



# LUND UNIVERSITY

## The pitfalls and potential of debt-for-nature swaps: a US-Indonesian case study

Cassimon, Danny; Prowse, Martin; Essers, Dennis

*Published in:*  
Global Environmental Change

*DOI:*  
[10.1016/j.gloenvcha.2010.10.001](https://doi.org/10.1016/j.gloenvcha.2010.10.001)

2011

[Link to publication](#)

*Citation for published version (APA):*

Cassimon, D., Prowse, M., & Essers, D. (2011). The pitfalls and potential of debt-for-nature swaps: a US-Indonesian case study. *Global Environmental Change*, 21, 93-102.  
<https://doi.org/10.1016/j.gloenvcha.2010.10.001>

*Total number of authors:*  
3

### General rights

Unless other specific re-use rights are stated the following general rights apply:

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Read more about Creative commons licenses: <https://creativecommons.org/licenses/>

### Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

LUND UNIVERSITY

PO Box 117  
221 00 Lund  
+46 46-222 00 00



## **The pitfalls and potential of debt-for-nature swaps**

Cassimon, Danny; Prowse, Martin Philip; Essers, Dennis

*Published in:*  
Global Environmental Change

*DOI:*  
[10.1016/j.gloenvcha.2010.10.001](https://doi.org/10.1016/j.gloenvcha.2010.10.001)

*Publication date:*  
2011

*Citation for published version (APA):*  
Cassimon, D., Prowse, M., & Essers, D. (2011). The pitfalls and potential of debt-for-nature swaps: a US-Indonesian case study. *Global Environmental Change*, 21(1), 93-102. [10.1016/j.gloenvcha.2010.10.001](https://doi.org/10.1016/j.gloenvcha.2010.10.001)



# The pitfalls and potential of debt-for-nature swaps: A US-Indonesian case study

Danny Cassimon<sup>\*</sup>, Martin Prowse<sup>1</sup>, Dennis Essers<sup>2</sup>

*Institute of Development Policy and Management (IOB), University of Antwerp, Prinsstraat 13, B-2000 Antwerp, Belgium*

## ARTICLE INFO

### Article history:

Received 12 January 2010

Received in revised form 20 September 2010

Accepted 9 October 2010

Available online 12 November 2010

### Keywords:

Forest conservation

Debt swaps

United States

Indonesia

Conservation International

## ABSTRACT

The vital role of forests in limiting the likelihood of dangerous climate change has precipitated renewed interest in debt-for-nature swaps. This article uses evidence on past debt-for-nature deals and similar debt mechanisms to assess a recent second wave of such swaps. It outlines five typical shortcomings of this form of financial transaction: that they often fail to deliver additional resources to the debtor country and/or debtor government budget; often fail to deliver more resources for conservation/climate purposes; often have a negligible effect on overall debt burdens (and, as such, do not generate more 'indirect' benefits); and are often in conflict with principles of alignment with government policy and alignment with government systems (these two last shortcomings being important elements within the new aid delivery paradigm). Our analysis is applied to a recent debt-for-nature swap between the United States and Indonesia. We show that this case, which we consider a litmus test for current swap practice, performs unevenly across the five shortcomings. First, although the US-Indonesian swap does increase available resources to Indonesia at the country level, it does not generate extra budgetary room for the Indonesian government. Second, the extent to which the resources provided by the swap are additional to other donor support and reserved domestic budget lines for conservation goals is unclear. Third, the swap is too insignificant to create indirect (positive) economic effects. Regarding alignment issues, fourth, the swap is very much in line with current national policy, but, fifth, appears at odds with the new aid delivery paradigm's insistence on system alignment. We argue that if a second generation of debt-for-nature swaps is to be pursued then they need to avoid the common pitfalls associated with this form of finance. Moreover, there is a need to debate broader ways of linking debt service repayments to climate mitigation and adaptation.

© 2010 Elsevier Ltd. All rights reserved.

## 1. Introduction

Forest ecosystems play a vital dual function in limiting the likelihood of dangerous climatic change. On the one hand, they act as carbon sinks which store twice the amount of carbon present in the atmosphere. On the other hand, each year they actively remove up to one third of all carbon dioxide emissions from fossil fuel combustion and land use change (McMullen and Jabbour, 2009). Forests' role in maintaining the globe's carbon cycle can be supported in a number of ways. For example, through reforestation initiatives, by increasing the amount of carbon stored and sequestered per hectare (in other words, increasing a forest's

carbon density), and through utilising sustainably harvested forest products in place of items with a large carbon footprint (e.g. using timber instead of concrete for house construction) (McMullen and Jabbour, 2009). Most importantly, forests' role can be supported through reducing deforestation (see Rudel, 2001). Estimates suggest that around one fifth of global greenhouse gas emissions stem from tropical deforestation (see IPCC, 2007), concentrated particularly in Indonesia and Brazil (see Porrúa et al., 2007).

Despite the importance of forest ecosystems in the global carbon cycle, until recently reduced or averted deforestation has been excluded from agreements under the United Nations Framework Convention on Climate Change (UNFCCC) (see Babiker et al., 2002; Dessai and Schipper, 2003; Fogel, 2005; Paulsson, 2009). This has been due to a number of controversial issues. For example, the setting of baseline deforestation rates, the permanence of forest carbon sinks, the possible non-additional nature of conservation projects, the leakage of deforestation into adjacent areas, and the potential over-supply of forest-based carbon credits

<sup>\*</sup> Corresponding author. Tel.: +32 3 265 5937.

E-mail addresses: [danny.cassimon@ua.ac.be](mailto:danny.cassimon@ua.ac.be) (D. Cassimon), [martin.prowse@ua.ac.be](mailto:martin.prowse@ua.ac.be) (M. Prowse), [dennis.essers@ua.ac.be](mailto:dennis.essers@ua.ac.be) (D. Essers).

<sup>1</sup> Tel.: +32 3 265 5939.

<sup>2</sup> Tel.: +32 3 265 5935.

onto incipient carbon markets. In addition, there has been a lack of scientific agreement on measuring carbon sequestration in land use, land-use change and forestry (as the amount of carbon sequestered in the soil depends on climatic zone, local climatic condition, characteristics of the soil, type of vegetation, and cultivation or harvesting practices – see Muller, 2009). As some progress has been made on these fronts, and the need for mitigation has become all the more pressing, recent years have seen a debate on how to integrate REDD-plus (in other words, reduced emissions from deforestation and forest degradation, and the conservation and sustainable management of existing forest carbon stocks) into a global climate regime (see Angelsen et al., 2009; Ebeling and Yasue, 2008; Karsenty, 2008; Neeff and Ascui, 2009).<sup>3</sup>

However, how to finance reduced emissions from deforestation and degradation is still a matter of debate. Recent estimates suggest that the cost of preparing and implementing such measures to ensure a 50% reduction in forest emissions will be between US\$15 and 35 billion per year (Angelsen et al., 2009). The extent to which these funds will be generated from existing multilateral climate funds (such as the Global Environment Facilities' Trust Fund or the World Bank's Strategic Climate Fund), current market-based schemes (such as the Clean Development Mechanism under the Kyoto Protocol, or the European Emission Union Trading Scheme) or innovative climate finance channels is yet to be finalised. For example, the Copenhagen Accord only states that countries 'decide to pursue various approaches, including opportunities to use markets, to enhance the cost-effectiveness of, and to promote mitigation actions' (UNFCCC, 2009a).

The search for novel financing mechanisms – such as a levy on emissions from international shipping and aviation, or the international or domestic auction of a proportion of assigned amount units – has also renewed interest in debt-for-nature swaps (now framed as much in terms of carbon storage as protecting biodiversity). For example, debt swaps were part of the negotiating text for the Copenhagen summit, as Indonesia inserted 'external debt swap/relief' as a source of finance during the UNFCCC's informal consultations in Bonn in August, 2009 (see UNFCCC, 2009c, p. 157). In such swaps a non-governmental organisation (NGO) typically purchases (commercial) developing country debt on the secondary market at a discount from the face value of the debt title. The NGO redeems the acquired title with the debtor country in exchange for a domestic currency instrument used to finance environmental and conservation expenditures by local partners (normally receiving a redemption price closer to face value than the secondary market price) (see Hansen, 1989; Jha and Schatan, 2001; Sheikh, 2008). In other cases, the transaction is conducted directly between creditor and debtor governments (and thus involves public debt), usually with assistance from an international NGO (for example, The Nature Conservancy, the World Wildlife Fund, and Conservation International have all been involved in recent transactions). On the 30th June 2009, such a bilateral deal was signed between the United States and Indonesia, swapping nearly US\$ 30 million of Indonesian government debt owed to the United States over the next 8 years, against an Indonesian commitment to spend this sum on NGO projects benefiting Sumatra's tropical forests.

<sup>3</sup> For example, the 15th Conference of Parties of the UNFCCC saw calls for the 'immediate establishment' of a mechanism to reduce emission from deforestation and forest degradation (including REDD-plus) as part of the Copenhagen Accord (UNFCCC, 2009a). In addition, the Working Group on Long-term Cooperative Action under the Convention outlined the steps developing countries will be assisted with to make a REDD-plus mechanism operational, including: the identification of the drivers of deforestation; and estimating the levels of forest carbon emissions and sinks through a combination of remote sensing and ground-based measurement (UNFCCC, 2009b).

Both Conservation International and an Indonesian environmental foundation helped broker the deal (see USAID, 2009a; Huff, 2009).

Debt swaps have been seen as 'win-win-win' transactions (Gugler, 1997), being advantageous to all parties involved (see Moye, 2001).<sup>4</sup> From this perspective, debtor countries reduce their debt burden, save scarce hard currency, and free up budgetary resources for environmental (or other) spending. Environmental groups leverage their funds because of a positive difference between the redemption value and the secondary market value of the debt purchased or received, raise their profile and expand their network. Creditors, usually developed country governments or private banks, see an increase in the value of any remaining debt claims and improve their environmental credentials (Occhiolini, 1990; Dogsé and von Droste, 1990). It is, however, far from certain that many of the foregoing benefits materialise in practice. For example, does the US-Indonesian swap deal necessarily imply that the Indonesian government will see its available resources increase by US\$ 30 million, or that an extra US\$ 30 million will be spent on environmental purposes?

This article uses evidence on past debt-for-nature swaps and similar debt swap initiatives to assess the pitfalls and potential of such financial instruments. The analysis is applied to the recent debt swap between the United States and Indonesia. There are four reasons why we focus on this swap and consider it a litmus test for assessing the efficacy of current debt-for-nature swaps. First, this is the largest debt swap yet conducted under the Tropical Forest Conservation Act (TFCA), a key piece of US legislation designed to facilitate public debt swaps to conserve tropical forests. Second, on the creditor side, the United States, through the TFCA, is the main exponent of debt-for-nature swaps. Third, on the debtor side, and under the guidance of the previous Finance Minister Sri Mulyani Indrawati, Indonesia has been promoting debt swaps and debt relief as a form of climate finance. And fourth, regarding the broker role, Conservation International has been at the forefront of promoting and conducting debt-for-nature swaps over the past two decades.

The article is structured as follows. Section 2 offers a concise history of debt swaps and provides details of the case under review. Section 3 discusses two direct benefits that debt-for-nature swaps should provide. First, swaps should generate extra funding for conservation at the national level, and within the government budget. Second, on a global level, they should generate extra funding for conservation. Section 4 focuses on an alleged indirect benefit: that reduced external debt will help to improve macro-economic stability, hence leading to increased domestic resources and aid flows in the future as well as lower deforestation rates. Section 5 summarises the institutional budgetary procedures associated with debt-for-nature swaps, and discusses whether such swaps adhere to the new aid paradigm's insistence on alignment with government policy and systems. Each section concludes by stating the extent to

<sup>4</sup> Some arguments in support of debt-for-nature swaps resemble those in the literature on environmental taxation concerning the 'double dividend hypothesis'. Here, environmental taxes are seen as an efficient instrument to protect the environment by, firstly, discouraging environmentally degrading activities such as, say, mining or deforestation. Secondly, tax revenues can be used to finance projects to the benefit of the environment or to cut other, possibly distortionary taxes. As such, by introducing an environmental tax, the government may reap a 'double dividend' (see Goulder, 1995; Bovenberg, 1999 for a more detailed account). Analogously, advocates of debt-for-nature swaps have argued that these swap arrangements, by relieving countries from their foreign exchange (debt service) obligations, help to preserve the environment as the demand for natural resource extraction diminishes, while at the same time mobilising additional funds which can be utilised for beneficial environmental or fiscal purposes. However, the link between hard currency denominated debt reduction and lower extraction rates is contested (see Didia, 2001 versus Kahn and McDonald, 1995).

which the recent US-Indonesia case overcomes the typical shortcomings outlined in the literature.

## 2. Debt-for-nature swaps: what are they and where did they come from?

### 2.1. A short history

Debt-for-nature swaps belong to a broader category of debt conversion programmes. Their origins can be traced to debt-for-equity exchanges triggered by the Latin American debt crisis in the early 1980s. The secondary market for developing country debt expanded rapidly at this time as lending agencies sought ways to curb losses (Thapa, 1998). Originating in Chile in 1985, debt-for-equity schemes allowed investors to redeem external debt titles, obtained at discount on the secondary market, with the debtor country in return for local currency to be invested as equity in national companies (Moye, 2001). The rationale was that debtor countries would benefit from debt relief, while foreign investors obtained stock holdings at preferential exchange rates (Buckley, 2009). Debt-for-equity swaps were practiced widely in the late 1980s, often linked to the privatisation of public assets, and peaked in 1990 with a combined swap volume of US\$ 27 billion (see Kaiser and Lambert, 1996).

As is widely acknowledged, applying the concept of debt-for-equity swaps to environmental protection was first proposed in 1984 by Dr. Thomas Lovejoy, then vice-president of the World Wildlife Fund (see Lovejoy, 1984). Conservationists like Lovejoy argued that the mounting pressure on highly indebted countries to service external debt was leading to an increase in primary commodity exports (often the main source of foreign exchange earnings in these economies) which was harming the environment. Debt-for-nature swaps were seen as a way of raising funds for reducing environmental degradation at the same time alleviating debtor countries' desperate search for hard currency (Sheikh, 2008). The first agreement was signed between Conservation International and Bolivia in July 1987.<sup>5</sup> The Nature Conservancy, World Wildlife Fund and Conservation International brokered numerous similar debt-for-nature swaps with commercial debt around this time, mainly in Latin American countries (Sheikh, 2008). For example, between 1987 and 1997 debt-for-nature swaps accounted for US\$ 134 million worth of commercial developing country debt, purchased at an average discount of 78%, with US\$ 126 million of local currency counterpart funds targeted to conservation (Development Finance International, 2009).

In addition to the use of commercial debt titles, in 1991 the Paris Club, a forum for negotiating debt restructurings between indebted developing countries and official bilateral creditors, introduced a clause that allowed members to convert all official public debt through debt swaps with social or environmental objectives (Jha and Schatan, 2001; Ruiz, 2007; see also Paris Club, 2009a). This led to a marked increase in debt-for-nature initiatives. Canada, Finland, France, Sweden and Switzerland were among the first countries to make use of the Paris Club clause for environmental purposes (see Moye, 2003). Above all, though, the United States has played a leading role in conducting bilateral (non-commercial) debt-for-nature swaps. A cornerstone of recent exchanges has been the Tropical Forest Conservation Act (TFCA), passed by Congress in 1998, which expanded the 1990 Enterprise

for the Americas Initiative (EAI) away from just Latin American and Caribbean countries to any developing country with tropical forests (Moye, 2001; Sheikh, 2008).<sup>6</sup>

Despite the TFCA, the overall number of debt-for-nature swaps has declined since the mid-1990s. Just as with debt-for-equity swaps, the appreciation of the value of commercial debt titles on secondary markets (due, in part, to the improved stability and solvency of major economies such as Argentina, Brazil, Chile and Mexico, as well as the improved overall debt position of many developing countries because of previous debt relief efforts), has made debt-for-nature swaps less attractive for environmental groups, at least from a financial perspective (see Ruiz, 2007; Sheikh, 2008). Moreover, debt swaps in all their guises have been subject to thorough critique. They generally failed to deliver additional resources to debtor countries or more resources for sectoral or public goods purposes, and were conducted at an insufficient scale with inappropriate conditionalities (see Sections 3–5). Debt relief practice thus moved away from debt swaps to comprehensive and large-scale debt relief initiatives such as the Heavily Indebted Poor Countries (HIPC) Initiative and its successor, the Multilateral Debt Relief Initiative (MDRI), with policy and system alignment (see Section 5) facilitated through the attached Poverty Reduction Strategy (PRS) process.<sup>7</sup>

In spite of these critiques, recent years have seen the re-emergence of debt swaps in a number of sectors. For example, debt-for-education swaps and debt-for-health swaps have been pursued (see OEI, 2006; Global Fund to Fight Aids, Tuberculosis and Malaria, 2007, respectively) and critiqued (see Cassimon et al., 2008, 2009). Akin to the latest swap initiatives in the health and education sectors, debt-for-nature swaps now typically target low- and middle-income non-HIPC/MDRI-eligible countries and non-HIPC/MDRI-eligible debt titles. As highlighted above, the main advocate is the United States, initiating 13 such operations with 12 different debtor countries under the TFCA between 2000 and 2007. Environmental groups such as The Nature Conservancy, World Wildlife Fund and Conservation International have often subsidised part of the debt relief granted by the United States to these countries (see Sheikh, 2008; USAID, 2009b). Other creditor countries, such as Germany and France, for example, have also pursued new debt-for-nature initiatives (Buckley, 2009; Viltz, 2008).

### 2.2. The 2009 US-Indonesian debt-for-nature swap

The case under examination here is the recent American debt-for-nature swap with Indonesia, representing the 15th and single largest swap under the TFCA so far (see USAID, 2009a; Huff, 2009).

<sup>6</sup> A further example comes from a transition economy. The Polish EcoFund, established by five Paris Club members in 1991, agreed to cancel debt claims in exchange for US\$ 474 million in local currency funds disbursed until 2010 for environmental projects on air and water pollution, greenhouse gas emissions and biodiversity. The United States was by far the largest donor in this initiative, forgiving 10 percent of its bilateral debt in exchange for Polish counterpart contributions of US\$ 370 million (OECD, 1998).

<sup>7</sup> The HIPC Initiative, launched in 1996 by the IMF and the World Bank, aimed to make a selected number of severely indebted low-income developing countries' debt service payments realistic and achievable, and debt burdens sustainable. Creditors were asked to contribute debt relief in proportion to their volume of debt claims. The Enhanced HIPC Initiative in 1999 relaxed eligibility and progress criteria and introduced process conditionality through Poverty Reduction Strategies, instead of policy conditionality associated with pricist and state minimalist structural adjustment loans of the late 1980s and early 1990s. In 2005, the IMF, World Bank and African Development Fund, through the MDRI, committed themselves to debt relief beyond HIPC, promising to forgive all remaining debt owed to them by countries that completed the whole HIPC process. To date, HIPC debt reduction packages have been endorsed for 35 countries, good for an estimated US\$ 51 billion of nominal debt service relief over time (IMF, 2009a; World Bank-IEG, 2006).

<sup>5</sup> Using a US\$ 100,000 grant from the Frank Weeden Foundation, Conservation International acquired commercial Bolivian debt with a nominal value of US\$ 650,000. It redeemed this title with the Bolivian government in exchange for a commitment to conserve 3.7 million acres of forest, and a contribution of US\$ 100,000 worth of new bolivianos to a US\$ 250,000 fund for biosphere reserve management (Occhiolini, 1990).

The swap, signed on the 30th June 2009, involves four main actors: the US government, the Indonesian government, Conservation International, and an Indonesian environmental foundation – *Yayasan Keanekaragaman Hayati Indonesia* (hereafter abbreviated as KEHATI).

The US government agreed to forgive six debt claims (all foreign assistance loans from 1974 to 1976) owed by Indonesia to the US Agency for International Development (USAID) in exchange for a pledge to spend an equivalent amount on grants to support local NGOs involved in tropical forest conservation projects in Sumatra (which is extremely rich in biodiversity). The outstanding principal and interest payments of US\$ 29,921,500.22 (as of the 15th May 2009) have been forgiven for a commitment to deposit instalments for an identical sum (also denominated in US\$) into a Debt Service Account with HSBC in Singapore. Through the TFCA, USAID receives US\$ 20 million from the US Treasury, and US\$ 1 million each from Conservation International and KEHATI for the costs incurred in relieving the Indonesian government from its obligations. The total of US\$ 22 million reflects the default risk-adjusted present value of the loan repayments before the swap operation as estimated by the US Treasury (personal communication, Katie Berg, US Treasury Department). The remaining US\$ 7.9 million of claims against Indonesia is borne by USAID itself through a reduction in loan assets in its general ledger.

In accordance with instructions from an oversight committee, the depository of the Debt Service Account, HSBC, will make periodical transfer payments (denominated in US\$) to a Forest Conservation Agreement (FCA) Grants Account. In response to calls for proposals, the administrator of this account, initially KEHATI, will then disburse grants to eligible environmental NGOs operating in tropical forest areas in Sumatra after proposals are approved by the oversight committee (US Government and Government of Indonesia, 2009). This set of transactions is illustrated in Fig. 1.

We now assess the extent to which this debt-for-nature swap overcomes the generic shortcomings of this type of financial transaction, starting with two alleged direct benefits that we see as most important: an increase in available resources for the debtor country and for the government budget, and extra funding for conservation purposes.

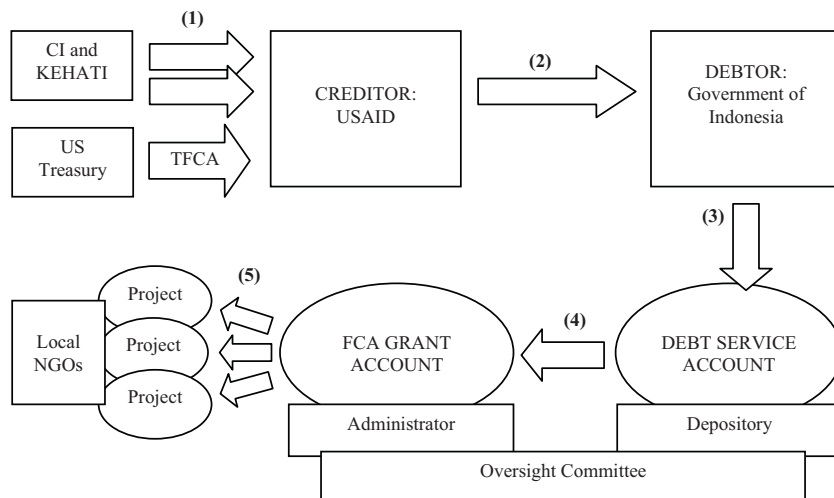
### 3. Direct benefits

#### 3.1. Increase in available resources to the debtor country and government budget

Debt-for-nature swaps are supposed to increase net financial transfers to recipient countries. Through a swap a debtor government is able to divert public resources, otherwise leaving the country via debt service payments in foreign currency, to domestic spending on environmental concerns. In other words, debt swaps, as any other form of aid intervention, transfer international purchasing power from the donor to the recipient country. However, there are three important qualifications that apply.

First, debt relief savings are realised only gradually, typically over many years or even decades, depending on the contractual repayment terms and schedule of the underlying debt. In this respect, the reported nominal value of the cancelled debt in a swap is not necessarily a reliable measure of the increase in available resources at the level of the debtor country. The net present value (NPV) of future debt service payments that are forgiven (discounted at the interest rate at which the debtor country can raise this money on international markets) is arguably a better estimator. In particular when debt is highly concessional, with long maturity and repayment periods and below-market interest rates, as is the case with claims accounted for as Official Development Assistance (ODA), NPV gains in international purchasing power for the country receiving debt relief will be significantly lower than nominal ones.

Second, only the share of debt service that would have actually been paid to the creditor in the absence of debt relief will generate new resources for the debtor country. To presuppose that all debts would have been fully serviced without the swap arrangement (in other words, assuming the probability of default to be zero) is clearly optimistic, in particular when a country is experiencing debt service problems. This is especially the case since credit availability has tightened after the global financial crisis. If the debtor would have failed to meet its debt obligations, the resource effect of debt reduction through swap practices is partly virtual,



**Fig. 1.** Schematic overview of the 2009 US-Indonesian debt-for-nature swap. (1) Under the TFCA, the US Treasury contributes US\$ 20 million to USAID. In addition, Conservation International and KEHATI each pay a swap fee of US\$ 1 million to USAID. (2) The US Government cancels six debt claims, with a nominal value of US\$ 29,921,500.22, owed by the Indonesian Government to USAID. (3) The Indonesian Government pays in instalments the sum of US\$ 29,921,500.22 into a Debt Service Account. (4) In accordance with instructions from an oversight committee, the depository of the Debt Service Account (HSBC) makes periodical transfers, denominated in US\$, to a FCA Grants Account. (5) After approval by the oversight committee, the administrator of the FCA Grants Account (KEHATI) disburses grants to eligible NGOs to execute environmental projects. Source: authors' representation on the basis of US Government and Government of Indonesia (2009).

referring to an ‘accounting clean-up of historical and future arrears accumulation’ (Cassimon and Vaessen, 2007, p. 14).

Third, debt-for-nature swaps are often based on the tacit assumption that these interventions are additional to other forms of donor support (especially when swaps concern countries and debt titles outside the HIPC/MDRI framework). However, debt-for-nature swaps may well crowd out other, potentially more effective, forms of aid (as accounting rules allow donors to treat debt relief operations as substitutes for new aid). Most notably, the full nominal value of debt relief is counted as ODA, the primary benchmark used by the Development Assistance Committee (DAC) of the OECD to determine donor disbursements. Of course, to avoid double counting, for loans that already previously qualified as ODA and are converted into debt swaps only the redirection of the interest component (and not the principal) is recorded as new ODA. Debt-for-nature swaps can thus be considered an attractive option to boost a donor’s ODA figures, and may lead to reduced expenditures on other categories of ODA. Moreover, since the nominal value of debt-for-nature operations is typically an overestimation of both the debtor’s benefit and the creditor’s cost, a swap may provide fewer resources than, say, direct budget support. Evidence from empirical studies indicates that past debt swaps have *not* been additional to other sources of donor financing (Birdsall et al., 2003; Ndikumana, 2004).

The foregoing suggests that debt-for-nature swaps which seem generous at first sight may only lead to minor hard currency gains for the recipient country. Indeed, debt relief from the first generation of debt swap initiatives, in which debt-for-nature swaps occupied an important role, was largely fictitious for the reasons cited above (see Krugman, 1988; Bulow and Rogoff, 1991).

What happens at the country level is, however, only part of the story. One also needs to consider the government budget. Debt-for-nature swaps are often thought of as generating additional ‘fiscal space’ (Heller, 2005) in the recipient country’s budget, which that country can spend without putting the stability of its fiscal and macro-economic position at risk. Again, there are two good reasons why this does not necessarily occur, even if the transfer of international purchasing power at the country level is considerable.

First, genuine fiscal space is only created when there is a positive difference between the debt service payments forgiven under the debt swap and the counterpart payments that replace them. Without such a discount, no additional budgetary room is freed up to the benefit of the recipient government (this is not to say, however, that replacing debt service in hard currency with local currency counterpart payments does not provide some benefit if the debtor country is suffering from severe foreign exchanges shortages – see Deacon and Murphy, 1997). Second, there may be a conflict between the timing of annual savings from debt relief and the timing of domestic counterpart payments. In contrast to slowly maturing debt service payments, domestic counterpart payments are often frontloaded, becoming due within a shorter time period. A poorly structured debt-for-nature swap where annual domestic counterpart payments occur prior to the realisation of debt relief savings may therefore worsen the government’s fiscal position instead of improving it, depending on the NPV of both debt service payments and domestic counterpart payments. The case under review, the 2009 US–Indonesian debt-for-nature swap, does not perform consistently across the two levels of analysis presented here.

At the national level, there does appear to be a transfer of international purchasing power, although it is difficult to determine how much exactly. As debt savings are realised over an average period of 8 years, the actual gain will be lower than the nominal value of US\$ 30 million. On the other hand, since Indonesia is labelled as a non-HIPC country and has serviced all of

its external debt, the probability of non-full debt repayment appears relatively small. It is important to note, however, that Indonesia enjoyed Paris Club debt rescheduling on concessional Houston terms for lower middle-income countries in 2000 and again in 2002 (Paris Club, 2009b). This suggests some previous debt service problems which may have been prevented by rescheduling arrangements. In this respect, the possibility of default cannot be discarded entirely.<sup>8</sup> Taking these factors into consideration, the US Treasury values the debt savings for Indonesia at US\$ 22 million (see Section 2.2).

But US\$ 22 million can only be taken as the maximum amount of international purchasing power transferred from the US to Indonesia, assuming no ODA substitution effect as described above. It remains extremely hard to measure the effect of the US–Indonesian swap on other US donor support. Since the Federal Credit Reform Act was passed in 1990, the US Treasury is obliged to make appropriations to fund debt-for-nature transactions with official public debt, covering the estimated NPV costs of the interest and principal payments foregone. For example, under the TFCA, appropriations have added up to US\$ 117 million from 2000 to 2006 (Sheikh, 2008). While the costs of the credit restructuring to USAID are thus paid by the US Treasury rather than deducted directly from USAID’s programme budget, it does not necessarily follow that other US donor support to Indonesia (or third countries) remains unchanged. Indeed, the swap, made up of previous ODA loans, *does* increase US net ODA figures for the amount of the redirected interest payments, in accordance with the above-stated OECD–DAC rules (personal communication, Katie Berg, US Treasury Department). This leaves the US Treasury with some (albeit moderate) scope for substitution. The burden of proving full additionality falls on the donor institutions that claim it.

Finally, with respect to the budgetary effect of the swap, the picture that emerges looks more gloomy. No fiscal space has possibly been generated as the entire previous outstanding principal and interest sums are still due (now going into the Debt Service Account instead of to USAID) without any positive discount. Neither has there been any hard currency relief since payments remain US\$ denoted. On a more optimistic note, since the original debt service schedule has been adopted for the deposit of counterpart instalments into the Debt Service Account, there is no conflict between the timing of annual debt service savings and counterpart payments.

### 3.2. Increase in available resources for conservation

In addition to providing additional financial resources to the debtor country and/or government budget, it is often asserted that debt-for-nature swaps create further immediate benefits: not for the nation in question, but for global level public goods through an increase in resources for the conservation of forests (and thus carbon sequestration and reduced carbon emissions) and, to a lesser extent these days, biodiversity. Clearly, the embedded ‘earmarking’ of debt savings towards conservation would suggest this. The alleged increase in overall funds for conservation purposes, however, depends on additionality in both donor

<sup>8</sup> One potential (albeit imperfect) proxy for the probability of future government default is the price of credit default swaps (CDSs), instruments that investors can purchase to protect themselves (partially) against default risk on sovereign bonds. According to Thomson Reuters’s *Datastream* database, the eight-year CDS mid-market premium on senior Indonesian government bonds stood at around 320 basis points at the time of signing of the debt swap contract (end-June 2009). There has been a remarkable downward trend in CDS premiums when compared to end-2008/begin-2009 rates (when the global crisis was at its boiling point). Still, the data indicates that investors would need to pay an annual fee of 3.2% of the nominal value of government bonds to be insured for the next eight years (which is the average remaining maturity of the debt obligations underlying the swap).

support and government expenditure in this area. These are now discussed in turn.

First of all, and related to the third argument of Section 3.1, at the donor level, debt-for-nature swaps may well substitute for other interventions *aimed at conservation*, and as such they may not be additional. Second, and in a similar vein, debt-for-nature swaps do not automatically result in additional resources spent on conservation purposes *within* recipient countries (Hansen, 1989). When confronted with an externally imposed schedule of counterpart payments, the government may decide to cut back on its own efforts accordingly and reduce projected budget allocations for conservation spending. As such, swaps can merely substitute planned government expenditure on conservation, leaving open the possibility of using the savings elsewhere (and not necessarily to the benefit of the environment). A certain degree of so-called ‘fungibility’ is inherent to most aid instruments, but is often thought to be more pronounced in the case of specifically targeted support such as debt-for-nature swaps (Feyzioglu et al., 1998).

A significant degree of additionality in a double sense, with freed-up resources coming on top of other donor interventions as well as budget lines already reserved by the recipient for conservation goals, should be a necessary condition for the enactment of debt-for-nature swaps. So, how does our Indonesian case perform against these two additionality requirements?

Again, it has been difficult to gauge the degree of additionality of the US-Indonesian swap with regards to overall US donor support for conservation. To our knowledge, there is no systemised data available on the extent to which recent debt-for-nature swaps, including our case study, were subject to fungibility. Measuring debtor country spending on the environment against an historical baseline could possibly provide some insights here. The Forest Conservation Agreement between Indonesia, Conservation International and KEHATI states that grant proposals for conservation projects that target tropical forest sites whose species and ecosystems differ from those already managed under the national system of classified Protected Areas will be prioritised, hinting at some degree of additionality to Indonesia’s own conservation efforts (see NISP, 2006, for more information on this Protected Area system and its financing modalities). This ‘complementarity’ criterion is, however, only one out of five grounds for prioritisation and is not a necessary condition for project selection (Government of Indonesia, CI and KEHATI, 2009). Overall, it has been hard to assess donor additionality and government fungibility. Involved parties could well be able to provide further details.

#### 4. Indirect benefits

Unlike other aid interventions, debt-for-nature swaps may possibly have extra (more indirect) benefits through helping recipient countries to surmount a ‘debt overhang’ (see Krugman, 1988). High debt service payments in a highly indebted country precipitate, or are expected to lead to, punitive taxation against the most productive sectors of the economy, thus reducing investment, economic stability, lowering government revenues, and, finally, the ability to meet debt service payments (Cassimon et al., 2008; Occhiolini, 1990).<sup>9</sup> Debt relief interventions, such as debt-for-nature swaps, could help to break this vicious circle and restore a self-enforcing process of economic stability. This should, in turn, lead to greater domestic resource mobilisation in the future (for

example through more efficient taxing practices or increased private sector investment). Lowering debt burdens could also alter the distribution of aid flows in a positive manner. Indeed, over the years bilateral donors have tended to provide the most-indebted countries with new loans to allow them to stay current on their debt service payments, rather than using these funds for development purposes in less-indebted countries with often higher-quality policy choices (a practice that has been termed ‘defensive lending’ – see Birdsall et al., 2003). Debt relief reduces the need for such defensive lending and allows recipient countries to attract more aid as donors aim to increase overall aid effectiveness by channelling funds to countries where the poverty-reducing effects of aid are greater. Another indirect benefit of lower (hard currency) indebtedness in developing countries might be the reduced need for primary resource exports and therefore lower extraction and deforestation rates (see footnote 4 on the ‘double dividend hypothesis’).

However, debt relief must reach a critical mass and be delivered in a harmonised manner to stand a chance of freeing a country from its debt burden and the related economic deadlock. In contrast, debt-for-nature swaps have always been piecemeal interventions whose scale, in comparison with recipient countries’ overall debt stock, is deemed insufficient to make a meaningful impact (see Hamlin, 1989; Hansen, 1989; Patterson, 1990; Thapa, 1998), with the notable exception of the Polish EcoFund swap. That only a ‘discrete shock’ under the form of sizeable and comprehensive debt relief operations (Bulow and Rogoff, 1991) can address a situation of ‘debt overhang’ has led to the gradual demise of earlier debt swaps and paved the way for large-scale initiatives such as HIPC and the prior Brady initiative for middle-income countries.<sup>10</sup> For reasons of limited size, typical debt-for-nature swaps have no real potential of garnering more domestic resources in the future, improving aid allocation or bringing down deforestation rates in recipient countries.

So, how does our Indonesian case compare here? Despite being the largest debt-for-nature swap yet conducted under the TFCA, the US\$ 30 million nominal value (or US\$ 22 million NPV for that matter, see Section 3.1) pales into insignificance when compared with Indonesia’s total outstanding external debt of US\$ 149.7 billion in nominal value in 2008, equal to 29.3% of GDP and 96.7% of exports (IMF, 2009b). In other words, the swap only concerns 0.02% of Indonesian external debt (in nominal terms) and can not be expected to produce any (indirect) effects on Indonesia’s economic position. The total absence of hard currency relief further implies that deforestation rates could not have been affected purely by reduced demand for such hard currency. Moreover, Indonesia’s latest debt sustainability analysis (IMF, 2009b) suggests that the country has steadily improved both its external and total (external and domestic) public debt position over the last decade. In recent years, domestic debt has overtaken external debt as an attention point in Indonesia’s debt sustainability (World Bank, 2007), a trend observed in many other (middle-income) developing economies (Panizza, 2008).

#### 5. Alignment with government policy and systems

Granting debt relief is very similar to providing budget support, to the extent that both modalities free up additional budgetary resources for the recipient. As it is not necessarily the case that these extra funds will be put to good development use, donors have

<sup>9</sup> This is not to say that the ‘debt overhang’ hypothesis is not contentious. For example, Chauvin and Kraay (2005) dispute that the hypothesis holds for low-income countries. On the other hand, there is some evidence that middle-income countries do suffer such effects from excessive debt burdens (see Patillo et al., 2004). For the specific case of Indonesia, Cholifihani (2008) suggests that debt overhang is a long-term rather than short-term problem.

<sup>10</sup> The Brady debt reduction deals between 1989 and 1995 helped mostly Latin American countries swap syndicated debt held by private creditors for bonds with lower nominal value and/or reduced interest rates. These transactions typically involved several hundreds of millions of US\$ per country and have been said to have deterred debt overhang, at least to some extent (Arslanalp and Henry, 2005).

tended to curtail recipient countries' choice by controlling to a certain degree the ways in which the resources will be spent. Just as conditionality on 'new' concessional lending has shifted from policies (such as stipulating specific public sector reforms) towards supporting processes (such as the completion of a Poverty Reduction Strategy Paper or PRSP), the conditions attached to debt relief have evolved.

The previous approach was to give binding instructions on the allocation of funds, referred to as 'earmarking' in donor jargon. Different types of 'earmarking' exist (see IMF and IDA, 2001) and donor practice has changed through time. For example, many donors now seek to influence recipient government behaviour through policy dialogue on fiscal prudence, good governance and respect for human rights (see Mold, 2009).

Unsurprisingly, debt swaps implemented during the 1980s and 1990s, including debt-for-nature swaps, often practiced 'micro-earmarking', with donors attempting to keep track of the use of freed-up resources. To accomplish this, counterpart payments were established outside recipient countries' regular budgets jointly managed by donor, debtor and, in some cases, an NGO broker. Donors also imposed mechanisms for implementation, and monitoring and evaluation, which circumvented the recipient's established system (see Roemer, 1989).

Whilst micro-earmarking allowed donors to keep an eye on how debt relief was utilised (thus increasing accountability to constituencies at home), such surveillance increases the chances of the displacement of domestic resources to other budget priorities (in other words, fungibility). Moreover, the creation of parallel systems suffers from high transaction costs, prevents long-term capacity building, and reduces the sense of national ownership (and hence, perhaps, the longevity of such practices). Donors now claim to leave the allocation of funds, planning, budgeting, implementation of projects and programmes, and monitoring and evaluation processes in the hands of the recipient government. At the same time, they try to use their influence to gradually improve public sector functioning and, along with other stakeholders, engage government in dialogue on key national development issues (see Molenaers and Renard, 2009). Indeed, debt relief practice has been at the forefront of this evolution in donor/government relations, as evidenced by the use of Poverty Reduction Strategies in the enhanced HIPC Initiative (since 1999, the preparation of a PRSP is a precondition to qualify for debt relief under the Enhanced HIPC Initiative and gain access to new concessional IMF/World bank loans – see IMF, 2009c). As such, most debt relief practice has evolved to what one can denote as 'debt-to-PRSP swaps' (Cassimon and Vaessen, 2007, p. 24).

In recent years, this new aid delivery paradigm has been further elaborated, resulting in the 2005 Paris Declaration on Aid Effectiveness and the 2008 Accra Agenda for Action. In Paris and Accra, bilateral and multilateral donors subscribed, *inter alia*, to the concepts of 'policy alignment' and 'system alignment' (see OECD-DAC, 2005, 2008). The former refers to focusing donor support on partner countries' national development strategies, whereas the latter encourages the use of countries' own institutions and public systems for financial management, implementation, and monitoring and evaluation (where these are deemed effective, accountable and transparent). But to what extent do debt-for-nature swaps adhere to the principles of 'policy alignment' and 'system alignment'?

### 5.1. Policy alignment

On policy alignment, there are two key questions: first, ownership and control of conservation measures; and second, coherence with the environmental (and developmental) strategy of the country.

The strong involvement of international NGOs in the first generation of (primarily private) swaps raises questions about the recipient government control in such initiatives. Although typical debt-for-nature contracts required NGO projects to be consistent with government policies, host government involvement was generally limited to veto rights on the projects proposed (see Deacon and Murphy, 1997). Often there was no room for governments to actively define programmes and/or projects according to their own national development or sectoral priorities. Unsurprisingly, within Latin American countries such schemes were criticised as being forms of 'eco-imperialism' or 'eco-colonialism' (see Greener, 1991; Gugler, 1997). Swaps involving public debt have also suffered from a lack of debtor government control on environmental measures (see Jha and Schatan, 2001).

The most influential body in the US-Indonesian debt swap procedure is the oversight committee. This is responsible for, among other tasks, the establishment of a strategic plan with key conservation objectives, the final approval of eligible grant recipients and their proposals, the supervision of all payment transfers between the different accounts, and the annual evaluation under the TFCA. Clearly, the composition of the oversight committee is of the utmost importance. We find that only one Indonesian government official can be a permanent voting member of this decision-making body. The other three permanent members are designees of the US government, Conservation International and KEHATI. Three additional oversight committee members are nominated by designated environmental NGOs from, or active in, Indonesia (Government of Indonesia, CI and KEHATI, 2009). In other words, control of the debt swap conservation measures is largely taken out of the hands of the Indonesian government and transferred to non-governmental (and sometimes non-Indonesian) actors. Such a structure could raise questions regarding national ownership and could endanger the longevity of these measures.

We now turn to coherence with the environmental (and developmental) strategy of the country. We focus firstly on a recent environmental strategy document from Indonesia – the National Action Plan Addressing Climate Change. In this document, Indonesia's Ministry of Environment sets out mitigation and adaptation strategies in response to climate change and calls upon bilateral and multilateral partnerships to tackle the environmental problems faced. Deforestation, especially in Sumatra, is given considerable attention. Moreover, within the mitigation and adaptation strategies outlined, the protection and management of forest ecosystems and prevention of illegal logging and reforestation are recurrent themes. Debt swaps are one of the non-conventional financing instruments deemed desirable here (Government of Indonesia, 2007). Therefore, there seems to be a reasonable fit between the aims of this strategy and the activities to be funded under the debt-for-nature swap agreement (see USAID, 2009a; Government of Indonesia, CI and KEHATI, 2009, respectively, for detailed lists of eligible activities).

More importantly, Indonesia has made noticeable efforts to mainstream broader environmental matters into its development agenda, in contrast to many developing and middle-income countries (for example, many national development plans, such as Poverty Reduction Strategy Papers and equivalent National Development Strategies, ignore climate change and wider environmental concerns – see Prowse et al., 2009). Recognising the interrelationship between climate policy, economic growth and poverty reduction, Indonesia's national planning agency or *Badan Perencanaan dan Pembangunan Nasional* (BAPPENAS) has produced the National Development Planning Response to Climate Change, or 'Yellow Book', which explicitly attempts to integrate the above-mentioned National Action Plan into the 2010–2014 National Mid-Term Development Plan (see Tedjakusuma, 2009; Indrawati,

2008). This 'Yellow Book' places climate change mitigation, and thus by extension the conservation of tropical forests, at the heart of Indonesia's overall national development strategy. Again, debt swaps feature prominently on BAPPENAS's priority list of climate finance mechanisms (see Triastuti, 2008; Indrawati, 2008).

Further evidence of the inclusion of climate change within Indonesia's development planning processes comes from the OECD's Aid Architecture and Financing Unit (see OECD, 2009). This highlights how Indonesia is a leading example of policy integration. For example, and in a similar manner to Bangladesh, the country has created a Climate Change Trust Fund to allow global public resources to be delivered 'horizontally' to relevant Ministries. Whilst the Trust Fund demonstrates how the debt swap is aligned with national policy, it also illustrates how it is not aligned with national systems – the issue we turn to now – as the swap is entirely outside this funding basket. Nevertheless, there appears to be ample *policy* coherence between Indonesia's environmental and developmental strategies and the recent debt swap.<sup>11</sup>

## 5.2. System alignment

System alignment, or in other words working with the recipient country's systems and procedures to the maximum extent possible, is crucial for long-term capacity building and strengthening of public sector agencies active in environmental affairs. Previous studies on debt-for-nature swaps have paid little attention to this issue. However, as international NGOs have brokered a number of deals, it is likely that parallel budget, implementation, and monitoring and evaluation systems have been utilised (not least as an international NGO may require a degree of oversight not possible within government procedures). As a result, opportunities to make government agencies more effective and develop the experience and skills of their personnel have been missed (Patterson, 1990). For example, Gugler (1997) indicates that, in many cases, new autonomous environmental funds or foundations have been established in parallel to existing structures.

Our Indonesian case is no exception to this. The ring-fencing arrangements made for the use of the debt swap proceeds, namely the Debt Service and FCA Grants Account, largely bypass the Indonesian government's institutions and public systems. In Paris Declaration terms, a so-called Parallel Project Implementation Unit (PIU) was created (OECD-DAC, 2005), resulting in a duplication of costs. Indeed, extra management expenses incurred by the administrator need to be approved by the oversight committee and are paid from the Debt Service Account, thereby diminishing the sum available for project grants.

To be eligible for grants under the debt-for-nature swap deal, candidate organisations need to be operating and/or established in Indonesia and cannot be affiliated with the administrator, depository, Indonesian government, Conservation International, KEHATI or a designated member institution. Once selected, grant recipients are obliged, at their own expense, to keep accurate accounts and present complete annual financial statements in accordance with a set of agreed upon principles and standards. Moreover, a detailed narrative report on progress towards the goals set forth in the original grant proposal and a certification by an independent auditor need to be submitted (Government of Indonesia, CI and KEHATI, 2009). While the focus on local conservation actors can be considered positive, the extensive

reporting requirements may arguably deter those (low capacity) organisations that would benefit most from being involved in the implementation of projects financed by the swap. Overall, the project- and proposal-based funding structure is likely to impart extra transaction costs which could have been avoided if the swap had been integrated into existing (government) conservation programmes.

## 6. Concluding remarks

With climate change an ever more important item on the international agenda, the importance of forests in removing and storing carbon dioxide from the atmosphere is only set to increase. Schemes to reduce emissions from deforestation (such as REDD-plus) and support forest conservation efforts will continue to be at the forefront of climate policy debates. However, the financing of such schemes remains undecided. The search for novel financing mechanisms appears to have renewed interest in debt-for-nature swaps. The re-emergence of such swaps poses serious questions about the extent to which current swap practice has incorporated the insights of earlier critiques. As has been demonstrated in this article, the 2009 US-Indonesian debt-for-nature deal, which we consider a litmus test for current swap practice, performs unevenly across five typical shortcomings.

First, the debt-for-nature swap does constitute an increase in available resources at the Indonesian country level, albeit certainly not for the full 30 million nominal value of debt relief. We have referred to the US Treasury's own estimated US\$ 22 million as the upper bound here and, furthermore, take a cautious stand as existing OECD-DAC accounting rules leave the door to substitution open. On a budgetary level, on the other hand, the debt swap does not create any fiscal space. The government of Indonesia is still liable for the entire previous outstanding principle and interest sums and does not enjoy any positive discount. Luckily, fiscal space is not diminished as the original debt service schedule is adopted (with timing and instalments staying the same as before).

Second, from the documents and data we have been able to assemble it remains unclear whether the freed-up resources come on top of other donor support and reserved domestic budget lines for conservation goals. It is difficult for outside researchers to assess 'double additionality' and involved parties may be able to provide further details on this issue. Third, relative to Indonesia's total debt burden, a US\$ 30 million (or better, US\$ 22 million) debt swap is too insignificant to create any indirect (positive) economic effect. One cannot expect the debt scenario to benefit from this piecemeal transaction, especially as domestic debt is now outpacing external debt in Indonesia.

The swap's performance with respect to the new aid delivery paradigm's emphasis on alignment with government policy and systems is also mixed. Fourth, policy coherence between the aims of the debt-for-nature swap and Indonesia's own environmental and developmental priorities seems to have been respected. But, fifth and finally, the two accounts and the decision-making structures handling the swap have been established in parallel to existing (government) structures, and separate (strict) reporting requirements have been put in place. Such practice undercuts ownership and sustainability and augments transaction costs.

While it is possible (in theory) to make debt-for-nature swaps more efficient and effective instruments by engineering them in such a way that they adhere to the basic principles of delivering additional resources to the debtor country, increasing fiscal space, double additionality and policy and system alignment, scaling up these instruments remains a major problem. Large-scale debt relief schemes similar to HIPC/MDRI but earmarked to conservation/climate purposes are not feasible. Nearly all bilateral and multilateral debt owed by HIPC countries is due to be cancelled

<sup>11</sup> This is not to say, however, that coherence at the national policy level has percolated through to regional and local government decision making. For example, ample concerns persist regarding the continued use of forest resources and land by the paper and palm oil industries.

when these countries reach their completion point under the HIPC process. Only those bilateral and multilateral debt titles that rest with a limited number of non-HIPC low-income and lower middle-income countries (such as Indonesia) seem realistically qualified for new debt-for-nature initiatives. Taking this into account and examining the debt structure of 58 developing countries particularly vulnerable to the effects of climate change, *Development Finance International* (2009) finds that at most US\$ 30 billion of bilateral debt owed to Paris Club creditors could be eligible. Eligible multilateral debt of non-HIPCs is in principle more substantial (an estimated US\$ 60 billion) but its conversion may suffer from the recent 'debt relief fatigue' that has followed grand multilateral efforts such as HIPC and MDRI.

Moreover, even if political will for further large-scale debt relief can be mobilised, the debt titles mentioned are not immediately accessible for programmes with conservation/climate objectives. Vertical funds such as the Global Fund (through its Debt2Health programme) in the health sector and an envisaged EduFund or Debt4Education initiative in the education sector (see Filmus and Serrani, 2009) are expected to focus on the same claims. Many actors seem to be fishing in the same pond for their own purposes. A second wave of debt-for-nature swaps, as currently formulated, thus appears to be neither practical nor desirable.

This is not to say that the concept behind debt-for-nature swaps should be abandoned altogether. Indeed, as the climate crisis is beginning to unfold, there is a need to debate broader initiatives that link debt service payments to climate change mitigation and adaptation.<sup>12</sup> For example, debt-for-efficiency swaps are seen as a possible source of finance for non-forest-related mitigation measures included within the Clean Development Mechanism (with at least one CDM project utilising this form of finance). Moreover, a further promising approach might be to mainstream climate concerns into the existing HIPC/MDRI framework, raising policymakers' awareness and aiding developing countries to take climate mitigation and adaptation issues fully into account when formulating national development strategies (on the latter, see Prowse et al., 2009). Indonesia arguably stands as an exemplar in this respect.

## Acknowledgements

Helpful comments from Robrecht Renard (IOB, University of Antwerp) and Katie Berg (Environment and Energy Office, US Treasury Department) are gratefully acknowledged. Needless to say, the opinions expressed in this paper, as well as the responsibility for any remaining errors, remain solely with the authors.

## References

- Angelsen, A., Brown, S., Loisel, C., Peskett, L., Streck, L., Zarin, D., 2009. Reducing Emissions from Deforestation and Forest Degradation (REDD): an options assessment report. Prepared for the Government of Norway. Available at [http://www.redd-oar.org/links/REDD-OAR\\_en.pdf](http://www.redd-oar.org/links/REDD-OAR_en.pdf).
- Arslanalp, E., Henry, P.B., 2005. Is debt relief efficient? *Journal of Finance* 60 (2), 1017–1051.
- Babiker, M.H., Jacoby, H.D., Reilly, J.M., Reiner, D.M., 2002. The evolution of a climate regime: Kyoto to Marrakech and beyond. *Environmental Science & Policy* 5 (3), 195–206.
- Birdsall, N., Claessens, S., Diwan, I., 2003. Policy selectivity foregone: Debt and donor behaviour in Africa. *World Bank Economic Review* 17 (3), 409–435.
- Bovenberg, A.L., 1999. Green tax reforms and the double dividend: an updated reader's guide. *International Tax and Public Finance* 6 (3), 421–443.
- Buckley, R., 2009. Debt-for-development exchanges: the origins of a financial technique. *Law and Development Review* 2 (1), 24–49.
- Bulow, J., Rogoff, K., 1991. Sovereign repurchases: no cure for overhang. *Quarterly Journal of Economics* 106 (4), 1219–1235.
- Cassimon, D., Vaessen, J., 2007. Theory, practice and potential of debt for development swaps in the Asian and Pacific region. *Economic Systems* 31 (1), 12–34.
- Cassimon, D., Essers, D., Renard, R., 2009. An assessment of debt-for-education swaps: case studies on swap initiatives between Germany and Indonesia and between Spain and El Salvador. Working Paper 2009.03. IOB, Antwerp.
- Cassimon, D., Renard, R., Verbeke, K., 2008. Assessing debt-to-health swaps: a case study on the Global Fund Debt2Health Conversion Scheme. *Tropical Medicine and International Health* 13 (9), 1188–1195.
- Chauvin, N.D., Kraay, A., 2005. What has 100 billion dollars worth of debt relief done for low-income countries? Working Paper. World Bank, Washington, DC.
- Cholifhani, M., 2008. A cointegration analysis of public debt service and GDP in Indonesia. *Journal of Management and Social Sciences* 4 (2), 68–81.
- Deacon, R.T., Murphy, P., 1997. The structure of an environmental transaction: the debt-for-nature swap. *Land Economics* 73 (1), 1–24.
- Dessai, S., Schipper, E.L., 2003. The Marrakech accords to the Kyoto protocol: analysis and future prospects. *Global Environmental Change* 13 (2), 149–153.
- Development Finance International, 2009. Debt relief to combat climate change. Paper prepared for the Joint Ministerial Forum on Debt Sustainability. Commonwealth Secretariat, London.
- Didia, D., 2001. Debt-for-nature swaps, market imperfections and policy failures as determinants of sustainable development and environmental quality. *Journal of Economic Issues* 35 (2), 477–486.
- Dogsé, P., von Droste, B., 1990. Debt-for-nature exchanges and biosphere reserves: experiences and potential. MAB Digest No. 6. UNESCO, Paris.
- Ebeling, J., Yasue, M., 2008. Generating carbon finance through avoided deforestation and its potential to create climatic, conservation and human development benefits. *Philosophical Transactions of the Royal Society for Biological Sciences* 363, 1917–1924.
- Feyzioglu, T., Swaroop, V., Zhu, M., 1998. A panel data analysis of the fungibility of foreign aid. *World Bank Economic Review* 12 (1), 29–58.
- Filmus, D., Serrani, E., 2009. Desarrollo, educación y financiamiento: análisis de los canjes de deuda por inversión social como instrumento de financiamiento extra-presupuestario de la educación. Fundación SES/OEI, Buenos Aires/Madrid.
- Fogel, C., 2005. Biotic carbon sequestration and the Kyoto protocol: the construction of global knowledge by the Intergovernmental Panel on Climate Change. *International Environmental Agreements* 5 (2), 191–210.
- Global Fund to Fight Aids, Tuberculosis and Malaria, 2007. Debt2Health. The debt conversion initiative of the Global Fund. Global Fund to Fight Aids, Tuberculosis and Malaria, Geneva.
- Goulder, L.H., 1995. Environmental taxation and the double dividend: a reader's guide. *International Tax and Public Finance* 2 (2), 157–183.
- Government of Indonesia, 2007. National Action Plan Addressing Climate Change. State Ministry of Environment, Jakarta.
- Government of Indonesia, CI, KEHATI, 2009. Forest Conservation Agreement among the Government of the Republic of Indonesia, Conservation International and Yayasan Keaneekaragaman Hayati Indonesia, 30 June.
- Greener, L.P., 1991. Debt-for-nature swaps in Latin American countries: the enforcement dilemma. *Connecticut Journal of International Law* 7, 123–180.
- Gugler, A., 1997. The win-win-win-scenario: conversion of debt. In: Paper presented at the ECDPM Anniversary Seminar on Alternatives to Cooperation: Sustainable Finance as an End to Development. Maastricht, 12–13 May. Available at [http://www.ecdpm.org/Web\\_ECDPM/Web/Content/FileStruc.nsf/index.htm?ReadForm&BA3C9CE777ABEA8DC1256C8B0053CD51](http://www.ecdpm.org/Web_ECDPM/Web/Content/FileStruc.nsf/index.htm?ReadForm&BA3C9CE777ABEA8DC1256C8B0053CD51).
- Hamlin, T.B., 1989. Debt-for-nature swaps: a new strategy for protecting environmental interests in developing nations. *Ecology Law Quarterly* 16 (4), 1065–1088.
- Hansen, S., 1989. Debt for nature swaps: overview and discussion of key issues. *Ecological Economics* 1 (1), 77–93.
- Heller, P., 2005. Fiscal space: what it is and how to get it. *Finance and Development* 42 (2), 32–33.
- Huff, P., 2009. US enters debt-for-nature swap with Indonesia. Voice of America News, 29 July. Available at <http://www.voanews.com/english/archive/2009-07/2009-07-29-voa44.cfm?CFID=296512455&CFTOKEN=80958645&jsessionid=0030a040719b0cf1e7d83c7e2b2c34276b70>.
- IMF, 2009a. Debt relief under the Heavily Indebted Poor Country Initiative. Factsheet June 2009. Available at <https://www.imf.org/external/np/exr/facts/hipc.htm>.
- IMF, 2009b. Indonesia: 2009 Article IV consultation. IMF Country Report No. 09/230. IMF, Washington, DC.
- IMF, 2009c. Poverty Reduction Strategy Papers. Factsheet August 2009. Available at <http://www.imf.org/external/np/exr/facts/pdf/prsp.pdf>.
- IMF, IDA, 2001. Tracking of Poverty-reducing Public Spending in Heavily Indebted Poor Countries. IMF/World Bank, Washington, DC.
- Indrawati, S.M., 2008. Mainstreaming of climate change into national development agenda. Presentation. Available at <http://www.cic.nyu.edu/internationalsecurity/docs/mulyanipresentation.ppt>.

<sup>12</sup> One line of argument that has received increasing attention is the notion of 'climate debt' or 'carbon debt', owed by developed to developing countries and accumulated through decades of excessive emissions by the former. As of 7 December 2009, no less than 254 civil society organisations had endorsed a joint statement urging the repayment of these climate debts (see *Third World Network*, 2009). Since 'climate debt' involves a kind of swap that fundamentally differs from that under scrutiny here (having its own particularities), it is not considered further in this article. We refer readers to the analysis of Jones and Edwards (2009) as one possible entry point on this topic.

- IPCC, 2007. Summary for policymakers. In: Parry, M.L., Canziani, O.F., Palutikof, J.P., van der Linden, P.J., Hanson, C.E. (Eds.), *Climate Change 2007: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, pp. 7–21.
- Jha, R., Schatan, C., 2001. Debt for nature: a swap whose time has gone? Working Paper. ECLAC, Santiago de Chile.
- Jones, T., Edwards, S., 2009. The Climate Debt Crisis: Why Paying Our Dues is Essential for Tackling Climate Change. World Development Movement and Jubilee Debt Campaign, London.
- Kaiser, J., Lambert, A., 1996. Debt Swaps for Sustainable Development: A Practical Guide for NGOs. IUCN, Gland.
- Karsenty, A., 2008. The architecture of proposed REDD schemes after Bali: facing critical choices. *International Forestry Review* 10 (3), 443–457.
- Kahn, J.R., McDonald, J.A., 1995. Third-world debt and tropical deforestation. *Ecological Economics* 12 (2), 107–123.
- Krugman, P., 1988. Financing versus forgiving a debt overhang. *Journal of Development Economics* 29 (3), 253–268.
- Lovejoy, T.E., 1984. Aid debtor nations' ecology. *New York Times*, 4 October, A31.
- McMullen, C.P., Jabbour, J., 2009. *Climate Change Science Compendium*. UNEP/EarthPrint, Nairobi.
- Mold, A., 2009. Policy ownership and aid conditionality in the light of the financial crisis: a critical review. Development Centre Studies. OECD, Paris.
- Molenaers, N., Renard, R., 2009. The trouble with participation: assessing the new aid paradigm. In: Kremer, M., van Lieshout, P., Went, R. (Eds.), *Doing Good or Doing Better? Development Policies in a Globalising World*. Amsterdam University Press, Amsterdam, pp. 255–271.
- Moye, M., 2001. Overview of debt conversion. Publication No. 4. Debt Relief International, London.
- Moye, M., 2003. Bilateral debt-for-environment swaps by creditor. WWF Center for Conservation Finance. Available at <http://www.cbd.int/doc/external/wwf/wwf-bilateral-swaps-en.pdf>.
- Muller, A., 2009. Benefits of organic agriculture as a climate change adaptation and mitigation strategy for developing countries. EFD Discussion Paper 09-09. Environment for Development Initiative and Resources for the Future, Washington, DC.
- Ndikumana, L., 2004. Additionality of debt relief and debt forgiveness, and implications for future volumes of official assistance. *International Review of Economics and Finance* 13 (3), 325–340.
- Neeff, T., Ascui, F., 2009. Lessons from carbon markets for designing an effective REDD architecture. *Climate Policy* 9 (3), 306–315.
- NISP, 2006. An effective Protected Area system. How much will it cost Indonesia? Available at <http://bk.menlh.go.id/files/FundingPA.pdf?PHPSESSID=5b29b6b56a21738de09aab4f1bbc7503>.
- Occhiolini, M., 1990. Debt-for-nature swaps. PRE Working Paper. World Bank, Washington, DC.
- OECD, 1998. *Swapping Debt for the Environment: The Polish EcoFund*. OECD, Paris.
- OECD, 2009. Development perspectives for a post-Copenhagen climate financing architecture. Consultation Draft. 14th October. Aid Architecture and Financing Unit, Development Co-operation Directorate, OECD, Paris.
- OECD-DAC, 2005. Paris Declaration on Aid Effectiveness. High Level Forum, Paris.
- OECD-DAC, 2008. Accra Agenda for Action. High Level Forum, Accra.
- OEI, 2006. What are debt for education swaps? Working Paper prepared for the Working Group on Debt Swaps for Education. OEI, Buenos Aires.
- Panizza, U., 2008. Domestic and external public debt in developing countries. Discussion Paper No. 188. UNCTAD, Geneva.
- Paris Club, 2009a. Debt swap provision. Available at <http://www.clubdeparis.org/sections/types-traitement/reechelonnement/clause-conversions>.
- Paris Club, 2009b. List of the countries that have benefited from Houston. Available at [http://www.clubdeparis.org/termscountry\\_view?t=HO](http://www.clubdeparis.org/termscountry_view?t=HO).
- Patillo, C., Poirson, H., Ricci, L., 2004. What are the channels through which external debt affects growth? Working Paper No. 04/15. IMF, Washington, DC.
- Patterson, A., 1990. Debt-for-nature swaps and the need for alternatives. *Environment* 32 (10), 5–32.
- Paulsson, E., 2009. A review of the CDM literature: from fine-tuning to critical scrutiny? *International Environmental Agreements* 9 (1), 63–80.
- Porrrra, M.E., Corbera, E., Brown, K., 2007. Reducing greenhouse gas emissions from deforestation in developing countries: revisiting the assumptions. Working Paper No. 115. Tyndall Centre for Climate Change Research, Norwich.
- Prowse, M., Grist, N., Sourang, C., 2009. Closing the gap between climate adaptation and poverty reduction frameworks. Project Briefing No. 21. ODI, London.
- Roemer, M., 1989. The macroeconomics of counterpart funds revisited. *World Development* 17 (6), 795–807.
- Rudel, T.K., 2001. Sequestering carbon in tropical forests: experiments, policy implications, and climate change. *Society and Natural Resources* 14 (6), 525–531.
- Ruiz, M., 2007. Debt Swaps for Development: Creative Solution or Smoke Screen? EUROAD, Brussels.
- Sheikh, P.A., 2008. Debt-for-nature initiatives and the Tropical Forest Conservation Act: Status and implementation. CRS Report for Congress. Available at <https://secure.ljfs.org/leak/crs/RL31286.pdf>.
- Tedjakusuma, E.E., 2009. National development policy to address climate change. In: Presentation at the National Climate Change Training. Bogor, 30 March. Available at [http://www.indonesia-apncapable.com/download/2008-2009/national%20climate/EDL\\_TEJAKUSUMA\\_BAPPENAS.pdf](http://www.indonesia-apncapable.com/download/2008-2009/national%20climate/EDL_TEJAKUSUMA_BAPPENAS.pdf).
- Thapa, B., 1998. Debt-for-nature swaps: an overview. *International Journal of Sustainable Development and World Ecology* 5, 249–262.
- Third World Network, 2009. Repay the climate debt: a just and effective outcome for Copenhagen. Available at [http://www.twinside.org.sg/announcement/sign-on.letter\\_climate.dept/climate%20debt\\_EN.doc](http://www.twinside.org.sg/announcement/sign-on.letter_climate.dept/climate%20debt_EN.doc).
- Triastuti, U.H., 2008. Mainstreaming climate change into national development planning. In: Presentation at the Kick-off Meeting of the Asia-Pacific Gateway to Climate Change and Development. Bangkok, 23 April. Available at [http://www.climateanddevelopment.org/pdf/kickoff\\_2-1-4\\_BAPPENAS.pdf](http://www.climateanddevelopment.org/pdf/kickoff_2-1-4_BAPPENAS.pdf).
- UNFCCC, 2009a. Copenhagen accord. In: Conference of the Parties Fifteenth session, Copenhagen, 7–18 December.
- UNFCCC, 2009b. Draft decision -/CP.15 Methodological guidance for activities relating to reducing emissions from deforestation and forest degradation and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks in developing countries. In: Conference of the Parties Fifteenth session, Copenhagen, 7–18 December.
- UNFCCC, 2009c. Ad hoc Working Group on Long-term Cooperative Action. Notes on sources for FCCC/AWG/LCA/2009/INF.1 Part II. UNFCCC, p. 157.
- USAID, 2009a. US-Indonesia debt-for-nature deal to save forests in Sumatra. Press Release. Available at <http://indonesia.usaid.gov/en/Article.372.aspx>.
- USAID, 2009b. Tropical Forest Conservation Act (TFCA) program descriptions. Available at [http://www.usaid.gov/our\\_work/environment/forestry/tfca\\_descs.html](http://www.usaid.gov/our_work/environment/forestry/tfca_descs.html).
- US Government and Government of Indonesia, 2009. Agreement between the Government of the Republic of Indonesia and the Government of the United States of America regarding a debt-for-nature swap with respect to certain debt owed by the Government of the Republic of Indonesia to the Government of the United States of America, 30 June. Available at <http://www.state.gov/documents/organization/130456.pdf>.
- Viltz, E., 2008. Monumental debt-for-nature-swap provides \$ 20 million to protect biodiversity in Madagascar, WWF announces. WWF Press Release. Available at <http://www.worldwildlife.org/who/media/press/2008/WWFPresitem9271.html>.
- World Bank, 2007. Spending for development: making the most of Indonesia's new opportunities. In: *Indonesia Public Expenditure Review*, World Bank, Washington, DC.
- World Bank-IEG, 2006. Debt Relief for the Poorest: An Evaluation Update of the HIPC Initiative. World Bank, Washington, DC.