158	1 016 065 000	1 531 892 000	–	2 630 822 726	50 000 000	2 580 822 726	Reschedule	Not feasible	Not feasible
Sub-total II					**1 254 433**	**696 944**	**264 121 962 462**	**522 767 110 978**	**103 694 936 200**	**334 959 746 771**	**58 064 583 018**	**276 895 163 753**			

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							Govt equity contribution	Zero interest loan	Commercial loan					Technical	Financial
44	PT Intan Hutani Lestari	PT Inhutani I	Bank Mandiri	South Sumatra	13 300	3 930	1 176 560 000	1 674 077 243	–	2 472 804 048	–	2 472 804 048	No application for rescheduling	Not feasible	Not feasible
45	PT Hutan Kusuma	PT Inhutani I	Bank Mandiri	East Kalimantan	13 325	6 622	3 648 458 000	5 764 886 000	–	7 409 663 000	–	7 409 663 000	No application for rescheduling	Not feasible	Not feasible
46	PT Belantara Pusaka	PT Inhutani I	Bank Mandiri	East Kalimantan	15 610	8 740	4 405 169 860	8 431 960 350	–	10 090 915 541	–	10 090 915 541	No application for rescheduling	Feasible	Feasible
47	PT Kiani Hutani Lestari	PT Inhutani I	Bank Mandiri	East Kalimantan	53 083	39 963	12 124 950 095	27 733 768 668	24 045 503 132	76 164 870 752	–	76 164 870 752	No application for rescheduling	Not feasible	Not feasible
48	PT Taman Hutan Asri	PT Inhutani I	Bank BNI	Central Sulawesi	5 300	-	338 476 800	785 808 000	–	926 967 166	–	926 967 166	No application for rescheduling	Not feasible	Not feasible
49	PT Jati Cakrawala	PT Inhutani II	Bank Mandiri	Maluku	17 210	2 473	1 994 268 500	3 527 602 882	–	3 888 795 373	–	3 888 795 373	No application for rescheduling	Not feasible	Not feasible
50	PT Janggala Semesta	PT Inhutani II	Bank Mandiri	South Kalimantan	12 380	5 989	2 985 747 000	5 862 009 000	–	5 922 747 399	–	5 922 747 399	No application for rescheduling	Feasible	Feasible
51	PT Eritani Buana Lestari	PT Inhutani II	Bank Mandiri	Maluku	n. a	n. a	1 025 260 580	2 380 247 100	–	3 652 107 140	–	3 652 107 140	No application for rescheduling	Not feasible	Not feasible
52	PT Hutan Sembada	PT Inhutani II	Bank Mandiri	South Kalimantan	10 260	6 166	3 146 209 400	6 109 825 000	1 106 516 000	8 032 629 708	–	8 032 629 708	No application for rescheduling	Feasible	Feasible
53	PT Wanatani Lestari	PT Inhutani II	Bank Mandiri	Central Sulawesi	-	5 867	4 278 175 000	5 040 574 000	–	615 065 365	–	615 065 365	No application for rescheduling	Not feasible	Not feasible
54	PT Lahan Mahkota	PT Inhutani III	Bank Mandiri	West Kalimantan	8 900	1 086	1 232 978 500	1 966 277 000	–	2 639 620 608	–	2 639 620 608	No application for rescheduling	Not feasible	Not feasible
55	PT Mayang Adiwana	PT Inhutani III	Bank Mandiri	West Kalimantan	8 060	1 172	1 874 730 000	2 270 825 500	–	2 727 383 755	–	2 727 383 755	No application for rescheduling	Not feasible	Not feasible

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							Govt equity contribution	Zero interest loan	Commercial loan					Technical	Financial
56	PT Dwima Intiga	PT Inhutani III	Bank Mandiri	South Kalimantan	22 500	8 130	4 148 675 959	9 172 522 800	–	10 856 222 545	–	10 856 222 545	No application for rescheduling	Not feasible	Not feasible
57	PT Puspawarna Cemerlang	PT Inhutani III	Bank Mandiri	Central Kalimantan	4 300	2 813	2 091 919 000	3 405 130 000	–	4 509 027 930	–	4 509 027 930	No application for rescheduling	Not feasible	Not feasible
58	PT Wana Damai	PT Inhutani III	Bank Mandiri	Central Kalimantan	4 500	1 938	973 308 000	1 717 612 000	–	1 932 871 804	–	1 932 871 804	No application for rescheduling	Not feasible	Not feasible
59	PT Lahan Sukses	PT Inhutani III	Bank Mandiri	West Kalimantan	14 460	2 771	1 527 563 000	2 223 181 500	–	2 734 214 902	–	2 734 214 902	No application for rescheduling	Feasible	Not feasible
60	PT Rimba Equator Permai	PT Inhutani III	Bank Mandiri	West Kalimantan	17 068	6 917	3 276 723 630	6 780 207 885	–	5 503 014 549	–	5 503 014 549	No application for rescheduling	Not feasible	Not feasible
61	PT Pundiwana Semesta	PT Inhutani III	Bank Mandiri	Central Kalimantan	5 000	3 556	2 918 822 000	4 908 561 000	–	4 363 617 564	–	4 363 617 564	No application for rescheduling	Feasible	Feasible
62	PT Perwata Rimba	PT Inhutani III	Bank Mandiri	Central Kalimantan	11 450	7 371	3 262 528 500	5 093 269 000	–	4 015 619 705	–	4 015 619 705	No application for rescheduling	Feasible	Feasible
63	PT Lembah Jatimutiara	PT Inhutani III	Bank Mandiri	West Kalimantan	16 800	1 547	1 314 785 000	1 406 685 000	–	1 609 418 625	–	1 609 418 625	No application for rescheduling	Not feasible	Not feasible
64	PT Meranti Sembada	PT Inhutani III	Bank Mandiri	Central Kalimantan	15 995	6 127	3 645 047 000	6 567 271 000	–	2 880 221 243	–	2 880 221 243	No application for rescheduling	Feasible	Feasible
65	PT Perintis Adiwana	PT Inhutani III	Bank BNI	Central Kalimantan	18 400	16 595	2 658 516 000	4 917 437 000	–	6 013 105 386	–	6 013 105 386	No application for rescheduling	Feasible	Feasible
66	PT Rimba Argamas	PT Inhutani III	Bank BNI	Central Kalimantan	9 300	3 969	2 424 022 000	4 176 138 000	–	4 914 971 039	–	4 914 971 039	No application for rescheduling	Not feasible	Not feasible
67	PT Rimba Timur Sentosa	PT Inhutani IV	Bank Mandiri	Aceh	8 250	2 785	1 771 313 470	3 744 337 825	–	3 739 110 209	–	3 739 110 209	No application for rescheduling	Not feasible	Not feasible

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							Govt equity contribution	Zero interest loan	Commercial loan					Technical	Financial
68	PT Aceh Swaka WNP	PT Inhutani IV	Bank Mandiri	Aceh	7 050	1 410	1 131 080 200	2 018 258 000	–	1 851 313 539	–	1 851 313 539	No application for rescheduling	Not feasible	Not feasible
69	PT Rimba Peranap Indah	PT Inhutani IV	Bank Mandiri	Riau	11 620	11 909	4 085 282 900	7 280 684 420	–	118 932 986	–	118 932 986	No application for rescheduling	Feasible	Feasible
70	PT Dyera Hutani Lestari	PT Inhutani V	Bank Mandiri	Jambi	8 000	2 778	3 097 753 000	4 174 362 112	–	4 170 780 758	–	4 170 780 758	No application for rescheduling	Not feasible	Not feasible
71	PT Wana Perintis	PT Inhutani V	Bank Mandiri	Jambi	6 900	9 818	2 091 961 000	4 118 742 485	–	1 197 681 466	–	1197681466 11	No application for rescheduling	Feasible	Feasible
72	PT Wana Mukti Wisesa	PT Inhutani V	Bank Mandiri	Jambi	9 264	4 876	2 025 472 000	2 540 223 000	–	1 193 718 373	–	1 193 718 373	No application for rescheduling	Feasible	Feasible
73	PT Darma Hutani Lestari	PT Inhutani V	Bank Mandiri	Lampung	41 210	4 071	2 881 930 000	1 628 777 000	–	1 771 838 366	–	1 771 838 366	No application for rescheduling	Not feasible	Not feasible
74	PT Tunas Bentala	PT Inhutani V	Bank Mandiri	South Sumatra	9 180	1 997	1 397 444 303	767 701 641	–	672 665 721	–	672 665 721	No application for rescheduling	Not feasible	Not feasible
75	PT Riau Abadi Lestari	PT Inhutani IV	Bank Mandiri	Riau	12 000	9 615	4 487 124 000	7 109 291 000	–	6 281 639 039	5 331 703 397	949 935 642	No application for rescheduling	Feasible	Feasible
76	PT Anangga Pundinusa	PT Inhutani I	Bank Mandiri	East Kalimantan	29 728	10 731	5 568 154 500	7 563 842 500	–	6 027 960 772	1 832 458 246	4 195 502 526	No application for rescheduling	Not feasible	Not feasible
77	PT Mayawana Persada	PT Inhutani III	Bank Mandiri	West Kalimantan	14 000	3 136	2 532 862 420	4 412 571 450	–	2 249 969 969	1 774 866 450	475 103 519	No application for rescheduling	Not feasible	Not feasible
78	PT Wana Teladan	PT Inhutani V	Bank Mandiri	Jambi	9 800	3 956	1 880 659 000	3 887 040 000	–	3 393 693 869	1 463 980 198	1 929 713 672	No application for rescheduling	Feasible	Feasible
79	PT Lahan Megah	PT Inhutani III	Bank Mandiri	West Kalimantan	10 000	-	524 640 990	1 546 037 000	–	1 375 047 500	1 375 047 500	–	No application for rescheduling	Special	–

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							Govt equity contribution	Zero interest loan	Commercial loan					Technical	Financial
80	PT Kirana Khatulistiwa	PT Inhutani II	Bank Mandiri	South Kalimantan	14 400	6 869	2 937 259 000	5 168 795 575	–	5 365 722 730	1 072 324 575	4 293 398 155	No application for rescheduling	Feasible	Not feasible
81	PT Purwa Permai	PT Inhutani III	Bank Mandiri	Central Kalimantan	20 500	4 440	2 830 844 000	6 572 087 000	–	2 262 167 044	750 053 000	1 512 114 044	No application for rescheduling	Feasible	Feasible
82	PT Wanakasita Nusantara	PT Inhutani V	Bank Mandiri	Jambi	9 030	6 310	3 194 607 000	4 874 714 704	–	4 253 214 928	40 024 000	4 213 190 928	No application for rescheduling	Feasible	Feasible
83	PT Meranti Laksana	PT Inhutani III	Bank BRI	West Kalimantan	17 300	2 660	1 781 066 000	3 618 404 000	–	–	–	–	No application for rescheduling	Not feasible	Not feasible
84	PT Meranti Lestari	PT Inhutani III	Bank BRI	West Kalimantan	16 500	2 912	2 408 532 000	4 351 155 000	–	–	–	–	No application for rescheduling	Not feasible	Not feasible
85	PT Hutan Barumun Perkasa	PT Inhutani IV	Bank Mandiri	North Sumatra	11 845	9 536	773 291 000	1 040 738 000	–	–	–	–	No application for rescheduling	Not feasible	Not feasible
86	PT Nusa Wana Raya	PT Inhutani IV	Bank BNI	Riau	21 870	12 246	5 115 234 000	10 479 418 000	–	–	–	–	No application for rescheduling	Feasible	Feasible
87	PT Hutani Trans Kencana	PT Inhutani II		East Kalimantan	9 300	895	727 220 000	–	–	–	–	–	No application for rescheduling	Not feasible	Not feasible
88	PT Meranti Delta	PT Inhutani III		West Kalimantan	6 700	-	198 800 000	–	–	–	–	–	No application for rescheduling	Not feasible	Not feasible
89	PTSumatera Silva Lestari	PT Inhutani IV		North Sumatra	42 530	40 277	4 049 733 000	–	–	–	–	–	No application for rescheduling	Feasible	Feasible
90	PT Lahan Cakrawala	PT Inhutani III	Bank BNI	West Kalimantan	11 328	5 365	3 450 355 900	6 451 992 500	–	5 746 330 500	5 746 330 500	–	No application for rescheduling	Feasible	Feasible
Sub-total III					**655 506**	**302 333**	**127 415 513 507**	**215 265 049 140**	**25 152 019 132**	**225 547 662 914**	**19 386 787 865**	**206 160 875 049**			
91	PT Ryani Hutani Sipatuo	PT Inhutani I			n. a	n.a.	1 634 948 000	3 795 519 000	–	–	–	–		–	–

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							Govt equity contribution	Zero interest loan	Commercial loan					Technical	Financial
92	PT Waihijau Lestari	PT Inhutani V			21 000	13 531	5 106 494 604	11 854 802 422	–	14 924 342 336	12 154 802 422	2 769 539 914		–	–
93	PT PIR Inti Indo Rayon		Bank Mandiri	North Sumatra	30 000	17 568	–	10 960 000 000	–	20 391 878 889	20 391 878 889	–		Special	–
	PT Rimba Mujur Mahkota		Bank Mandiri		n. a	n.a.	–	–	–	981 778 000	981 778 000	–		–	–
	PT Inhutani II		Bank Mandiri	South Kalimantan	100 420	66 713	60 084 196 718	10 965 162 000	6 365 443 500	17 330 946 819	17 330 946 819	–			
	PT Inhutani V		Bank Mandiri	Lampung	56 547	38 797	28 365 114 000	28 856 390 000	15 342 349 000	85 644 896 231	–	85 644 896 231			
	PT Inhutani I		Bank Mandiri	East Kalimantan	163 676	57 602	63 608 178 820	39 211 145 150	3 363 459 000	13 334 103 859	1 000 000 000	12 334 103 859			
	PT Inhutani III				377 980	88 513	214 254 978 539	–	–	–	–	–			
	PT Inhutani IV				n. a	n.a.	16 358 247 250	–	–	–	–	–			
Sub-total IV					**749 623**	**282 724**	**389 412 157 931**	**105 643 018 572**	**25 071 251 500**	**152 607 946 135**	**51 859 406 130**	**100 748 540 004**			
TOTAL I sd IV					**3 695 137**	**1 864 189**	**960 038 188 111**	**1 139 117 857 706**	**318 558 881 823**	**1 210 380 682 544**	**626 575 079 596**	**583 805 602 948**			

Note: HTI planted area figures include net areas reported by the companies to have been planted and do not include losses.
Sources: Ministry of Forestry (2008) for HTI total and planted areas, except for Inhutani figures; BPK (2008) for all other data

Appendix D

Table D-1: List of BPK audits related to the DR during 2004–08

No.	Subject of audit	Institution	Location	Period audited	BPK audit number	Date of audit	BPK ref #
1	Sarana Wana Jaya Foundation and the Business Unit of the Gedung Manggala Wanbakti Management Board *Yayasan Sarana Wana Jaya (SWJ) dan Unit Usaha Badan Pengelola Gedung Manggala Wanabakti (BP GMW)*	Ministry of Forestry	Jakarta and Mataram (West Nusa Tenggara)		n/a	2006 (n.d.)	63
2	Non-tax state revenues from the Forest Resource Rent Provision and the Reforestation Fund *Penerimaan Negara Bukan Pajak (PNBP) Berupa Provisi Sumber Daya Hutan (PSDH) dan Dana Reboisasi (DR)*	East Kalimantan Provincial Forestry Service, and District/Municipal Forestry Services for Pasir, Kutai Kertanegara, Kutai Timur Districts and for Samarinda and Balikpapan Municipalities	East Kalimantan		n/a	2006 (n.d.)	64
3	As per #2	Central Kalimantan Provincial Forestry Service, and District Forestry Services for Kotawaringin Barat, Kotawaringin Timur, Katingan and Seruyan Districts	Central Kalimantan		n/a	2006 (n.d.)	65
4	As per #2	South Kalimantan Provincial Forestry Service, and District Forestry Services for Tabalong, Tanah Bumbu, Barito Kuala and Barito Muara Districts	South Kalimantan	2004–2005	n/a	2006 (n.d.)	66
5	As per #2	Papua Provincial Forestry Service, and District Forestry Services for Yapen Waropen, Nabire, Waropen Districts and the Forestry Section of the Agriculture Service for Jayapura Municipality	Papua	2004–2005	n/a	2006 (n.d.)	67

No.	Subject of audit	Institution	Location	Period audited	BPK audit number	Date of audit	BPK ref #
6	Management of Non-Tax State Revenues *Pengelolaan Penerimaan Negara Bukan Pajak (PNBP)*	Ministry of Forestry	DKI Jakarta	FY 2005–2006	n/a	n/a	86
7	Non-Tax State Revenues from the Forest Resource Rent Provision and the Reforestation Fund *Penerimaan Negara Bukan Pajak (PNBP) Berupa Provisi Sumber Daya Hutan (PSDH) dan Dana Reboisasi (DR)*	North Sumatra Provincial Forestry Service	North Sumatra	2005–2006	n/a	2006 (n.d.)	87
8	As per #7	Riau Provincial Forestry Service, and District Forestry Services for Pelalawan and Siak, Bengkalis, Rokan Hilir and Indragiri Hilir Districts	Riau	2005–2006	n/a	2006 (n.d.)	88
9	As per #7	Provincial/District/Municipal Forestry Services and Relevant Agencies	Jambi	2005–2006	n/a	n/a	89
10	As per #7	West Kalimantan Provincial Forestry Service, and District Forestry Services for Ketapang, Kapuas Hulu, Sintang and Melawi Districts	West Kalimantan	2005–2006	n/a	n/a	90
11	Financial Report *Laporan Keuangan*	Ministry of Forestry	DKI Jakarta	FY 2006	n/a	n/a	32
12	Capital and Physical Expenditures *Belanja Barang dan Belanja Modal*	Ministry of Forestry	Jakarta, Bogor (West Java), Yogyakarta and Palu	FY 2005 and FY 2006	n/a	n/a	85
13	Land and Forest Rehabilitation Activities *Kegiatan Rehabilitasi Hutan dan Lahan (RHL)*		South Sulawesi		5/LHP/ XVII/01/2008	17 January 2008	

No.	Subject of audit	Institution	Location	Period audited	BPK audit number	Date of audit	BPK ref #
14	As per #13		Riau		05/LHP/ XVII/02/2008	31 January 2008	
15	As per #13	Directorate General of Land and Forest Rehabilitation	DKI Jakarta		01/LHP/ XVII/01/2008	31 January 2008	
16	As per #13		West Java		02/LHP/ XVII/01/2008	31 January 2008	
17	As per #13		Central Java		03/LHP/ XVII/01/2008	31 January 2008	
18	As per #13		W. Kalimantan		06/LHP/ XVII/01/2008	31 January 2008	
19	As per #13		C. Kalimantan		07/LHP/ XVII/01/2008	31 January 2008	
20	Land and Forest Fire Prevention Activities *Kegiatan Pengendalian Kebakaran Hutan dan Lahan*		Riau		15/LHP/ XVII/02/2008	8 February 2008	24-10
21	Industrial Forest Plantation Development Activities Financed by the Reforestation Fund *Kegiatan Pembangunan Hutan Tanaman Industri (HTI) yang Dibiayai dari Dana Reboisasi (DR)*	Ministry of Forestry and other Relevant Agencies	DKI Jakarta, East Kalimantan, Central Kalimantan, and South Kalimantan	FY 2003–2007	16/LHP/ XVII/02/2008	14 February 2008	24-9
22	Management of Government-Owned Accounts *Pengelolaan Rekening Milik Pemerintah*	Ministry of Forestry	DKI Jakarta	FY 2006 and FY 2007	22/LHP/ XVII/04/2008	15 April 2008	139
23	Financial Report *Laporan Keuangan*	Ministry of Forestry	DKI Jakarta	FY 2007	29a/LHP/ XVII/04/2008	30 April 2008	35

No.	Subject of audit	Institution	Location	Period audited	BPK audit number	Date of audit	BPK ref #
24	Forest Management Activities related to Forest Inventory, Harmonisation of the State Forest Zone, Mitigation of Climate Change, Issuance of Permits for Forest Utilisation and Use of the Forest Zone, Forest Felling and Reporting, Management of Non-tax State Revenues, and Conservation and Protections of the Forest Zone *Manajemen Hutan yang Terkait dengan Kegiatan Inventarisasi Hutan, Pengukuhan Kawasan Hutan, Mitigasi Perubahan Iklim, Perizinan Pemanfaatan Hutan dan Penggunaan Kawasan Hutan, Penebangan Hutan dan Pelaporannya, Pengelolaan PNBP, serta Pengamanan dan Perlindungan Kawasan Hutan*	Ministry of Forestry and other Relevant Agencies	DKI Jakarta and Bogor (West Java)		32/LHP/ XVII/02/2009	23 February 2009	
25	As per #24	Ministry of Forestry including Technical Implementation Units (UPT), Provincial and District/ Municipal Forestry Services, Forestry Companies, and other Relevant Agencies	Riau		33/LHP/ XVII/02/2009	23 February 2009	
26	As per #24	Ministry of Forestry including Technical Implementation Units (UPT), Provincial and District/ Municipal Forestry Services, Forestry Companies, and other Relevant Agencies	West Kalimantan		34/LHP/ XVII/02/2009	23 February 2009	

No.	Subject of audit	Institution	Location	Period audited	BPK audit number	Date of audit	BPK ref #
27	As per #24	Ministry of Forestry including Technical Implementation Units (UPT), Provincial and District/ Municipal Forestry Services, Forestry Companies, and other Relevant Agencies	East Kalimantan		35/LHP/ XVII/02/2009	23 February 2009	
28	As per #24	Ministry of Forestry including Technical Implementation Units (UPT), Provincial and District/ Municipal Forestry Services, Forestry Companies, and other Relevant Agencies	Central Kalimantan		36/LHP/ XVII/02/2009	23 February 2009	

Source: BPK website (http://www.bpk.go.id)

Appendix E.
An overview of revolving funds

In the regulations issued to establish both the Forest Development Account and the BLU-BPPH, it is stipulated that the funds managed by these institutions will be administered as a 'revolving fund'. However, little information is provided about how such a revolving fund will function in Indonesia's forestry sector, or why such a structure has been chosen in this particular context. In other sectors, revolving funds have functioned as financial intermediaries to provide co-financing and credit enhancement for government-supported projects.

In general terms, a revolving fund is characterised as 'a fund established for a certain purpose, such as making loans, with the stipulation that repayments to the fund may be used anew for the same purpose' (Houghton Mifflin 2008). Such funds have been used in a wide variety of contexts, ranging from the provision of microfinance for farmers groups to the financing of large-scale infrastructure projects. Government-sponsored revolving funds are generally established to facilitate the financing of specific types of projects in support of policy objectives. They are sometimes called working capital funds, industrial funds or loan funds.

During the past decade, bilateral and multilateral donor agencies have promoted the use of government-sponsored revolving funds in Indonesia to finance major infrastructure projects, including investments in toll roads, power plants and water and sanitation utilities. A 2006 feasibility assessment for the Indonesia Water Revolving Fund (IWRF), prepared for the United States Agency for International Development (USAID), offers a typology of revolving funds and describes how these function 'to lower the cost of [finance] and improve credit terms for regional governments and their enterprises' (DAI 2006). Three types of revolving funds are described, with varying degrees of complexity, as follows.

- **Direct Loan Model**: Government grants are 'deposited into a designated account and project loans are made to individual municipalities. As loans are repaid, funds become available for new loans. The total amount of project loans can never exceed the total level of available grants. A disadvantage of the Direct Loan Model is that it does not provide for leveraging of private capital.'
- **Cash Flow Model:** The revolving fund is capitalised by two sources of funds: '(i) grants; and (ii) bonds sold to the public. The bonds sold represent leveraging of government funds. Loan repayments are first used to ensure the repayment of bonds. The subordination of the repayment of the grant-funded portion of the [revolving fund] itself enhances the rating of the [revolving fund] bonds. This, in turn, lowers the cost of capital for future loans to local governments. Repayment into the [revolving fund] in excess of what is needed to repay bondholders is used to replenish the fund.'
- **Reserve Fund Model:** The revolving fund, under this model, 'is composed of two inter-related accounts: (i) the Reserve Fund; and (ii) the [Project Fund]. Government grants are deposited into the Reserve Fund, which is used solely as a credit reserve for the Project Fund. Leverage is achieved through the sale of bonds, with the proceeds used to capitalise the [revolving fund], which finances

> project loans.' Experience with this type of model in the United States 'indicates that the credit features of the Reserve Model allow a multiple of the Reserve Fund to be raised for loans to regional governments'.

An important function of revolving funds – particularly with the Cash Flow and Reserve Fund models – is that they are often structured to leverage substantially larger amounts of finance than the capital contributed through government grants. The USAID-funded feasibility assessment of the Indonesia Water Revolving Fund, for example, anticipated that the revolving fund would allow a multiple of eight times the amount contributed by government grants to be raised to finance water and sanitation projects (see Box D-1). Revolving funds typically achieve such multiples by attracting co-financing arrangements with bilateral and multilateral lenders and with commercial banks. In some cases, they also allow regional governments to raise additional funds by gaining expanded access to municipal bond markets.

Bilateral and multilateral donors and lending agencies often provide support for government-sponsored revolving funds in order to assist developing country governments to achieve shared policy objectives. Such support can involve:

- co-financing of the revolving fund's reserve capital, thereby improving the fund's credit rating and/or expanding the amount that can be allocated as loans.
- co-financing of start-up, capitalisation and feasibility studies.
- providing credit risk guarantees to lower both the risks and the costs of credit on long-term loans (DAI 2006).

Commercial banks are often motivated to co-finance loans arranged through government-sponsored revolving funds due to the presence of credit risk guarantees and liquidity enhancements. By effectively guaranteeing repayment in the event a borrower defaults on a loan, the revolving fund can significantly limit the banks' credit risk exposure. This is particularly important for the financing of long-term loans and/or high-risk projects. In sectors such as forestry which involve large numbers of small and medium-sized projects, revolving funds can also support economies of scale by consolidating smaller loans into a size that is more cost-effective for commercial banks to manage. In addition, revolving funds are often structured as cooperative financial institutions, through which 'peer pressure' among members can reduce the risk that individual borrowers would fail to repay their loans (DAI 2006).

In some cases, revolving funds can also enable participating government agencies to gain enhanced access to bond markets. They typically do so by providing credit enhancement mechanisms which limit the risk of default for government agencies seeking to issue bonds. These might include, for instance, regional governments seeking to enter Indonesia's fledgling market for municipal bonds. It is not entirely clear whether national government agencies, such as the Ministry of Forestry or even the BLU-BPPH itself, are eligible to issue agency bonds.

In terms of budget management, another important characteristic of government-sponsored revolving funds is that the administering agency is able to use the funds without regard to fiscal-year limitations. As Peckinpaugh (1999) explains with regard to the status of revolving funds under US law:

> The establishment of a revolving fund is a special exception to the general rule that Congress appropriates funds for an agency's use on a

fiscal-year basis. Accordingly, their administration and use are limited strictly to the terms of the act that establishes them. … Money left in a revolving fund at the end of the year remains available for use the following year. The money does not revert back to the general treasury as would ordinary, unused fiscal-year appropriations.

Box E-1. The Indonesia Water Revolving Fund: How does it work?

A 2006 feasibility assessment prepared for USAID describes how the proposed Indonesia Water Revolving Fund (IWRF) would use government funds to leverage additional co-financing from bilateral and multilateral lenders and domestic commercial banks. It describes three steps through which the fund would be financed to achieve an 8:1 multiple of the government's initial capital contribution, as follows.

Step 1: Establishment of the capital base. The Government of Indonesia and regional governments would provide resources to establish a capital fund in return for voting rights in the IWRF on the appropriate legal basis. Initially only the 50 most creditworthy regional governments in the country would be invited to participate. It is assumed that each of these 'first tier' regional governments would contribute Rp 5 billion to the IWRF Capital Fund, resulting in a total contribution of (50 × Rp 5 billion) = Rp 250 billion. GOI would match this contribution, so that central and regional governments would provide Rp 500 billion (or US $50 million) to the initial capital base of the fund.

Step 2: Enter into co-financing arrangements with bilateral and multilateral lenders. JBIC (Japan Bank for International Cooperation) has indicated, in principle, its interest in co-financing loans with the IWRF, thereby enabling the fund to leverage the financial participations of GOI and participating regional governments. … Other bilateral and multilateral lenders may also be interested in co-financing arrangements with the IWRF. Assuming that JBIC will match the contributions of central and regional governments, the IWRF would initially be capitalised at (2 × US $50 million) = US $100 million. Bilateral and multilateral loans would be channelled to the IWRF through (the Ministry of Finance) in conformance with prevailing regulations.

Step 3: Enter into co-financing arrangements with domestic commercial banks. Domestic commercial banks will be invited to match the contributions of the IWRF Capital Fund. Such co-financing arrangements would allow the IWRF to further leverage its capital base. Assuming the banks would co-finance 50% of a project with the IWRF Capital Fund, the fund would be able to mobilise (2 × US $100 million) = US $200 million in capital. Stated differently, an investment in participation certificates of Rp 250 billion would enable 'first tier' regional governments to mobilise (up) to Rp 2 trillion in loans (a leverage ratio of 8:1). Commercial bank loans could either be channelled through the IWRF or directly to the borrower, co-financed with the IWRF.

Credit enhancement mechanisms. The IWRF would extend long-term loans that are sourced from the IWRF Capital Fund (including bilateral/multilateral bank loans) under co-financing arrangements with commercial banks. The fund would reduce risks to commercial financiers by using the following credit and liquidity enhancements:

- credit guarantees from the US government (Development Credit Agreement) and other foreign donors.
- the IWRF Reserve Fund, which acts as a liquidity guarantee to commercial banks.
- a trustee, appointed by lenders for every loan transaction, whose function is to represent the interests of the creditors by controlling assigned capital.

Source: Development Alternatives Inc. (2006)

This study analyses Indonesia's experience with its Reforestation Fund, and examines implications for REDD+. The Reforestation Fund (Dana Reboisasi, DR) is a national forest fund financed by a volume-based timber levy to support reforestation and forest rehabilitation. Since 1989, the fund has had receipts of US $5.8 billion.

During the Soeharto era, the Ministry of Forestry allocated more than US $1.0 billion in cash grants and loans from the Reforestation Fund to promote commercial plantation development. Many recipients fraudulently marked up their costs and overstated areas planted, causing the programme to fall well short of targets. The Ministry also disbursed US $600 million to finance politically favoured projects outside the Fund's mandate of promoting reforestation and forest rehabilitation. A 1999 external audit by Ernst & Young documented billions of dollars in losses, citing systematic financial mismanagement.

Since 1998, successive post-Soeharto governments have taken steps to improve financial governance by: transferring authority over the Reforestation Fund to the Ministry of Finance; strengthening the Supreme Audit Board's authority to monitor public financial assets; and creating a Corruption Eradication Commission which has prosecuted dozens of senior officials.

However, continuing problems with the Reforestation Fund hold significant implications for future REDD+ payment schemes. The study highlights how national strategies to manage both the Reforestation Fund and REDD+ funding streams must:

- strengthen financial management and revenue administration;
- deal with corruption, fraud, and loss of state assets;
- monitor, report, and verify financial transactions;
- remove misaligned and perverse incentives;
- ensure accountability and mitigating moral hazard; and
- distribute benefits equitably.

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