

CHALLENGES AND RECOMMENDATIONS

Contribution to the World Bank's Forest Policy Implementation Review and Strategy (30/03/00)

INTRODUCTION

The World Bank's FPIRS: an opportunity for real change

The World Bank's Forest Policy Implementation Review and Strategy (FPIRS) process has the potential to be far more influential than previous forest sector reviews. This review covers not only policy, but also the World Bank's implementation strategy, which is where many observers consider the main problems are. Furthermore, the World Bank is examining all of its activities that impact on forests. The review will go far beyond the relatively small forestry sector loan portfolio to put the spotlight on mainstream World Bank activities such as structural adjustment and infrastructure lending - which are known to have a major impact on forests.

The World Bank can convincingly link macro-economic policy and forest issues, and it has enough weight to make a difference on the ground. The World Bank is one of the few institutions that can affect how macro-economic policies in client countries integrate environmental values. Therefore we expect the outcome of the FPIRS to influence not only governments but also the policies of other multilateral institutions, such as the International Monetary Fund and the regional development banks, and bilateral donors.

Since the World Bank's Forest Policy was issued in 1991, the World Bank has become an increasingly important player in financing sustainable development. Environmental project loans increased from \$26 million to \$10.9 billion (thousand million) between 1986 and 1998. Environmental personnel in the same period went up from less than 20 to more than 300. But even if its policies are well intentioned, experience has shown that the World Bank's operations can do substantial harm if these policies are not implemented effectively.

A lost decade?

Some observers argue that 1991-2000 has been a "lost decade" for the World Bank's work on forests - with deforestation and forest degradation continuing to impoverish forest-dependent people in many parts of the world. IUCN and WWF contend that the ten years that have passed since the Forest Policy was issued will be a lost decade only if the World Bank fails to learn the lessons from both its successes and failures in conserving forests, and enhance their contribution to poverty alleviation. The challenge ahead of us is to assist the World Bank in strengthening the environmental and social safeguards applied to its operations impacting forests, while at the same time developing a more pro-active agenda to ensure that forest sector interventions contribute to achieving their poverty alleviation and environmental conservation objectives.

IUCN/WWF's Challenges and Recommendations

The World Bank has commissioned a range of analytical studies designed to contribute to the FPIRS. The present document provides a response by IUCN and WWF to what we perceive to be the key findings - and omissions - of these studies. What follows is a series of "challenges", including recommendations. The series is split in two categories: priorities and tools.

Priorities: Poverty Alleviation; Conservation Priorities and Biodiversity; Role of Plantations.

Tools: Structural Adjustment; Forest Markets and Trends / Economic Valuation / Economic Incentives; Collaborative Forest Management.



PRIORITIES

- **Poverty Alleviation**
- **Conservation Priorities and Biodiversity**
- **The Role of Plantations**

Poverty Alleviation

Please note that Annex Two provides some detail about IUCN/WWF's experience with this issue area.

Analytical Study commissioned by the World Bank:

- Shepherd, Gill; Arnold, Mike; and Bass, Steve (1999). *Forests and Sustainable Livelihoods – Current understanding, emerging issues and their implications for World Bank Forest Policy and funding priorities.*

(This paper can be found on the World Bank's FPIRS web site, under the heading "Background Documents", and then under "Other Relevant Stakeholder Documents").

Challenges or Questions Raised by the Analytical Study:

The poverty paper bases its analysis on the five forms of social capital required for sustainable livelihoods, namely natural, physical, financial, human and social capital. This concept is being developed by DFID and provides a practical means to analyze poverty issues, both in general and specifically in terms of forestry. If this is combined with the need for sustainable livelihoods to be embedded in environmental, social and economic security, strong analyses can be made and practical actions taken at a range of different levels. The paper addresses three important questions: What do forests do for the poor? What do the poor do to or for forests? And what are the implications of the answers to these questions for World Bank support for a range of forest projects, and for projects that take place on what might not normally be considered forestland.

The poorest rural people are poorer than the poorest urban people are. In the poorest developing countries, 65-80% of the population still lives in rural areas. As we go into the third millennium, a greater proportion of people in many countries are below the poverty line. Rural inhabitants of poor developing countries depend in complex ways on natural resources. Often the poorer the household, the more diverse the sources of its livelihood and the more likely they are to depend on natural resources. Among off-farm resources, forests play fundamental roles in livelihood support, and dependence on forests is almost always complementary to agriculture, livestock herding, trading or wage laboring. So in order to understand how rural people are using forests, it is essential to be aware of all the other components of their livelihoods. Within rural society it is often the poorest, and then within that category poor women, who have to access wild natural products to sustain their livelihoods. Such natural resources can come from common lands and from state forests. With communal land being increasingly privatized, and national or private control over forests being assumed, such rights of access have been lost. The loss of these rights contributes to increased poverty. In addition there are other wider social influences in many nations such as corruption, perverse incentives, and political expediency. These have all contributed to the dramatic reduction in forest cover as it has given way to farming, often on land not or only marginally suitable for agriculture.

The paper identifies a range of broad groups who depend in one way or other on forests. These include:

- Hunter gatherers, though many now practice some form of agriculture;
- Those who practice sustainable fallowing systems and rotational agriculture in tropical moist or dry forests;

- Pastoralists in many of the dry lands of Africa whose livestock browse on trees and where dry season graze and browse reserves are of critical importance for risk and resilience management;
- Those who practice agriculture outside the forest as their main activity may still be very dependent upon forests for nutrients, feed, housing, fuelwood etc.;
- Traders and artisans have a different relationship with forests and are likely to buy forest products, and may have less interest in forest sustenance; and
- Urban dwellers may also purchase forest products.

Most traditional forest management systems gave those who lived in or near forests secure rights over the resource through various customary tenure and access arrangements. Many of these arrangements were annulled by state tenure systems, although many customary systems still operate in terms of day to day *de facto* resource use and management. The range of forest products can be very diverse, and timber may be only a small component, while the range of non-timber forest products used may be very extensive.

While CFM relates to involving local people in the management of forests, which are usually under some form of national gazettment, independent forest management under Common Property Regimes (CPR) may well be an important focus to take in future. It is vital to understand the conditions under which common property management provides the best match between resources and the economic, social and institutional context within which it is situated. Forests are more likely to be protected under common property regimes when they are managed as an adjunct to and component of wider livelihood strategies with which they are in symbiosis. In some cases, eg. where upland forests and watersheds have to be managed to protect water and agricultural areas lower down, forests must be managed in their entirety; in others thinly spread communal use over a very large area is appropriate (such as pastoralist resource use).

Unfortunately many of the evolving CPR, and CFM arrangements have not been adequately informed by the lessons coming from CPR scholarship, and the potential problems of trying to integrate customary arrangements with those of national authorities have been underplayed. Many such CPR systems are not even known let alone legally recognized, even though state control in a number of countries is remote and weak. It is clear that many institutions, including the World Bank, need to be better informed about the lessons from - and key ingredients for - successful CFM and for forest management under CPR.

The paper discusses poverty and rural people involvement in terms of collaborative forest management, protected area management, tree planting, and marginal (or "invisible" lands).

The background paper by Shepherd et al. has a number of relevant observations on and recommendations for World Bank policy at national and international levels:

- Choose strategies and time frames to suit the poor;
- Free up management goals so that people are better able to manage forests and woodland in their own ways;
- Rural people are not 'proxy' forestry department employees. While they need technical advice, much of the paperwork they have to go through to acquire forest management rights is a deterrent;
- The goal of decentralization to the local level, and of devolution away from government to private bodies of one kind or another does not usually return the local level to the same state it may once have been;
- Decisions which could have been made quickly locally may now have to wait upon government officials;
- Ensuring rights and responsibilities at a local level, so that local people can also be effective stewards of biodiversity and meet their livelihood needs;
- Open up forest policy to biodiversity and livelihood interests;
- Adaptive collaborative management arrangements to account for biodiversity uncertainties and to lessen livelihood risks; and

- Develop the capacity of national forest authorities with careful consideration of the merits and demerits of combined responsibilities for biodiversity and livelihoods.

It is argued that, for rural farmers and the private sector, commercial tree growing is likely to be a significant growth area in the immediate and long term future, and is an area where the World Bank could become more involved. Such commercial tree planting can have the added advantage of substitution for forest-based resources, both timber and non-timber based. However in terms of the poverty context, what the poor need for sustainable livelihoods is different from what the rich need, and may be less well articulated. Focusing on the more commercial and private sector aspects may doubly disadvantage the poor by taking land away from subsistence farming and by not investing adequately in the types of trees and resources which poor people need. Many poor people are planting trees, often using up to 25% of their land. Overall, such tree plantings, and the products accrued for subsistence use and informal trade are very significant indeed. However, in spite of the scale of tree planting by poor people, such activities are often 'invisible' to the larger economy, and their contribution is not recognized or valued, except at the local level.

The paper recognizes that (a) poverty causes deforestation, in that resource poor farmers and people need to increase their area under cultivation to produce adequate food, and that (b) immigration causes deforestation. National policies and politics in many countries support the continued clearing of forests for cultivation, yet give less emphasis to increased agricultural yields per hectare, through improved agricultural practices, agroforestry, resource substitution etc. Similarly, forest exploitation that primarily benefits those at the national level and/or the private sector often reduce the supply of forest goods and services for customary and local use. For example, intensive forest harvesting can reduce the supply of non-timber forest products and cause a drop in soil fertility that further exacerbates the poverty cycle. Past work of the World Bank has emphasized plantation forestry as a national concern, and the exploitation of indigenous forests by national and international interests with little respect for local rights to resources or for local institutional and legal arrangements for forest management. Poverty alleviation requires more than simple national policies. Such policies have to be articulated in local practice, in tangible benefits for local people, and in increased local responsibility for the management of natural resources. Further such policy has to result in increased social and environmental security, not simply economic security.

The paper identifies many factors relating to poverty that are not strictly of a forest nature, but over which institutions such as the World Bank have influence. These include tenure over land and resources, access rural credit, market access, pricing for farm products, perverse incentives for production. In addition, there are other key issues which either inform or are influenced by poverty related issues. There is need for all of these issues to be integrated within the wider issue of responsible "community involvement". These issues include:

- **Forest Markets and Trends** – with respect to non timber forest products and local level incentives for forest and forest product markets;
- **Sustainability of Forest Resources and Services** – the role of collaborative forest management (CFM) and common property resource (CPR) arrangements as tools in sustainable forest management, and rural development forestry (RDF) helps contribute to this by taking the pressure off natural forests;
- **Collaborative Forest Management / Rural Development Forestry** – the role of CFM, CPR and RDF in contributing to livelihood security, and contributing to sustainable forest management;
- **Economic Valuation** – where valuation is seen as contributing to more equitable benefit flows to local resource users, and not simply at the national level;
- **Economic Instruments** – what measures need to be put in place to support CFM, CPR and RDF, both at local and national levels?
- **Structural Adjustment** – can create incentive measures through decentralization, increased user rights and responsibilities for rural people;

- **Indigenous Peoples and Forests** – many indigenous groups live in or near formally gazetted forests, or live in and use other natural forests. Integrating them is a key component in CFM and CPR regimes; and
- **Priorities for Conservation and Biodiversity** – from a biodiversity and conservation analysis, to what extent and how does CFM contribute to such objectives?

Recommendations to the World Bank:

There are many kinds of livelihood issues, which the World Bank needs to be aware of, integrate and balance in its forest and broader policies. Not to do so could further marginalize the poor. Many people live in, around and with forests. Often their forest management systems are not officially recognized, their value not understood, yet they are of significant importance for the rural poor. The better the risk-reducing, security-increasing qualities of forests and woodlands are understood, the better the fundamental nature of the needs of the poor will be understood.

The World Bank can play an important part in ensuring that forestry contributes in a real and significant manner to rural people's wellbeing and especially the poor through its various instruments, including that of policy influence. This needs to include the natural, physical, financial, human and social capital aspects of rural livelihoods. Forestry must become a recognized part of economic land use of rural people and the poor.

The World Bank should:

- Find ways to understand and support livelihood needs more effectively in the context of forest management and poverty alleviation;
- Apply conditionalities on loans and credits and assists nations to create and adopt fairer producer pricing mechanisms and incentives for both timber and non-timber forest products to foster sustainable forest management and sustainable use at the local level;
- Encourage governments to integrate the real values of forests and trees into economic land use and landscape planning so that forests and trees enhance rural livelihoods; and
- Use opportunities provided by structural adjustment and other national level changes to promote a responsible environment for the involvement of local people in forest management.

Conservation Priorities and Biodiversity

Analytical Studies commissioned by the World Bank:

- Putz, Francis; Redford, Kent; Fimbel, Robert; and Robinson, John (1999). *Biodiversity Conservation in the Context of Tropical Forest Management*. Wildlife Conservation Society, New York.
- Platais, Gunars (forthcoming 2000). *Global overlays: Externalities*. World Bank, Washington, D.C.

Voluntary Contributions:

- Lovejoy, Tom et al (1999). *High Extinction-risk Ecoregions Analysis*. Report of Working Group 1, World Bank CEOs Ad Hoc Forum on Forests, Washington, D.C.

(These papers can be found on the World Bank's FPIRS web site, under the heading "Background Documents", and then under "Other Relevant Stakeholder Documents").

Challenges or Questions Raised by the Analytical Studies:

These three papers raise the following challenges and questions.

"Despite...statistics on current human impacts and the observations on the long-term impacts of previous generations of our species, many in the conservation and sustainable development community still maintain it is possible to both use and preserve biodiversity...with no costs to either side...This ahistorical and wishful thinking is extremely dangerous because it allows its adherents to believe that there exist easy, cost-free solutions to exploitation of the planet." (Putz et al. 1999)

The paper by Putz et al. analyses the impact of different logging methods (low/high intensity x small/large areas) on different components of biodiversity (landscape, ecosystem, community, species/populations and genetic components). This analysis, though elegant and valid, seems of limited relevance to a development agency that is unlikely to make available large amounts of concessional funds for logging operations that have a pay-back time of 18-24 months - whether or not the clause prohibiting Bank support for logging in primary tropical moist forest will be retained in the new policy. There is also a more summary analysis of the effect of a range of forest uses on the components and attributes of biodiversity, which gives rise to a number of sound, practical recommendations at the end of the paper.

The paper by Lovejoy et al. sets out to answer the following three questions:

- 1) *Does the conservation community agree on biodiversity conservation priorities?*
- 2) *Where would large-scale commercial logging do the most damage to biodiversity?*
- 3) *Where would such activities do the least damage?*

With regards to 1) it states that all biodiversity is important, and that conservation priorities merely reflect differences in urgency. In response to questions 2 and 3, the paper develops the example of the Indo-Pacific region. It recommends that all large-scale commercial logging in natural forests should end immediately in High Extinction-Risk Ecoregions, and that it should be phased out in forest frontiers and other significant tracts of intact and near-intact forests in all tropical ecoregions - noting that there may be exceptions where it can be scientifically demonstrated upfront that logging can be managed without adverse impacts on biodiversity and ecosystem function. It also recommends that hunting to support logging camps and related market hunting should be eliminated immediately, and that there should be a shift to plantation forestry in areas of degraded forest lands that are not priorities for restoration. Again, this analysis, while useful in the context of the CEOs Ad Hoc Forum on Forests, seems of limited relevance to a development agency that is unlikely to make available large amounts of concessional funds for logging operations that have a pay-back time of 18-24 months.

As the paper by Platias is still not available, the subject of economics is almost absent from these papers. This is not only surprising, given the nature of the World Bank mandate, but also wrong. The setting of conservation priorities, like all human endeavours, is at least in part an economic problem: how can scarce resources be allocated to achieve an optimum mix of morally and/or socially desirable outcomes? (In this case, the maintenance of habitat value for plants and animals, and of productive capacity of natural resources that sustain the livelihoods of the rural poor.) This lack of integration of economics is symptomatic of much of the Bank's environmental work. Routinely, National Environmental Action Plans (with some notable exceptions) consist of the combined wish lists of all the sectoral ministries in a given country, with no clear prioritization given to "environmental 'bang' for your buck."

Priorities for Biodiversity Conservation

As far as the methodologies for biodiversity conservation priority setting are concerned, there is considerable disagreement among nature conservation organizations about how to weight the different components and attributes of biodiversity. This is more than just an academic problem. For example, given the fact that key biodiversity attributes such as high species diversity, endemism and level of threat are often poorly correlated, weighting them slightly differently may well result in modifications in conservation priorities. In addition, maximum diversity scores for different groups of plants and animals rarely coincide so it is not easy to come to unanimous definitions of so-called "biodiversity hotspots".

These differences should not be overplayed, however. There is increasing consensus among conservation experts that the biodiversity conservation priority setting methods used by major conservation organizations such as Birdlife (Important Bird Areas), Conservation International (hotspots), IUCN (Red Lists of Threatened Species) and the World Wildlife Fund (Extinction-prone ecoregions) lead to results that overlap 70-80% in most regions.

Many experts believe that it will be possible to achieve an even higher degree of consensus by combining ecosystem and species based approaches.

IUCN-SSC and Birdlife have compiled data on all red-listed mammals and birds. Within the next 2-3 years, these data will become available through IUCN's Species Information System (SIS) as distribution maps, in a format that allows easy overlays with other geographic priority setting methods such as WWF's Ecoregions and CI's Hotspots. Apart from mammals and birds, SIS will eventually also cover amphibians, reptiles, freshwater fish and certain types of plants and invertebrates. This is expected to lead to the identification of globally agreed "Important Biodiversity Areas", that will be readily available to and useable by organizations such as the World Bank.

One element that is missing from many publications on biodiversity priority setting is how to translate global-level recommendations into guidance for designing national protected area networks. There is increasing consensus that the best way to do the latter is to combine iterative reserve selection approaches (see Howard 1996 for a concrete application in Uganda) with data on threatened species (Johnson 1995). IUCN and WWF are also developing and testing a Landscape Approach to Forest Conservation, to bridge the gap between stand and site level approaches such as forest certification on the one hand, and national or ecoregional planning processes on the other. The aim of this landscape approach is to develop a decision-making tool that can be used both at a general level (eg. on the role of plantations) and at the operational level (eg. about the siting of a particular plantation). This approach will be very useful for situations where blanket policy prescriptions at national or ecoregional level are likely to be overly simplistic eg. concerning the acceptability of industrial-scale timber plantations or logging in (near-)natural forests.

Recommendations to the World Bank:

Much of the discussion between the World Bank and the conservation community has focused on the need to preserve the most biodiverse forests in strictly protected areas. As a

consequence, forest conservation priority setting is often equated to (or confused with) the selection of high biodiversity forest areas for set-aside purposes. However, a priority approach based purely on species richness and biological distinction does not do justice to all aspects of biodiversity conservation, for the following reasons:

- In many areas of unfavourable topography and soil fertility, forest cover is the only productive and sustainable land use imaginable. In the tropical drylands, where the livelihoods of the rural poor are based on rain-fed arable and livestock farming, woodlands are essential sources of support especially in times of drought, crop failure and pasture degradation. Degrading or converting forests in such settings severely disrupts local people's livelihoods and may lead to out-migration, sometimes with considerable social and environmental impact elsewhere;
- Many (relatively) species-poor forest ecosystems are key providers of environmental services, eg. tropical montane cloud forests increase the availability of high-quality surface water supplies by stripping moisture out of the air; a large share of the world's freshwater reserves is contained in the boreal forests and a considerable part of the world's carbon is stocked in boreal and tropical peat swamp forests;
- Many (relatively) species-poor forest ecosystems protect the integrity of other, more biodiverse and often more threatened ecosystems, eg. mangrove forests protect coral reefs against sedimentation in Mozambique, and upland woodlands prevent siltation of the spawning grounds of the cichlid fishes of Lake Malawi. (The role of forests in protecting freshwater biodiversity is especially important since the latter is much more threatened than forest plants and animals, as witnessed by the fact that most of the well-documented recent extinctions are of freshwater species. Deforestation and forest degradation are a major cause of the loss of integrity of freshwater ecosystems.);
- Small areas of riverine forest may be essential to maintain connectivity between larger forest blocks, allowing for the migration of large mammals such as elephants.

IUCN's mission is "to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and ensure that any use of natural resources is equitable and ecologically sustainable". WWF aims "to conserve nature and ecological processes by preserving genetic, species and ecosystem diversity; ensuring that the use of renewable natural resources is sustainable both now and in the longer term; and promoting actions to reduce pollution and the wasteful exploitation and consumption of resources and energy." Therefore, forest conservation means more to IUCN and WWF than just preservation of the most biodiverse forests in strictly protected areas; it also includes conservation and sustainable use of all forest ecosystems in protected areas where limited use is allowed, and outside protected areas.

The issue of sustainable use of forest ecosystems provides the most straightforward link to the World Bank's central mandate of poverty alleviation. But forests outside protected areas are not just of interest for poverty alleviation. As Putz et al. put it, forests outside protected areas are immensely important for conservation. Conservation priorities in those areas are not mainly about set-aside, but rather about identifying and mitigating the main negative environmental impacts of various kinds of forest use. In many cases, the application of a few "best-bet" technologies and approaches could make a significant contribution to reducing environmental impact of such use activities. Such technologies can be financially profitable as well as environmentally beneficial, as is shown by the example of low impact logging.

The World Bank's main comparative advantage would seem to lie in helping client country governments to improve the way in which public resources are allocated and spent to achieve environmental and sustainability goals with regards to forests, rather than in the pursuit of individual conservation results. Simply trying to avoid doing harm will not be sufficient: the World Bank will need to use strategic environmental assessments for all sectors impacting on

forests it is involved in (agriculture, infrastructure, oil & mining, macroeconomic adjustment) to define a positive agenda for its role in forest conservation.

Specific recommendations:

- The World Bank should focus first and foremost on helping client country governments to improve the way in which public resources are allocated and spent to achieve environmental and sustainability goals with regard to forests. It should pursue individual conservation results only where it has a comparative advantage in doing so.
- In order to ensure that its Country Assistance Strategies and lending portfolios are better informed regarding forest issues, the World Bank should increase resources available for Economic and Sector Work on forests, and form external advisory committees including forest and nature conservation organizations for key forest countries.
- The results of strategic environmental assessments for all major sectors impacting on forests (agriculture, infrastructure, oil & mining, macroeconomic adjustment) should be integrated into Country Assistance Strategies, especially in forest-rich countries.
- Forest conservation priorities for the World Bank should be more than just a number of high-species diversity, "no-go" areas for investment lending. Country Assistance Strategies should also include as priorities the conservation of forest ecosystems that provide essential environmental services other than biodiversity conservation (eg. watershed protection and carbon sequestration), as well as "best-bet" technologies and approaches to reduce negative environmental impact of different kinds of forest use across sectors (agriculture, forestry, infrastructure, mining etc.).
- Rather than adopting blanket forest policy prescriptions for large geographical areas, which are often overly simplistic, the Bank should use decision-making tools such as the Landscape Approach to Forest Conservation that is being developed by IUCN and WWF, which allow for the rational consideration of conservation trade-offs at appropriate geographic scales.
- The World Bank should focus on overlap rather than differences between various biodiversity conservation priority setting methods and use combinations of ecosystems and species based approaches to conserve all attributes of biodiversity.

The Role of Plantations

Please note that Annex Two provides some detail about IUCN/WWF's experience with this issue area.

Analytical Study commissioned by the World Bank:

- Hardcastle, P.D., *Plantations: Potential and Limitations*.

(This paper can be found on the World Bank's FPIRS web site, under the heading "Background Documents", and then under "Other Relevant Stakeholder Documents").

Challenges or Questions Raised by the Analytical Study:

The terms of reference for the paper take a rather narrow view of the plantations issue and direct the consultant primarily to focus on industrial roundwood with some reference to carbon sequestration. This would have been understandable if the Bank had included a broader consideration of reforestation/afforestation as an additional key issue area - this is not the case. WWF and IUCN believe that plantation establishment for the industrial production of roundwood and sawlogs should only be considered as a subset, albeit an important one, of reforestation/afforestation activities for the production of a whole range of forests goods and services. By failing to distinguish between reforestation/afforestation and "industrial plantations" the Bank is missing a golden opportunity for a more comprehensive analysis of how planted forests can contribute to the social and ecological wellbeing of their client countries. Worryingly, the Bank, in framing the terms of reference, continues to adhere to, what is in IUCN and WWF's opinion, the flawed assumption that industrial plantations relieve "pressure on natural forests from wood production activities and assist in redressing biodiversity losses in natural forests". WWF and IUCN note that the consultant appears unconvinced as to the general veracity of this assumption (paragraphs 221 to 227), particularly with respect to tropical forests.

The paper attempts to quantify the "potential supply" and demand from plantations over the next half-century, principally drawing information from three respected sources. The consultant highlights the variation among the sources, whose recommendations for additional planting requirement range between 66 and 101 million hectares by 2050. He also points out that approximately 80% will be required to meet fuelwood demands and 20% to supply industrial roundwood. WWF and IUCN believe that these figures while interesting, inasmuch as they indicate the likely order of magnitude that needs to be considered, should also be treated with caution. Experience over the past 50 years has shown that Governments and multilateral organizations have made serious errors, both from an investment and environmental point of view, by shaping industrial plantations policy on predicted future trends. The Sao Hills plantation, one of the largest in East Africa, although replete with reasonable quality pine has made little, if any, contribution to Tanzania's economic development. Similarly, FAO supported the replacement of 13,000 hectares of selectively logged, though good quality, perhumid tropical forest with monospecific Gmelina plantations in the Subri Forest Reserve, Ghana. On both occasions, these projects were justified on the anticipated growth in demand for paper products in East and West Africa respectively. WWF and IUCN welcome the current research the Bank is carrying out in this field (Global Vision for Forests – in collaboration with WWF, WRI and CFR) and suggest that the same detailed analysis should be extended to a regional / national level.

More consideration could have been given to the impact that changes in consumption patterns may have on the extent and nature of industrial plantations. Only the risk that product substitution could be counterproductive by encouraging a switch to energy-inefficient alternatives was highlighted. The feasibility (and drawbacks) of using other renewable resources, such as hemp and flax lint for paper-making, were not considered. The potential of markets in recycled and "cascaded" wood and paper products was also largely ignored. In recognizing the difficulties of persuading consumers to voluntarily reduce consumption, one should be careful to distinguish, and not discount, the potential of reducing **wasteful** consumption.

The paper correctly points out that the exponential nature of compound interest, high initial expenditure and long rotations makes the financing of industrial plantations potentially less attractive than other possible capital investments. These conditions not only restrict the availability of capital but also shape, to a large degree, the nature of plantation silviculture. Such limitations have resulted in grants and subsidies being widely used and the consultant concludes that these are seen in many countries as positive tools (paragraph 231). WWF and IUCN only partially concur with this final statement. We believe that grants and subsidies for industrial-scale plantation forestry has had a mixed history from an economic development point of view and has largely exerted a negative influence with respect to biodiversity conservation. Large amounts of money that could have been better invested, either within or outwith the forest sector, have gone to support ill-conceived planting schemes. WWF and IUCN believe that, wherever possible, industrial-scale plantation activities should rest with the private sector. Investment decisions should be a matter for capital markets, receiving only judicious and minimal support from the public purse. Apart from providing a legislative framework that balances protection of the investment with that of local peoples' rights and the environment, governments' principal role should be to ensure that the investment does not subsequently capitalize at a cost to civil society, for example through stream acidification, loss of rare habitats, etc.

However WWF and IUCN believe that governments do have a major role to play in supporting afforestation and reforestation activities. Restoration of forest cover to provide essential non-timber goods and services is seldom financed. When additional payments are made for non-timber services, such as recreation in Germany, it is often done on an arbitrary basis. More comprehensive application of environmental economics to forestry would allow the true costs and benefits of such schemes to emerge and provide governments with a solid basis on which to make informed decisions. The Bank has already made a major contribution to brown issues through the application of environmental economics (eg. pollution abatement in Mexico City), and WWF and IUCN now call on it to work with, and encourage client countries to adopt and adapt, similar analytical methodologies with respect to reforestation/afforestation.

The consultant makes a valid point that just as plantations established for services can deliver (timber) products, so can industrial plantations deliver other service values: in other words, management objectives are more a question of priorities than exclusive focus on a single aim. WWF and IUCN accept this as true but also caution that it is not misinterpreted. The dominant use and multiple use paradigms are often portrayed as being alternative management strategies for forest stands, while in fact they are largely scale dependent. In general, the smaller the scale the more likely that land use specialization will occur, on the basis that it becomes increasingly difficult to extract a full range of goods and services from diminishing units of area¹. Alternatively the larger the unit area, the greater the imperative to ensure that no single good or service precludes the attainment of others. Multiple use - a landscape level priority - should not be confused with multi-functionality that can, in certain circumstances, be attained at site level under dominant-use management. This "landscape approach" to forest conservation recognizes that trade-offs exist at the stand level, and if managed properly - eg. through certification - are acceptable. However with increasing scale, trade-offs are more and more unacceptable and it becomes essential to achieve a balanced multiple use strategy.

The other reason why WWF and IUCN caution that the stand-level, multi-functionality argument should not be overstated is that during the past twenty years industrial plantation silviculture, instead of moving towards Kanowski's "complex plantation" model, has tended towards greater intensification and simplification. This is particularly apparent with the rush towards developing and testing transgenic trees. WWF and IUCN endorse the consultant's note of caution (paragraph 196) with respect to the dangers of recklessly commercializing this technology before it is better understood. The Bank should encourage all client countries to

¹ Critics of what IUCN and WWF term the "landscape approach" to forest conservation may point to an extractive reserve as evidence of multiple-use at the small-scale. We would argue that this is not the case - there is still one dominant use (management objective) - to maintain livelihoods of dependant peoples. Other functions, eg. biodiversity conservation may be also attained but only as a second-order management objective. Similarly, other functions, eg. industrial-scale timber extraction, will be excluded.

strictly apply the precautionary principle with respect to the commercial production of transgenic trees until the risks have been properly quantified and adequate safeguards put in place.

While recognizing that the Bank has "Carbon and Forests" as another thematic key area, WWF and IUCN feel more consideration could have been given to the discussion on carbon fixation and plantations. We are concerned that the Bank appears to be contemplating the inclusion of industrial plantations in its Prototype Carbon Fund (PCF). We envisage that this would create difficulties with the "additionality" of such projects and, considering that industrial plantations produce short-lived products, fail to make any meaningful contribution to long-term mitigation of the impact of GHGs. Given the UK's Hadley Centre estimates that global warming will negatively impact upon one third of the world's forests by 2050, WWF and IUCN urge the Bank to ensure that forest-related investments through the PCF seek, as a first order priority, to increase the resilience and resistance of high-value forest landscapes to the effects of climate change. Again we reiterate that this means looking beyond industrial plantation establishment towards restoration of forest cover for a wide range of non-industrial uses.

Recommendations to the World Bank:

Plantation forestry appears set to become a significant, perhaps even dominant, form of industrial forest development in the new century. The increasing importance of plantations to global wood supply has led some commentators to speculate that these trends might be harnessed to alleviate logging pressure on natural forests, which could then be managed solely for the production of other goods and services. WWF and IUCN question this assumption. With the exception of a few often-cited examples, particularly those of Fiji and New Zealand, there is little evidence that industrial-scale plantation forestry can alone provide an effective vehicle for the achievement of broader forest conservation goals. On the other hand, IUCN and WWF also challenge the assumption that industrial forest plantations are inherently bad for people and the environment, and acknowledge that, under certain circumstances, there may well be a positive role for "compensatory" planting strategies. We believe that protagonists on both sides have failed to address the complexity of the "plantations" issue. WWF and IUCN advise the Bank that an appropriate role for plantations can only be determined when all the costs, benefits and trade-offs created by their establishment and management are given adequate and equal consideration on a case by case basis.

IUCN and WWF encourage the World Bank to widen the scope of FPIRS with respect to planted forests. We believe that industrial plantations constitute only one possible intervention with respect to afforestation / reforestation development strategies. The Bank can play an important role by promoting the re-establishment of tree cover in client countries for a whole range of socially and ecologically beneficial forest functions and should not just concentrate on industrial roundwood supply. Key areas that require attention are:

- The promotion of, and investment in, forest restoration projects based on a total economic valuation of the forest goods and services provided. WWF and IUCN believe that the Bank's major role with respect to planted forest should be to help address market and policy failures so that the full costs and benefits of planting schemes are distributed equitably within society.
- An improved understanding of the policy and legislative environment necessary to enable afforestation / reforestation schemes to deliver real development and conservation change. The industrial plantation model is only one of several options for re-establishing tree cover that benefits both people and the environment. The Bank could play a key role in supporting research into the policy / legislative framework and supporting the testing of innovative approaches to reforestation.
- The adoption of a **landscape approach** to plantation development by appropriate government agencies within client countries. Investment in proposed schemes should not

be considered if it can be demonstrated that the plantation is likely to prevent the delivery of a full range of forest goods and services at the landscape level. For example, plantation schemes that directly or indirectly disrupt hydrological cycling or affect water quality at a landscape level should not be supported.

- The provision of clear guidance to client countries on when and when not to support the establishment of large-scale industrial plantations. WWF and IUCN believe that all too often governments waste large amounts of public funds on ill-conceived industrial forest expansion initiatives which serve only to create perverse incentives that produce biodiversity loss with little, if any, social benefit. Where possible, industrial plantation development should be driven by private sector investment.
- As a rule, to discourage the loss of either primary or ecologically-important, secondary forest cover through the direct (e.g. conversion) or indirect (e.g. poor fire management) impact of industrial plantation establishment and management. WWF and IUCN believe that the Bank's safeguard policies must also ensure that resource-poor people are not adversely affected by the conversion of so-called unproductive, degraded or abandoned lands to industrial plantations.
- The promotion of the independent certification of all planted forests through FSC or equivalent schemes.

IUCN and WWF appreciate that most of the actions outlined above reflect elements of current World Bank policy and are already being implemented to some degree. The 1991 Forest Policy acknowledged that the social, environmental and economic conditions must be right before the Bank would assist in plantation establishment. However this has not prevented some Bank-supported industrial plantation projects attracting criticism by campaigning groups such as WRM. WWF and IUCN believe that the World Bank must now go further in defining what it means by the "right conditions" and more clearly articulate its policy guidelines for afforestation/reforestation activities that can contribute to national economic development while positively impacting on local wellbeing & biodiversity conservation. In doing so, IUCN and WWF caution the World Bank not to proceed under the assumption that industrial plantations, if properly managed, can act as adequate repositories of other forest goods and services. Industrial plantation forestry, often by necessity, is a highly exclusive land use with respect to other forest functions, both over the short and long term. Consideration of the nature of the Bank's afforestation/reforestation activities should be balanced in two respects: i) by taking into account both local and macro-economic needs and; ii) by weighing the full costs and benefits from the supply of multiple goods and services against those of a single product.

The World Bank possesses a series of mechanisms and instruments to facilitate ecologically and socially appropriate plantation establishment although these need to be utilized in a more strategic manner. As with agricultural commodities, industrial roundwood production should, wherever possible, be financed by private sector investments and therefore Bank support should be channeled primarily through IFC loans and MIGA guarantees. Independent certification should be a requirement of all plantation-related loans.

Other World Bank loan and grant facilities could then be aimed at "leveling the playing field" with respect to extending forest cover for the production of those "non-industrial" goods and services necessary for sustaining livelihood security, economic development, environmental protection and biodiversity conservation. In other words Bank funds would defray the financial shortfall created by present market failures to capture the true costs and benefits of non-industrial reforestation/afforestation schemes. Particular attention should be focussed on reforestation (forest restoration) for watershed management, fuelwood and energy supply, erosion prevention and soil protection, enhancing ecosystem resilience to local climatic fluxes and global climate change, including the combating of desertification. WWF and IUCN acknowledge that smallholder planting schemes can often have important societal benefits and encourage the Bank to continue supporting such initiatives. However as these schemes

characteristically promote local development as a first order objective the Bank should not automatically follow an industrial forest model under such circumstances.

WWF and IUCN agree with the eight recommendations made by the consultant in *Plantations: Potential and Limitations*. To these we would add:

- In its FPIRS - and in any country or forestry sector support programmes - the Bank should broaden its examination of "plantations" to include restoration of forest cover for a range of goods and services, including wood fibre and sawlog production.
- The Bank should mainstream environmental economics into its analysis of reforestation/afforestation projects. Greater emphasis should be placed upon creating properly-priced incentives for the establishment and maintenance of planted forests to supply those goods and services whose value present markets have failed to capture.
- Support for industrial plantations must be examined within a landscape context. Such investments must be able to demonstrate that any trade-off in lost goods and services will be compensated for, at an equivalent scale, elsewhere in the landscape and that appropriate political, institutional and economic mechanisms exist to guarantee the management of such trade-offs.
- More research is required to identify the conditions under which start-up support to the establishment of an industrial plantation estate is justifiable. In the medium to long-term, industrial plantations schemes must be economically viable and not dependent on support from the public purse.
- More research is required to better define the role of national forest departments in industrial plantation development. Too many forest departments still see their principal role as that of the main supplier of roundwood to the forest industry. The Bank can play a crucial role in helping to broaden national forest visions, especially with respect to the restoration of forest cover for a wide range of goods and services, and training forest department staff to help deliver these.
- The Bank should support partnerships with organizations such as WWF and IUCN and grass-roots NGOs to develop strategies for the delivery of tangible social and environmental gains through afforestation/reforestation.

TOOLS

- **Structural Adjustment**
- **Forest Markets and Trends / Economic Valuation / Economic Incentives**
- **Collaborative Forest Management**

Structural Adjustment

Analytical Studies commissioned by the World Bank:

- Kaimowitz, David and Angelsen, Arild (1999). *The World Bank and non-forest sector policies that affect forests*. CIFOR.
- Seymour, Frances and Dubash, Navroz (1999). *The Political Economy of Environmental Adjustment: the World Bank as midwife of forest policy reform*. WRI.

(These papers can be found on the World Bank's FPIRS web site, under the heading "Background Documents", and then under "Other Relevant Stakeholder Documents").

Challenges or Questions Raised by the Analytical Studies:

"Some might argue that the World Bank should not get involved in forestry issues at all, since it has no comparative advantage in dealing with their complexity and location-specific nature. To that we respond that as long as the Bank exists and continues to have a major impact on countries' economies and policies it will inevitably affect the future of forests and forest dependent people in some way. Thus the key question is not should the Bank have a role, but how can it make that role more positive." (Kaimowitz and Angelsen)

"Forest reform depends on long-term incremental institutional change and capacity building, which may include decentralization of natural resource management roles to sub-national levels and non-state actors. These sorts of changes are not built at the national level by a small group of bureaucrats, nor can they be realistically enforced at that level." (Seymour and Dubash)

Most observers now accept that the reasons for continuing forest loss and degradation are largely found outside the forestry sector per se – in fiscal and other macro-economic policies, and sector policies such as agriculture and infrastructure. The main international initiatives set up to deal with forest loss and degradation - the Tropical Forestry Action Plan (later programme) in the 1980s and early 1990s, and the UN Intergovernmental Panel (later Forum) on Forests in more recent years - have failed to take forest issues to the Finance, Planning and Agriculture Ministries where many of the key decisions on forests are taken. IUCN and WWF feel that this is exactly where the World Bank's main comparative advantage lies: it is in almost constant dialogue with these powerful ministries as well as with those in charge of Forests and Environment.

As Kaimowitz and Angelsen note, current policy and market failures lead to inappropriate forest clearing and degradation as well as greater poverty. Conversely, good policies can lead to improved forest management and more sustainable and less poverty-ridden rural livelihoods. The World Bank is therefore right to concentrate on forest policy reform in Structural and Sectoral Adjustment Loans and Credits. However, policy reform conditionality can be a pretty blunt instrument. Given the huge variation in biophysical and socio-economic contexts in the World Bank's client countries, one size definitely does not fit all. In addition, the value that different parts of the global community attach to the different goods and services provided by forests have changed more rapidly and profoundly in the past few decades than ever before – and this process of change is unlikely to slow down. Therefore, a diversity of approaches to forest management, by a wide variety of stakeholders, would seem to be the best option to guarantee a continuing flow of multiple benefits to both present and future generations. Policy reform proposals should be developed with this kind of flexibility in mind.

Kaimowitz and Angelsen argue that a whole range of policy measures that are commonly included in the Bank's (and the IMF's) structural adjustment "packages" have an impact on forests, often but not always negative, for example:

- *Real-exchange rate depreciation* (currency devaluation) favours the expansion of tradeables over non-tradeables, which generally encourages expansion of agriculture, logging and mining – although some of its secondary effects may reduce forest loss.
- *Reducing tariffs and trade restrictions* for manufactured imports shifts the terms of trade in favour of agriculture and forestry and may therefore lead to increased logging and forest conversion, whereas lowering tariffs for farm and forestry imports should have the opposite effect.
- *Lower agricultural export taxes* encourage agricultural expansion, often at the expense of forests.
- *Deflationary policies* (reducing public spending and money supply) through depressing the economy, often induce migration to the agricultural frontier, while diminishing government capacity to manage and protect forests.

The challenge for World Bank policy analysts and loan task managers is how to avoid such negative impacts, or where this is impossible, how to mitigate their extent. Structural Adjustment Loans and Credits (SAL) are often introduced during times of crisis. Some significant forest-related Economic and Sector Work and country dialogue need to be underway if the World Bank is going to have any basis for understanding the cross-sectoral impacts of SAL on forests and for getting the forest policy conditionality right. Where such analytical work and dialogue are non-existent, macroeconomic adjustments can wreak major havoc on forests. The ill-prepared CFA devaluation in francophone Africa in the early 1990's is a case in point. This led to environmentally damaging logging booms in Côte d'Ivoire and Cameroon, which could have been mitigated in considerable part through a combination of fiscal and concession allocation measures.

Seymour and Dubash concluded, on the basis of case studies of forest-related conditionalities in adjustment lending in Cameroon, Indonesia and Papua New Guinea, that **the World Bank had been most effective in promoting forest sector reforms where it had invested in building coalitions with local constituencies in favour of forest conservation**. This is because the "stroke of the pen" reforms included in adjustment conditionality - while useful for buying time in the short run - will not have much of an impact in the longer term unless constituencies in borrower countries get actively involved in the follow-up. The challenge for World Bank senior management is to ensure that sufficient resources and time to do this are available on the work floor – as Country Directors and Country Economists perceive Structural Adjustment Loans and Credits as a fast and cheap (in terms of staff time) way of disbursing large sums of money.

One stakeholder group that the Bank has rarely managed to build effective coalitions with is that of the private loggers. This failure to engage seems surprising since most serious private sector players agree with large chunks of the World Bank's reform agenda, eg. in Cameroon most of the loggers agreed with three out of the World Bank's four major reform proposals:

- Abolishment of government monopolies on the execution of forest inventories and management plans (with governments refocussing on norm setting instead).
- Increased maximum size and duration of timber concessions.
- Log export taxes and quotas to replace log export bans (which tend to cause rapid establishment of inefficient processing industries that end up accelerating forest depletion C/F Indonesia).

One possible explanation is that adjustment conditionality often envisages an increase of forest and timber fees and taxes (the fourth measure also in Cameroon), without at the same time dealing with the parallel payments that corrupted government officials extract with impunity from private companies. The introduction of such fiscal measures in a "governance vacuum" tends to punish law-abiding companies who pay their taxes, while leaving tax fraudsters and other illegal operators a free hand. The result is a further un-levelling of the playing field, the opposite of what is needed to attract responsible private sector investment.

The challenge for World Bank management is how to deal with these difficult governance and corruption issues in an open and effective manner.

The World Bank's Country Directors and Country Economists often perceive forest conditionality in structural adjustment loans and credits as difficult and as a risk to timely disbursement. As a consequence often only a small part of the total amount of the loans is pegged to forest-related conditions, which reduces the leverage of adjustment as a forest conservation tool. This "speaking loudly and carrying a small stick" is unlikely to bring about the desired results. **The challenge for World Bank senior management is to put in place mechanisms to ensure that forest conditionality is not marginalised through risk-averse behaviour of lower and middle management.**

So far, public sector reform exercises carried out as part of adjustment packages have focussed heavily on cost cutting, often in a very non-selective manner, eg. with a fixed percentage of cuts to be applied to all government agencies. This is unfortunate, as public forest agencies will need to continue to play a role in safeguarding the public interest in the sector. The challenge for the World Bank is to find a new way to run civil service reform exercises under adjustment operations. Quick-fix, number-crunching, all-take-and-no-give exercises that only serve to perpetuate "under-funded inefficiency" will have to make way for a dialogue in which **progressive elements in forest agencies are empowered to devise creative solutions to re-prioritizing and reallocating government expenditure.**

Recommendations to the World Bank:

The World Bank should:

- Increase resources devoted to Economic & Sector Work and Strategic Environmental Assessments, in order to mitigate unintended impacts on forests of macro-economic and sector policy reforms proposed under structural adjustment loans & credits and Country Assistance Strategies, and identify opportunities for forest policy reform conditionality.
- Engage small groups of external resource persons to identify opportunities and determine the scope for forest-related conditionality, in order to encourage Country Directors to become more pro-active in identifying opportunities to use adjustment lending in favour of forest conservation, and in keeping non-forest sector policies and governance and corruption issues on the adjustment agenda.
- Improve the effectiveness of forest (and other environment-related) conditionality in adjustment loans and credits through more sophisticated political analysis of the borrower country constituencies and external agents that could be mobilised around forest sector reform, and through building coalitions with them.
- Use public sector expenditure reductions as an opportunity to reorient government agencies, eg. towards more participatory and less costly strategies for managing forests (see also the section about Collaborative Forest Management).

Forest Markets and Trends / Economic Valuation / Economic Incentives

Please note that Annex Two provides some detail about IUCN/WWF's experience with this issue area.

Analytical Studies commissioned by the World Bank:

- Bishop, Joshua T. (Environmental Economics Programme, IIED). *Valuing Forests: a Review of Methods and Applications in Developing Countries*.
- Simula, Markku; Oy, Indufor. *Certification of Forest Management and Labeling of Forest Products*.
- Forestry Department of FAO. *Future Developments in Forest Products Markets*.

(These papers can be found on the World Bank's FPIRS web site, under the heading "Background Documents", and then under "Other Relevant Stakeholder Documents").

Challenges or Questions Raised by the Analytical Studies:

Valuation

The analytical paper on valuation provides a detailed review of (a) the possible values of both timber and non-timber forest products and (b) the techniques for measuring these values. Unfortunately, the paper provides minimal information on the uses of these values. Valuation is a tool that the World Bank can use to:

- **Identify stakeholders**, winners and losers (especially those marginalized groups such as the landless and women) and the resulting incentives of both their forest and other sectoral projects, programmes and policies; and
- **Identify means of capturing revenues** for ensuring the long-term ecological sustainability of forests.

The uses of valuation that are highlighted in the paper are relevant and important. For instance, the paper emphasizes the need to integrate non-timber values into decisions about private property rights, forestry regulation and pricing systems. However, IUCN and WWF disagree that valuation can be used as a politically neutral tool for determining how much forest of different types is needed and how it should be managed. Because of the many and often conflicting stakeholder perceptions on forests and their conservation and management, expert-led decision making systems are not likely to have much credibility and negotiated outcomes will tend to be more acceptable politically speaking, and lead to more robust results in the longer term.

Forest Markets and Trends

The analytical paper on Forest Markets and Trends fails to address the issue in a balanced and thorough manner. It focuses exclusively on timber markets and does not address the potential for capturing the power of markets to ensure the long-term economic, ecological and social benefits from forests which may be locally and socially more important. The paper fails to acknowledge the potential for the World Bank to identify, develop and support markets in non-timber forest products.

The demand analysis presented in the paper is weak, focusing on population growth without any substantive link to impacts on the use of wood products (or non-timber forest products). Moreover, the paper does not provide substantive analysis of the impact of wealth on these markets.

Most importantly, the paper advocates that the World Bank should encourage increased demand for wood products to be met through expanding the supply – although there is no analysis at all of present sources of supply and possible substitutes. Similar dire predictions regarding rising fuelwood demand in the 1970's led to the Bank funding a large number of so-called peri-urban woodfuel plantation projects. Although these projects were costly failures,

the predicted fuelwood crises did not materialize, because the Bank scenarios had not taken into account on-farm sources of woody biomass and other sustainable supplies such as coppice woodlands.

Ironically, sustainable forest management is seen as a threat to future wood supplies, as apparent from the following quotation from the paper:

"Of all the possible changes in the way forest resources are managed in the future, changes in forest harvesting practices as a result of the implementation of sustainable forest management (SFM) have the greatest potential to diminish future wood supplies...the implementation of SFM will present a significant challenge to many forest policymakers in both developing and developed countries." (FAO)

IUCN and WWF consider that any view of forest markets that fails to account for the economic, social and environmental aspects of forest management is at odds with the World Bank's focus on sustainable development.

IUCN and WWF urge the World Bank to view sustainable forest management as an important aim for forest management and to use markets as a tool for achieving this aim. This can be done by:

- Identifying, supporting and developing markets for **non-timber forest products** capable of providing sustainable incomes while maintaining the ecological sustainability of forests;
- Requiring independent verification (through certification or other means) of the sustainability of World Bank forestry investments, either as a condition upfront or as an objective to be achieved within the duration of the project;
- Encouraging the development of biodiversity robust certification processes;
- Viewing the sustainability of trade in economic, social **and** ecological terms; and
- Working to ensure that market prices more accurately reflect externalities (both positive and negative).

Economic Instruments

The World Bank had not provided an analytical paper on the issue of incentives at the time of preparing this section. There is, however a list of economic instruments which the World Bank applies in its work. From IUCN and WWF's experience, it seems that these instruments can be wielded either to benefit or undermine conservation and sustainable management of forests (see Annex Two). This demonstrates again the need for results-oriented monitoring and evaluation systems for all Bank interventions. The fact that the Bank still recognizes the lack of such systems as a major constraint to evaluating its effectiveness (see for example the recent OED report on Bank performance in the forest sector) should provide food for thought – especially since this issue was already highlighted in the OED review carried out prior to the issuing of the 1991 Forest Policy more than ten years ago!

Recommendations to the World Bank:

The three themes of valuation, markets and incentives should be viewed as means to an end, and not ends in themselves. Valuation should be used to help markets internalize externalities, and as a means to identify stakeholders and related incentives. Markets should be used to provide incentives for ensuring the long-term viability and sustainability of forests. Incentives should be assessed for their impact on forests and designed to support the long-term economic, social and ecological sustainability of forests.

Forest markets, economic valuation and economic instruments are interrelated in the sense that they are important tools that the World Bank can use to promote the conservation and sustainable management of forests and to enhance the role of forest resources in alleviating poverty. However, to apply these tools effectively, the World Bank needs to thoroughly rethink the focus of its forest-related activities both within the forest sector and in its work in other

sectors such as environment, energy, finance, rural development, agriculture, transportation, water supply and sanitation.

IUCN and WWF recommend that the World Bank:

- **Identifies and fosters markets** in both use and non-use goods and services flowing from forests (such as sustainably harvested non-timber forest products and timber products, ecosystem services, and global biodiversity benefits);
- **Bases any resource expansion efforts** on sophisticated analyses of not only demand but also sustainable sources of wood product supplies as well as potential substitutes.
- **Advocates a more holistic set of forest values** (including both use and non-use values) be incorporated in client country decisions affecting forest resources and requires such consideration in all World Bank decisions affecting forest resources;
- **Develops economic valuation as a market identification tool** and moves towards the monetizing of those economic values which support the promotion of conservation and sustainable management of forests and enhancement of the role of forest in alleviating poverty;
- **Designs and applies economic instruments** capable of supporting those same objectives.
- **Develops robust monitoring and evaluation (M&E) systems** for tracking the impact of economic policies and project interventions on human behavior with regards to forest ecosystems, including the establishment of baselines and parameters to be monitored as well as a system for verifying whether M&E data are effective in measuring impact.

Collaborative Forest Management

Please note that Annex Two provides some detail about IUCN/WWF's experience with this issue area.

Analytical Study commissioned by the World Bank:

- Carter, Jane (1999) *Recent Experience in Collaborative Forest Management Approaches: a Review of Key Issues*. SDC, Intercooperation Switzerland.

(This paper can be found on the World Bank's FPIRS web site, under the heading "Background Documents", and then under "Other Relevant Stakeholder Documents").

Challenges or Questions Raised by the Analytical Study:

The paper takes a broad definition of collaborative forest management, so broad that it reduces its usefulness. A recent framework paper for community conservation (Barrow and Murphree 1999) takes a more user-oriented approach based on ownership of, rights to, and responsibilities for the land and resources. In this framework **Collaborative Management** seeks to create agreements between local communities or groups of resource users, and conservation authorities for negotiated access to natural resources which are usually under some form of government statutory authority. **Community Based Natural Resource Management**, on the other hand, has the sustainable management of natural resources through returning control over, or responsible authority for these resources to the community as their chief objective. The key differences refer to the tenure regimes, and the various rights and responsibilities which flow as a result. In the former, land and resources are normally government owned; in the later they are community, individually or privately owned.

An understanding as to what constitutes a forest is needed. IUCN and WWF agree that practices such as agroforestry, social or farm forestry fall under the rubric of Rural Development Forestry. While many forests are under some form of national gazettement, there are forests and forest types that are on community, rural peoples' or private lands. Such forests would here be classified as community based forest (natural resource) management, since they are 'community' owned. The case of communal forests (for example riparian forests, forests on tops of hills, mangrove forests, and more open savannah woodlands) is more complex, as such lands have often not been formally demarcated and remain under customary ownership regimes which have yet to be formalized. This is particularly so in the tropics and dry lands. This challenge paper takes a wider perspective of the term forest to include tree-dominated landscapes, and adopts a loose and embracing meaning for the term "community."

The paper correctly points out the diversity of stakeholders and the complexity of relations among them, both inside and between communities. Such analyses also have to address power relations that affect who might have access to what resources in a given forest, and conversely who is further marginalized. Where large, often external, private sector operations are found, their power is likely to override that of others resulting in an increased disenfranchisement by the more proximal, but less powerful stakeholder groups. This a key issue for the future - that of better understanding and being able to respond to the different interests and power relations affecting forest management, so that local resource users and communities have greater rights and responsibilities. Ownership of, and/or secure rights to and responsibilities for such forest areas through collaborative management agreements would seem to be central.

From a local perspective, collaborative forest management can result in greater and more equitably shared benefits amongst the different stakeholders, and in particular those who need such resources most. Care has to be taken though that the less powerful, for example women, the landless, the poor are not further marginalized. The linkages between rights to and responsibilities for such forests have to be reinforced and an explicit focus on equity and empowerment maintained. From a government and donor perspective the author has correctly identified many positive attributes, however this has to be tempered with the reality of "centre-periphery" power shifts that collaborative forest management calls for. Many government

departments, and particularly **forestry departments all over the world have been reluctant to devolve power to local communities**, equating it with a loss of control. However, experience has shown that devolution of power often results in improved management of forests and the emergence of new ways of working between government forestry staff and local people, as shown in Nepal, Tanzania, The Gambia, and Ghana.

The paper acknowledges the fundamental division between "people-" and "government-" driven initiatives. There has been a tendency by government and donor projects to focus more on government-driven initiatives, without a clear understanding of what existing local or customary initiatives might exist. Where such initiatives do exist, they should be built on and developed, rather than, as more often happens, replaced. There are many such examples - the rubber tappers of Brazil, the indigenous groups in the Philippines, the rich patch forest/grassland areas of many pastoralists groups in Africa. **It is important to understand and learn from local or customary initiatives** as to why and how they work, and try and reinforce such systems with the principles of sustainable and collaborative forest management.

While there is a wide range of key players, it is clear that certain groups are pushing the CFM agenda, including some donors and NGOs. On the other hand there is a reluctance to embrace CFM by many state forestry departments. The views of local level community and forest user groups and organizations are often not seen or heard. Many such groups are small, informal, not organized, not registered - yet it is such groups who are often guardians of local forests. To ignore, or worse replace, such groups, is to ignore local management and coping mechanisms.

CFM is not a panacea for solving the world's forest management problems. It is, however, a tool for sustainable forest management that is gaining prominence as a result of failures of many centrally-managed forest systems and the push for decentralization and democratization. Not all circumstances are suited to CFM and CBNRM: for example, water catchment forests and forests with unique and globally important biodiversity. With land use intensification RDF and farm forestry is likely to become more important in future.

CFM and RDF are informed and influenced by the same issues described in the poverty section.

Recommendations to the World Bank:

The World Bank possesses a range of instruments to facilitate such actions, including Adjustment Lending, Sectoral Adjustment, Adaptable Program Lending, Learning and Innovation Loans, Guarantee Options and the Forest Guarantee Facility. However, such instruments will need to be used in a more innovative and flexible manner to promote Collaborative Forest Management (CFM), Community Based Natural Resource Management (CBNRM), and Rural Development Forestry (RDF), through for example increased support for rural financing.

It should be noted that now that the World Bank has moved into the Country Assistance Strategy, it is the country teams, not necessarily the technical specialists who decide on priorities. Therefore it is important to work with both the clients (national government staff) and the World Bank country staff, in order to include stronger mechanisms to trap such values at the 'community' level, and use existing lessons on CFM to advocate for policy (forestry and wider economic and land use) change to better understand the real value of forests to rural people and especially the poor.

IUCN and WWF appreciate the role the World Bank is playing in sustainable forest management and in reviewing its forestry policies. It is clear that the Bank is trying to achieve a balance between the economic imperatives of the many nations it works with, and the need to conserve biodiversity for present and future generations. This is complex and by implication cannot be resolved by nationally or internationally based economic instruments alone. The

role of rural and indigenous peoples is vital in this respect. Many past policies have resulted in the erosion of their rights and responsibilities.

The World Bank has indicated that it wants to enhance the environment for local people to have greater rights to, and responsibilities for forest management. This will require the use of instruments that channel national and international resources to the local level. It will also require recognizing that bad governance, local and national corruption and lack of village level financial capacity constrain such an approach. The World Bank's assertion that **"participation matters... and is at the core of the progress made in rural investment"** needs to be more practically articulated and implemented in its work. Past emphasis at macro and national levels has tended to 'ignore', and 'forget' the rural poor. A more proactive and focused emphasis is needed.

IUCN and WWF caution the World Bank not to focus purely on macro level policy and economic instruments, unless they are firmly articulated and support improved livelihood and conservation opportunities at the local level. Short term economic gains from unsustainable forest management and timber exploitation, which may contribute to GDP, are unlikely to be sustainable in the longer term, given the importance of the long term goods and services which forests provide.

The World Bank should:

- Include in any forestry sector support a core component of poverty alleviation (for both natural and plantation forests).
- Provide greater emphasis on Rural Development Forestry (RDF), including farm forestry, in their support to the agriculture sector.
- Create and foster incentives for local community rights to and responsibilities for sustainable forest management. Such incentives should include higher producer prices for timber and non-timber forest products (through "pro-poor" restructuring of forest product markets), and the removal of perverse incentives for forest conversion and degradation.
- Increase investment in integrating Collaborative Forest Management (CFM), Common Property Regimes (CPR) and RDF principles into food and environmental security, based on its own experience (for instance in Brazil and Burkina Faso) and the experience of others.
- Emphasize CFM and local participation in its ongoing support to the work programmes of multilateral environmental agreements.
- Better integrate CFM and natural resource management concerns into the Bank's economic and sector work, as well with their country assistance strategies and policy instruments.
- With others, continue to support more equitable tenure systems (eg. through recognition of customary rights to land and natural resources, and of intellectual property rights).
- Expand strategic partnerships with major groups such as IUCN and WWF, while at the same time ensuring that the parties' rights and responsibilities are clear so that these partnerships will help the Bank to influence, and be influenced by, critical issues such as poverty alleviation.
- Build in economic and policy measures to promote increased yield per hectare of a wider range of goods and services to promote environmental and livelihood security.
- Promote better valuation of forests so that the range of goods and services provided are better understood, and acknowledged in national and local land use and economic planning, with a particular focus on the rural poor.
- Use opportunities provided by structural adjustment, retrenchment and decentralization to encourage national governments to implement policy changes related to CFM, CPR, CBNRM and RDF and to create economic and other incentives so that rural and indigenous peoples can have more rights and responsibilities for their forests and trees.

ANNEX ONE: Issue Areas

Following is a short description of the issue areas addressed in this series, as identified by the World Bank.

Economic Valuation / Economic Instruments / Forest Markets and Trends

Forest Markets and Trends

- Patterns and trends for supply and demand of forest products, including timber and NTFPs on global, regional, national and local level
- Identification and prospects of markets for a diverse range of forest goods and services
- Assess economic and policy instruments for market development

Economic Valuation

- Lessons learned from the application of valuation methods
- Conditions for the application of valuation in forest policy
- Socio-economic valuation
- The economics of carbon and forests
- The asset valuation of timber and forest land

Economic Instruments

- Economic incentives of sustainable forest management
- Economic instruments and global environmental externalities
- Review and evaluation of forest policy instruments
- Forest taxation and concession regulation including performance bonds
- Land use policies and regulation of land use (land tenure, open access, public ownership)
- Forest certification
- Financing sustainable forest management

Priorities for Conservation and Biodiversity

- Assessment of global, regional and country **needs** for forest protection and conservation
- Technical, economic and social aspects of **alternative strategies** for forest protection
- Assessment of **global needs** for forest protection and preservation

Structural Adjustment and Forests

Both structural adjustment studies aimed to compile and assess the best available information on the impacts of structural adjustment on forests.

Impacts were assessed of three broad categories of adjustment measures:

- Measures which were designed into the adjustment process, but for which the specific environmental outcomes were not considered (eg. impact of currency devaluation and reduction of fertiliser subsidies on deforestation rates and land conversion, impact of reduction in public sector expenditure on enforcement of forest conservation laws).
- Measures that had unintended macro-economic results, with consequences in the environmental area.
- Deliberate measures aimed at environmentally sustainable outcomes which were included in adjustment operations (eg. how successful were such measures in dealing with “political economy” issues such as corruption and in bringing about significant forest sector reforms).

Poverty and Forests

The analytical paper on poverty and forests identifies the following two key issues – poverty as a cause of deforestation and deforestation as cause of poverty. More specifically, the paper identifies:

- The relationship between poverty reduction policies and deforestation/degradation, looking at issues of change rates, subsidies, trade, infrastructure, land tenure and other policies;
- The impact of forest policies and interventions on the poor;
- **Sharing of benefits** of forest exploitation with the poor;
- Dynamics between poverty and deforestation/degradation, looking at issues such as elasticities of demand, migration, and fuelwood/fodder needs, social fabric, indirect impacts such as soil erosion;
- Importance of **forest resources in the livelihood strategies of poor people**, including issues such as **non-timber forest products**, private sector employment opportunities, small scale logging and processing activities and **gender issues**;
- Potential for forest resource to be used to reduce poverty, including arrangements for small scale operations, devolution of management control;
- **Integrating the poor into the management of forests**; and
- **Best practices** in poverty alleviation and forest programs and projects.

Collaborative Forest Management / Rural Development Forestry

The World Bank is focusing on institutional and organizational arrangements necessary for locally based forest management based on sustainable and environmentally friendly principles including:

- Appropriate instruments
- Circumstances for resolution
- The promotion of participatory approaches

Role of Plantations

- The current extent and productivity of plantations on a regional basis
- Trends in extent and productivity of forest plantations, products supply and demand
- The relationship between plantations and biodiversity under various conditions – including biodiversity within plantations and the dynamics between plantations and pressures on natural forest
- The environmental and social issues and impacts of plantations, such as watershed benefits or issues of equity
- The broad financial and economic issues attached to the investment in plantations
- The ownership and management options for plantations, including partnership and collaborative arrangements and the use of carbon sequestration funds
- The impact of genetic and biotechnology advances
- The potential role of independent verification of appropriate management

ANNEX TWO: IUCN/WWF's Experience in the Issue Areas

Poverty, Communities and Forests

IUCN has limited experience with direct work on poverty alleviation, though much of its forest conservation work has an impact on poverty alleviation. However, IUCN has a long history of field experience with CFM, which is one important mechanism for poverty alleviation. **Through its large network of practitioners and policy makers, its field projects, working groups and studies, IUCN has learned that:**

- Ownership, or secure rights to and responsibilities for forests and trees are a crucial component of CPR and for poverty alleviation. 'Communities' are increasingly organizing so that they can gain greater authority over local forest resources. While many forests have been alienated from rural people, and their rights annulled, it is clear that *de facto* arrangements are still very important, particularly in places where national control is distant and not interested;
- Capacity is a key issue at the community level so as to be able to better manage forests and trees, set up systems for equitable benefit sharing, establishing group structures, be able to negotiate equally and fairly with other local, national or international forest interests who may wish to use such forests, and in particular on community owned lands;
- The move to CFM and CPR arrangements require significant shifts in the skills and capability requirements of forestry authorities, more used to and trained in 'traditional' forest management. A much greater range of 'social' skills are required relating to extension, community management, social analysis, negotiation, forest management and business planning etc.;
- Representation is a key issue at the local level. Forest committees (of whatever nature) can be dominated by political and social elites and men - particularly in cases where there are significant income and benefit accruals. Likewise external 'experts' (forestry, government and project staff) can have an inordinate influence, rather than a facilitatory and advisory role. Building local capacity and confidence of all different stakeholders at the community level is vital; otherwise power is likely to be usurped. CFM has to have equity as a goal.

There is a range of key circumstances that will make successful CFM or CBNRM more likely. These include:

- A willingness to experiment and modify policy so that rural people and poverty issues are taken into account in the responsible manner required;
- An appropriate institutional framework which supports the use of local expertise, knowledge and resources, and fosters the exchange of information;
- Political and responsible commitment to decentralization, and in some cases the rights of indigenous and local peoples;
- Financial instruments should include empowering local communities to manage funds, and includes local accountability and governance, as well as local monitoring of impact;
- Strong donor support;
- That local people and communities understand the advantages of CFM and CPR arrangements, so they have greater rights to and responsibilities for their resources (much of this has been well discussed in the literature on common property regimes). This means that the forest users are clearly identifiable, have a common understanding of the forest resource, that the users depend to a greater or lesser degree on the resources, and that they have some organizational experience (local institutions, rules etc.) to be able to manage and harvest the resources without undue external influence;

- Lessons learnt from the wide range of existing experience need to be more strategically integrated into national forest and land use management policies and legislation, as well as being embraced by the donor community;
- The process of CFM and CPR is long, requires a detailed understanding of social and community issues and of community institutions (groups, rules, norms);
- The importance of demonstrated successful case studies in this field is crucial to show that success assists with livelihood sustainability, contributes to forest conservation objectives and so contributes to national development goals;
- It is clear that perverse incentives need to be removed, and forest conservation, forestry and RDF are treated equally with other forms of livelihood investments such as agriculture, livestock; and
- The IUCN Working Group on Community Involvement in Forest Management has made a number of recommendations to the Intergovernmental Panel on Forests (1996 - see reference in Annex Four), many of which are still relevant.

Much of the World Bank's support to forest issues has been to the formal forestry sector, where timber production and exploitation as a component of national economic development has been the main thrust. This approach has been changing towards a greater emphasis on projects that have a greater social development and conservation focus.

Countries like Tanzania, Uganda and Nepal allow for village or community owned forests, where locally approved by-laws regulate and create conditionalities of use. Assistance with such by-laws and conditionalities can help such groups create more sustainable and lasting forest management systems, which contribute to local and national economies. Community owned and managed forests complement the great strides in rural tree planting, mainly subsistence based, but are increasingly being used as a basis to meet contingencies and as a source of cash income. This has helped reduce forest dependence and contribute to livelihood security. Improved pricing and incentive measure could further stimulate this process.

Many countries are in economic and political transition, are undergoing some forms of structural adjustment and are embracing decentralization. Leaner and more efficient civil services are replacing centralized, over-staffed and under-resourced ones. Roles of governments are changing from centralized control and management to de-regulated, decentralized management and facilitation through policy change and regulation as a last resort. CFM can help fill the gap left by such retrenchment.

One of the key principles of CFM is that forest management and use will contribute to sustainable livelihoods. This is logical and important, but there are many instances where forests are conserved and used by communities and local people for other purposes, for example the sacred forests on the Kenya coast and in Ghana; the importance of Bamboo for certain cultural practices. In such instances the cultural importance is much greater than the straight economic importance, a factor often overlooked.

The World Bank's work in Ghana illustrates the importance of integrating forest management more closely with the management of other natural resources, as well as the need for decentralization and community participation. In a number of West African (for example Burkina Faso, Benin, and Mali) projects the World Bank has started to base its natural resource and forest conservation support on the "Gestion de Terroirs" community based approach to preparing local land and natural resource development plans. In Uganda the Mgahinga Bwindi Impenetrable Forest Conservation Trust has facilitated CFM with World Bank/GEF funding.

However it is important to be realistic in this field. Many local systems are flawed, as are many national systems. Corruption, favoritism, nepotism, exclusion of marginalized groups, privatization of public assets have been facts of life for many countries. Therefore having the checks and balances at different levels are important and need to be built in.

World Bank instruments: Incentives to conserve or to destroy forests?

From IUCN's experience, it seems that the instruments which the World Bank applies in its work can be wielded either to **benefit** or **undermine** conservation and sustainable management of forests, and by implication, the livelihoods of the rural poor depending on these forests, as shown in the notes below:

Investment lending, adaptable lending, guarantee options, Forest Guarantee Facility, International Finance Corporation, Development Grant Facility

- *Undermine*: lending to any sector (including forests) without due consideration of the impacts of this lending on social, economic and ecological aspects of forests and forest communities (eg. intensive agriculture).
- *Benefit*: investment in sustainable forestry, development of markets for sustainably harvested non-timber forest products.

Adjustment lending, sectoral adjustment and economic and sectoral work

- *Undermine*: public sector reforms can decrease government spending on forest conservation; liberalization of agriculture sector can result in the spread of agriculture into forests.
- *Benefit*: reform of forest revenue collection and administration systems can make investment in forest management more attractive. Can promote private sector investment and collaborative management of forests.

Learning and innovation loans (LILs)

- *Undermine*: increasing site specific and unsustainable demand for forest raw materials.
- *Benefit*: demonstrating and promoting sustainable forest management and activities which take pressures off forests.

Debt and Debt service reduction

- *Undermine*: where debt or debt service reduction results in the increased availability of resources for government-sponsored forest conversion and colonization schemes, it can lead to significant deforestation.
- *Benefit*: where debt or debt service reduction results in the increased availability of resources for government agencies in charge of enforcing forest resource use policies and forest laws, it can relieve pressure on forests.

Debt for nature swaps

- *Undermine*: where debt for nature swaps are negotiated without any involvement of local communities and indigenous peoples (as has happened in various cases) it may undermine local peoples' livelihoods, and their long-term interest in safeguarding and managing the forests.
- *Benefit*: could be used to promote investment in forest conservation activities. May help to reduce perverse incentives that impact adversely on forests.

Global environment facility

- *Undermine*: increasing country reliance on external sources of finance, possibly decreasing ability for indigenous and sustainable sources of finance.
- *Benefit*: investment in forest conservation activities.

Policy and human resources development fund

- *Undermine*: support projects that damage forests.
- *Benefit*: support forest conservation projects.

Technical Assistance

- *Undermine*: over-reliance on inappropriate, externally imposed technical solutions to forest management.
- *Benefit*: sound, country and site relevant forest management.

Convening ability-donor co-ordination

- *Undermine*: loss of national sovereignty and imposition of inappropriate externally imposed views conforming to donor agendas.
- *Benefit*: concerted and coordinated aid to forest conservation.

Role of Plantations

WWF has had some limited experience, through lobbying and campaigning with industrial plantation development. However both IUCN and WWF have been involved more with broader afforestation/reforestation initiatives, through field projects, studies and working groups. From these experiences we have learned:

- Governments are open to widening their perspective on afforestation/reforestation activities. In the Lower Mekong IUCN has been active working with Governments on plantation/forest restoration issues. Vietnam has agreed that at least 20% of its reforestation activities over the next eight years will be "non-industrial" and will take place primarily through the use of natural regeneration techniques.
- Local communities can provide a powerful driver for environmentally and socially appropriate afforestation/reforestation. However in many cases it is the attitude of forest departments that retards progress. As with CFM, these forest departments need to enhance social, negotiation and extension skills. Similarly, community and on-farm plantations can make important contributions to social and ecological wellbeing but do not necessarily have to be predicated on industrial plantation models.
- Reforestation/afforestation activities undertaken through Rural Development Forestry, Community Based Natural Resource Management and Collaborative Forest Management can result in more rapid and successive establishment of forest cover that is subsequently better managed than some industrial plantation schemes. The World Bank's Natural Resource Management Project in Benin resulted in 3000 hectares being enriched with native species and over 80% seedling survival. Community involvement also resulted in better resource management with fires being drastically reduced.
- Policies or regulations that restrict industrial-scale plantation development to "wastelands" are insufficient to prevent direct and indirect negative biodiversity impacts. In countries such as China terms like "wasteland" or "degraded sites" are used flexibly and are often applied to ecologically important secondary forest or shrub communities. Low commercial value must not be read as low conservation or local economic importance.
- Permitting secondary forests to re-establish on ex-agricultural land can deliver important societal and conservation benefits at a fraction of the cost of conventional plantation establishment. Studies in Costa Rica have shown that secondary forest regrowth has become an important on-farm resource in the north of the country, making a significant contribution to some local economies.

ANNEX THREE: Contacts for More Detailed Information on the Issue Areas

Priorities in Conservation and Biodiversity

- Per Angelstam, WWF
- Colin Bibby, Birdlife
- Eric Dinerstein, WWF
- Georgina Mace, IUCN Species Survival Commission
- Simon Rietbergen, Programme Officer, IUCN Forest Conservation Programme, spr@hq.iucn.org
- Rodolphe Schlaepfer, EPFL
- Simon Stuart, IUCN Species Programme

Poverty and Forests and Communities

The following IUCN and IUCN Member/Commission work would be helpful to explore this topic area in more detail:

- Sameer Karki, IUCN Non-Timber Forest Product Network
- Working Group on Community Involvement in Forest Management, forests@iucn.org
- Steve Edwards, Sustainable Use Initiative (IUCN)
- IUCN's Commission on Environmental Economics and Social Policy

Role of Plantations

- Stewart Maginnis, Senior Forest Officer, WWF-International, smaginnis@wwfnet.org
- Forests for Life Programme Unit, WWF

ANNEX FOUR: Further Reading about the Issue Areas

Priorities in Conservation and Biodiversity

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Role of Plantations

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