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Social capital from carbon property: creating equity for indigenous people

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New incentives for protection and *in situ* use of forests and the services they provide raise hopes for the reversal of tropical and temperate deforestation. Past management of forests appropriated the rights of forest communities, providing incentives to convert natural forest into financial capital through logging, while destroying the underlying physical property. Carbon trading aims to provide a means to convert the forest property into financial capital, while protecting the physical property of forests, thereby providing new incentives for *in situ* forest management. The potential for carbon-emission trading as a contributor to these new incentives is tempered by concerns that it is another tool for capitalists to exploit the indigenous communities of the developing world. Estimates of annual emission trading amounting to US \$200 billion raise alarm bells about the effect of such trade in the developing world. People are right to be concerned, as the history of exploitation of indigenous people, the appropriation of their rights, the loss of forests and their benefits is well documented. This exploitation resulted in the exclusion of forest communities from the basic tenets for development created by the wealth generated by traded property. However, one virtue of trade is that it can be made subject to constraints. Through international treaties and agreements, trade can be constrained and national governments obliged to observe the rules of trade. The value of tradable carbon credits will be discounted or invalid if they do not meet these criteria, providing all parties with strong incentives to achieve the necessary performance standards relating to both processes and contracts. For carbon trading to develop social capital from natural capital requires the admission of forest communities into the polity and management of forest resources.

In this paper we argue for responsible carbon-emission trading based on the clear and appropriate definition of carbon entitlements, with the proviso that trading respects the rights and needs of indigenous people. We adopt this position as emissions trading now seems inevitable and there should be proper rules to control this trade where it affects forests and their inhabitants. It is imperative that the poor

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and indigenous people are not excluded from these systems. Trading systems and the property systems they depend on need to be more accountable, transparent and inclusive of those features which we propose.

Keywords: social capital; social equity; trading system

1. Public takings and perverse incentives

The history of natural-resource mismanagement is well documented. The forest sector is no different, with development programmes and objectives taking little notice of the needs or rights of forest communities. The marginalization of forest communities has been rapid and ongoing to the extent that many now form the core of the rural poor in the world today. The disparity relating to the recognition of rights and opportunity to gain the freedoms that underpin development has occurred through the exclusion of forest communities from development planning and programs. This exclusion has resulted in widespread failure of forest-management systems, and the loss of essential services provided by forests. For any carbon-trading system this in and of itself represents the biggest threat to the integrity of forest based carbon sinks.

Simply by definition, the world's forests have been our wildernesses, those wild places that represent the frontier of our development. Beyond this frontier lay the opportunity for expansion, settlement and 'success' for governments keen to provide economic development and the fiscal benefits, both official and unofficial, attached to these. Aid agencies stimulated economic development to bring developing nations closer to the norms of the West. The growing civil population also saw opportunity beyond the frontier. With increased population growth behind the frontier, citizens demanded their own space and property, resulting in outward migration beyond the frontier, bringing roads, access to markets and technologies, all of which change the relative value of *in situ* forest use relative to alternative land uses through land conversion. Finally, and mostly forgotten, there lived forest dwellers that were set apart from the development planning decisions, whose social wellbeing and capital were not considered and who ultimately faced one of the greatest social injustices within the developing world: that of being the 'problem' of forest-development management (Hall 2001).

Within the developing world the paradox is that there exist 'rich forests and poor people', to steal the title of Nancy Peluso's book (Peluso 1992). The history of tropical forests has seen the loss of rich forests, which has left the poor even poorer, highlighting the inseparability of natural resources from the social context within which they reside. Human development is inextricably linked to the environment and, as such, forest-management issues are poverty issues, as each is central to the other (Gordon *et al.* 1999).

There are an estimated 5 billion poor people in the world today, of which 3 billion live in rural areas and perhaps 50% of these are closely associated to the land and forests. The rate for forest conversion is estimated to be 7% per annum in tropical regions. It is the greatest land-use dynamic in the world, resulting in the predicted conversion of more than 120 million hectares in the period 1990–2010. The future looks bleak when the population in Asia alone will grow by two-thirds over the next two generations. The poor of Asia depend on the forest for products and services that range from protein and shelter to cultural and heritage values (Shen 1995; Saunders

& Weber 1996). Despite these linkages, development programs based on forestry have proved to be less than successful in protecting these development assets. This reflects the lack of congruence between the incentives faced by Government officials, corporate entities and local communities. The role of forestry and local development is summarized by Creedy & Wurzbacjer (2001), who stated 'more than perhaps any other sector, forestry captures the inter-relationships between economic growth, environmental preservation and poverty alleviation.'

The 'development of wilderness' has brought roads to provide access to the riches available from the conversion of open-access forests and the land on which they grew. Access was also provided for the labour to work the land, where those members of society that were already represented in the political system were allowed to move into the forest land, expanding the extent of the political frontier and the constituency of those who enabled the expansion. The conversion of forests represented not only a conversion of natural forest wilderness to other land uses but also the conversion of a political wilderness to that already represented by the political manifestation of governments. These governments chose to enable the movement of those under their control rather than negotiate and recognize the rights of those already present, due to the ease with which they could do so, as well as the expected political benefits. This approach relies on centralist command and control systems, which meant that local forest dwellers were unimportant to politicians and public policy makers. People were the problem. The classic example of this is the transmigration of Javanese into the outer resource-rich islands of Indonesia, resulting in massive land conversion, forest fires and loss of ecological integrity. Most importantly, it undermined the social capital of indigenous Dayak and other communities to the point that their existence in some areas has been put at risk, resulting in ongoing social conflict.

Trees play an integral role in defining local cultures and institutions. Trees and forests were traditionally used as important indicators of rights within society. Trees were used to claim or denote land-use rights, land ownership and use of forests, while providing shade, fodder, soil protection and watershed conditions. Those who did not have access to banks and the monetary system often planted trees to create physical capital. The capital was manifest as property, as others in society were excluded from using the trees. For example, small holders in Sumatra grew cinnamon trees to provide for their children's medical and educational needs; Damar trees were used to demarcate land claims in Borneo; teak is grown in Sri Lanka as a kind of savings deposit. These forest assets have contributed to the quality of life and, in many indigenous societies, were the tools for poverty alleviation and the primary development assets (Schmidt *et al.* 1999). The notion of forest property is captured in the term 'social capital'. Hall (2001) described social capital as follows.

... networks of social relationships, norms and values that allow groups to meet their development objectives (Coleman 1990). Like physical, human, or financial capital, strengthening social capital may be viewed as a legitimate form of investment for development. Nowhere is this more so than in the case of common-pool resource management in the forest sector, where grass root organization and co-operation is so fundamental.

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For carbon trading, social capital must be built if the risk of forest conversion is to be made acceptable to investors and the supervisors of carbon sinks as a global mechanism.

While recognizing the need for building social capital, we should not be blinded to the view that communal forest governance is easy, and the only solution. The presence of roads, new technology and the increase in the population has created new driving forces and incentives for the management of forests. Forces that traditional societies (and most contemporary ones) may have little experience of dealing with and which require them to make trade-offs between short-term profit-maximization from extractive use and long run sustainable use in the interests of the collective good of society. These trade-offs are no easy task within a civil society that is increasingly heterogeneous (Heinen 1996). However, donor agencies and governments alike need to accept the burden of correcting past mistakes to enable this to occur through supporting programs that define and codify property so that it is accessible to the poor and disenfranchised.

As assets, forests become obvious arenas for conflicting and diverse interests resulting in claiming, taking and use. The forests are both social and political arenas, where the interests of small holders, indigenous people, government management agencies, conservation groups (both local and international), timber companies and private organizations are brought to bear. With the development of international markets, governments or their officials, appropriate resource ownership and resource user rights from private or community interests. The taking of rights represents a redistribution of wealth to the government. Such appropriations are not only undertaken under the guise of 'protecting' the resource from the people; nor is it just a matter of governmental grasping, but it opens up opportunities for manoeuvring natural-resource exploitation and the associated financial benefits (Ascher 1999). These takings were completed by (i) invoking highly principled causes; (ii) limiting the confiscation to the rights of marginal members of society; and (iii) reliance upon indirect methods such as increasing the cost of protecting rights or proving traditional rights (Ascher 1999). Indigenous people need to be protected from governments that attempt to apply these techniques to the capture of carbon entitlements. The appropriation of rights by government also meant that the nexus of enforcement of rights was passed back to their management agency, whose officials have no incentive for adopting the long-term view necessary for sustainable forest management. The officials within forest-management agencies usually face the prospect of being transferred every three years, so that any benefit they can acquire is limited to this time-frame through ensuring any personal opportunities attached to logging are maximized. These officials therefore have little incentive to protect the underlying resources that they are required to manage and protect.

Environmental agencies, which may have been considered as being the appropriate agency for addressing the policy and government failures, have proved to be ineffective and weak in the forest-management arena. For example, their inability to address the land conversion in Sumatera, Indonesia, has resulted in significant regional costs arising from the burning of natural forests as the wilderness was converted into oil-palm plantations using fire. Likewise, in Sri Lanka, where sectoral Environmental Impact Assessment statements that are not site specific legitimize poor logging practices that damage waterways and important biodiversity values. In this latter example, the environmental agency's inability was further compounded

by their inclusion as part of the Forestry Ministry, leading to a direct conflict of interest between the production and conservation objectives of government. Under government forestry programmes, such incentive systems are likely to result in so-called carbon-sink forests being harvested, placing a high risk on any associated carbon-sink contracts.

Non-sustainable logging represents a mismatch of social and private benefits attached to forests. While society as a whole may benefit from watershed protection, biodiversity, shelter, protein, etc., the reality is that most of these values have little direct financial contribution to the owner or the management agencies themselves. This disparity between private financial and social costs and benefits is reportedly changed by the addition of water benefits, when water users pay for watershed protection (Creedy & Wurzbacjer 2001). Carbon entitlements will add yet another value to the bundle of attributes changing the relative value of *in situ* protection and logging. However, as management agency officials will not directly benefit from this, it provides little additional benefit for *in situ* protection of state-managed forests than has been the case for the last decade or more. As such, there is no reason to believe that state-controlled *in situ* protection will in fact supply the carbon sequestration objectives. Forests under the management control of the forest owner or communal owners, such as indigenous people, will, however, have increased incentives for *in situ* protection. The effect of adding carbon values to the benefit stream of forests has been shown to increase the rotation length and, when combined with water yields, the rotation length was found to be infinite (Creedy & Wurzbacjer 2001).

2. New social scarcities

The notion of adding to the bundle of private rights mirrors the relative weights placed on logging benefits compared with sustained harvesting, shelter, cultural, wildlife and biodiversity values that were previously applied by indigenous communities. The concept of forest rights is very much multidimensional and more than simple tenure. A tree and a forest need to be viewed as a bundle of rights (Fortman 1985). Different parts of a tree or forest often differ in terms of who owns, inherits, can use or dispose of a tree or other forest products. The bundle of rights is only ever partly defined, as it represents the collective body of social experience and scarcity that existed or was understood by civil society, including local indigenous communities. The movement of the frontiers of development back through forest lands has developed an increased awareness of the consequences of deforestation, leading to the redefinition of social scarcities attached to the functions of forests other than the provision of financial capital from logging. The priority is therefore to search for the means to define these scarcities into policy and institutional frameworks that enable their effective management. In this sense, carbon-absorption functions, like watershed protection, are undefined. However, as items, products or services increase in value as a result of scarcity, social relations with respect to a resource alter, resulting in the redefinition of rights and therefore the manner in which people interact with the resource. Carbon rights or entitlements are new and will change the manner in which people interact with trees and forests, but this new creation should not be seen as a unique occurrence. It is simply a continuation of an evolving definition of forest- and tree-based property. Carbon absorption and carbon-emission trading

will increase the range of property associated with a forest or trees. It will potentially change the private worth of a forest, but will local stakeholders have access to this property? If they are not made aware of the carbon entitlements and therefore cannot access the value derived from holding an entitlement, there will be no added incentive to protect the trees that absorb carbon.

3. From property comes capital

Capitalism creates wealth. However, past capitalism has resulted in a type of development apartheid, where the tools of wealth creation and development were not accessible to all and especially not to those that needed it most (De Soto 2000). Future success needs to address the issue of equitable access to the foundation on which development is derived: property.

Forest rights are rights to property and represent a social relation as well as formal or legal property that is usually codified in law within the Western economies. Property is more than 'the relationship between person and thing, it is the relationship between a person (or group) and all other persons in relation to that thing. A social relation by which a person, a group or a corporate entity can exclude others from the use of the thing' (Macpherson 1983). A carbon entitlement will create new property, a new stick to be added to the bundle of rights already associated with forests; a stick that enables one actor to exclude others from the use of the forest.

As a consequence of the continued appropriation of rights, many correctly argue for the exclusion of capitalism as it was, and still is, practised in the developing world, while others argue that it is the fundamental problem in any shape or form. There is clear evidence that capital-based development has provided the greatest contribution to social development. It was central to the survival of traditional communities worldwide. These communities developed physical capital to trade and settle disputes (Mauss 1950), to provide boundary demarcation and to obtain the necessary input for their subsistence and survival. What development-based capitalism has failed to see is the role of social capital and governance in the achievement of development objectives. As such, we need mechanisms that enable the transformation of physical capital into financial and economic capital that do not destroy the underlying natural capital. Not to achieve this is the single largest failing of capitalism as it has been applied to the forest sector. These failings have led to the exclusion of forest communities from political processes that would protect their rights to the opportunity to generate wealth by using their traditional physical capital as financial capital to generate empowerment and social well being. Carbon trading will create a new form of capital whose physical form is currently unrecognized in social and legal systems and whose financial and economic form may provide the incentive for a more inclusive forest-governance system, which recognizes and responds to past social injustices. Capitalism, like most social systems, can be good or bad. However, socially sensitive capitalism has the best record in producing the necessary conditions for empowerment and freedom.

For carbon entitlements, the issue needs to be addressed through deciding who should control the tools and assets of wealth creation. A continuation of past practices will place it in the hands of officials or the powerful; an attractive option is to place it directly with the poor and indigenous. To do so will require careful design of the carbon contracts; the international protocols of what is accept-

able, socially and legally; the provision of cost-effective means for their participation; and a strong voice for the ongoing protection and validation of contract conditions. The generation of capital is not the overarching goal, but simply a means to an end. If indigenous people have access to the potential freedom created by appropriate entitlements to property, they can participate in the generation of wealth that capitalism brings about. It is through this wealth that they can achieve the necessary conditions for empowerment and development. Property should be considered not only for carbon but also ultimately for the full range of property currently restricted to the privileged stakeholders. Carbon-emission trading must allow access to carbon credits in a way that respects the social context of each development and provides equal opportunity for all legitimate stakeholders.

To condemn capitalism in a world dominated by it, through excluding the poor, the indigenous or the disenfranchised, denies their freedom and right to development choice. This denial will occur if the 'appropriate detail of property' and the associated specifications for the capital generated by this property are not developed within the carbon-emission-trading mechanism and instruments. The denial will equally apply if those who decry capitalism as an evil to be repelled are allowed to exclude indigenous people from the new opportunity for the freedoms that carbon-emission-trading mechanisms can create.

Forests are development assets with the potential for associated carbon entitlements under detailed contracting rules to broaden the bundle of forest-development assets. The addition of carbon entitlements will encourage retention of forest cover by local communities. The concept of carbon entitlements as property, along with the safeguards that should be applied to the process and definition of carbon entitlements, is central to the reversal of past trends. Options for carbon trading that emphasize creation of mechanisms for local people to have access to these assets through a process that ensures a third-party voice for those who have no access to carbon markets is essential.

The need to achieve equity of access to the formal property system for all of society is developed as a central theme for the protection of indigenous people. The inequitable treatment of the poor has seen their exclusion from the right to derive value from their forest resources in the past. While the Bonn and, more recently, Marrakech agreements ratify the use of reforestation as a legitimate carbon sink, operational details will need to develop the mechanisms to ensure equity of participation if the Kyoto Protocol is to be credible within the developing world. The signs are not encouraging, in that both the Bonn and Marrakech agreements have embraced and ratified a highly inequitable approach to the use of avoided deforestation. Here the powerful industrial state of Japan has been credited with the carbon-sink value of avoided deforestation of the Kurile Islands, while those with greatest need, the indigenous people of the developing world, have been excluded from using avoided deforestation as a means of generating wealth. This favours a rich nation against a poor people. Social and economic inequities are major contributors to global and national conflicts, yet world leaders continue to embrace inequity within their attempts to guide globalization and global co-ordination mechanisms. Surely, after the events of 2001, there is a need to avoid such discrimination and for the wealthy industrial nations to recognize that what may be in their short-term interests has significant long-term consequences. If an indigenous forest community

can provide the same or better level of protection from forest conversion, why should they be considered less acceptable in benefiting from avoided deforestation carbon sinks than the Government of Japan, who have contributed so much more to the carbon loading of the global atmosphere?

4. Social capital from carbon property

The concept of property results in resource empowerment, and it is the basis of accumulating assets through the right to exclude others. However, it is more than simple ownership: it is conceptual and requires one to see beyond the asset. Property considers what an asset could be. For example, ownership of a car enables the holder of the ownership rights to sell it, yet the car itself does not change. Property creates capital entitlements that are legally enforceable (De Soto 2000). The poor are often excluded from formal property systems, opting instead for the working of the extralegal or informal property systems. They do so as the ease or cost of gaining access to the formal system is high relative to those associated with the extralegal system. For example, the landowners in Sri Lanka are often unable to sell their land rights (physical capital) in exchange for financial capital, which they could use to move to non-resource-dependent jobs in urban environments. As a consequence, many live away from families, in slums, and their land goes unused.

The effects of creating property within the overall development context has been detailed by De Soto (2000). The interesting aspect of this is that the findings of De Soto effectively mirror the recommendations made by the growing band of forestry experts that is promoting people-inclusive forest practices that see people not as the problem but as the solution. The major findings of De Soto are that creating property

- (i) fixes the economic value of potential assets;
- (ii) integrates dispersed information into one system;
- (iii) has the effect of making people accountable;
- (iv) makes assets fungible;
- (v) networks people; and
- (vi) protects transactions.

The appropriation of forest rights by the government is predicated on the notion that the people are the problem, whereas they should be the solution. If carbon-entitlement property is accessible, the ownership of the entitlement will provide indigenous people with the potential to generate the wealth that is required for their empowerment. But to do so requires those that develop carbon entitlements to see a forest, not as sawlogs, but as a contributor to global climate protection, a function that is complementary to *in situ* forest protection as the preferred use, as opposed to the production and harvest of wood. The creation of property as a carbon entitlement is not only an endowment but also the right to establish a wider set of production from forests. To achieve these win-win options, it is essential that investors, governments and stakeholders adopt a pro-poor strategy in forming carbon-based property. To do so will create a development asset that is designed to bring the poor into the capital system and provide the choices previously denied.

Carbon entitlements must recognize how indigenous smallholders connect to the varied outside influences on natural resources, such as through policies, markets, laws and social changes. Carbon entitlements should not only reflect the law that specifies them but also spell-out how rights will be perceived, recognized, ignored, appropriated or contested. Local management is not divorced from the state, markets and other influences. In some situations these influences have minimal influence that enables highly autonomous management systems to operate. However, as influences such as geographic and market barriers are continuously eroded, previously autonomous management systems become integrated into the growing market and management system.

Adopting a pro-poor strategy is one important aspect of protecting the rights of indigenous people; another is the manner and form in which the entitlement is codified. The success, and failure, of capitalism is reflected in the manner in which Western nations integrate their property into one system, whereas developing countries operate with numerous overlapping and competing systems. Ascher (1999) identifies the duplicity of systems as one of the root causes of the wastage of forest resources and a persistent failing of government and policy.

5. Land rights

Codification of property is the means through which legitimate ownership is protected. It enables the holder of property to exclude other members of society or organizational entities, including governmental management agencies. The means by which it is codified provides a mechanism through which a major concern of some observers may be addressed. The concern is that the development of carbon property will enable those with wealth or authority, such as corporate entities or government agencies, to use their power and authority for their own benefit and not that of local communities. Within the property system in developing nations, individuals can remain anonymous and therefore their rights cannot be protected. Similarly the takers of rights can also be anonymous, so that they have nothing to lose. Unified and codified systems remove the anonymity and provide the options for sanction and accountability, which also creates the possibility of forfeiture of property for offenders, a large disincentive to participate in the taking of rights.

The linking of a physical asset to a property system makes them fungible, enabling comparison between assets and their values while systemization reduces the costs of management and administration. Most importantly, it offers the holders of rights the opportunity to split their assets into shares to be held or traded. For indigenous people this may include community rights, which communities allocate to individuals or hold communally according to traditional allocation rules that support local culture, while retaining the strengths of community resource-management systems. Carbon entitlements can be sold, in part or whole, at different points in time, to provide local communities with a sustainable flow of resources.

Fungible assets mean that owners are attached to assets, assets to addresses or locations and ownership to enforcement, converting stakeholders into a network of individually identifiable and accountable agents. Through this networking arrangement, the codification of property enables transactions to be tracked through time and space, providing all parties with greater certainty over ownership and transactions.

The creation of property or entitlements in carbon may therefore bring about a positive opportunity, provided it can be established in a manner that empowers indigenous people and addresses the perverse incentives to protect forests under the control of a governmental management agency. As a new stick in the bundle of rights there is a fundamental question as to how the newly created property will be assigned. Traditionally property was created in the extralegal or informal systems of society and then ratified or formalized in the legal system. The decision on the nature of carbon entitlements will influence the assignment. For example, in most legal systems the consideration of carbon as a mineral would place the initial assignment of entitlements with the government. If, however, it is viewed as a crop, then the assignment is most probably linked to the existing entitlements to use the land or the crop on it. It is imperative that the lack of experience with carbon management is not used as an excuse, by unscrupulous governments or their agencies, to exclude forest communities, as they too have no experience in the management of forests for carbon. Just as easily it could be argued that government management agencies have less appropriate experience, given their supervision and support for the devastation caused. To provide the correct set of incentives and create the opportunity to enable access to development opportunity, it is essential that carbon entitlements be assigned to indigenous or local communities.

6. Forest carbon-sinks entitlements

The following principles adapted from those of the Forest Stewardship Council are proposed as applicable for defining the process and assignment of forest-carbon-sinks entitlements. These entitlements will be eligible for the issuing of 'certificates' that will be the basis for trading of carbon. The process for trading will involve a national trading desk or register, which will be required to conform to international standards and will adopt rules that support these standards. While trades could be arranged outside the agreed standards, these would increase the risk to the buyer of carbon credits.

The recommended principles for the assignment and management of carbon entitlements include the following.

- (1) Compliance with, and respect for, national laws and sovereignty including the enforcement of laws and protection of rights.
- (2) Respect for the tenure, use rights and carbon entitlements to natural resources by defining long-term rights to forests, forest use and forest lands.
- (3) The documentation of tenure, forest-use rights and carbon entitlements, along with formal legal recognition.
- (4) The assignment of entitlements respects original forest rights irrespective of any reassignment of logging rights to the state and that any assignment does not threaten or diminish existing rights, or claimants of past rights.
- (5) Boundaries of the territory involved and any third party ownership are specified wherever appropriate.

- (6) The certificate will need to specify levels of sustainable use and the locales where this can occur. This specification will need to address the monitoring and supervision of these parameters.
- (7) A full specification of the direct stakeholders who are involved in the agreement is required.
- (8) Carbon entitlements can be assigned communally with the local community institutions holding the entitlement able to allocate or divide the entitlement (or benefits from the entitlement) according to processes they decide.
- (9) Disputes over rights will be resolved before the issuance of carbon certificates, and that an independent non-governmental third party will assess each proposed assignment for the existence of claims over property.
- (10) Indigenous people will control forest management on their lands unless they delegate or sell these rights.
- (11) Any forest-management activity will not threaten directly or indirectly the rights of indigenous people.
- (12) Appropriate mechanisms will be provided for the resolution of conflicts or claims. Any existing carbon entitlement certificate shall not be eligible for trading if any outstanding claim or conflict exists.
- (13) An area of land or forest that has an assigned carbon-entitlement certificate will enable non-destructive use of forests while protecting ecologically sensitive areas and habitats.
- (14) The certificates should address the issue of socio-economic infrastructure and the likely demand for this, as well as the impact that such infrastructure would have on local people and the forests covered by the contracts.
- (15) Certificates will only be awarded to areas that use appropriate species and support heterogeneity.
- (16) Forest conversion will be specifically prohibited (see Brown 2002; Brown *et al.* 2002).

The specification of these principles needs to apply to the international standards that are used to construct the certificate and guide the trading of certificates. At the national level there is a need to provide mechanisms that provide access to the national trading process. It is suggested that a national taskforce be convened for establishing the local interpretation of the above principles. The taskforce should comprise representatives of government institutions, the judiciary, legal-profession associations and non-government organizations that currently work with indigenous and local communities in natural resource and social issues. The taskforce would also have an *ex-officio* representative from a reputable international agency (the International Timber Organization) or non-governmental organization that would supervise and verify the interpretation of the principles and the manner in which they are applied. This would extend to a review of the issued certificates to ensure that conflicts are managed.

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Participation in the processes that establish carbon trading is essential to the building of partnerships and the development of commitments to implement a forest-management regime. This participation needs to move beyond the informing and consultation steps of participation to include the following.

- (i) Scoping of the social network and relationships to identify who matters most and to define the respective roles of all the players in terms of rights, responsibilities and rewards.
- (ii) An assessment of the capacity to participate both in terms of carbon trading but also in the wider social interrelationships that will need to develop.
- (iii) Development of a collaborative management agreement between the parties to outline commitments and details of the agreements, especially with respect to the boundaries and rights the agreement applies to rather than the simple specification of ownership.
- (iv) The national trading desk will ensure the ongoing involvement of all the parties, as this is an important determinant of success. Investors cannot enter the system with the expectation that they will not be required to maintain a presence—even if their presence is only sporadic and not full time. Like all partnerships, these will need to be maintained and nurtured.

7. Conclusion

The concept is simple. How can the natural capital of forests be turned into social capital without destroying the underlying natural resource. Carbon entitlements and trading is one such mechanism. The challenge is partly democratic and requires the admission of forest communities into the policy, the policy process and management of forest resources, as these people are the solution (Bass 2001*a, b*). Carbon entitlements provide policy makers, political decision makers and global watchdogs with an opportunity to apply new instruments that develop property. The allocation of entitlements can redress past social injustices that have depleted the social capital of forest communities. The linking of forest communities to forest governance is increasingly recognized as the only option. This should not come as a surprise, as it mirrors the experience in nearly all other resources such as land, water and houses. Carbon entitlements need to be sensitive to the needs of forest communities while providing them access to the benefits of a strong property system and the development freedoms this can provide. To do so requires a commitment by all stakeholders to support the management of forests for wider civil society. Carbon trading and property entitlements provide another chance to get this right, or at least better than in the past.

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