

Questioning rent for development swaps: new market-based instruments for biodiversity acquisition and the land-use issue in tropical countries

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SUMMARY

Amongst the market-based instruments designed to protect biodiversity, some directly target acquisition of land-use rights to turn natural forests into conservation areas and protect them against destructive activities such as logging or agricultural conversion. Whereas some instruments, such as Transferable Development Rights and Conservation Easements, require the privatisation of land, conservation concessions are based on financial compensations to the state, logging companies and local populations against their rights to 'develop' these lands. This principle of 'rent for development swaps' embodied in three instruments designed for buying back land use rights must be discussed according to efficiency and equity criteria. Four issues are critical in this respect: the property rights structure, prevailing local representations, the size of the area concerned and existing institutional arrangements regarding forest resource access cost. This paper suggests that the opportunity cost of setting up large scale conservation concessions is much higher than generally suggested, especially in countries which have moved away from former discretionary allocation practices and have reformed their forest sector regulation framework according to prominent donors' recommendations. It concludes that using the so-called 'lower cost of conservation' in poorest countries, which makes large scale operation affordable for conservation investors, also raises ethical issues, since this means compensating stakeholders at their current poverty level.

Keywords: conservation concessions, conservation incentives agreements, payments for environmental services, transferable development rights, conservation easements

Remettre en question la location pour l'échange au sein du développement: nouveaux instruments basés sur le marché pour acquérir la biodiversité et pour l'utilisation de la terre dans les pays tropicaux

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Parmi les instruments basés sur le marché et créés pour protéger la biodiversité, certains visent directement l'acquisition des droits d'usage de la terre pour transformer les forêts naturelles en zones de conservation, et les protéger contre les activités destructrices, comme la coupe du bois ou la conversion à l'agriculture. Alors que certains instruments, comme les droits transférables du développement et les facilitations pour la conservation, requièrent la privatisation de la terre; les concessions de conservation sont basées sur des compensations financières versées à l'état, aux compagnies d'exploitation du bois et aux populations locales pour compenser leurs droits de "développer" ces terres. Ce principe de "location pour des échanges au sein du développement" compris dans trois instruments créés pour racheter les droits d'utilisation de la terre doit être examiné suivant des critères d'efficacité et d'équité. Quatre questions sont critiques à cet égard: la structure des droits à la propriété, les représentations locales dominantes, la dimension de la zone concernée et les arrangements institutionnels existants quant au coût de l'accès aux ressources forestières. Cet article suggère que le coût de l'opportunité de mettre en oeuvre des concessions de conservation à grande échelle est bien plus élevé qu'il ne l'a généralement été suggéré, particulièrement dans les pays qui sont allés de leurs pratiques d'allocations discrétionnaires d'autrefois à une réformation de cadre de régulation de leur secteur de foresterie, suivant les recommandations de donateurs importants. Il en conclut que l'utilisation du soit-disant coût bas de la conservation dans les pays les plus pauvres, rendant les opérations à grande échelle possibles pour les investisseurs de la conservation, fait également émerger des questions éthiques, puisque cela implique que la compensation aux parties prenantes est offerte à leur niveau actuel de pauvreté.

Intercambio alquiler-desarrollo: nuevos instrumentos basados en el mercado para la adquisición de biodiversidad y el problema del uso de la tierra en países tropicales

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Algunos de los instrumentos basados en el mercado que han sido diseñados para proteger la biodiversidad utilizan la adquisición

directa de derechos de uso de la tierra para convertir bosques naturales en áreas de conservación, y para protegerlos contra actividades destructivas, tales como la tala rasa y la conversión en terrenos para la agricultura. Otros instrumentos, como los Derechos Transferibles de Desarrollo y servidumbres de conservación (Conservation Easements), requieren la privatización de la tierra, pero las concesiones de conservación se basan en el pago de indemnizaciones al estado, a empresas madereras y a poblaciones locales para compensar su derecho de “desarrollar” estos terrenos. Este principio de “intercambio alquiler-desarrollo” debe ser considerado según criterios de eficiencia y equidad. Según estos criterios, hay cuatro principios fundamentales: la estructura de derechos de propiedad, la presencia de grupos con representación local importante, el tamaño del área en cuestión, y acuerdos institucionales existentes en cuanto al coste del acceso a los recursos forestales. Este artículo sugiere que el coste de oportunidad del establecimiento a gran escala de concesiones de conservación es mucho mayor que lo reconocido, sobre todo en países que se han alejado de las antiguas prácticas de asignación discrecional y que han reformado el marco reglamentario del sector forestal según las recomendaciones de los donantes más importantes. El estudio concluye que el uso del llamado “menor coste de conservación” en los países más pobres, que permite la rentabilidad de operaciones a gran escala para los inversionistas ecológicos, plantea también cuestiones éticas, ya que esta práctica implica el pago de indemnizaciones a los grupos interesados a su nivel actual de pobreza.

THE GROWING ROLE OF INTERNATIONAL NGOs IN DESIGNING MARKET-BASED INSTRUMENTS FOR CONSERVATION

One indication of globalization is perhaps the growing influence of major environmental conservation non-governmental organizations (NGOs) on public decision-making at the international level. For some time, large NGOs or organizations such as the World Wide Fund for Nature (WWF) and the World Conservation Union (IUCN) have been more than just marginal participants in an institutionalized international network of decision-makers dominated by United Nations organizations and financial institutions such as the World Bank (WB). They are players in their own right and institutions that can no longer be ignored in environmental matters. The annual total budget for the principal international conservation NGOs is estimated to have risen to US\$1 billion (Niesten and Rice 2004).

One of the main objectives of these NGOs is the global preservation of biodiversity, much of which is found in the vast expanses of tropical forest. The increase in protected areas comes mainly through government decisions in countries with highly biodiverse forests. These governments must decide whether to use the land for agriculture, timber production or conservation (where human activity is either very limited or strictly regulated). Such biodiverse forests are found in emerging nations (such as Brazil, Malaysia and Indonesia) and Least Developed Countries (LDCs), notably Congo Basin countries and Papua New Guinea. Many of these countries try to use their natural environment and resources – and especially forests – as a springboard for economic development, or at least as a means of financial survival.

Conservation has a cost which is generally, above all, an opportunity cost. In Southeast Asia, potential profit from timber mining in an easily accessed Indonesian forest (lowland dipterocarp forest), followed by its conversion to oil palm plantations, is estimated at US\$ 1 500 per hectare (in net present value) (Tomich, quoted in Douglas 2001). This is considerably higher than the modest profits which could be made from ecotourism in these dense forests.

Even in the case of sustainably managed production forests, the revenue to developers on the one hand and

the state on the other (through direct or indirect taxation of logging and wood transformation activities) is often greater than the revenue one could expect from foreseeable conservation activities (Bishop and Landell-Mills 2002). This is often the case despite the fact that Total Economic Value (TEV) framework assessments that include non-use values sometimes estimates overall forest ecosystem services to be higher than current revenues derived from timber activities (see Bishop 1999 on TEV). Timber activities themselves are the focus of the economic evaluations, based on market prices and used by most Governments in developing countries when having to arbitrate between different land-use patterns. In addition, a change in land-use toward conservation-oriented activities would entail distributive effects, with fewer taxes for the Government and, sometimes, less employment. Both facts combined lead to the issue of ‘ecological monetary compensation’. This can take several forms, such as debt-for-nature swaps, which require negotiation between debtors and creditors and are thus cumbersome to administer. International conservation NGOs have also considered mechanisms which do not necessarily require direct state involvement. These include hybrid regulatory instruments which can be used as contracts between private partners (or even between public and private partners) to increase biodiversity or reduce conservation costs (Landell-Mills and Porras 2001). They can take advantage of existing legislation, as in the case of tradable development rights, or of simple bilateral agreements between two partners, as is the case for voluntary conservation easements. In the case of conservation concessions, contracts can be made between the state and/or private forestry companies, but in the latter case, negotiations must be made with the government for financial compensation and for legal modifications to the concessions.

ECONOMIC INSTRUMENTS FOR FOREST CONSERVATION

Most of these instruments can be used in land use rights markets, as ownership of the land covered by natural habitats (the target of conservation initiatives) is not transferred in the transaction. These instruments include:

- conservation easements
- tradable development rights
- conservation concessions

Conservation easements

These are contracts in which the landowner retains possession of the land, but relinquishes the right to exercise certain specified rights to 'develop' (Gullison *et al.* 2001) at least part of the property. Generally, a conservation NGO acquires land-use rights from an owner in exchange for financial compensation. The latter corresponds in principle to the reduction in the property's commercial value due to loss of a portion of the owner's rights to use the land, including the revenue forgone when the forest is not logged (rights to benefit from the goods of the land). These contracts are fairly common in North America (Gullison *et al.* 2001, Douglas 2001) and NGOs are attempting to use them in tropical forest regions. However, this is problematic in countries where the forests are public or are located on communal property, and where individual private ownership of this type of land is the exception rather than the rule. According to FAO (2005), 84% of worldwide forest are public lands, and detailed data shows that 99% of African forests are under public ownership, as well as 94% in Asia, 86% in South America and 84% in Oceania (Siry *et al.* 2005). Even when public ownership is *de jure* rather than *de facto*, such as in many developing countries where local communities exercise customary tenure rights, such conservation easement schemes would therefore not be workable.

Tradable Development Rights (TDRs)

These rights have been used in the United States since the 1970s at a local county level. They often involve the right to construct housing on designated rural land. For each right acquired, the purchaser can add one more home than the number normally permitted in the zone, up to a maximum number. The sellers of the rights agree to easements. There are two schemes: a simple one, in which anyone can buy or sell development rights, and a 'dual' scheme, in which there are specific 'sending' and 'receiving' zones. 'Development' is not permitted in the 'sending zones' but landowners can sell their potential rights (which are non-utilizable in the sending zone) for a profit. The simple scheme works when the natural environment is more or less homogenous and the main objective is to preserve a minimum area of natural habitat (Douglas 2001). Brazil is the country that pioneered the tradeable development rights scheme in tropical and forest areas. Since the 1930s, landowners in rural areas of Brazil have been legally required to maintain at least 20% of their total forested land, a measure locally known as *reserva legal*. In the case of Legal Amazonia, this figure was

originally placed at 50% but was increased to 80% in the mid-1990s (Chomitz 2004).

Since forest conservation is legislated, administration of a tradable development rights market would be straightforward and would function similarly to the markets for emissions permits or fishing quotas. Landowners in rapidly expanding agricultural areas find the opportunity cost of this requirement extremely high (and as a matter of fact seldom observe the law). It is very costly for them to give up agricultural activity on 20% of their legal land (both in terms of opportunity cost for the owner and the cost of implementation and controls for the authorities) and the ecological benefits are questionable, as the forests remain highly degraded (Chomitz 2004). Strict application of the law on each property would be inefficient, both economically and ecologically, in regions which are already degraded. The implementation of a system of TDRs would allow owners for whom the preservation of 20% of their forest cover has a high opportunity cost to acquire development rights (expressed in hectares of deforested land) from owners for whom the opportunity cost is lower. In the state of Minas Gerais, the new state forest code has, since 2002, allowed such transactions within micro-basins and allowed certain forms of legal reserves within an entire watershed area (Chomitz *et al.* 2003). This system, which has been in place since 2000, has been discussed at the federal level with a view to a future forest code and has already been implemented in other Brazilian states (Douglas 2001).

In terms of economic efficiency, Chomitz *et al.* (2004) have demonstrated, with the aid of a spatial model, that an extension of the TDR system beyond catchment areas would significantly decrease the cost of conservation. TDR schemes allow exchanges of land use between highly degraded forests in climatic conditions favorable to agriculture, and forests in zones in which the market value of the land is lower, the remaining tree cover being larger and more diverse. In political economic terms, potential purchasers are the farmers in the richest agricultural regions (who thus have the highest opportunity cost), while potential vendors are landowners in less rich regions 'who have protected their forests'. In addition, Chomitz *et al.* (2004) indicate that routine authoritarian imposition of legal preservation requirements would have a negative effect on agricultural employees in wealthier rural regions, which would be politically unsustainable. An ecological safeguard might be the adoption of the principle of 'seller' and 'buyer' zones for rights, in order to guarantee that no fragile ecological zones are degraded by this system.

Conservation easements, just like TDRs, are necessarily linked to private individual or collective ownership of the land in forest zones, titled or not, especially inasmuch large land areas are concerned (see part 2). If the forest is formally public land, as is the case in most highly forested tropical countries¹ (Siry *et al.* 2005:556), reaching conservation easement agreements for small pieces of forests delimiting

¹ With the notable exception of Papua New Guinea and Pacific Island nations, where forest is owned by clan communities (Lynch and Talbot 1995; White and Martin 2002).

water catchments has proved to be feasible², but one might easily foresee the problems entailed by attempts to multiply such deals to cover large areas of hundreds of thousands hectares, which would lead to a *de facto* recognition of private ownership rights (individual or collective) on lands. Governments are likely to be very reluctant to such a 'rampant privatization', especially if forest lands are used by them as economic assets, through timber concessions allocations. This ownership issue has been duly noted by Niesten and Rice (2004), who discussed the possibility of a global TDRs scheme and state another limitation: 'A TDR scheme for global biodiversity conservation would require a global land use plan, recognized and endorsed by all participating governments'. In addition, the mechanism 'does not create incentives by channeling demand for biodiversity services' and its efficiency 'depends on demand for the right to develop areas, not on the demand for conserving them, and fails to confront the question of how to persuade governments in developing countries to forego rights to develop and consider the provision of biodiversity conservation services as an income-generating alternative'³.

Conservation concessions

Considering the perceived limitations of conservation easements and TDRs, Conservation International (CI) has proposed conservation incentive agreements (CIAs) which directly benefit rights-holders and groups concerned with the cost of foregoing development in conservation zones. These are 'conservation concessions' which do not require that the forests be privately owned nor of a legal minimum size. The analysis (and formula) by Rice *et al.* (2001) assumes that to prevent 'large-scale destruction' by commercial forest loggers (Niesten and Rice 2004) in regions where forests are public property, it is possible to use the same means of exclusive access that forest developers use, namely concessions. In this regard, conservation investors – whether NGOs, public groups, a state or individuals – propose to acquire development rights, which are the basis of forestry concessions, in order to prevent its commercial exploitation.

These rights can be bought directly from the public authorities, if the zone under consideration has not previously been leased to logging companies. In this case, the compensation paid by the conservation investor to the State would be at least equivalent to the taxes and royalties paid by a traditional concessionaire (Rice *et al.* 2001). Whereas the area-based taxes are easily calculated, one must also take into account the royalties that would have been collected on felled trees and exported timber that an operating forestry company would have paid the state.

Land-use rights can also be acquired directly, where permitted by law, from concessionaires. As the cost of a

whole concession would be high, CI suggests a progressive purchase scheme for rights to logged-over land, which follows the footsteps of the logging front. This is possible because industrial exploitation of tropical forests is selective – only some trees (or even barely more than a single tree) are felled per hectare, which contributes to the degradation of biodiversity, but does not irreversibly destroy the natural habitats, which are the main targets of CI's activities. According to Rice *et al.* (2001), the most financially effective strategy, which is a sort of 'second best' ecologically, is complete and perpetual protection of the forest after the first cut, whether conventional or not. Conventional logging maximizes corporate profit, while 'sustainable forest management' (SFM) is more costly and often more restrictive, so this option is more acceptable. From a social perspective, the opportunity cost of preservation is low, as the 'lion's share' (Rice *et al.* 2001) – mainly the valuable species – is extracted during the first cut, leaving a less commercially valuable wood resource. For Rice *et al.* (2001), conventional logging followed by very long-term preservation would be a better option than SFM ecologically speaking, as the forest regenerates over time, whereas its structure is altered on the long term with the close felling cycles prescribed by the sustainable logging plan (p.22). For these companies, limiting harvests based on rotation restrictions (annual allowable cuts) would no longer be a constraint, and nothing would prevent them from increasing the harvesting speed – and thus the area annually logged – while maintaining 'sustainable' harvest levels per unit area. In addition, costly post-harvest silviculture operations would no longer be necessary. Thus, short-term corporate profit is maximized and forest preservation is guaranteed by giving up logging rights and ensuring subsequent complete protection.

A CRITICAL ANALYSIS OF 'RENT FOR DEVELOPMENT SWAPS' SCHEMES

The previously mentioned mechanisms are based on the payment of monetary rent, in the sense of a contractual regular income, to agents in exchange for their waiver of rights to practice so-called 'development activities' (production of wood, agriculture, hunting, etc.) – as opposed to conservation activities – on biodiversity-rich lands, which are typical amongst tropical forests. The potential development is 'exchanged' for monetary rent and is to be either transferred elsewhere (as in the case of TDRs) or simply frozen for an indefinite period.

The philosophy and scope of these different instruments must be examined from two complementary angles:

- efficiency, both in environmental terms (reaching

² Several examples of such deals for protecting water catchments are related in the literature, such as in Amboró National Park in Bolivia (Wunder 2005:11) or in Costa Rica (Pagiola 2002:44).

³ Author's translation from an original article in French.

conservation objectives) and economic terms (reaching these objectives at the lowest cost);

- equity, *i.e.*, fair benefits to each party which has the right to claim compensation for surrendering the development of certain lands;

Conservation easements and TDRs are applied to private properties, and therefore offer, in our opinion, little to the debate on the questions of equity, since owners can refuse the deal, or, in principle, go to justice if they consider having being misinformed during contract negotiation process⁴. This is not the case for conservation concessions, which have been designed to be implemented on public and non-titled communal lands, and must therefore be assessed with regard to the two criteria listed above.

Efficiency

In order to evaluate the efficiency of the proposed instruments, it is necessary to consider the prerequisites of each one. Conservation easements, as well as TDRs, involve a very broad extension of private property in forest areas. The success of the TDR mechanism notably, depends on two conditions: (i) that the land be locally considered as a marketable good subject to private acquisition and freely alienable, and (ii) that actors pursue their activities exclusively within the framework of market logic. In Brazil, it is conceivable that these conditions do exist, insofar as landowners are often settlers who have bought their lands and are completely immersed in the market economy. In most African and South-East Asian countries, however, this is currently inconceivable for most of the lands (Le Roy *et al.* 1996; Lynch and Talbott 1995; Cleary and Eaton 1996). First of all, non-agricultural land is only exceptionally a freely transferable marketable good, even if the development of 'pseudo-markets' in real estate gives the, often deceptive, impression that land is becoming a type of merchandise, like movable property. Moreover, the motivations for deforestation and changes in forest land use are profound: they are at the heart of the logic of agrarian systems based on slash-and-burn practices and very often, peasants have no viable alternatives, given the prevailing agrarian structures and their lack of capital.

Socio-cultural representations are a determining factor. To illustrate this point, natural resource economists often refer to an experiment with the distribution of fishing licenses to Amerindian communities in British Columbia (Canada). After having listened to long explanations of the pros and cons of these licenses, the communities quickly sold them onto non-Amerindian fishermen, and then returned to fishing

in peace, as they had always done. Moreover, some practices, such as traditional hunting, bear a significance which goes well beyond the evaluation of the 'replacement costs' if they were considered to be abandoned and financially compensated; in many cases, hunting does not only have a subsistence or a commercial value, but is also invested by social and collective identity values, and redistribution of the bushmeat involves a reaffirmation of the social status within the group, as Koch (1968) noticed in Cameroon.

In situations where private property is relatively extensive, the possibility of 'moral hazard' is not negligible: neither the easements nor the TDR mechanism is self-regulating; instead, they require effective control systems. Nevertheless, it seems that if compensations are paid in the form of an annual rent, the risk of definitively losing the 'conservation rent' because of an unexpected inspection may be considered too high by its beneficiary and could act as a deterrent to fraud. However, in Brazil there are all too many examples of landowners organizing the invasion of their own *fazendas* by the landless so as to benefit from the government compensation allowed in such cases (Fearnside 2001). Thus, it is safer to assume that means of evading the system will be developed.

Conservation concessions are presented by Rice *et al.* (2001) as being more effective in the sense that the concession is a legal framework used worldwide, whereas private ownership of forests is not universal. The cost of the progressive repurchase of operating rights from existing concession holders might not be excessive, since these repurchased rights concern areas that have just been logged rather than those which have yet to be. In this case – which has yet to be carried out – it is not only the amounts payable to forest developers that must be mobilized, but also those corresponding to the compensation payments that states might demand for the reduced economic activity and fiscal revenues resulting from changes in the use of the forested areas in question. The cost of the operation may thus greatly increase, and its economic efficiency subsequently be challenged.

Equity

To assess equity, it is necessary to examine the nature and size of compensations to be offered to the state and to the various economic actors and agents, as well as the timescale to be followed.

The discussion about 'compensations' (the price of abandoning development) is full of the attributes of equity. At first, it appears to be similar to the bilateral Coasian⁵ negotiation, where polluter and polluted, according to their

⁴ Even though any cap to the development under any scheme have impacts on the overall welfare, the employment level, and have distributive effects (notably by creating rents for some economic agents), but this is a broader issue, not discussed here.

⁵ From the Nobel Prize of Economic science Ronald Coase who worked notably on the gap between social and private costs (*i.e.* the externalities). Economists used to refer to a so-called 'Coase Theorem' which suggest that if nothing (such as transaction costs) obstruct efficient bargaining, the people will negotiate until they reach an optimal result (private and social costs will be equal), whatever the initial structure of property rights.

respective property rights, choose the type of compensation arrangement that corresponds most to their preferences. The principle proposed by CI is based on a contractual and bilateral conception that ignores the state's duties of redistribution; such omissions lead to a problem with equity regarding the nature and size of compensations to offer the state and (civil) society as well as the time-scale to be followed.

Actually, as noted by Romero and Andrade (2004a), the opportunity cost of forestry exploitation is perhaps much greater than what the NGO conservation researchers envisage. The latter usually fail to acknowledge both the wood transformation industry and transportation economies, with the jobs that these two activities directly and indirectly create. Additionally, the costs that the authors closely refer to, particularly taxation, depend on the existing institutional arrangements in a country at a given moment, and cannot really be used as a guide for long-term agreements.

How to define and assess equity in implementing conservation concession?

Equity might be understood in various ways. *The American Heritage Dictionary of the English Language (Fourth Edition, 2000, by Houghton Mifflin)* suggests defining the concept as 'Something that is just, impartial, and fair'. Obviously, this definition depends on what one morally considers to be fair and just. I prefer the following statement: 'fairness can best be considered within the framework of two concepts: equality of opportunity and distributive equity' (Brown and Stern 2006). From an economic perspective, equity has to do with the financial opportunity cost⁶ of those who lose potential revenues due to changes in land and resource use. In fact, it is implicitly acknowledged by CIAs supporters who speak of 'financial compensations'.

Cameroon provides an interesting case for assessing what could be the financial opportunity cost of large-scale conservation concessions. The Ngoïla-Mintom forest is an 830 000 ha area divided into 9 Forest Management Units (FMUs) designed as 'production forest' in the Zoning Plan of Southern Cameroon (Côté 1995). After the 1999 Yaoundé Heads of State Summit, mainly spearheaded by WWF, the Cameroonian Government decided to turn this area into a 'potential' protection forest ('*projet de zone de protection de la biodiversité*'), referred to in some semi-official documents as 'conservation concessions'⁷. Currently, the area is still unallocated (most of the forest has never been logged before) and its legal statute remains unclear: the Government of Cameroon (GoC) was still looking for financial compensations offered by 'the international community' before taking a decision (Cameroon's Director

of Forests, pers. com.).

The forest administration is currently considering allocating the 9 FMUs in the near future unless financial compensations are proposed to and accepted by the GoC (idem). This allocation to logging companies can thus be considered the 'baseline scenario', and the option of establishing a conservation concession is an alternative scenario for which the opportunity cost can be assessed. As the official owner of this area, the Government could expect to receive as much royalties and taxes under a conservation concession system as it would have received in the 'logging scenario'. The Cameroonian population might also consider claiming the earmarked taxes they benefit from logging, and the revenues generated by this activity. A very crude assessment gives an idea of the likely magnitude of such an opportunity cost⁸:

- For the area fees, considering the current average winning bidding price of €4.25 the forgone revenues are of €3.53 million per year. This is a minimum, since such an average includes low fees of the 1996 and 1997 rounds, before subsequent improvements were introduced into the bidding system.
- For the cutting tax (2.5% of FOB prices), and considering an average of 10 m³ harvested in the FMUs, a 30 years rotation, and an average FOB value of €13 per m³, with a tax recovery rate of 60%, the amount is of €85,000 per year.
- For the mill entry tax (2.25% of log FOB value), considering that around 90% of logs are processed within Cameroon, and 68 % of tax recovery rate, the amount is close to €1.5 million per year.
- For the log export tax of the 10% of logs remaining, the amount will be of €775,000.

For direct forest taxes only, the GoC's forgone revenues would thus exceed €6.7 million per year. One must also add companies' corporate taxes and VAT induced by the overall activity increment. Moreover, a complete evaluation would have to take into account other components of the economic added-value that would not be generated by the conservation scenario, which includes wages corresponding to logging, processing and transport jobs not created by not harvesting around 221,000 m³ annually. Considering a content of full-time jobs of 5.57 per thousand of cubic-meters roundwood equivalent exported (Karsenty *et al.* 2006), this represents 1 230 jobs⁹ (transport sector excluded since the data are missing). With an average monthly cost of €450 for workers in the manufacturing sector¹⁰, this represents €6.64 millions of forgone salary costs (net wages and social contributions) per year. When considering financial assessments one also

⁶ The benefit forgone in the best alternative use of resources. www.cbfp.org/pfbc_paris/reunion230606/tridom.pdf

⁷ See a presentation made by COMIFAC (Forest Commission for Central Africa) www.cbfp.org/pfbc_paris/reunion230606/tridom.pdf

⁸ Parameters are derived from a 2006 financial and economic study ordered by GoC (Karsenty *et al.* 2006).

⁹ The figure may be lowered if one considers that workforce is not currently occupied full time.

¹⁰ Source IZF: <http://www.izf.net/izf/EE/pro/cameroun/6060.asp>

needs to include the induced revenues generated by industrial production activities. For instance, it is well known that wages and earmarked taxes do not constitute the only financial and social transfers that are channelled to local populations by the companies (through 'cahier des charges') (Karsenty and Pierre 2005), and such transfers have also to be evaluated.

At first look, the opportunity cost would be a minimum of €13 million per year, and probably more with a more comprehensive assessment. Against this number, the net financial benefits (for the GoC and local populations) of the conservation scenario should be evaluated, with likely financial returns from ecotourism (taxes, fees and wages) and possible expenses related to research projects implementation. A recent economic evaluation of the 300,000 ha Natural Park of Ivindo in Gabon (Lescuyer 2006) tried to quantify the financial benefits of ecotourism, with a hypothesis of a favorable evolution in terms of annual visitors. It hypothesises a growth of ecotourism revenues from €80 000 in 2006 to €466 000 in 2015 (not discounted)¹¹. These figures are rough benefits (amount paid by visitors to the tour operator) and do not include possible revenues induced by tourist activity (handcrafting, etc.). According to Lescuyer, the Government and the population are 'losers' in financial terms, in comparison with a 'logging scenario', and the benefits are mainly captured by tour operators.

If one shifts from financial to economic assessment, one should consider also the intangible and/or non-money benefits of the conservation scenario (water regulation and supply, reduced carbon emissions, option value for genetic resources, existence values, etc.). This exercise is often carried out by environmental economists (see, for Cameroon, Ruitenbeeck 1990; Yaron 2001; and for worldwide approaches see Lampietti and Dixon 1995, for instance) and will not be discussed here. Suffice it to say that such exercises may show substantial benefits embodied into conservation scenarios, but these benefits are primarily for the 'international community', not for the Government (and certainly not for the Public Treasury)¹². This raises the issue of 'distributive equity' if financial compensations are not related to the financial opportunity cost – an issue that will certainly be raised by the Government in negotiations with 'conservation investors'¹³.

An amount of €12 million, corresponding to €14.5 per hectare (US \$18.85 in January 2006), representing a very rough first assessment of the financial opportunity cost of the 'conservation scenario' in the Ngoïla-Mintom forest, can be used as a starting point for negotiation with the GoC and other stakeholders (e.g. local councils mayors who, by law, benefit of 40% of the area fees, villages representatives...), in which several considerations can be taken into account by players (such as the international reputation of Cameroon). But this example clearly shows that if one seriously wants to consider the issue of equity, the amount of compensation for the stakeholders is significant and a far cry from the idea of 'low and affordable cost' suggested by Hardner and Rice (2002) who claim that:

'Huge tracts of public forest in the developing world are being leased for less than \$1 per hectare a year. At those prices, conservation organizations, which have long demonstrated a willingness to pay for the preservation of biodiversity, can afford to outbid competitors for land leases and to compensate local people to manage the intact ecosystems'.

The example of Guyana, reported by Niesten and Rice (2004) to illustrate the affordability of the conservation concession concept is perplexing. The financial compensations are reported to be indexed on forest taxes that would have been paid by a logger. It is worth noticing that surface charges alone resulting from the tenders of concessions in Cameroon would reach a bare minimum of \$120 000 for a surface area equivalent to the example used in the article, which is clearly more than the US\$11 000 and \$30 000 mentioned for Guyana, corresponding to a cost of \$1.25 per year, according to Ferraro and Kiss (2002)¹⁴.

Moreover, the Guyanese allocation mechanism appears to be discretionary, even clientelistic, as was similarly the case 10 years ago in Cameroon – but where the situation has since evolved. By aligning the value of annual compensations

¹¹ The smaller area of Ivindo (300 000 ha against 830 000 ha in Ngoïla-Mintom) is compensated for by the outstanding scenic beauty (spectacular water falls) which has, seemingly, no equivalent in the Cameroonian area targeted.

¹² Bridging the gap between financial and economic assessments would require innovative international financing mechanisms, such as rewarding countries governments for reduced deforestation (Chomitz et al. 2006) which only remain rough guesses.

¹³ Significantly, Gabonese President Omar Bongo, who in 2004 suddenly decided to create several new National Parks, complained since then that 'nobody comes [to visit the parks]' (Allocution at the UN World Summit 2005: '...depuis que nous avons créé ces parcs (...) personne ne vient') v (video). In late 2006, after the international reactions caused by the authorizations granted to a Chinese Oil company to prospect within one of the most famous park (Loango), the President declared to Radio France International: 'if the foreign debt of Gabon is erased, I will preserve the forest on its full extent' ('qu'on efface la dette du Gabon et je préserverai la forêt dans son entière étendue' - AFP Press release, October 26 2006).

¹⁴ Beyond that fiscal issue, one must add that the Guyana concession conservation example is very specific from a 'socio-geographical' perspective too: as Bulkan (2004) noticed, 'the concession is very remote, the nearest of the three communities lies 50 miles downriver', thus 'for CIAs to be a workable model, they would need to be situated in 'threatened' accessible forests, and shown to be bringing real benefits to local people' (p.63). The additionality of the project is questionable in such case.

paid to the State with what is prevalent in Guyana, CI makes a calculation for conservation at a low cost, but which is perhaps far from what a fairly-judged compensation ought to be using under a different 'institutional arrangement'.

At this point, one is faced with a paradox. In line with SFM promotion policy, the World Bank and many other donors support forest taxation reforms and institutional changes favoring an increase of the timber resource access cost (Grut *et al.* 1991), and competition through transparent bidding process, such as it has been experienced in Cameroon (cf. Chomitz *et al.* 2006). On the other hand, such change in 'forest pricing' will make the forest less affordable for conservation investors, when they have to compensate the Governments for forgone revenues¹⁵. Does such a statement imply conflicting views about forest policy reforms to be fostered in the tropics? When one reads the tough criticisms made by Rice *et al.* (2001) against the 'conventional wisdom' of SFM supporters, one must admit that the question deserves to be raised. It is argued in this paper that such tension will mainly depend of the scale of the conservation concession project: as long as small areas are concerned, there is no (or few) case(s) for such conflicting views; but when conservation concessions are foreseen on large scale (*e.g.*, over hundreds of thousands hectares, like in the Cameroonian case we refer to), and if they are seen as a global alternative to logging in the tropics (cf. Gullison *et al.* 2001) conflicting policy views might arise as an expression of objectively diverging interests.

Should local populations be compensated at their current poverty level?

Generally, the rural populations of these wooded areas are not the 'owners' of the lands where they live, at least not in the sense of the law prevalent in these countries' legislations. They exercise common law rights and are recognized by the 'rights of use' legislation. And yet, it is these rights of use – a good part of them at least – that CIAs intend to buy back. In other words, the people cannot sell a 'property right' that is not acknowledged as theirs by the state: consequently, they are going to exchange the only right (of use) that is acknowledged to them for a financial allowance and the possible income resulting from conservation activities (ecotourism, caretaking, small livestock farming, ecological prospecting, etc.), the limited extent of which can be imagined. The conservation concessions promoted by CI are in the aspect of (total or partial) abandoning local development in exchange for payments to conserve the surrounding biodiversity-rich environment: *'The conservation incentive agreements take the form of a reciprocal and unambiguous exchange between the landowner and the parties who are*

trying to persuade him to abandon development' (Nielsen and Rice 2004:148).

Would it really be an unambiguous agreement? It is tempting for an African villager to give up the strenuousness of the daily work of land-clearing, or even industrial work in a sawmill, for the guarantee of a life's income! What social impact could such an 'opportunity' have in regard to the neighbors who do not have the luck of living in a biodiversity-rich area? Must the emergence of the salary worker, still in its embryonic stages in the areas of industrial timber and processing activities, be liquidated in order to transform them once again into the independent *rentiers* of 'global conservation?' Would the inhabitants be more innovative and sparing and will one day exceed the standard of living that they have today? Indeed, it is likely that the reference point for the 'compensatory payments' will be the current level of income or, in other words, the current level of poverty. Another prospect that could be appreciated, however, is Sen's proposal of an economy based '*on the agent's perspective*' (as opposed to the 'patient'), where it is possible for the people to be the agents of change and not '*the passive recipients of benefits allocated by one organization or other*' (Sen 2000a:13).

With his theory of fairness based on 'capabilities', Sen has suggested that public policies must be assessed according to the expansion of people's capabilities: '*To assess fairness based on capabilities, the claims of individuals must not be judged according to the resources or primary goods that they respectively possess, but according to the freedom that they actually enjoy to choose the life that they have reasons to value*' (Sen 2000b:122). In this term of capabilities, the options and opportunities offered by society are fundamental. This author's theory is that '*development can be understood as a process of expansion of the true freedoms that individuals enjoy*' (Sen 2000a:15). These freedoms need to be considered for their intrinsic value, without seeking to justify them by their positive effect on development (even if for Sen this relationship equally exists). The world suggested by the large-scale CIAs is quite unequivocal: it is one where the opportunities offered to the inhabitants of biodiversity-rich forestry zones are significantly reduced. One might say such limitation of freedoms is not specific to CIAs and can be discussed for a lot of projects, but what is somehow new is the fact that CIAs conceived as a global alternative to logging on large scale, embodied a cap on the development, and the proposed employment alternatives to populations (*i.e.* ecotourism) are particularly uncertain in the context of dense humid forest, where access is difficult, and animal watching is often disappointing, except in some located spots – and generally already encompassed in a protected area.

¹⁵ In fact, if the conservation investor has to buy back the logging rights from the logger (in case of a timber concession already allocated) as this last move into the concession, a high area tax will favor the deal with the logger (who might be wish to stop his tax payment for already logged areas), but the conservation investor would have to pay back on a long term the area tax to the Government. Conversely, if the area tax is insignificant, it could be easier to reach a deal with the Government than with the logger, who can keep the whole area for a second cut at low cost, and might be reluctant to accept only a modest compensation.

CONCLUSION: BEYOND THE 'LOWER COST'

An increasing amount of literature refers to 'Payment for Environmental Services' as a package of promising instruments sharing the common feature of being voluntary and '*explicitly recognizing the need to bridge the interests of landowners and outsiders*' (Wunder 2005). Whether the different schemes discussed here are part of PES is subject to debate, since according to Wunder conservation concessions appear not to be considered as PESs¹⁶, whilst for others they are clearly included (Wertz-Kanounnikof 2006:9). Clearly, beyond the incentives and the voluntary dimensions, the institutional context and the scale the proposed schemes might change the nature of the deal. Here, the property rights structure is one of the critical point. Large-scale conservation concessions, if they are to be implemented in the tropics as an alternative to industrial logging, would be in the public domain, in the context of overlapping (and often contested, cf. Sikor 2006) rights between the Government, private concessionaires (if any) and local populations. All these stakeholders have rights and expectations about the outcomes of land use, and being equitable will certainly be a difficult process, without the simplicity (and the expected fairness¹⁷) of the negotiation between a well-identified landowner and a conservation investor¹⁸.

If such schemes were proposed on devolved lands (such as community forests in Cameroon or forest cooperatives in Indonesia, the negotiation process would likely be easier, but the equity issue would also need to be carefully examined, since (symmetrically) many deals concluded between communities and logging companies throughout the tropics have been considered unfair, and claims for subsequent renegotiating are frequent. However, in most cases, such deals concern only limited amounts of land, the ones effectively devolved (which differs from mere transfer of management responsibilities under decentralization schemes, without change in land tenure). And here again, the scale of the operation matters: if the multiplication of such deals were to lead to reducing timber production notably, taxes and employment, in a country where such activities are critical from an economic viewpoint, it is likely that the Government would also demand public compensation. This leads to the political acceptability of certain schemes in the world's poorest developing countries.

The Climate and Biodiversity Conventions introduced the notion of 'common but differentiated responsibilities' between North and South, which aims to recognize the different levels of support involved, to organize the transfer of

financial resources by specific mechanisms and to guarantee a minimum level of official development assistance (ODA). This 'transfer of financial resources' issue becomes critical if the rights markets are proposed as a 'global' instrument of regulation and transfer; what is perceived as a right (to ODA) competes, then, with propositions aiming at channeling public and private funds into the particular activities or businesses alone chosen by those issuing the funds. Are the countries of the South wrong to want to benefit from both forms of transfer simultaneously (i.e., new market-based mechanisms and ODA)? This question can be viewed from very different perspectives, depending on whether one considers an instrument of investment in less polluting processes (Clean Development Mechanism, CDM) or 'Transferable Rights of Development', created so that the actors of the industrial countries might 'buy' conservation.

During the international negotiations on environment and development, notably during the negotiation on climate change, developing countries demonstrated their refusal to 'limit their development' (for example, by refusing the objectives of greenhouse gas ceilings) in exchange for 'drawing rights' (or 'paper gold') from environmental monetary sources. Hence the emergence of instruments such as the Global Environment Facility (GEF) and the CDM (the latter being proposed by Brazil at the Kyoto conference in 1997), which are based on the adoption of less polluting but more onerous technologies, the difference in cost being borne by industrialized countries or businesses investing in the trade of carbon.

The 'conservation rents for renouncing development' scheme seems to be exactly what the countries of the South have steadfastly refused for many years, which might suggest that the concept of conservation concessions will not be enthusiastically welcomed by the governments of the countries expected to be the main beneficiaries. This dynamic of extension and development of rights markets and notably their potential use to achieve changes in the use of land is taking place in the context of the growing 'contractualization' of social relationships, with the state submitting itself increasingly to this kind of relationship. A clear risk would be that the African countries that are the most deprived of the capacity for autonomous development could become particularly 'vulnerable' in this sort of relationship where the sale of 'rights' compensates for the impossibility to sell commodities.

The economic justification for mechanisms of transferable rights – whether in the form of an emission permit, rights of development or transferable obligations of conservation

¹⁶ 'Land acquisitions for conservation and similar measure such as buying out logging concessionaires are one-off solutions aimed at eliminating environmentally problematic actors. PES instead try to make deals to work with these actors. PES normally do not involve change in land tenure' (Wunder 2005:7).

¹⁷ Derived from the 'Coase Theorem' about the key issue of well-defined property rights, and acknowledged also by Wunder (2005:11): 'In principle, any price the two parties jointly negotiate can be 'the right price' – just as the price I negotiated for the fish in the market'.

¹⁸ Such characteristics would probably also be faced by any tentative of « scaling-up » TDRs at global level, as suggested by Panayotou (1994:102), since Governments are not automatically legitimate to decide alone of the land-use of most of the forests which are used by local people as economic asset and under local rules.

of biodiversity – can hardly be contested; it enables us to embark upon environmental efforts as a priority in areas where the marginal cost of action taken is lowest for a given quantitative objective (Panayotou 1994). But it is necessary to examine more attentively this question of ‘lowest cost’, since it concerns the conservation of vast natural spaces in tropical countries, generally forests.

Romero and Andrade (2004b) point out the fact that annual payments for conservation range, according to the economic literature compiled, from US\$39.22/ha in the UK, to \$9.88 in Tanzania and only \$1.25 in Guyana. They conclude that *‘the repeated mention by CIA advocates that biodiversity-rich tropical forests can be purchased at bargain prices in financially strapped developing countries seems to reflect a fundamental misrepresentation of the importance of these areas’* (p. 1454). The fact that the opportunity cost of conserving these lands in their original state is lower in the South than in the North is due to differences in the level of development and the scarcity of potential investment in rural areas. Small food-producing farmers, deprived of capital and land, are potentially a threat to the integrity of primary forests, but certainly less so than the expansion of industrial cash crops. However, turning these poor people into ‘conservation *rentiers*’ represents, without doubt, a much lower opportunity cost than doing so with agribusiness firm officials looking for land to invest in oil palm plantations. In that sense, this mechanism risks imposing the role of biodiversity reservoirs on the poorest forested countries. This is certainly in exchange for some rent, but only a ‘poor man’s rent’ since the latter is calculated according to the ‘lowest cost’ based on compensations in under-developed countries and regions.

These apparently ‘ground-breaking mechanisms’ are presented as ‘win-win’ policies, since they involve the transfer of funds from the North to the South to realize global environmental objectives. The problem is that their deployment – which in any case is still very limited, for the North’s desire to pay remains a hypothesis – does not integrate into global policies, which are coherent and supported by foreign aid. Nor does it accompany any essential global measures to help the poorest countries become less marginalized in international economic exchanges, in particular the reform of rules of global commerce in a way which would favor the most vulnerable countries of the South without destroying whole parts of their productive systems. Borne by large international environmental NGOs, these instruments of biodiversity protection through transfers of land-use rights from poor countries to actors from the industrial ones, even if these transfers are ‘compensated’ in financial terms, constitute ends in themselves. Such instruments would be more acceptable by local stakeholders if they were linked with public policies on sustainable development aiming to allow the creation of various employment opportunities, and ultimately an opportunity for poor populations to increase their wealth.

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