Financing NBSAPs: Options and Opportunities

Regional Biodiversity Programme, Asia
The designation of geographical entities in this book, and the presentation of the material, do not imply the expression of any opinion whatsoever on the part of IUCN concerning the legal status of any country, territory, or area, or of its administration, or concerning the delimitation of its frontiers or boundaries.

The views expressed in this publication do not necessarily reflect those of IUCN.

IUCN gratefully acknowledges the support received for the publication of this book from the Swiss Agency for Development and Co-operation and the German Federal Ministry for Economic Co-operation and Development.
Table of Contents

List of Boxes, Figures, and Tables v

Acronyms vi

Acknowledgements vii

Overview viii

1. Introduction 1

2. Review of Asian Countries’ NBSAPs 3

3. Critical Review of Conventional NBSAPs 6
   Financing Mechanisms
   3.1 Government Subventions 7
      3.1.1 Overview 7
      3.1.2 Critical Review 8
      3.1.3 Conclusion 10
   3.2 Donor Funds 11
      3.2.1 Overview 11
      3.2.2 Critical Review 13
      3.2.3 Conclusion 14
   3.3 GEF Funds 18
      3.3.1 Overview 18
      3.3.2 Critical Review 18
      3.3.3 GEF funding to biodiversity conservation in Asia 19
   3.4 Conclusion 21

4. Innovative Financing Mechanisms for NBSAPs 25
   Implementation
   4.1 Overview 25
   4.2 Critical Review 26
4.3 Further innovations to finance NBSAPs
4.3.1 Market based instruments to finance NBSAPs
4.3.2 Using non-market based instruments for financing NBSAPs
4.3.3 Conclusion
4.4 Environmental Funds
4.5 Debt-for-Nature Swaps
4.6 Transferable Development Rights
4.7 Green Credit Card
4.8 Tourism Fees & Charges
4.9 Clean Development Mechanism
4.10 Private Sector Partnership/Participation
4.11 Environmental Taxes
4.12 Tradable Permits
4.13 User fees
4.14 Biodiversity Prospecting
4.15 Payment for Environmental Services - Water-based financing

5. Guidelines for Developing a Financial Strategy for NBSAPs Implementation

6. References
a) Literature Consulted
b) Web-sites Consulted
List of Boxes
5. Reduced Impact Logging - Malaysia
6. Private Sector Partnership in Sri Lanka
7. Environmental Tax in Indonesia
8. Tradable Development Permits in New Jersey-USA
9. Royalty from Sagarmatha National Park - Nepal
10. Bilateral Contacts for Biodiversity Prospecting - Bioprospecting Agreements.

List of Figures
1. Total GEF allocation in select Asian countries
2. Total GEF allocation to Asian countries implementing NBSAPs.

List of Tables
1. Review of funding considerations mentioned in NBSAPs
2. Projects funded by bilateral donor agencies.
3. GEF grant to select Asian countries.
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADB</td>
<td>Asian Development Bank</td>
</tr>
<tr>
<td>BAP</td>
<td>Biodiversity Action Plan</td>
</tr>
<tr>
<td>CBD</td>
<td>Convention on Biological Diversity</td>
</tr>
<tr>
<td>CBOs</td>
<td>Community Based Organisations</td>
</tr>
<tr>
<td>CDM</td>
<td>Clean Development Mechanism</td>
</tr>
<tr>
<td>CIDA</td>
<td>Canadian International Development Agency</td>
</tr>
<tr>
<td>COP</td>
<td>Conference of Parties</td>
</tr>
<tr>
<td>CPFCCC</td>
<td>Conference of Parties to the Framework Convention on Climate Change</td>
</tr>
<tr>
<td>DANIDA</td>
<td>The Danish Agency for Development Assistance</td>
</tr>
<tr>
<td>FAO</td>
<td>Food and Agriculture Organisation</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>GEF</td>
<td>Global Environment Facility</td>
</tr>
<tr>
<td>GTZ</td>
<td>Gesellschaft für Technische Zusammenarbeit</td>
</tr>
<tr>
<td>HIPC</td>
<td>Highly Indebted Poor Countries</td>
</tr>
<tr>
<td>IDO</td>
<td>International Development Organisation</td>
</tr>
<tr>
<td>IMO</td>
<td>International Maritime Organisation</td>
</tr>
<tr>
<td>JICA</td>
<td>Japanese International Co-operation Agency</td>
</tr>
<tr>
<td>MBIs</td>
<td>Market Based Instruments</td>
</tr>
<tr>
<td>NBSAPs</td>
<td>National Biodiversity Strategies and Action Plans</td>
</tr>
<tr>
<td>NEF</td>
<td>National Environment Fund</td>
</tr>
<tr>
<td>NGO</td>
<td>Non Government Organisation</td>
</tr>
<tr>
<td>NORAD</td>
<td>Norwegian Agency for Development Co-operation</td>
</tr>
<tr>
<td>ODA</td>
<td>Official Development Assistance</td>
</tr>
<tr>
<td>PDF</td>
<td>Project Development Facility</td>
</tr>
<tr>
<td>RNE</td>
<td>Royal Netherlands Embassy</td>
</tr>
<tr>
<td>SIDA</td>
<td>Swedish International Development Co-operation Agency</td>
</tr>
<tr>
<td>SNV</td>
<td>Netherlands Development Organisation</td>
</tr>
<tr>
<td>TDRs</td>
<td>Transferable Development Rights</td>
</tr>
<tr>
<td>UNDP</td>
<td>United Nations Development Programme</td>
</tr>
<tr>
<td>UNEP</td>
<td>United Nations Environment Programme</td>
</tr>
<tr>
<td>UNESCO</td>
<td>UN Educational, Scientific and Cultural Organisation</td>
</tr>
<tr>
<td>USAID</td>
<td>US Agency for International Development</td>
</tr>
<tr>
<td>WB</td>
<td>World Bank</td>
</tr>
<tr>
<td>WBFM</td>
<td>Water-Based Finance Mechanism</td>
</tr>
<tr>
<td>WFP</td>
<td>World Food Programme</td>
</tr>
<tr>
<td>WWF</td>
<td>World Wildlife Fund</td>
</tr>
</tbody>
</table>
Acknowledgements

For us, this report represents in many ways an inspiring journey into the critical issue of financing sustainable development. Indeed, in the current national and global realities, financing sustainable development largely hinges on the ability and ingenuity of national governments to design innovative mechanisms to make finances available. The financing of National Biodiversity Strategies and Action Plans (NBSAPs) implementation is no exception, and represents one of the most vital and key ingredients in this far-reaching issue.

This report also represents the first collaborative effort between the IUCN Asia Regional Biodiversity Programme (RBP), Regional Environmental Economics Programme (REEP), and IUCN Pakistan’s Business Programme and Environmental Economics Programme. This activity was supported by the IUCN Asia Regional Biodiversity Programme with financial assistance from German Federal Agency for Economic Co-operation and Development (BMZ). Shireen H Khan, Head, IUCN Pakistan Business Programme and Usman A Iftikhar, Head, IUCN Pakistan Environmental Economics Programme are the main authors of this report. We acknowledge the many contributions of Afshan Sajid, IUCN Pakistan who helped co-ordinate the study as well as provided significant research assistance and support throughout the study.

Our heartfelt thanks to Balakrishna Pisupati, Head RBP and Lucy Emerton, Head REEP on two accounts: one, for giving us the opportunity to undertake this imperative research; and two, for providing us with excellent insight and input during the study.

We are also indebted to the Asian Regional CBD and Biodiversity Focal Points for all the assistance they provided with securing replies to our questionnaire. We acknowledge Channa Bambaradeniya, IUCN, Sri Lanka, Kashif Sheikh, IUCN, Pakistan and Mao Kosal, IUCN, Cambodia for their help.

Finally, we are grateful to our Country Office (IUCN Pakistan) for the support in allowing us to undertake this study. In particular, we thank Mohammad Rafiq, Country Representative and Dhunmaie Cowasgee, Head, Programme Co-ordination.
Overview

Most countries in Asia have ratified the Convention on Biological Diversity (CBD). In response to the call in Article 6a of the CBD countries are in various stages of developing and implementing National Biodiversity Strategies and Action Plans (NBSAPs). These NBSAPs set out an ambitious programme of work for biodiversity conservation to be carried out over the coming years. Unfortunately little thought has been given as to how the activities contained in NBSAPs will be financed. Government budgets are scarce, and donor funds are also under heavy pressure. There is a tendency to see the GEF as a "catch all" mechanism for funding all types of biodiversity conservation efforts and NBSAP implementation. But this, too, has only finite resources, which are subject to intense competition. There is a real danger that NBSAPs will not be implemented in practice, due to inadequate funding.

In fact, there are many ways in which funds can be raised for NBSAP implementation, and have potential application in Asia. The aim of this toolkit is to provide biodiversity planners and decision-makers in Asia with a series of clear and practical methods, options and steps for developing financing strategies for their NBSAPs. It outlines some of the opportunities for raising and allocating more innovative sources of finance for NBSAP implementation.

The methodology used in this study comprised of both primary and secondary research. A survey was designed, and a questionnaire sent to select CBD focal points in Asia to gather primary information on the various types, amounts and nature of biodiversity funding in their respective countries. Secondary data was collected via Internet based research and an extensive consultation of published literature, including the NBSAPs of eleven countries.
In order to enhance understandings and clarify concepts this tool kit has been divided into five sections. A brief overview of each section is as follows:

**Section 1**  
presents an introduction to the Toolkit.

**Section 2**  
analyses the extent to which Asian countries have considered financing mechanisms when they developed their NBSAPs.

**Section 3**  
deals with conventional biodiversity funding mechanisms (Donor Funds, GEF, and government funding) currently in use in Asia. It gives an overview and critical review of these methods of funding as they have been used in Asia.

**Section 4**  
describes twelve innovative financial mechanisms that can be used to finance National Biodiversity Action Plans. An overview of the strengths, weaknesses, and critical success factors of each mechanism is also discussed and real world examples of their application in Asia and elsewhere are presented.

**Section 5**  
lists the steps in developing a financial strategy for financing NBSAP implementation.
I. INTRODUCTION

The objectives of CBD are conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including by appropriate access to resources and transfer of relevant technologies, taking into account all rights over those resources and technologies, and by appropriate funding.

The CBD is clear on the need to raise financial resources for conserving biodiversity. For example, Article 20 of the CBD calls on all Contracting Parties “to provide new and additional financial resources and incentives in respect of those national activities which are intended to achieve the objectives of this Convention, in accordance with its national plans, priorities and programmes.” This article also calls upon developed country parties to “provide new and additional resources to enable developing countries to meet the incremental costs to them of implementing measures which fulfil the obligations of the Convention.” For this purpose, Article 21 mandates the establishment of an institutional structure [GEF] for the provision of financial resources to developing country Parties.

In addition, Article 11 calls on all Contracting Parties to “as far as possible and as appropriate, adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity.” This article represents a key link between Articles 20 and 21: the need for additional funds through innovative financial mechanisms that provide both incentives as well as raise finances for conservation. Furthermore, activities prescribed in Articles 1, 6, 8, 9, 15 and 16 make clear references for the need to allocate additional financial resources to implement the Convention. Overall, the activities envisaged in the remaining articles of the Convention would certainly require the provision of additional financial resources enabling the Contracting Parties to implement their obligations.
Despite the clear mention in the CBD for allocating financial resources to conserve biodiversity, nevertheless consideration of what it will cost and where the finances will come from, to implement NBSAPs of Asian countries, leave much to be desired. On both accounts (the costs and resources) most Asian countries’ NBSAPs are deficient. Moreover, there is overwhelming reliance on conventional sources such as government subventions, bilateral and multilateral donor funding. These too have their limitations. Government subventions, for example, are limited in scope and amounts because most Asian developing countries’ priorities are economic development and poverty eradication. Hence, their budgetary allocations reflect these priorities. Furthermore, the provision of official development assistance (ODA) has been steadily declining over the years, and the Global Environment Facility (GEF) - because of finite resources and intense competition for funds - is no exception to this rule. A full review of these conventional sources will be conducted in the following two sections.

There is, however, hope in sight. Experiences from many parts of the world are revealing that there are many potential, innovative sources available to raise finances for NBSAPs implementation. These innovations certainly have the potential of helping bridge the financing gap. In Section 4, we will document some of these promising innovations along with real world examples and case studies from around the world.
2. REVIEW

The following Table 1 summarises financial considerations as documented in select Asian countries' NBSAPs. The table reveals that only two countries state what it would cost to implement their NBSAPs. While only 3 countries have included a separate section on financial aspects. Overall, however, the financing considerations are poor because at a general level many countries do not know what it will cost to implement their NBSAPs, or if they know what it will cost they have not considered where the funding will come from. Without this information it is hard to assess how much is needed, what will be the contribution from conventional sources (government subventions, donor funds) and what are the inputs required from other, innovative sources. Moreover, there is overwhelming reliance on conventional resources, which, as mentioned previously, are limited in amount and scope.
### Financing NBSAPs: Options and Opportunities

**Table 1**

<table>
<thead>
<tr>
<th>Country</th>
<th>Does the NBSAP mention financing</th>
<th>How the NBSAP specifies the role of different funding agencies.</th>
<th>Stated cost of NBSAP Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bhutan</td>
<td>Mentioned under other sections.</td>
<td>National Environment Commission is an agency responsible for BD related policy decisions. Bhutan trust Fund established in 1991 still provides longterm funds for BD conservation.</td>
<td>The govt. of Netherlands in a debt for nature swaps provided assistance to Bhutan</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Mentioned under other sections.</td>
<td>Economic evaluation of the assessment of resources to develop revenue based activities. National, regional &amp; sectoral ministries will implement CBD acc. to their fiscal capabilities.</td>
<td>Not specified</td>
</tr>
<tr>
<td>China</td>
<td>Yes, in a separate section.</td>
<td>Implementation of BAP will be included in all 5 year plans to secure funding. Relevent ministries &amp; governmental agencies will include BD projects in their administration plans &amp; allocate funds for the management of reserves.</td>
<td>Not specified</td>
</tr>
</tbody>
</table>

**Govt.'s Role**

GEF enabling activity grant, funds to Bhutan trust Fund & other project funding

**GEF**

The govt. of Bhutan considers BD an important area of co-operation with bilateral & multilateral donors. It actively pursues support for priority unfunded projects with the donor community.

**Donors**

Selected themes are funded by donors.

**Other fund sources**

Fines/penalties for inadequate use of BD.

---

National Environment Commission is an agency responsible for BD related policy decisions. Bhutan trust Fund established in 1991 still provides longterm funds for BD conservation.

Bhutan trust Fund established in 1991 still provides longterm funds for BD conservation.

Bhutan trust Fund established in 1991 still provides longterm funds for BD conservation.

The govt. of Netherlands in a debt for nature swaps provided assistance to Bhutan.

Bhutan trust Fund established in 1991 still provides longterm funds for BD conservation.

Selected themes are funded by donors.

Fines/penalties for inadequate use of BD.

Implementation of BAP will be included in all 5 year plans to secure funding. Relevent ministries & governmental agencies will include BD projects in their administration plans & allocate funds for the management of reserves.

The govt. of Netherlands in a debt for nature swaps provided assistance to Bhutan.

Fines collected, social organizations/individuals.
### Table 1

**Review of funding considerations mentioned in NBSAPs**

<table>
<thead>
<tr>
<th>Country</th>
<th>Does the NBSAP mention financing</th>
<th>How the NBSAP specifies the role of different funding agencies</th>
<th>Stated cost of NBSAP Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Indonesia</strong></td>
<td>Yes, in a separate section</td>
<td>In addition to the allocation from the national budget, a govt. task force will be appointed to look for avenues of sustainable financing.</td>
<td>Not specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GEF: Not specified. Donors: Form an informal working group of donors to develop funding abilities for Indonesian program.</td>
<td>Endowment funds, Adopt a park, royalties from industry, debt swaps.</td>
</tr>
<tr>
<td><strong>Maldives</strong></td>
<td>Mentioned under other sections.</td>
<td>Allocate funds for BD from Government.</td>
<td>Not specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GEF: Seek financial assistance from International organizations.</td>
<td>Action 26 includes considerations for raising revenues, Action 28 deals with financing mechanisms</td>
</tr>
<tr>
<td><strong>Nepal</strong></td>
<td>Mentioned under other sections.</td>
<td>Not specified</td>
<td>Not specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GEF: Seek financial assistance from International organizations.</td>
<td>Endowment funds, Adopt a park, royalties, debt swaps, bilateral debt, postage stamps &amp; coins.</td>
</tr>
<tr>
<td><strong>Pakistan</strong></td>
<td>Yes, in a separate section</td>
<td>Re-assess the national spending priorities &amp; re-allocate finances to sectors, which currently receive a disproportionate share.</td>
<td>Not specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GEF: It is a major funding source.</td>
<td>Action 26 includes considerations for raising revenues, Action 28 deals with financing mechanisms</td>
</tr>
<tr>
<td><strong>Philippines</strong></td>
<td>Mentioned under other sections.</td>
<td>Operationalizing country commitments on CBD by creating institutions.</td>
<td>Not specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GEF: Seek funding from multilateral &amp; bilateral agencies.</td>
<td>Us $92.2.13 million over 10 yrs.</td>
</tr>
<tr>
<td><strong>Sri Lanka</strong></td>
<td>Mentioned under other sections.</td>
<td>The govt. should provide financial resources to meet the conservation needs.</td>
<td>Not specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GEF: Not specified.</td>
<td>Not specified</td>
</tr>
<tr>
<td><strong>Thailand</strong></td>
<td>Mentioned under other sections.</td>
<td>Main funding source for BD projects.</td>
<td>Not specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GEF: Not specified.</td>
<td>Not specified</td>
</tr>
<tr>
<td><strong>Vietnam</strong></td>
<td>Mentioned under other sections.</td>
<td>Greater govt. investment is given.</td>
<td>Not specified</td>
</tr>
<tr>
<td></td>
<td></td>
<td>GEF: Is realized as a major source of fund.</td>
<td>Not specified</td>
</tr>
</tbody>
</table>

**Financing NBSAPs: Options and Opportunities**
3. CRITICAL REVIEW OF CONVENTIONAL NBSAPs FINANCING MECHANISMS

Generating and allocating sufficient financial resources for biodiversity conservation is a crosscutting theme in the CBD. Article 20 and Article 21 of the CBD are specifically concerned with generating and allocating financial resources to biodiversity conservation. They specify the following four mechanisms:

- National financial support and incentives
- Financing through bilateral, regional and other multilateral channels
- New and additional financial resources through the financial mechanism, and
- Financing by the private sector

Out of these financial provisions, only national financial support (to some extent) and financing through bilateral and multilateral channels are currently used to finance biodiversity conservation in Asia. New and additional financial resources (innovative methods to finance biodiversity) and private sector investment remains largely unexplored as ways of financing NBSAPs. The majority of Asian countries have long depended, and continue to depend, on two main categories of “conventional” financing mechanisms for biodiversity:

- Donor funds (multilateral, bilateral, NGO and GEF)
- National government budgets

According to the NBSAPs of majority of Asian countries reviewed, approximately 80% of all funding is derived from the above “conventional” sources. While these financing mechanisms have their strengths, the demand being placed on them threatens their use as a sustainable financial resource. Both government and donor funds are already under heavy competition and pressure from other sectors of the economy. There is frequently little potential either for increasing the overall amount of finance available, or for
reallocating funds to biodiversity from other activities. Biodiversity conservation typically finds it hard to compete with other sectors of the economy that may appear to generate wider development benefits, or can demonstrate higher and more immediate returns. Conventional financing mechanisms are simply insufficient to meet the biodiversity conservation funding needs of most countries.

As well as being limited in amount and under heavy competition, conventional funding mechanisms are also often insecure. Donor funds are limited; government budgets are mostly decreasing in real terms; and both commercial and donor loans incur financial and payback burdens. As well as stretching already indebted public and private sectors and sometimes being uncertain over the long-term, donor financing mechanisms run the additional risk of decreasing national, individual or group control and sovereignty over biodiversity because they depend on external decisions and are often tied to particular conditions, goals or activities. In light of the significant amount of funding required for biodiversity conservation, the sustainability of these conventional mechanisms is questionable.

This section presents an overview and critical analysis of the ways in which biodiversity conservation has conventionally been financed in Asia, and is continuing to be financed through NBSAPs. It focuses on national government support, donor funding and the GEF.

3.1 Government Subventions

3.1.1 Overview

The Convention on Biological Diversity, in Article 20, requires all contracting parties to mobilise substantial resources in support of its implementation. This call is echoed in paragraph 1 of Article 20. The implication for Asian governments of this is that funds need to be sought from various sources if they are to be able to meet the obligations of the Convention. We can see from Table 1 above that Asian countries place relatively more emphasis on increasing government subventions. This is not to suggest that some Asian countries do not seek to improve allocations from other conventional sources such as GEF and Donor funds. They do.
Nevertheless, government subventions, through higher national budget allocations, play an integral part in financing NBSAPs.

This emphasis on government subventions has several downsides. In fact, the CBD recognises that “economic and social development and eradication of poverty are the first and overriding priorities of the developing country Parties.” This entails that, ultimately, environment like all the sectors of the economy competes for scarce government resources. In most Asian countries, public resources are allocated on a year-to-year basis and they are allocated sectorally. This means that funding for biodiversity conservation comes through various related sectors (forests, fisheries, etc.). One the one hand, what usually ends up happening is that sectoral economic policies place a great deal of emphasis on formal sectors such as agriculture, energy, etc. because of the huge, immediate benefits accruing to them. This emphasis on the sectoral economic policies comes at the expense of natural resources including biodiversity. On the other hand, the nature of investments in natural resources are often such that they can produce dividends in relatively longer periods of time compared with many other investments. This in turn implies that the environment, as a sector, is ignored when government budgets are allocated. For example, in Pakistan in 1999/00 barely 1% of the Public Sector Development Programme was allocated to the environment. Surmise is to say that the poorly financed and under-staffed environment and resource sector comes up short of effective management of these resources.

3.1.2 Critical Review

More specifically, government subventions suffer from the following drawbacks:

- **The Budget Cycle in Asian Countries:** The annual cycle of budget allocations does not necessarily follow the seasonal variations of say forests, and at times delays in release of funds cause waste of opportunity for investments in plantation. Therefore, only projects, which bring some semblance of medium to long-term predictability, can be of use as financing instruments. Delays in the release of funds often adversely affect these too.
Uncertainty of Funding: The annual cycle entails that financing of a particular biodiversity conservation project is certain for that year. Although medium to long-term projects do bring some measure of financial certainty, and allow multiyear planning. Nevertheless, these projects may be deferred or abandoned especially if government priorities change the following year. Ultimately, the projects remain at the impulses of annual priorities and hence lack certainty.

Population growth and Stabilisation Programme: Economic development and poverty alleviation are foremost priorities of developing countries, and with growing populations in many Asian countries; this means increasing demands on their fiscal systems. So the provision of basic infrastructure and services, and allocations to sectors that generate higher immediate returns such as agriculture, energy, etc. are given priority. Simultaneously, most Asian countries under the stabilisation regime face expenditure constraints. One the one hand, resources allocated for reducing budget deficits puts a squeeze on government's expenditures. While, on the other hand, within an overall fixed target and the focus on policy priorities, environment budget tends to diminish. Sectors that generate higher immediate returns are given priority, as they can best finance current budget deficits and future government expenditures.

Shortsightedness of Short-term Investments: The cyclical process also brings in the constraint of short term planning which does not suit the long-term nature of investments on natural resource regeneration and support. Investments in natural resources produce dividends in relatively longer periods of time as compared with many other investments. This short-sightedness entails that the natural resource base necessary for economic development can continually be degraded and depleted, with strong implications for future economic development and poverty alleviation.

The budgetary process and local communities: The budgetary process is not reflective of local communities interests and initiatives. Although there are trends towards greater local community participation in conservation
projects, as a more effective and efficient method of conserving biodiversity and natural resources. Nevertheless, these devolved initiatives are relatively few in numbers and are largely dependent on donor funds. The idea is that local communities have an interest in maintaining the state of natural resources because their survival is dependent on the survival of natural resources. Local communities are aptly placed to prepare and implement initiatives for the protection and conservation of biodiversity. However, the government’s budgetary process presents problems to its wider applicability. One, local communities at times lack the capacity to reach out to the formal budgetary mechanism for allocations to their proposals. Two, the budgetary process entails cumbersome procedures, which usually do not allow for financing to be approved from formal mechanisms. Three, there is a dearth of national government financial resources available at local levels, and hence, further impediments to local level initiatives.

3.1.3 Conclusion

It is clear from the above that the current macroeconomic realities, policy priorities of many Asian countries, nature of the budgetary process and lack of local, popular support and initiatives make effective conservation of biodiversity difficult. Not only are government allocations for biodiversity conservation being squeezed as a result of expenditure constraints, they also get squeezed from competing priority areas. Furthermore, the budgetary process suffers from shortsightedness, and does not take account of long-term costs and benefits of biodiversity conservation. Finally, local administration and communities, who are aptly placed and can be instrumental in conservation initiatives, lack necessary outreach and resources, as the budgetary process is not responsive to their interests and initiatives. In the face of these constraints, clearly the need arises for additional, innovative ways to raise finances for NBSAPs implementation. Moreover, biodiversity conservation requires adequate, predictable and timely flow of funds, which current budgetary processes and practices inhibit. As we shall see below, for example, how Environmental Trust Funds can be instrumental in assuring predictable, adequate and timely flow of funds.
3.2 Donor Funds

3.2.1 Overview

Article 20 of the CBD emphasises that "developed country parties shall provide new and additional financial resources to enable developing country parties to meet the agreed full incremental costs to them of implementing measures which fulfil the obligations of the CBD". It also states that developed country Parties may also provide, and developing country Parties avail themselves of, financial resources related to the implementation of this Convention through bilateral, regional and other multilateral channels.

Historically, bilateral and multilateral donor agencies have played a pivotal role in financing NBSAP implementation in Asia. According to the data provided in the third meeting of Conference of Parties (COP) nearly 1% of the official development assistance provided accounts for biodiversity related activities. Over the past couple of decades, donor funds have been a major source of financing conservation projects in many Asian countries. In fact in many instances despite the presence of other conventional financing mechanisms such as GEF funding and governmental interventions, bilateral and multilateral grants continue to be a major source of funds for environmental initiatives in the Asia region. Most multilateral donors and bilateral donors have been active in financially assisting biodiversity conservation in Asia.

Review of the NBSAPs of selected Asian countries shows the following donors and the projects that are / is being funded by them:

- Donors active in funding biodiversity projects in Bhutan include GEF, UNDP, DANIDA, GTZ, EU, SNV, Save the Children USA, FAO, the Japanese Government, Switzerland Hervitas, NORAD, EU, ADB and WB.

- Pakistan like many developing countries has required significant external financial support to implement its Biodiversity Action Plan. While presently the major portion of funding is provided by GEF, Pakistan has established an informal environmental donor group, which meets regularly, and comprises donors currently financing biodiversity related projects.
Several aid agencies have provided financial assistance to Vietnam. For example: FAO, assisted the Ministry of Forestry in the development of Cuc Phong National Park; SIDA assisted some provinces in greening schemes; UNDP funded the development of tropical forestry and also acts as a secretariat for co-ordination of donor inputs; while WFP has aided reforestation activities. Vietnam’s NBSAP emphasises availing funds from multilateral and bilateral agencies operating in environment sector including institutions such as UNDP, ADB and World Bank.

China’s NBSAP places emphasis on securing funds from bilateral and multilateral agencies such as UNDP, UNEP, WB, UNESCO, IDO and IMO.

The Governments of United States, Japan and the Netherlands have been funding environmental activities in the areas of training and education information and protected areas management in Indonesia. Donors such as World Bank, UNDP, FAO, ADB and WWF have financed the wetland, coastal and marine conservation projects as well as breeding programmes.

Interestingly, The Philippines is one of two Asian countries to have derived total estimated cost of implementing their NBSAP. The Philippines too places considerable emphasis on obtaining funding from (unspecified) bilateral and multilateral agencies.

Nepal’s NBSAP does not specify or target any donors. It, however, mentions the amount required to implement its NBSAP, which is US$ 96 million for 89 projects over 15 years.

Sri Lanka and Thailand’s NBSAPs have not specified any donor-funding source.

Cambodia’s NBSAP includes seeking international assistance for Protected Areas Management as well as support from FAO, UNESCO, and UNDP for awareness, education, research and development.
3.2.2 Critical Review

As is evident from the above overview, most Asian countries' NBSAPs consider donor funds to be another major source of financing, and in many cases there is heavy reliance on donor-funded projects with recipient government's financial support. However when viewed from a sustainability perspective, donor funds fall short of the test.

Donor funded projects are typically designed to provide seed monies for a specified period in support of specific activities. The onus of raising additional monies to support the conservation issue at hand, beyond the life of the project then lies with the recipient country. Hence it is often the case that in the medium term, such funding leads to an unhealthy reliance on external support, and inhibits the development of capacities at local levels to generate funds.

This lack of sustainability of donor funding arises due to several reasons.

Declining trend in ODA

The Official Development Assistance (ODA) provided to developing countries includes monies extended to all development projects and it is difficult to arrive at a conclusive figure for the total amounts of monies currently being extended specifically for biodiversity conservation. However one thing is certain, investments by multilateral and bilateral agencies since 1988 have steadily been on the decline. This declining trend in ODA means that the pool of available donor funds is shrinking, clearly highlighting the need for additional sources of financing NBSAPs.

Funds allocated to Biodiversity projects may be very low as a percentage of total assistance rendered

Not only is the pool growing smaller, but also the amount of donor funds that have traditionally been spent on biodiversity activities has rarely exceeded 1% of the total financial assistance rendered by donors over the past decade.
Donor priorities may not be in-line with country priorities

It is increasing being seen that most donors now have clear-cut agendas focusing on a few key themes rather than the broader all encompassing approach of yesteryear. In some instances these donor priorities may not be in-line with the specific countries’ NBSAP priorities. In such cases one of two things could happen. Either most of the grants will thus be directed towards the donor’s priority area instead of the specific need as identified in the NBSAP, or the country loses out on the funding opportunity altogether. This situation sometimes limits the possibility of a recipient country receiving grants.

Changing Donor Agenda

Donor’s agenda on funding changes over a period of time. This change in agenda creates hindrance in the sustainability of funding. For example, this may create hurdles in cases where no provisions have been made in recipient country for raising monies post project life, as they were depending on the roll over of subsequent phases of the current project.

Bilateral Relations between Countries

The social, political and economic relations with donor countries affect the possibility of sustaining and securing funds from them. Due to the politicised nature of some of the Asian countries such as Pakistan, India and Sri Lanka bilateral relations can be strained. This is a critical drawback of this method of financing as tension between countries may not only affect future funding but may in some cases lead to a disruption in committed and existing project funding.

3.2.3 Conclusion

Clearly the above review (including the responses from Asian countries to our questionnaire) reveals that there is overwhelming dependence on donor funds for financing conservation projects. This is not to suggest that donor funding is not important and should not be relied on. Rather it is better to recognise its limitations, and employ alternative, innovative mechanisms that compliment donor
funding and give it more predictability, adequacy and sustainability. As we will see below, how debt for nature swaps and environmental funds can compliment donor funding and make it more responsive to NBSAPs implementation. Considering how presently things stand - nature of bilateral relations, changing donor priorities and a shrinking pool of ODA overall - donor funding, in and of itself, cannot be regarded as a sustainable financial resource.
### Table 2

Projects Funded By Bilateral Donor Agencies

<table>
<thead>
<tr>
<th>S.No.</th>
<th>Country</th>
<th>Project Name</th>
<th>Donor Agency</th>
<th>Executing Agency</th>
<th>Duration/ Project Assistance</th>
<th>Specific Project Assistance</th>
<th>Total Assistance by Donor</th>
<th>In-country Partner</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bhutal</td>
<td></td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td>DM 1.3 Million</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Cambodia</td>
<td>Cambodia - German Forestry Project</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td>DM 14.7 Million</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Biodiversity Protection &amp; Community Development in Inner Mongolia Autonomous Region</td>
<td>GTZ</td>
<td>To be selected through competition</td>
<td>2000</td>
<td>$ 6 Million</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Rehabilitation &amp; Protection of the Tropical Forests in Yunnan</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reduction of Noxious Emission</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conservation &amp; Management of Water catchment areas of the Yijiang Reservoir</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Basic &amp; Further Training in Forestry</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Reduction of Industrial CO2 Emissions</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Indonesia</td>
<td>Kaltim Social Forestry Project</td>
<td>CIDA</td>
<td>University College of the Cariboo</td>
<td>1998-2002</td>
<td>$ 730,000</td>
<td>DM 33.4 Million</td>
<td>Mulawarman University</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Integrated Forest Fire Management</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Strengthening the Management Capacities of Indonesian MoF</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>River Basin Management</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Malaysia</td>
<td>Sustainable Forestry Management, Sarawak Study &amp; Expert Fund, nationwide</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td>DM 5.0 Million</td>
<td>Govt. of Nepal, Private Sector organizations &amp; Local NGOs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Support to Forestry Management, Sabah</td>
<td>GTZ</td>
<td></td>
<td>2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Nepal</td>
<td>Collaborative Local Initiatives for Environment</td>
<td>CIDA</td>
<td>Canadian Co-operation Office in Kathmandu</td>
<td>1998-2001</td>
<td>$ 500,000</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S.No.</td>
<td>Country</td>
<td>Project Name</td>
<td>Donor Agency</td>
<td>Executing Agency</td>
<td>Duration/ Project Assistance</td>
<td>Specific Project Assistance</td>
<td>Total Assistance by Donor</td>
<td>In-country Partner</td>
</tr>
<tr>
<td>-------</td>
<td>---------</td>
<td>------------------------------------------------------------------------------</td>
<td>--------------</td>
<td>--------------------------</td>
<td>------------------------------</td>
<td>-----------------------------</td>
<td>----------------------------</td>
<td>----------------------------------</td>
</tr>
<tr>
<td>1</td>
<td>Nepal</td>
<td>International Centre for Integrated Mountain Development (ICIMOD)</td>
<td>GTZ</td>
<td>Cowater International, Ottawa</td>
<td>2000</td>
<td>19942000</td>
<td>DM 17.7 Million</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Pakistan</td>
<td>Pakistan Environment Program Urban Industrial Environment Project (UIEP) Peshawar Assistance to Stock breeding in Punjab, Lahore</td>
<td>CIDA</td>
<td>GTZ</td>
<td>1994-2001</td>
<td>$14.6 million</td>
<td>$11500*</td>
<td>Govt. of Pakistan &amp; ACNP</td>
</tr>
<tr>
<td>4</td>
<td>Sri Lanka</td>
<td>Water supply &amp; Sanitation Project Vavuniya Sri Lankan - German Estate Forest &amp; Water Resource Development Project</td>
<td>GTZ</td>
<td>USAID</td>
<td>2000</td>
<td>$14.6 million</td>
<td>$11500*</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Thailand</td>
<td>Environment Advisory Assistance for Industry Urban Environmental Management Thai - German Energy Efficiency Promotion Project Thai - German Highland development Programme, Chiang Mai</td>
<td>GTZ</td>
<td>GTZ</td>
<td>2000</td>
<td>$14.6 million</td>
<td>$11500*</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Vietnam</td>
<td>Support for Reform of forestry Administrative System Sustainable management of resources in the lower Mekong Basin Project</td>
<td>GTZ</td>
<td>GTZ</td>
<td>1997</td>
<td>DM 7.67 Million</td>
<td>DM 5.62 Million</td>
<td></td>
</tr>
</tbody>
</table>

SEPA: State Environmental Protection Administration
IMAR-BPB: Inner Mongolia Autonomous Region Environmental Protection Bureau
USAID: Development Assistance provided during the year 2001

* Development Assistance, inclusive of social sector and other funds.

MOARD: Ministry of Agriculture & Rural Development

Financing NBSAPs: Options and Opportunities
3.3 GEF Funds

3.3.1 Overview

In relation to Article 21, GEF was established as the interim financing mechanism of CBD to help developing countries finance the incremental costs of securing global biodiversity benefits. Since its inception, GEF has been a biodiversity funding resource for many countries in Asia. Over the years, most of the Asian countries have shown reliance on GEF to finance their environmental projects.

GEF was established in 1991 with the aim of providing developing countries grants to address threats to the global environment in four focal areas, namely biodiversity loss, climate change, ozone depletion and degradation of international waters. The work of GEF is guided by a number of international treaties in the focal areas. In particular, GEF is the interim "financial mechanism" of the Convention of Biodiversity (CBD) and United Nations Framework on Climate Change (UNFCC).

For a project to be eligible for funding a country must be party to the CBD, and the project must lead to demonstrable global biodiversity benefits. GEF funds the incremental costs of taking action to secure these benefits.

Till 1999, GEF allocated US$ 991 million in grants for biodiversity projects. Moreover, an additional US$ 1.5 billion in co-financing was raised from recipient countries, bilateral donor agencies, other development agencies, the private sector, and NGOs to support these projects.

3.3.2 Critical Review

It is important to understand that GEF funding is only on the basis of incremental costs. What this means is that GEF will finance only the incremental cost of a project in carrying out activities that go beyond a country's immediate national benefits/interests and provide global biodiversity benefits. Therefore, the costs associated with achieving national objectives and national benefits must be met by other sources of funding, i.e., these co-financing costs must be met elsewhere. Typically GEF requires a ratio of 2:1 co-financing.
from other sources. The rationale is that any environmental project will yield a mix of benefits, some national and others global. Clearly, some of the burden of meeting the project costs will fall on the respective countries, and hence the needs for alternative financial mechanisms to address this financing gap.

GEF is an important source of large scale, long-term grant funding. In addition to conventional project funding, GEF has also provided funding to support the development of innovative financial mechanisms, for example environmental investment funds, and contribution to the establishment of Conservation Trust Funds. However, GEF has recently moved away from financing trust funds.

GEF has been instrumental in funding a wide variety of institutions such as governments, NGOs and the private sector. In particular, GEF has become an important source of support to NGO-led conservation projects. However, because of the diverse range of actors involved in the project cycle, project approval can be a complex and often highly political and frustrating process.

GEF also has sought to mainstream global biodiversity concerns into the regular project portfolios of the implementing agencies. This concern with global biodiversity is one impediment to funds from GEF. Only project that demonstrate global biodiversity concerns can be considered, which could be a source of confusion. Finally, it is important to recognise that GEF is only one source of financing NBSAPs and because of its mandate and requirements should not be thought of as meeting all the financial requirements.

### 3.3.3 GEF Funding to Biodiversity Conservation in Asia

Table 2 below has been produced to provide a summary of some of GEF funded projects in Asia.

GEF’s current overall investment on Biodiversity conservation in Asia is approximately US $182.4 million. Majority of these investments span a period of between five to ten years, that is, 60% are full-sized projects. The rest, nearly 40% are medium sized projects, and are usually for shorter span of time. We were not able to ascertain the number and amounts of small grant projects. Most of the countries, which already have an NBSAP or are in the process
of developing their NBSAPs, have received an enabling activity grant of between US$ 350,000 - 450,000.

The current projects undertaken by GEF in Asia are primarily focused on conservation of forest ecosystems and coastal marine and freshwater ecosystems out of the five operational programmes under the biodiversity focal areas. The figures are respectively US$ 80.4 million for forest ecosystems and US$ 65.9 for coastal marine and freshwater ecosystems.

![Total Allocations in select Asia Countries](image)

Analysed country wise, out of the 13 Asian countries with GEF projects, three countries (China, India and Indonesia) account for more than 50% of allocations. Moreover, Indonesia receives the highest GEF allocations and accounts for nearly 20% of the total. Interestingly, The Philippines, which estimates that the implementation costs of their NBSAP will be US$ 92.2 million (over ten years) receives only US$ 9.6 million or barely 5% of total allocations. Figure 1 provides the percentages of total GEF allocation for each Asian country.

Furthermore, If we only consider Asian countries that have developed their NBSAPs and are subsequently receiving GEF grants, we find that the total GEF allocations now amount to US$ 130.87 million. Now two countries, namely China and Indonesia account for more than 50% of total GEF allocations. Figure 2 below gives a percentage breakdown for all 10 countries.
3.4 Conclusion

The review and analysis in this section has made explicit that conventional financing mechanisms are simply inadequate to meet the biodiversity conservation funding needs of most Asian countries.

These conventional sources all suffer from their respective shortcomings. These include: limits in amount and under heavy competition; are often insecure; are mostly decreasing in real terms; are uncertain over the long-term; and are an additional risk of decreasing national, individual or group control and sovereignty over biodiversity because they depend on external decisions and are often tied to particular conditions, goals or activities. In light of the significant amount of funding required for biodiversity conservation, the sustainability of these conventional mechanisms is questionable. Furthermore, this brings us to the need for additional, innovative mechanisms to meet the financing gap. We now turn to these in the next section.

Figure 2
Total GEF Allocations to Asian Countries Implementing their NBSAPs

- Sri Lanka: 13%
- Philippines: 7%
- Pakistan: 17%
- Nepal: 5%
- Korea DPR: 1%
- Vietnam: 5%
- Bhutan: 1%
- China: 24%
- Indonesia: 25%
<table>
<thead>
<tr>
<th>Country</th>
<th>Title</th>
<th>Focus Area</th>
<th>GEF Input</th>
<th>Co-financier</th>
<th>Total</th>
<th>Brief Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangladesh</td>
<td>Aquatic Biodiversity Conservation</td>
<td>Coastal, Marine and Freshwater Ecosystems</td>
<td>5,000</td>
<td>55,840</td>
<td>60,840</td>
<td>The promotion of wetlands and aquatic biodiversity conservation and sustainable use in Bangladesh.</td>
</tr>
<tr>
<td>Bangladesh</td>
<td>Biodiversity Conservation in the Sundarbans Reserved Forest</td>
<td>Coastal, Marine and Freshwater Ecosystems</td>
<td>12,200</td>
<td>63,300</td>
<td>75,500</td>
<td>The Project will develop and implement a sustainable management and biodiversity conservation system for the Sundarbans region of Bangladesh.</td>
</tr>
<tr>
<td>Bhutan</td>
<td>Integrated Management of Jigme Dorji National Park</td>
<td>Mountain Ecosystems</td>
<td>1,498</td>
<td>1,030</td>
<td>2,528</td>
<td>Strengthening the integrated management of Jigme Dorji National Park, Yemment of Bhutan.</td>
</tr>
<tr>
<td>Cambodia</td>
<td>Biodiversity and Protected Area Management Pilot for the Virachey National Park</td>
<td>Forest Ecosystems</td>
<td>2,750</td>
<td>2,240</td>
<td>5,000</td>
<td>Proactive measures to minimize illegal exploitation of the relatively intact biodiversity of national and global significance in the Virachey National park.</td>
</tr>
<tr>
<td>China</td>
<td>Nature Reserves Management</td>
<td>Forest Ecosystems</td>
<td>17,800</td>
<td>5,700</td>
<td>23,500</td>
<td>Prepare and implement management plans in five priority-protected areas, 2nd comp will restructure a major timber industry to promote sustainable forestry.</td>
</tr>
<tr>
<td>China</td>
<td>Lop Nur Nature Sanctuary Biodiversity Conservation</td>
<td>Arid and Semi-Arid Zone Ecosystems</td>
<td>0,725</td>
<td>0,782</td>
<td>1,507</td>
<td>Strengthen the establishment and management of the sanctuary.</td>
</tr>
<tr>
<td>China</td>
<td>Wetland Biodiversity Conservation and Sustainable Use</td>
<td>Coastal, Marine and Freshwater Ecosystems</td>
<td>12,026</td>
<td>23,024</td>
<td>35,050</td>
<td>Project will remove barriers at four demonstration project sites with high global biodiversity importance in four areas.</td>
</tr>
<tr>
<td>China</td>
<td>Multi-agency and Local Participatory Cooperation in Biodiversity Conservation in Yuanan Upland's Ecosystem</td>
<td>Mountain Ecosystems</td>
<td>0,750</td>
<td>0,750</td>
<td>1,500</td>
<td>The project would aim to establish a political organization frame work for a response to Biodiversity loss in upland ecosystems.</td>
</tr>
<tr>
<td>India</td>
<td>India Eco-development</td>
<td>Forest Ecosystems</td>
<td>20,210</td>
<td>54,000</td>
<td>74,210</td>
<td>Project integrates conservation and development objectives in 7 threatened, priority sites representative of India’s varied ecosystems.</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Kerinci Seblat Integrated Conservation and Development</td>
<td>Forest Ecosystems</td>
<td>14,400</td>
<td>25,500</td>
<td>39,900</td>
<td>This project seeks to conserve the Gulf of Mannar’s globally significant assemblage of coastal biodiversity.</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Conservation and Sustainable Use of the Gulf of Mannar Biosphere Reserve's Coastal Biodiversity</td>
<td>Coastal, Marine and Freshwater Ecosystems</td>
<td>7,840</td>
<td>19,900</td>
<td>26,890</td>
<td>Park management/protection will be strengthened based on collaborative linkages with buffer zone communities and local NGOs and governments.</td>
</tr>
<tr>
<td>Country</td>
<td>Title</td>
<td>Focus Area</td>
<td>GEF Input</td>
<td>Co-financer</td>
<td>Total</td>
<td>Brief Description</td>
</tr>
<tr>
<td>------------------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>-----------</td>
<td>-------------</td>
<td>---------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Indonesia</td>
<td>Coral Reef Rehabilitation and Management Project (COREMAP)</td>
<td>Coastal, Marine and Freshwater Ecosystems</td>
<td>12.280</td>
<td>48.000</td>
<td>60.280</td>
<td>Strengthen coral reef management through improving management capacity and inter-agency co-ordination; capacity building to prepare and implement strategies, plans and policies.</td>
</tr>
<tr>
<td></td>
<td>Maluku Conservation and Natural Resources Management</td>
<td>Coastal, Marine and Freshwater Ecosystems</td>
<td>6.000</td>
<td>4.600</td>
<td>10.600</td>
<td>Strengthening management of the existing terrestrial protected area and establishing a 2nd area (Lolabata-Akitajawe National Park); and expanding and managing a system of marine protected areas around the Aru and Banda islands.</td>
</tr>
<tr>
<td></td>
<td>Conservation of Elephant Landscapes in Aceh</td>
<td>Forest Ecosystems</td>
<td>0.742</td>
<td>1.025</td>
<td>1.767</td>
<td>Project would protect and conserve the extent and integrity of remaining forest habitat in Aceh Province.</td>
</tr>
<tr>
<td></td>
<td>The Greater Berbak-Sembilang Integrated Coastal Wetlands Conservation Project</td>
<td>Coastal, Marine and Freshwater Ecosystems</td>
<td>0.732</td>
<td>0.732</td>
<td>1.464</td>
<td>Preparation and implementation of a management plan for the Greater Berbak-Sembilang Ecosystem, based on biodiversity conservation values and socio-economic realities &amp; strengthen national park management.</td>
</tr>
<tr>
<td>Korea DPR</td>
<td>Conservation of Biodiversity at Mount myohyang</td>
<td>Mountain Ecosystems</td>
<td>0.750</td>
<td>1.664</td>
<td>2.414</td>
<td>Addressing serious threats from logging, agriculture, and human-induced disturbances.</td>
</tr>
<tr>
<td>Malaysia</td>
<td>Conservation and Sustainable Use of Tropical Peat Swamp Forests and Associated Wetland Ecosystems</td>
<td>Coastal, Marine and Freshwater Ecosystems</td>
<td>6.300</td>
<td>6.670</td>
<td>12.970</td>
<td>To ensure the conservation and sustainable use of globally significant biodiversity.</td>
</tr>
<tr>
<td>Nepal</td>
<td>Upper Mustang Biodiversity Project</td>
<td>Mountain Ecosystems</td>
<td>0.750</td>
<td>1.730</td>
<td>2.480</td>
<td>To conserve the globally significant natural and cultural environment in the Palaearctic biogeographical realm in the Trans Himalayan region.</td>
</tr>
<tr>
<td></td>
<td>Biodiversity Conservation in Nepal</td>
<td>Mountain Ecosystems</td>
<td>3.800</td>
<td>4.600</td>
<td>8.400</td>
<td>Promotion of ecosystem conservation with local involvement to ensure that communities benefit from project activities.</td>
</tr>
<tr>
<td></td>
<td>Arun Valley Sustainable Resource Use and Management Pilot Demonstration Project</td>
<td>Forest Ecosystems</td>
<td>0.625</td>
<td>0.625</td>
<td>1.250</td>
<td>The proposed project aims to mitigate the major threats to natural resources, especially the forest and water from anthropogenic activities.</td>
</tr>
<tr>
<td></td>
<td>Landscape-scale Conservation of Endangered Tiger and Rhinoceros Populations in and Around Chitwan National Park</td>
<td>Forest Ecosystems</td>
<td>0.750</td>
<td>0.750</td>
<td>1.500</td>
<td>The Project will promote landscape level biodiversity conservation with strong community-based management links to conserve endangered species.</td>
</tr>
<tr>
<td>Country</td>
<td>Title</td>
<td>Focus Area</td>
<td>GEF Input</td>
<td>Co-finance</td>
<td>Total</td>
<td>Brief Description</td>
</tr>
<tr>
<td>------------</td>
<td>----------------------------------------------------------------------</td>
<td>---------------------------------</td>
<td>-----------</td>
<td>------------</td>
<td>---------</td>
<td>-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Pakistan</td>
<td>Protected Areas Management Project</td>
<td>Forest Ecosystems</td>
<td>11.140</td>
<td>15.700</td>
<td>26.840</td>
<td>The project will improve the participatory planning and management of three priority protected areas across a range of ecosystem types.</td>
</tr>
<tr>
<td>Philippines</td>
<td>Coastal and Marine Biodiversity Conservation in Mindanao</td>
<td>Coastal, Marine and</td>
<td>6.110</td>
<td>4.800</td>
<td>6.050</td>
<td>GEF would aim to finance the incremental costs of promoting coastal and marine biodiversity conservation and sustainable use.</td>
</tr>
<tr>
<td></td>
<td>Samar Islands Biodiversity Project: Conservation and Sustainable Use</td>
<td>Freshwater Ecosystems</td>
<td>1.250</td>
<td>4.800</td>
<td>6.050</td>
<td>Establish the Samar Islands National Park (SINP), a new protected area zoned for multiple uses centering on protection, but providing for sustainable harvests of non-timber forest products.</td>
</tr>
<tr>
<td></td>
<td>Sustainable Management of Mount Isar</td>
<td>Forest Ecosystems</td>
<td>0.750</td>
<td>2.225</td>
<td>2.225</td>
<td>The project seeks long-term impact on the biodiversity loss by tackling not just the immediate threat of forest loss but also its key threats.</td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>Conservation of the Tubbataha Reef National Marine Park and World</td>
<td>Coastal, Marine and</td>
<td>0.750</td>
<td>1.760</td>
<td>1.760</td>
<td>To prepare and finalize a GEF full project brief and draft full project document.</td>
</tr>
<tr>
<td></td>
<td>Heritage Site</td>
<td>Freshwater Ecosystems</td>
<td>0.743</td>
<td>0.743</td>
<td>0.743</td>
<td>This project addresses the priorities of the Philippine National Biodiversity Action Plan (NBSAP), the Philippine Marine Policy.</td>
</tr>
<tr>
<td></td>
<td>Biodiversity Conservation and Management of the Bohol Island Marine</td>
<td>Forest Ecosystems</td>
<td>5.417</td>
<td>20.400</td>
<td>25.817</td>
<td>Project will design and implement a medicinal plants conservation program.</td>
</tr>
<tr>
<td></td>
<td>Tringle</td>
<td>Coasts, Marine and</td>
<td>0.750</td>
<td>0.772</td>
<td>0.772</td>
<td>This MSP aims to ensure the conservation of valuable coastal ecosystems through the development of a collaborative management system.</td>
</tr>
<tr>
<td></td>
<td>Conservation and Sustainable Use of Medicinal Plants</td>
<td>Freshwater Ecosystems</td>
<td>0.750</td>
<td>0.976</td>
<td>0.976</td>
<td>The project aims to protect the ecosystems in the rainforests of Sinharaja and Kandaneetha-Dodiyagala-Nakiyadha through community co-management.</td>
</tr>
<tr>
<td></td>
<td>Conservation of Biodiversity through Integrated Collaborative</td>
<td>Forest Ecosystems</td>
<td>10.200</td>
<td>24.500</td>
<td>34.700</td>
<td>The project aims at assisting the Government of Sri Lanka to conserve the nation's valuable natural resources and preserve its wildlife.</td>
</tr>
<tr>
<td></td>
<td>Management in Kalpaya, Lunganaya, and Lakamatty Coastal Ecosystems</td>
<td>Coasts, Marine and</td>
<td>0.750</td>
<td>0.655</td>
<td>0.655</td>
<td>Project to conserve Vietnam's globally significant biodiversity through implementation of a landscape of a landscape ecology approach to protected areas management.</td>
</tr>
<tr>
<td></td>
<td>Vietnam PARC - Creating Protected Areas for Resources</td>
<td>Forest Ecosystems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Conservation (PARC) in Vietnam Using a Landscape Ecology Approach</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
4. INNOVATIVE FINANCING MECHANISMS FOR NSBSAP IMPLEMENTATION

4.1 Overview

This section deals with the new and additional financial mechanisms mentioned in Article 20 and Article 21 of the CBD. Traditionally countries have shown greater reliance on financing their NBSAPs via conventional mechanisms, e.g., government subventions, donor funds and the GEF. But because these funds are limited in amount and scope, as previously mentioned, many Asian countries have started exploring non-conventional sources of funds such as market-based and non-market based mechanisms.

It should, however, be noted that in most instances Asian countries are in the early stages of adapting and implementing these innovative financing mechanisms (IFMs). There are, however, two sets of issues involved in their wider applicability. On the one hand, as experiences with these innovations are just emerging, there is a general lack of knowledge and awareness about them. Second, there is also controversy regarding their applicability to developing country contexts. The specific arguments against these innovation highlight the facts that economic development and poverty alleviation are developing countries priorities; tax revenues are limited; financial and capital markets are relatively underdeveloped; there is low willingness to pay for environmental amenities; and there are legal, institutional and cultural constraints.

The NBSAPs of some of the Asian countries touch upon a few IFMs. Some of these are already in use, while others are merely proposed or planned and have yet to be developed or implemented. The IFMs mentioned in Asian NBSAPs include:

- Adopt a Park
- Debt-for-Nature Swaps
- Endowment Funds / Trust Funds
• Partnerships with the private sector
• Royalties from Wildlife & Fisheries
• Postage stamps / Coins
• Revenues from parks & reserves
• Fines / Penalties

4.2 Critical Review of Mentioned Innovations

The need for new and additional methods to complement existing financial resources is clearly apparent. As has been documented above, there is a significant gap between funding requirements and finances available for NBSAP implementation. Although the NBSAPs reviewed above have mentioned new, innovative mechanisms, in most instances, Asian countries have not been able to fully comprehend, absorb and implement these methods. This may be due to their underdeveloped financial systems, dearth of local capacities and absence of enabling environments.

In many instances, the non-conventional mechanisms mentioned are not feasible when assessed from a basic sustainability perspective. For example, financing mechanisms such as postage stamps and coins may not be an adequate source of income, especially over a long period of time. Moreover, some mechanisms depend on bilateral or multilateral donor funding such as Adopt a Park Scheme, or in some cases the capitalisation of environmental funds, which again rely on external funding.

Implementing non-conventional financing mechanisms also involves significant follow-up, transparent governance systems and established modes of monitoring & evaluation. This may require significant structural changes especially for some Asian countries. These legal and structural changes might be difficult to undertake in a bureaucratic set-up and developing state of economy.

But perhaps more importantly the delay in implementing such innovative financial mechanisms in Asia vis-à-vis the North has arisen due to a lack of awareness on the nature of these mechanisms and their modes of implementation. Hence it is envisaged that this tool kit will assist in filling this knowledge gap.
4.3 Further Innovations to Finance NBSAPs

The purpose of this sub-section is to explore new innovations, in both public and private finance, which generate substantive financial flows addressing the financing gap in the implementation of NBSAPs. It considers the following mechanisms:

- Environmental Funds
- Debt for Nature Swaps
- Environmental Taxes
- Tradable Permits
- User Fees
- Tradable Development Rights
- Clean Development Mechanism
- Green Credit Cards
- Private Sector Partnership/Participation
- Tourism Charges and Fees
- Bio-prospecting
- Payments for Environmental Services

Each mechanism is laid out into description; strengths and weaknesses; critical success factors; and examples of application in Asia (or elsewhere).

4.3.1 Market-based Instruments to Finance NBSAPs

Many of the innovations dealt with in this section are commonly referred to as economic instruments or market based instruments (MBIs). These innovations use the logic of the markets. Moreover, these instruments display two important characteristics, namely they create a system of environmental protection for lower overall costs and they raise much needed finances. In effect, they provide a double-dividend.

To understand the underlying logic of economic instruments, one must understand why biodiversity loss arises in the first place. In the
process of developing NBSAPs, it has been discovered that a major reason for the tremendous loss of biodiversity in particular and natural resources in general is the underpricing and undervaluation of these resources. There are many reasons for such underpricing. First, a market system has difficulties with the pricing of public goods or common property. A public good is one that is characterised by non-rivalness and non-excludibility - meaning that benefits to one person will not diminish the benefits to another, and that the good cannot be expropriated for use by a single individual or group. This is a classic case of market failure, similar to the case of national defense or clean air. In such cases, each individual will act as if the good was valueless, leading to less than optimal production, and more than optimal consumption, and hence to overexploitation and destruction.

Second, besides the general problem of underpricing of public goods, biological diversity is also affected adversely by development policy. In developing countries, natural resources have been underpriced deliberately, with the idea that such underpricing will promote greater use and thus contribute to development. Third, another important contributory factor to the underpricing of natural resources is the nature of property rights, especially collective property rights in developing countries. The reason why water is underpriced is that people do not have rights to fresh and clean water. If such rights existed, then polluters would have had to pay for their any adverse effects produced by their actions, and they would thus have the incentive to desist. Fourth, markets for much of the functions that biodiversity provides such as ecological services (water supply, flood control, soil fertility, storm protection, carbon sequestration, climatic control) usually do not exist, and hence, are completely unvalued.

The underlying premise for MBIs is to correct market failures and create markets by demonstrating appropriate values for biodiversity and capturing these values by the use of innovative financial mechanisms. This is because decision-makers often face informational constraints with regard to biological diversity and biological resources. The reason for these constraints emanates from a lack of knowledge about the Total Economic Value of biodiversity. Traditionally biodiversity and its components are seen in terms of their direct uses such as raw materials for human
production and consumption (for example, timber value of natural forests, fisheries value of coastal and marine ecosystems). What this informational constraint contributes to is a singular focus on commercial level extraction at the expense of other, less tangible, values or wider socio-economic development goals. In a situation of under valuing biodiversity, conservation is difficult to justify in the face of other, often unsustainable, land and resource uses, which appear to yield greater and more immediate returns.

In brief, MBIs use price signals to direct behaviour towards the conservation and sustainable use of biodiversity. Moreover, they minimise the cost of achieving this objective, and can raise significant amounts of financial resources.

4.3.2 Using Non Market-based Instruments to Finance NBSAPs

Another method of raising revenues for NBSAPs implementation is through the use of non market-based mechanisms. These have a longer history of application in both developed and developing countries. The idea is that governments use regulation, for instance by establishing standards or placing limits on use to address the loss of biodiversity. What these regulations involve is the use of specific rules or procedures that must be followed, or a penalty (charge or fine) will be imposed. So in contrast to MBIs, which focus more on price incentives, non-MBIs focus more on quantity controls.

For example, many developing countries use fines against activities that directly degrade biodiversity (or violate conservation laws) such as hunting, poaching, fishing, etc. and hence, limit or ban these activities accordingly. Alternatively, activities that indirectly degrade biodiversity by, for example, release of pollutant can be 'fined'. Pollution charges are an example of this. Anderson and Fiedor (1997) highlight the use of these in Poland, where pollution charges are among the highest in the world and an estimated US$ 450-500 million are collected annually. Finally, fines can be imposed on those users who do not follow specific procedures. An example of this is the use of turtle excluding devices (TEDs) mandated on fishermen to negate any adverse impact of their activity on endangered turtles. In light of this procedure, violators would have to pay if the specified technology is not used.
4.3.3 Conclusion

To sum up then, we feel it is important, therefore, that appropriate financial measures are used to bridge the gap between the private costs and benefits of biodiversity conservation at the local level, and public benefits at national and global levels. For this purpose, financing measures under Articles 20 and 21 should be linked to incentive measures under Article 11 of the CBD. Furthermore, financial measures for biodiversity conservation and sustainable use need to be developed as part of the broader framework of enabling conditions which include: public awareness, clearer definition of property rights, strengthening of the legal system, and reform of fiscal policies such as taxes and subsidies. Now we move on to specific innovative financial mechanisms.

4.4 Environmental Funds

Environmental funds represent one of the many innovative mechanisms that have been used to fund biodiversity conservation internationally. Environmental Funds are national, regional, or community based instruments used for financing sustainable development and/or biodiversity conservation. Essentially they are financial instruments used for managing money and disbursing it for initiatives that help protect the environment. One of the unique characteristics of environmental funds are that they are instrumental in building local capacities, while leveraging additional funding for the environment. Together with their focus on long-term biodiversity financing makes them an excellent example of a sustainable financial product.

While the terminology associated with environmental funds often looks very complex, environmental funds are very simple products. Environmental Trust Funds, Conservation Funds, National Environmental Funds, Environmental Trusts, Conservation Trust Funds, Environmental Endowments, and Environmental Foundations are all examples of environmental funds. Furthermore, environmental funds may be grouped into several categories depending upon their organisational structure, objectives, mission, financial structure, legal structure and the ways in which they utilise their capital.
Based on their objectives, environmental funds can be grouped into three main types: National Environmental Funds, Park Funds and Grants Funds. National Environmental Funds (NEF) or Strategy Funds have a mandate to support full range of activities included in a country's national plans and strategies. In many cases a separate window for each activity may exist. However due to their broad objectives, currently very few examples exist internationally. In Asia, there is a proposed NEF for Pakistan, while in Latin America the NEF for Bolivia is another example. Parks Funds are specifically created to support the conservation of a park or a protected area. The Jamaica National Parks Trust is an example of this type of environmental fund. Grants Funds, for example, make grants to other organisations such as NGOs, CBOs and sustainable development projects.

Environmental funds can also be categorised according to their mission. Single-issue funds are funds with a specific mission such as the envisaged Protected Area Management Fund in Pakistan. While Multiple issue funds have a broader and more diverse mission.

Endowments, revolving funds and sinking funds are all example of environmental funds categorised by financial structure. Endowment Funds invest their entire capital and use the interest earned to finance environmental activities. Revolving funds usually have periodic and regular disbursements and additions of new revenues and resources periodically. Sinking funds disburse both the entire principal (income/capital) and interest over a fixed period of time (usually 6-15 years). In many cases, a mix of all three financial structures has been used through sub-accounts.

Environmental funds can also be categorised according to their legal structure. These can be set up as non-profit companies, common law trusts, foundations or trusts formed by a national act of legislature. The type of legal structure is usually driven by the respective country's legislative environment.

**Strengths**

As innovative financial mechanisms for biodiversity conservation, environmental funds carry several advantages. One, they serve as
long term sources of finance. Two, they act as tools for leveraging additional sources of capital. Three, are cost-effective instruments for managing funds. Four, they facilitate increased participation of civil society. Five, they provide a vehicle to finance national environmental & conservation strategies. Six, they strengthen the capacity of local environmental organisations. Finally, they offer new possibilities for public-private partnerships and devolve responsibility and decentralise decision-making to local levels.

**Weaknesses**

Most of the disadvantages cited for environmental funds refer to governance and economic issues. The most common drawback of an environmental fund according to economists is that it ties up scarce capital to generate relatively small amounts of money. Furthermore, it adds a management layer between financing organisation and beneficiaries, which in turn increases administrative costs. From a donor’s perspective, the independence of environmental funds can mean less control over the allocation of resources. Overall, it is important to realise that in the case of most Asian countries, the advantages far outweigh the disadvantages.

**Critical Success Factors**

For an environmental fund to operate effectively and efficiently, sustainable & diverse sources of finance are imperative. This needs to be accompanied by well-defined long-term plans and clearly stated objectives, which will aid in prioritising the activities of the fund. Transparent governance systems are critical to facilitate effective implementation along with an efficient monitoring and evaluation system. In view of this, training and capacity building of personnel are key elements for the attainment of goals. The needs of donors should be effectively catered to while working towards local philanthropy. For the successful management of funding there should be a constant drive towards devising innovative tools for future funding with a clearly defined grant making criteria.
The Bhutan Trust Fund for Environmental Conservation was the world’s first environmental trust fund. It was established as a collaborative venture between the Royal Government of Bhutan, United Nations Development Program, and World Wildlife Fund with an original endowment of $20 million to finance conservation programs in Bhutan. Additional funding has come from the Global Environment Facility, the governments of Bhutan, Denmark, Finland, the Netherlands, Norway and Switzerland. In May 1996, the trust fund was legally incorporated in Bhutan under the Royal Charter. Today, it is an effective conservation grant making organization autonomous of the government. The trust fund is governed by the Royal Charter of 1996 and as a Management Board that was fully Bhutanised in May 2001. Source: http://www.worldbank.org/wbi/BSPAN/sub_bhutan_tf.htm

4.5 Debt-for-Nature Swaps

Debt for nature swaps is an innovative way to turn the debt problem into an environmental solution. While easing the debt problems, it also re-channels much-needed cash for the implementation of National Biodiversity Strategies and Action Plans. In essence, there are no debts, provided they have been rescheduled, that cannot be converted on the basis that there is a mutual agreement between the buyer, seller and the debtor. However some debts are excluded due to political decisions, for example multilateral debt, especially from the side of the creditor.

There are three main components in debt-for-nature swaps:

- A significant eligible debt which is owed by the country in question to a creditor country or to a bank;

3. Although the principle that multilateral debt can be negotiated has been accepted (the major stumbling block in the past), but it has so far largely remained at a theoretical level. An exception to this case has been the Highly Indebted Poor Countries (HIPC) Initiative, which has enabled countries that fall into this group to pursue debt relief with strict conditionalities.
An agreement by which the creditor country or a bank agrees to accept something less than the full amount owed, in order to clear the "bad loan" from its books; and

A commitment by the debtor country to make payments in local currency to support conservation efforts.

Essentially, there are two kinds of debt for nature swaps possible: debt conversion and *debt buy-backs*. Debt conversion entails the conversion of official development assistance (ODA) debt owed by developing countries. In a bilateral debt conversion of ODA debt, a creditor government cancels debt owed by a debtor government in exchange for the debtor setting aside an agreed amount of local currency counterpart funds for conservation programmes. Debt conversion is potentially more desirable because it can often involve much larger sums of money than are possible through debt buy-backs. For debt buy-backs, commercial and bilateral non-concessional debt can be bought at a discount from the creditor (or the secondary market) and exchanged with the debtor country for a local currency equivalent to be applied towards a conservation program (see Box 2). The purchaser of the debt could be an NGO or another suitable organisation acting as an intermediary between the debtor country and its creditors. For example, in a *Three-Party Debt for Nature Swap*, an intermediary organisation "buys back" some of the country's international debt. This is known as 'secondary debt' and it can be purchased on the world's money market. The value of such a debt is always less that its face value e.g. if a country owes $1 billion, each $1 of face value can be purchased for a fraction of this price, say 30 cents. The intermediary organisation then "sells" it back to the debtor government for more than it paid for the debt, but less than the face value, say 50 cents on the dollar but in local currency. The reason that the actual price differs from the face value is because there is a risk that the country in question will not be able to pay its debt back. Thus, secondary debt can be quite cheap. It should be noted that anyone may become a debt converter, provided they have the money or are able to mobilise it from a third party.

There are three beneficiaries who benefit from the three party debt for nature swap from the difference between the face value and the real value of a country's foreign debt i.e. the debtor country, the creditor and the conservation organisation. The creditor benefits in
the sense that they receive payment on at least part of the debt. They effectively subsidise the debtor as well as the conservation organisation.

**Strengths**

The strengths of this method are that it reduces debt, especially official bilateral debt. Debt swaps improve a country’s credit rating, and represent a net benefit transfer from developed to developing countries for conserving biodiversity. Debt swaps can be the basis of setting up environmental funds, and hence, ensure long term financing, attract further investment as well as promote civil society participation. Quintessentially, debt swaps are instrumental in making available tremendous local currency funds for implementing NBSAPs.

**Weaknesses**

Although debt swaps can be an effective financing tool especially in Asia, however, the process can prove to be costly and lengthy, and debt relief may be negligible. Some consider that the environmental conditionalities exacted by debt swaps interfere with a country’s sovereignty. There is also concern that payments made in local currency will cause inflationary effects. Finally, debt swaps can be a risky initiative, as debtor country may not meet its obligations to repay in local currency.

**Critical success factors**

For a debt-for-nature swap to be successfully implemented strong support of the debtor government for environmental conservation is required. Furthermore, close co-ordination between the finance and environment ministry is also required so that the funds are used in accordance with the conservation policies and priorities. Stable economic and political conditions of the country with the capacity for implementation (e.g. independent environmental trust funds) should be in place for effective utilisation of funds. Finally, most of the developing countries in Asia need to broaden their organisational capacity and require adequate technical help to make use of this method of funding biodiversity.
Box 2

With US$ 12 million of funds provided by USAID, World Wildlife Fund was able to purchase US$19 million in commercial debt owed by the Government of the Philippines, which represented a purchase price of 68% of face value. In exchange for cancellation of the debt, the Government of the Philippines agreed to pay Philippine pesos and peso notes valued at the equivalent rate of US$17 million (or a redemption price of 90% of face value). The funds generated were used to assure long-term funding for the environment thought the creation of an endowment for the Foundation for the Philippine Environment.

4.6 Transferable Development Rights

Sometimes the most contentious of mechanisms can be turned into financial advantages for biodiversity conservation. This is precisely the case with Transferable Development Rights (TDRs). There is a general conflict between developed and developing countries whether the land biodiversity occupies should remain conserved or be converted for development purposes. On the one hand, developing countries feel it is their national sovereign right to benefit from the exploitation of land as well as components of biodiversity accordingly. While, on the other hand, developed countries feel biodiversity is a global public good and should be conserved as a global resource. The reality is that individuals, firms, organisations and governments at various levels are willing to pay significantly to ensure the continual provision of services conferred by biodiversity. However, because of lack of an appropriate mechanism these transactions are not possible. To address this conflict, and capture the benefits biodiversity provides transferable development rights mechanism may be of significant value. This mechanism allows the global community, owner states and landowners to be a party to the transaction.

The idea is simply this. At the onset, it is important to recognise that development rights are separate from ownership rights: a country can hold the rights to the land (ownership) while trade its rights to development. Second, limit all or certain development on a site for
conserving biodiversity benefiting the global community. Third, allow property owners to transfer to other sites or sell their development rights to others and thereby recover their full market value. It is this incentive to develop elsewhere, which motivates the holders of transferred development, rights the intention for such rights. In effect, what TDRs enable is the creation of a market, which determines the equilibrium price at which exchange or transfer takes place.

This mechanism would allow for international co-operation for biodiversity conservation - by using this instrument of payment by the developed countries for conservation and supply of biodiversity services by the developing countries. A country could set aside habitats for biodiversity conservation and divide each habitat into a number of TDRs, corresponding to an area of unit such as a hectare. Each TDR would state the location, condition, diversity and degree of protection of the habitat and any special rights that it conveys to the buyer/holder. TDRs could then be offered for sale both locally and internationally at an initial offer price that covers fully the opportunity cost of the corresponding land unit. That is, the net present value of the income stream of the forgone development opportunity.

Initially, it may be better to start with a high price to test the market because if it too low then the transaction would be irreversible. If, however, the price is too high and no one purchase the TDRs. The price could then be scaled down to attract more buyers. Alternatively, additional features such as enlarging the area to include additional biodiversity values or improving its protection and management may be explored. The potential buyers of TDRs include local and international environmental organisations, local and international foundations and corporations, developed countries, chemical and pharmaceutical companies, scientific societies, universities and research institutions and even environmentally conscious individual philanthropists. They may have their own motivations for purchasing TDRs, for example, chemical and pharmaceutical industries would be interested in bio-prospecting (see Section 4.14). Moreover, there may be strong interest in the sense that the value of TDR may be increasing because of population and income growth, change in tastes as well as environmental awareness.
Strengths

One of the strengths of this mechanism for biodiversity conservation is that it makes the opportunity costs clear and provides a vehicle for the beneficiaries to pay them. Moreover, this mechanism can provide a country with substantial resources to finance NBSAPs without compromising national ownership or sovereignty. A country can always purchase back TDRs or lease them on an annual basis rather than sell outright.

Weaknesses

A major weakness of this mechanism is that because biodiversity is a public good and no one can be excluded from its benefits, an incentive to free ride arises. That is, recognising that everyone will benefit from biodiversity conservation regardless of who is paying for it will make possible for some countries to let other countries purchase TDRs. This could, in effect, lower the prices. However, a combination of alternative incentives in developed countries could overcome this hurdle. For example, credits could be given to domestic firms and property owners for the acquisition of TDRs from developing countries against domestic environmental regulations or introducing a conservation tax where the owners of TDRs would be given a tax break.

Critical Success Factors

The successful implementation of this mechanism requires the provision of certain legal, institutional, administrative and political preconditions. First, consulting and reconciling the relevant communities and stakeholders views on the intended proposal. Second, areas have to be designated as development areas and conservation areas based on extensive information. This requires collecting relevant data (on biodiversity) as well as appropriate government institution to zone the areas accordingly. Third, issuance of TDRs will require legal and administrative set-up to implement, monitor and enforce them. Finally, assessing the price of TDRs will require economic valuation of biodiversity to determine the appropriate prices. All these activities would require funding for various staff and administrative costs.
Tradable development rights in coastal environments in Cyprus

Box 3

Coastal areas of the Akamas Peninsula in north-west Cyprus have a high level of biodiversity, as well as containing several rare and endemic plant species. The Government of Cyprus has zoned part of the Akamas Peninsula as a non-development area. So as to save costs in its conservation, raise funds and avoid conflicts with potential developers, a system of transferable development rights has been proposed. Under this scheme developers, rather than being compensated with cash for activities foregone, would retain their rights to development but not be able to exercise them on-site. Development rights could be traded for property in other areas, or sold to groups concerned with the conservation of the Akamas Peninsula.


4.7 Green Credit Card

Green Credit Cards are one of the many ways of involving private sector enterprises in the promotion of biodiversity conservation and sustainable development. In essence the theory behind a green credit card is very simple. A financial sector organisation, (usually a commercial bank) interested in biodiversity conservation issues a credit card in association with an NGO, non-profit organization, or private sector firm working in the field of conservation. This may be done at either a provincial, regional or national level, depending on the nature and type of conservation activities being funded. The product is usually structured to raise monies for a new or existing environmental fund.

Each time a customer (defined as the holder and user of the credit card) makes a purchase on their card, a small percentage of the purchase price goes towards protecting the environment. In the simplest type of case, the financial sector organization donates a percentage of the amount of every transaction that takes place on the card, (with no burden on the customer) for conservation purposes. This donation is either made directly to the partner
environmental organization or is placed in an environmental fund. However the modalities of transactions may vary significantly from card to card and often depend upon the nature of funding required. In certain cases, this percentage may be an additional surcharge the customer agrees to pay on signing on to the card. In some instances, the percentage comprises a combination of both: deductions from the customer’s account and a donation from the bank on a matching principal basis. Furthermore, the bank usually agrees to donate a small amount for each card issued. The monies thus collected are usually deposited in an environmental fund (usually administered by an NGO) with which the card was jointly issued in the first place. In instances where customer donations are also involved, the financial sector organisation often gives its customers certain benefits to assist in marketing the card. These could range from incentives such as lower rates of interest, longer payment cycles, waiver of annual fees and so on.

As this mechanism for raising finance for biodiversity conservation usually involves third party intervention, its success depends entirely on the transparency in the use of funds by the conservation agency.

Strengths

While it is easy to cite advantages and disadvantages associated with this product it should be noted that, as its usage has not been very widespread to date, these remain rather theoretical in nature.

Probably the key advantage of this product is that it raises awareness among a wide base of stakeholders of conservation issues thereby allowing a larger constituency to get involved in biodiversity conservation. Hence, in order for this product to be successful, strong public awareness on conservation issues needs to be developed.

Weaknesses

One of the key drawbacks associated with this method is the high cost of marketing the product, which might be a setback for many private organisations. Furthermore, the initial speed of revenue generation might be slow in relation to the high marketing costs.
As the fund raising time required is a function of the public’s spending pattern, green credit cards are usually more suited to support medium and long-term fund raising activities rather than for short term capital raising.

**Critical Success Factors**

High level of initial investment in marketing the product, and hence, creating environmental awareness is vital for the success of this conservation financing mechanism. This may require that in most Asian countries the governments provide support to private companies such as tax-exemptions. In the initial stages, bearing in mind the time required to market and raise awareness, initial outlays from customers should be kept low.

**Examples from Asia or Elsewhere**

While the usage of green credit cards is a relatively new idea in Asia, examples from other regions do exist. Some of these are listed below:

**Action For Animals Master Card** is issued to support the cause of animal care by donating to homeless and abused animals. For additional information please see: [http://www.nacard.com/afaq&a.html](http://www.nacard.com/afaq&a.html)

**Earth Share Affinity Credit Card** in partnership with American Express and The Australian Conservation Foundation, Environment Victoria and The Wilderness Society. For additional information please see: [http://www.earthshare.org](http://www.earthshare.org)

**National Audubon Society Credit Card** in partnership with First USA visa or Master card. For additional information please see: [http://www.audubon.com/](http://www.audubon.com/)

**National Geographic Master Card.** For additional information please see: [http://www.bluemarbleinv.com/green.html](http://www.bluemarbleinv.com/green.html)

**Discover National Alliance For Species Survival Card**

**ECO Card Tiger Platinum Visa Card.** For additional information please see: [http://www.bluemarbleinv.com/green.html](http://www.bluemarbleinv.com/green.html)
Society for the Prevention of Animals (SPCA) Hong Kong issues a Master Card in partnership with AEON credit service company limited, which donates 25% of the annual fee and 0.1% of the credit purchase amount to support SPCA. For additional information please see http: www.aeon.com.hk/web/card

4.8 Tourism Fees & Charges

Since the past decade, Tourism has been one of the fastest growing industries globally. In 1999, tourism related spending accounted for $4.5 trillion of global economic activity, or 12% of the gross world product according to the World Trade & Tourism Council (Vital Signs, 2000). As per statistics released by the World Tourism Organisation 2000, Asia attracts 14% of all international arrivals and this figure is expected to double in the next decade. The tourism industry’s rapid growth rate is an opportunity that can be effectively harnessed by the environment sector to raise capital for biodiversity conservation.

The idea of using tourism to generate funding for biodiversity conservation is not a new one and eco-tourism examples in Asia abound. Eco-tourism, which refers to the sustainable mode of tourism, or an environmental and socially responsible form of travel and leisure; assists in building local capacities, generating income for local communities and creates employment. Together, this can be done with protecting the host country’s natural resource endowment.

Purposeful visits to natural areas are arranged by tourism agencies to protect the flora and fauna of these sites, which run the risk of being destroyed by the environmentally irresponsible behaviour of visitors and local communities alike. The revenue collected from such visits is used for the conservation of the area. Furthermore the product offers numerous income generating prospects for local communities that can be fed back into biodiversity conservation.

Eco-tourism provides a channel to sustain natural habitats while simultaneously promoting a country’s tourism industry. Fees are charged on a number of services provided at the tourist site, within the confines of a park or protected area. These are then used to support and conserve the natural endowments of that area. The
amount of fees charged depends on a variety of factors including, but not limited to, the cost of providing recreational services, the demand for natural resources and the intrinsic value of the area for visitors.

As mentioned, tourism user fees can be charged on a number of services. Some of the common activities include:

**Entrance Fees:** This is the admission fee to enter the park or protected area. In many cases there is usually a differential fee structure for local and foreign visitors. Local visitors are usually charged at a lower level for two key reasons. Firstly, to avoid a scenario akin to double taxation as they may already be subject to environmental taxes. Secondlly, as a marketing tool to encourage locals to visit the protected area or park more often so as to aid in awareness raising.

**Royalties and Sales Revenue:** This is a tax based on the sales revenue generated from the sale of souvenirs, food items and other products.

**License or permit fees:** These are fees charged to individuals, companies or groups who want to carry out an activity within the bounds of a park or protected area. Some examples of such activities include hiking, rock climbing, boat launching, fishing, hunting, harvesting of medicinal or other economically important plants and wild flowers. Furthermore, guides and tour operators may also require licenses to work within the site, and the monies generated from the sale of such licenses can also be a useful source of revenue for conserving the site.

**Concession Fees:** Concession fees are charged to companies granted access on concessional basis to the protected area for providing services to tourists. Concessionaires usually provide services such as food, guided tours, lodging and gifts. Concession fees are viable only where there is market for the services provided by the companies.

**Other Fees:** If the operational costs of the services provided in the protected area are not covered by the entrance fees, then additional fees for other opportunities offered by site such as camping, car parking, utilities and amenities can be charged.
Strengths

From a sustainability perspective, the product ranks high given that the fee based income generated is a self-sufficient method of financing protected areas, independent of government allocation. Furthermore, the ability of this product to raise monies independently can be used to leverage donor funding in larger conservation projects, thus making this a feasible financing option for funding NBSAP implementation.

The product also encourages wider stakeholder participation and assists in building local capacities and providing employment opportunities. According to the World Tourism Organisation 2000 findings, tourism created an estimated 192 million jobs. After manufacturing and oil industry, tourism is the third largest income earner. Implementing this mechanism in one part of a country is often seen to have a spill over effect, as the high levels of income generated more often than not motivate governments to protect additional areas. Furthermore, pricing the services in the protected area gives an economic value to ecosystem services. Increased fee structure allows management of access to users, and hence, to control overcrowding and exploitative or damaging use of the area.

Weaknesses

One of the major weaknesses of this method is that fees collected depend greatly on international tourist inflows. Tourist inflows may be adversely affected suddenly due to unstable political regimes, unfavourable economic conditions, threats of natural disasters such as earthquakes, hurricanes etc, or as seen recently in the wake of September 11 attacks.

Other major weakness cited by conservationists is that eco-tourism often ends up promoting tourism in areas that were hitherto unexploited and hence could lead to a negative effect over all on the natural resource base. Some other disadvantages associated with this product are mostly related to local communities and include the following. High pricing of the area may exclude the use of land by poorer communities. Additionally while the product offers employment opportunities, it may often be an unstable source of income generation, as it is subject to seasonal fluctuations. Finally,
the initial marketing of the protected area may be a challenge for the developing countries with limited resources.

**Critical success factors**

For the success of this mechanism it is necessary to ensure that the money generated by fees and permits goes for the conservation of that area rather than national treasury. Proper marketing of the natural area is necessary to attract large number of tourists. Flexibility in the fee structure as well as trained staff, so as not to discourage tourism is an important success factor.

---

**Tourism/Entry fees Annapurana Conservation Area, Nepal**

Traditionally, tourism proceeds (entry fees) generated from most protected areas of Nepal have gone to the central treasury. However, there is an exception to this rule. The Annapurna Conservation Area, because of special legislation passed, gets to retain entry fees for operation and development costs of the Annapurna project area. Recent estimates suggest that over $400,000 is collected and allocated for operations as well as local development programs in the region. Initially, World Wildlife Fund put in $1.3 million for the project (over a period of ten years), but in 1996 their input was only $30,000. The protected area is now viewed as self-sustainable (Sherpa, 1996).

**4.9 Clean Development Mechanism**

In 1997, the Clean Development Mechanism (CDM) was adapted by the Conference of the Parties to the Framework Convention on Climate Change (CPFCCC) under the Kyoto Protocol. The purpose of this mechanism is to assist developing countries in implementing projects to reduce greenhouse gas emissions. This can be done either through bilateral agreements resulting in an investment by a developed country or through the trading of permits (see Section 4.12), thus enabling developed countries to meet their own emission reduction targets. The CDM focuses specifically on the reduction of carbon and other gases that are known to lead to global warming.
The need to address the threat of climate change is a dire one. According to the statistics, the carbon intensity of the global economy (emissions per unit of economic output) declined 38.8% between 1950 and 1999 while developing economies saw a 34% increase in carbon output between 1990 and 1998 with emissions in China and India rising by 28% and 55% respectively (Vital signs 2000). This increase in the carbon emissions is a threat to biodiversity conservation.

In the CDM, developed countries assist developing countries by financing projects to reduce greenhouse gas emissions. The resulting emissions reduction is credited to their own compliance commitments and the proceeds of the projects are used to meet the adaptation cost in developing countries.

Clean Development Mechanism allows for the proceeds of the projects to be used for administrative and adaptive measures in developing countries. Both public and the private sector can invest in emission reduction projects in developing countries. Quantifiable long-term emission reduction is allowed to be credited by the executive board.

Due to the significant decrease in the ODA since 1990, additional finance other than GEF and ODA will be required for project management and risk management study.

**Strengths**

The strengths of the CDM are that it can provide several benefits. Examples include: sustainability of land area, decrease in the disruption of water supplies, no loss of agricultural output, and less tropical diseases.

**Weaknesses**

This mechanism allows developed countries flexibility in meeting their emission targets by transferring part of its targeted emission reduction to another party. This flaw in the mechanism is a disadvantage against developing countries, and hence, requires that the projects implemented should be assessed in light of the objectives of CDM. With no limits on the emission reduction targets
to be achieved by the flexibility option would allow the developed countries to buy credit from developing nations with no action taken domestically.

This method requires effective monitoring and verification. There is ambiguity regarding the ownership of Certified Emission Reductions i.e. whether the government will allocate them, or private companies will be allowed its trade in the emissions trading market.

**Critical Success Factors**

The successful operationalising of CDMs will depend on the development of adequate procedures and modalities. These include, for example, governance structure (executive board), rules for certifying emissions reductions or greenhouse sinks and units of measurement and equivalence between different reductions of different greenhouse gases. Developing countries would want to ensure that their development priorities are not compromised but advanced. The experience gained from joint implementation projects during the pilot phase will help in the development of this innovative financing mechanism for biodiversity conservation. Its potential to raise significant funding will depend in part on institutional arrangements to minimise transaction costs (including brokerage, monitoring verification and risk management).

**4.10 Private Sector Partnership/Participation**

Article 21 of the CBD places significant importance on developing new and additional methods of financing sustainable development and Article 10 touches upon the private sector involvement in developing methods for sustainable use of natural resources. In 2000, ODA fell to its lowest level ever, declining to $53 billion from $56 billion a year earlier while foreign direct investment (FDI) has been continuously increasing over the same period. Looking at this change in trend of investment flows it is important for developing countries in Asia to tap the private market resources to achieve the objectives of the CBD.
Conventional logging operations can significantly alter a forest's physical structure. Removal of as little as 3 percent of the trees can reduce canopy cover by 50 percent, and in some cases up to 75 percent. The impact on undergrowth can also be significant: removal of just three trees per hectare can destroy nearly 40 percent of the undergrowth.\[47, 48, 49\]

Shifting to Reduced Impact Logging (RIL) practices can reduce logging damage by as much as 50 percent through pre-cutting vines, directional felling, and planned extraction of timber on properly constructed and utilized skid trails.

New England Electric Systems (NEES) of Massachusetts, invested $450,000 in a RIL project in Sabah, Malaysia, in 1992. The 1,400-hectare project was carried out by Innoprise Corp., a semi-government forestry organization, which has the largest forest concession in the state of Sabah (1 million hectares). In addition to saving carbon offset programs, such as afforestation, RIL offers investors lower risk advantages. A very large percentage of the carbon savings occur immediately, rather than spread over 30 to 100 years. This lessens the risk of project failure for investors.

The NEES pilot project was completed in 1995, and reduced logging damage by 50 percent. This saved roughly 40 tone of carbon per hectare (58,000 tones over the 1,400 ha area) at a cost of $7.60 per ton of carbon saved at two years after logging. Higher savings are expected in the longer term.\[38\] In addition to providing an attractive forest carbon offset option, RIL practices provide other benefits, such as retaining biodiversity values, minimizing fire risks, and maintaining topsoil integrity. They will also lead to better stocked forest stands that are less damaged, faster growing, and will produce greater volumes and higher-value forest products in the future. The successful NEES project is being expanded by the UtiliTree Carbon Company, a consortium of 40 utilities. The expanded project will be carried out on another 1,000 hectares. Expected benefits include offsetting 40,000 tones of carbon by the year 2000, and 102,000 tone of carbon over the 40-year life of the project.

Developing countries face problems in initiating financial measures involving the private sector due to the non-availability of proper legislation and also absence of environmental institutions to secure funding for the projects. The varieties of mechanisms that can be used to stimulate private sector partnerships include: global and regional level mechanisms, national level mechanisms and firm level mechanisms.

**Global and regional level mechanisms:** These can be regulation induced or spontaneous activities. Regulation induced mechanisms are trade between governments through international agreements. As environmental conservation is gaining wider importance as a global issue in recent years as well as the need to project a green image, some countries voluntarily support activities towards environmental conservation. Examples include debt-for-nature swaps and financial aid. More specifically, the reduction of carbon waste from inefficient logging industry in Sabah, Malaysia by New England Power Corporation's investment in carbon sequestration is an example of global private partnership for environmental conservation not linked to any legislation.

**National level mechanisms:** The institutional, economic and regulatory mechanisms in most of the developing Asian countries need to be strengthened to assure effective private participation in conservation measures. Involving industrial and trade federations, development banks, investment boards etc. helps in getting their participation in conservation financing. In addition, private sector should be encouraged by government to finance sustainable development by providing incentives to them. The legislative measures to reduce pollution by improving work practices should be put in place. These institutional, economic and regulatory steps are necessary to take in the light of above-mentioned reasons to ensure sustainable financing of the NBSAPs.

**Firm level mechanisms:** Firm level mechanisms can be used to develop co-operative efforts between private sector organisations by providing the right incentives and taking a strategic approach. For example, training of private entrepreneurs by government sometimes becomes a time consuming and costly process as industrialists may view it with suspicion. This training if carried out by the private sector to impart skills will be more effective.
Some common examples of public private sector partnership are,

*Privatization:* In privatization government seeks a private sector financing for the environmental service. Private sector designs and operates the environmental facility.

*Tax-exempt lease:* In this method public partner finances the assets or facilities by borrowing from a financial institution. According to the state and federal laws the portion of lease on capital investment is tax exempt. In this method the public partner must have the authority to enter into long-term lease arrangements.

*Build/operate/transfer or build/transfer/operate (New facility construction, Operation and/or Ownership):* In this method the private sector builds and operates the facility in partnership with the public sector organization. After the completion of the project facility, private partner to have a reasonable return on the investment (which in some cases the private partner also does) runs it.

*Contract services:* Operations, Maintenance and Management: Under a private management contract environment facility is managed and maintained by a private organization while its ownership is retained by the public partner. Private partner does investment in the efficient running of the facility to achieve efficiency savings.

*Developer Financing:* In developer finance the private sector provides finance for the construction of a facility. This facility is supervised by the public partner an the private organization is given a right to build residential housing, stores and industrial facility, it also has the right to use the facility and gets future income from user fees. In very rare cases the investor is required to pay for its use and the payment is used to upgrade the facility.

**Strengths**

Public and private sector partnership reduces dependence on public debt and helps government to capitalize on private sector resources. Significant savings can be done, using environment friendly technology. Private sector expertise can sometimes provide the services unavailable to public sector. Implementation in the private sector is faster than public sector. Private sector becomes a partner
in risk sharing when dealing with implementation of environmental standards.

**Weaknesses**

Due to the bureaucratic work procedures and centralization of authority in public departments the government may feel a loss of control in day-to-day matters. Unions due to the fear of losing a job may oppose the partnership. The governments always may not have the authority to enter a partnership. Low cost financing may not be available from the state and changes in the taxation policy affecting the profit levels of private businesses may create a conflict.

**Critical Success Factors**

In the case of public private partnership the change (temporary or otherwise) in ownership and work processes creates labour problems which if not dealt with will lead to failure in achieving the desired results. Participation of trade bodies in the private sector partnership helps gain speedy results. Policies regarding the tax exemption or any other incentive for private sector should be addressed in every transaction to avoid future conflict.

**Box 6**

Private sector partnership in Sri Lanka

Sri Lanka is a very good example where development in private participation in environmental programmes is seen. The Sri Lankan Chamber of Commerce has been encouraged to hold trade fairs of environmental technology. National Development Bank of Sri Lanka and Development Finance Corporation of Ceylon (DFCC) are developing environmental cells and Development Finance Corporation of Ceylon (DFCC) also agreed to work with United Nations Industrial Development Organization (UNIDO) and Central Environment Authority to lease low-waste industrial equipment.
One way to deal with the underpricing and unpricing of biological diversity is by the imposition of environmental taxes to curb excessive consumption and depletion. Governments have at hand the use of fiscal policies to do this. These policies influence the market prices of various components of biodiversity. In many cases, tax systems encourage higher consumption of ecologically important resources.

We have begun to recognise that biological diversity is being lost, and also that human economic activity is responsible for much of this loss. Such activity includes deforestation for commercial or agricultural purposes, release of toxic materials (including industrial pollutants, agricultural runoffs) into terrestrial and aquatic systems, replacement of biologically diverse ecosystems with monocultures, destruction of habitats, and degradation of ecosystems by over-infusion of waste materials. How can environmental taxes be used to alter this state of affairs?

The rationale behind environmental taxes is that individuals, firms and governments' activities, causing loss of biological diversity, are not taking into consideration the external costs associated with those activities. Because these costs are external to the decision-makers the net result is the underpricing, and hence, overproduction and overconsumption of these activities. If, however, a tax, which builds into the price the external costs associated with carrying out that activity, is imposed the net result would be the socially optimal level of production and consumption. More importantly, the decision-makers now have an incentive to engage in more environmentally friendly production and consumption in order to reduce the amount of tax paid. The overall effect of this mechanism is environmental protection as well as revenue generation.

Environmental taxes have largely been used to address pollution-related activities impacting the environment, and as Panayotou (1997) points they out can be applied to pollution itself, input products or final products. Moreover, they can also be used on resource extraction activities such as deforestation. For example, in Malaysia, Korea, Indonesia, Thailand, India and China, pollution taxes have been introduced. In the case of resource extraction activities we have an example from Indonesia (see Box 7) on the
use of forest taxes. What the resource extraction taxes do is impose a higher burden on forestry activities that do not have adequate provisions for reforestation.

**Strengths**

The main advantage of using environmental taxes is that it influences behaviour towards biodiversity conservation by providing *incentives* by directly or indirectly modifying the prices of biodiversity-related goods and services. In effect, the logic of the market is invoked to encourage more sustainable behaviour on the part of producers and consumers because they may seek to minimize costs. Additionally, they raise regular and reliable source of income. Moreover, collection of tax can be straightforward as these set-ups already exist in many countries. Finally, environmental taxes can be instrumental in bridging the gap between private and external costs and benefits.

**Weaknesses**

Some of the weaknesses of this instrument are that detailed information, such as determining exactly what are the external costs, is required to set a tax. This requires institutional capacity to come up with the appropriate figures. Second, environmental taxes may be politically challenging because of higher costs as well as concerns about their impact on competitiveness and distribution. Third, there may be concerns whether these taxes can be earmarked for the implementation of NBSAPs. Finally, certain institutional preconditions have to meet, for example, the ability to levy, monitor and collect these taxes.

**Critical Success Factors**

Incorporating a fiscal instrument like environmental taxes will depend on the provision of adequate legal, institutional, administrative and political preconditions. The effective use of environmental taxes will depend on an administrative apparatus to set, administer, collect and allocate revenues. Institutional and human capacities are required in terms of determining costs of biodiversity loss and benefits of biodiversity conservation. Tax laws
need to be set in place which assign clear responsibilities and confer tax collecting powers. Proper enforcement will require the existence of a legal structure. Implementation, monitoring and enforcement all require appropriate staff and funding. As with other fiscal instrument the political/government support is vital to ensure compliance. Political support also helps in gaining public acceptance to pay for the conservation.

---

**Environmental tax in Indonesia**

Environmental taxes are not new in Asia. For example, Indonesia required that logging companies pay a representation fee unless they reforest areas they cleared. Although this helped to raise finances for reforestation, nevertheless the fee was too much cutting and too little reforestation.

---

### 4.12 Tradable Permits

Tradable permits hold a lot of promise as an innovative system in establishing a limit on the overall use of a resource, product or level of pollution emissions. Tradable permits do this by allocating individual quotas, which can be traded between producers and users. This mechanism combines the advantages of regulatory controls and taxes in allowing certainty as to the overall use but flexibility in the response of individual producer or user.

The mechanism works in the following manner for a natural resource that is being overexploited. Government, for example, sets an optimum level of total allowable catch for an offshore fishery taking into account the environmental costs of exploitation. The government may then issue the permits to fishermen to harvest fish through an auction. The number of permits issued should equal the total allowable catch mandated. The permit gives the holder a property right to harvest an assigned number of fish, which must be abided. The innovative feature of this permit is that these rights are tradable. The holder can sell its permits to a willing buyer at a mutually agreeable price. If there are enough buyers and sellers of permits, a market will be established, where, a price is achieved that equates the supply for permits with the demand for permits.
Therefore, a fisherman faces this price when deciding to harvest fish. As Panayotou (1997) points out, this will entail that fishermen who can harvest fish most efficiently will purchase the permits, hence, ensuring that the catch is achieved at the minimum possible cost. The net result of this mechanism is that overexploitation is controlled and efficiency in harvesting is achieved, and those fishermen who choose to sell their permits are fully compensated.

**Strengths**

This mechanism generates finance through two means. One, by the initial auction of the permits, and two, through the reduction of compliance costs, which is usually the problem with regulatory mechanisms. Similar to environmental taxes, this method also provides producers and user the incentive to move towards more pollution abatement simply because they may wish to avoid the purchase of further permits to pollute, and thereby, positively impacting the environment.

**Weaknesses**

Some weaknesses of this financing mechanism are that in order to set a total allowable catch or total level of emissions information on total fish population or total emissions is required. This may generate high administrative costs to collect such data. The agencies also need to monitor periodically the relationship between say the total population of fish and total allowable catch. Moreover, a system of enforcement is also required to ensure permit or non-permit holders are abiding by the terms set out. Clearly there is an institutional capacity requirement here in terms of data collection, monitoring and enforcement. Finally, for political reasons, governments may find it difficult to auction permits.

**Critical Success Factors**

The success of this mechanism depends on the availability of accurate data on the type and level of emission or catch to set the maximum allowable limit. This requires that the presence of institutions and qualified personnel to carry out these assessments. Secondly, institutional and human capacities are required for monitoring and follow up. Thirdly, legal measures need to be in
place if limits are violated. Fourthly, administrative costs associated with implementing the mechanism should not exceed the benefit for its implementation. Finally, political support is necessary for the mechanism to control ensure compliance and acceptability.

**Box 8**

*Tradable development permits in New Jersey, USA*

The state of New Jersey in the USA has developed an innovative zoning and credit programme to protect a biologically unique area, Pine Barrens. The New Jersey Pinelands Commission has established three zones of use in this area - a strictly protected preservation area, a buffer zone where low-impact economic activities are permitted, and a commercial growth area. Landowners in the more restricted conservation areas can earn conservation credits by owners in the commercial growth area can increase the density of development on their property by purchasing these credits from others. Credits can also be used to guarantee bank loans.


### 4.13 User Fees

User fees are innovative mechanisms used to capture the full value of a particular good or service. User fees are similar to environmental taxes in that user fees refer to any direct fee attached to the use of a particular resource while taxes refer to a fee which is attached to the existing price of a good or service. Theoretically, the fee should be set at a level, which incorporates the cost of depletion and/or degradation of a resource as a result of its use. For example, a royalty fee charged to forest logging companies should contribute to maintenance costs of protecting the resource, thereby ensuring sustainable resource use. Depending on the specific political and economic system, fees can be a relatively direct way to generate money from the resource users themselves. They can be charged by individual property owners or by a government entity, which has legal title and responsibility for a public resource such as a forest.
In the latter situation, an intermediary body is often used to collect revenue from the users and then to redistribute it to the appropriate stewards and/or producers.

**Strengths and Weaknesses**

There are essentially two challenges for establishing effective fees. First, an appropriate amount must be set which accurately reflects the costs of maintenance and protection of the resource. For this purpose, the capacity to carry out environmental valuation studies can be especially helpful in determining an appropriate fee level. While many governments have been successful in implementing a fee system where revenue is collected from various resources, the amount charged often has no correlation with the economic value of the resource. The second challenge is to redirect the revenue earned back to the communities so that they are given incentives to continue in their stewardship roles.

Similar to environmental taxes, fees, if set appropriately, are straightforward in internalising external costs. Forest loggers, for example, face the full cost of depletion and hence harvest at the sustainable level. Additionally, user fees have the potential of generating substantial funds. Administratively it would be less costly to maintain and protect the resource. For example, in the case of forest where the local communities receive royalties from it use, community now have the incentives for its maintenance and protection. Fees would then in effect finance their own maintenance and protection.

**Critical Success Factors**

In the Asian countries success of this mechanism depends on the strong government support in raising awareness and gaining public / institutions acceptance to pay for the environmental services for their maintenance. Also considerable legal framework has to be developed in pointing the environmental services to be charged. Fee structure should be based on economic value of the area as well as paying capacity of the locals.
I Nepal, a system of royalty has been instituted for resource conservation and community development. The royalty is a result of a tripartite agreement between World Wildlife Fund, Ministry of Tourism and Civil Aviation, Government of Nepal and Sagarmatha Pollution Control Committee, a local NGO. The royalty entails the return of 30% of Mt. Everest fees to Sagarmatha Pollution Control Committee for clean-up activities inside the park. The royalties for climbing Everest (estimated $50,000) and subsequently, the Government of Nepal returns $40,000 per year (about the agreed 30 percent) for clean-up and community development work in Nepal’s Sagarmatha National Park.

### Box 9

**Royalty from Sagarmatha National Park, Nepal**

4.14 Biodiversity Prospecting

Biodiversity prospecting, as an innovative financing mechanism, fulfils all three tenets of the CBD: conservation, sustainable use and equitable sharing of benefits from biological diversity. Bioprospecting is an agreement between two countries or a country and pharmaceutical company to search, extract and screen commercially valuable genetic and biochemical resources.

Given the sovereign rights over national biological resources as stated in the CBD, payment to the country from bio-prospecting reflects the economic value of it. As an alternative to resource extraction to the point of depletion, bioprospecting ensures conservation and sustainable use of resources.

A lot of technical expertise in collection of samples, research and sample processing is required. Although Southeast Asia has a rich endowment of biodiversity yet no examples of this method are seen. This is probably due to the lack of biotechnological expertise and infrastructure. Biodiversity prospecting is, however, being promoted in Bhutan, which is sometimes referred to as ‘Land of Medicinal Plants’. Payments from bioprospecting activities are either used for the maintenance of natural habitats through the government or alternatively local residents are funded to conserve biodiversity.

The method of bioprospecting usually involves an agreement between pharmaceutical company and a host country institution.
This agreement involves intermediary parties like a donor/development assistance agency or an NGO. Each agency or institution may have its own motives and potential benefits for being associated with this activity.

There is no specific agreement structure between the host country and the collector of biological sample. Anything can be negotiated within an agreement. Basic agreement types include:

**Permits:** Permits are the rights of access to the biological resources. The host country sets the terms for access and may limit the time allowed, type and amount of material to be collected, method of collection etc.

**Licenses:** Licenses define how the collected material can be used.

**Material Transfer Agreement:** This agreement gives the collector right to transfer the material to third parties. It is a way of maintaining control over the resource by the owner.

**Co-operative Research and Development Agreements:** CRADAs give the statement of work and the legal details of rights associated with it.

**Strengths**

A general strength of this financing mechanism is it protects a country's biodiversity, and can potentially raise significant resources. The agreements promote local communities' participation, and hence, provide incentives and awareness for conserving biodiversity. The mechanism also provides developing countries access to pharmaceutical technology and promotes biotechnology industries. Moreover, it contributes to increased scientific knowledge about the countries flora and fauna. Finally, it also results in pharmaceutical business expansion and development opportunities.

**Weaknesses**

One major weaknesses of this mechanism are that medicine development is costly, slow and time-consuming process. Due to the lengthy period of research ranging from 6 to 12 years, and
uncertainty regarding the development of final product, the return on the investment can be minimal. Hence, in some cases no substantial economic benefit is gained. In addition, research and production techniques in this field are still being developed.

A country also faces the risk of intellectual property theft because intellectual property rights do not necessarily cover local, traditional knowledge. This ‘biopiracy’ could happen because a host country is not able to effectively monitor these bioprospecting agreements. Finally, this mechanism could entail that local people lose access to natural areas with the introduction of conservation measures that restrict public access.

**Critical Success Factors**

This mechanism requires that a country, rich in biodiversity, is able to set aside natural areas for research without giving access to local people. This will require that local communities are made active participants and benefit from this mechanism. Moreover, a country’s active participation and commitment to control and conserve the biological resources paves way for the success of this mechanism. Lastly, biotechnological industries and the related infrastructure requirement are imperative for the successful implementation of this financing mechanism.

**Bilateral Contracts for Biodiversity Prospecting - Bioprospecting Agreements**

The first major bilateral contract for bioprospecting was made public in September, 1991 (prior to the Convention on Biological Diversity) when Merck & Co, (a U. S. - based pharmaceutical corporation) announced a 2-year, $1.135 million deal with the Institute National de Biodiversidad (INBio agreed to provide Merck’s drug-screening programs with chemical extracts from wild plants, insects and microorganisms. In return, Merck agreed to give INBio a two-year research budget of $1.135 million, an disclosed share of royalties on any resulting commercial products, and technical assistance and training to establish in country capacity for drug research. INBio also agreed to contribute 10% of its up-front payment from Merck and 50% of any royalties it may eventually receive to Costa Rica’s National Park Fund.
4.15 Payment for Environmental Services - Water-based Financing

Payments for environmental services are the charges levied on the use of environmental services such as carbon sequestration, scenic beauty, water usage and so on. By charging a user fee, funding for the sustainable management of a natural resource is captured. There are many potential markets for these environmental services.

This method is just like selling any other commodity; only difference being that the demand for it has to be induced by raising awareness among people. Since most of the environmental services like clean air, fresh water, scenic beauty, etc. are taken as free and seen to be unlimited in amount, this requires raising awareness among the public to pay for these services. In many parts of Asia, the public - especially the poor - is already aware of the value of say clean water by the amount of money they spend on medicines for water-related diseases and purifying water.

No wonder, the most common environmental services’ payment is for watershed protection. Water-based financing mechanisms help capture funding for watershed conservation and provide clean, safe water to nearby communities including the supply for agricultural and industrial purposes. In the absence of these charges, individuals, firms and governments are neither given the incentive to use water optimally not pay for the costs of maintaining the services they benefit from.

The most common application of water-based finance mechanisms (WBFM) is through the public payment scheme. In the public payment scheme the public sector organisation or government provides for the maintenance of watershed services. The government generates the revenues from an additional water charge or levy on the water bills. This in effect becomes the payment for the environmental service provided by a watershed. These charges are earmarked and are allocated to watershed management. More recently, there are experiments in involving the private sector as well as using tradable permits as a water-based financing mechanism.
**Strengths**

This mechanism ensures sustainable protection of a watershed from earmarked revenues. The mechanism is based on sound reasoning. Water has an immense market, as it is an essential commodity for every household, farm and industry. Experience has shown that willingness to pay for access to clean and safe water especially amongst the poor is high. Most households receive a water bill and hence the charge is easy to collect. The charge could be acceptable to clients especially if expenditures on preventative and avertive activities are minimised.

**Weaknesses**

Since water services are thought of as relatively free, getting the public to pay for it may require time and commitment to bring a change in thinking and overcome reluctance to pay for the environmental service. Proper implementation would require effective co-ordination among public institutions to ensure that earmarked funds are made available to the watershed management department, and it is effectively implemented. High transaction costs may make implementation of this mechanism expensive.

**Critical Success Factors**

The following factors are imperative for successful implementation of this mechanism.

- Demand for the service by local inhabitants, industries should be adequate to cover all the implementation costs.
- Cost of implementation should not exceed its benefits.
- Political stability with transparent legal and administrative institutions.
- Economic activity linked to the ecosystem service is important.
- Legal and regulatory framework should be in place to ensure compensation for service providers.
Box 11

Water shed protection in Ecuador

An example of public payment water-based finance mechanism can be seen in Quito, Ecuador. Water services to the city of Quito are provided by watersheds located inside, and adjacent to protected areas such as the Condor Bioreserve. These upland plateaus and the quality of water services they provide are affected by human activities such as extensive livestock grazing, agricultural practices, various large-scale development projects and tourism. In order to develop the funding necessary for long term protection of these regions a coalition of government agencies, environmental organizations and water users worked together to develop a conservation fund for the city’s water sheds (Fondo para la Conservacion del Agua - FONAG) to be capitalised through water use fees. These fees were first collected form the municipal water agency, and as the project develops, other key water users have agreed to pay into the fund to project the water sheds whose services they rely upon.
5. GUIDELINES FOR DEVELOPING A FINANCIAL STRATEGY FOR NBSAP IMPLEMENTATION

Having provided details of innovative financial mechanisms above, we now turn to the issue of designing a financial strategy for NBSAPs implementation that brings these mechanisms into play. The financial strategy provides easy, step-by-step details of what issues and factors need to considered and borne in mind while designing such a strategy.

An important precondition, however, should be to first think about the available ways and means to come up with an integrated financing strategy. One of the ways could be to have a stand-alone financial strategy, at the national level. For example, the creation of a National Environmental Fund specifically for implementing NBSAPs, which is supplemented with various financial mechanisms, could be one option. Second, a financial strategy can be integrated into every action or project enlisted in the NBSAPs. So for every action and project in the NBSAPs, we can think about the most appropriate mechanisms to use to finance them, within the overall framework of the strategy. Yet another way would be to look at integrating biodiversity into the strategies (and budgets) of other sectors. Here sectoral budgets could be supplemented with new and additional resources, which integrate biodiversity considerations and allow investment in biodiversity conservation.

We now turn to the guidelines for developing a financial strategy below.

- First, simply what will it cost to implement the NBSAP?
  This exercise should highlight two broad issues. One, what are the activities envisaged in NBSAPs (such as: in-situ and ex-situ conservation; sustainable use; identification and monitoring; incentive measures; research and training; public education and awareness; environmental impact assessment; planning and policies; (Contd.,)
Second, what will be/are the benefits of implementing the NBSAP?

This exercise should help in demonstrating the economic value of the country's biodiversity, and bring out the specific benefits in carrying out the activities. Demonstrating the many benefits associated with biodiversity conservation will justify the costs of undertaking such initiatives. This exercise should also determine who benefits, and can potentially pay. Furthermore, determine whether there are any goods and services that are being received free or at low cost by beneficiaries who could and should pay. Finally, assess who are the cost bearers, and what kind of financial resources, incentives or compensation do they require. Finally, determine what are the most appropriate mechanisms for getting financial resources to them. Recall how payments for ecosystem services dealt with this issue.

Third, determine why these benefits are currently not being captured?

This exercise should highlight the underlying causes of biodiversity loss, and make explicit a set of market, policy and institutional failures. These failures should, for
example, show why prices for many goods and services provided by biodiversity are undervalued: why the market tends to underprice or not price them at all. Two, why government policies directly affect the prices of various components of biodiversity and encourage higher consumption of ecologically important resources. Three, why management institutions may lack awareness and capacity to demonstrate the value of biodiversity; are preoccupied with development priorities; are under the influence of powerful groups; or lack resources for conservation. All three of these failures will send the wrong signal to economic actors.

- **Fourth, what are direct and underlying financial causes of biodiversity loss?**

  Because economic actors get the wrong signals, they will either have the incentive to undertake activities that degrade and deplete biodiversity, or a disincentive to conserve biodiversity. This simply relates to the fact that because biodiversity is underpriced or not priced at all it fails to compete with alternative practices. In such a situation, deforestation for commercial or agricultural purposes provide higher immediate financial rate of return as say conserving forests. Releasing of toxic materials (including industrial pollutants, agricultural runoffs) into terrestrial and aquatic systems instead of cleaning up effluents saves financial resources or increases profits.

- **Fifth, what are the right, effective and targeted choice of IFMs (or incentive measures) to address the direct and underlying causes of biodiversity loss?**

  This exercise should make explicit the choice of IFM, which sends the right signals to different economic actors through (direct or indirect) incentive and disincentive measures. To address both causes will generally require a mix of instruments that work well together. For example, over-fishing can be addressed through tradable permits (by

(Contd.)
limiting use of the resources) along with fines if the permits are violated. It is also imperative to recognise that different instruments are more applicable to address immediate and long-term threats to biodiversity loss. For example, fines may be best suited to address the immediate threats, while environmental funds are best suited to address long-term threats.

- **Sixth, what are the legal, institutional and administrative pre-conditions to undertake different IFMs?**
  
  This exercise will highlight the enabling environment necessary to adapt and implement IFMs. For example, tradable permits may require monitoring fishermen to if they are adhering to the limits set. This may require institutional and administrative costs to be able to carry out this function. Moreover, they may be legal costs involved if violators are say to be prosecuted for non-compliance.

- **Seventh, assess what is currently available from conventional mechanisms to implement the NBSAP, and hence, identify the financing gap?**
  
  This exercise should take stock of predictable resources from conventional resources currently available. In terms of identifying the financing gap three aspects related to government subventions should be assessed. First, the removal of subsidies harmful to biodiversity. Panayotou (1998) points out that in many developing countries the most highly subsidized sectors are energy ($150-$200 billion) and water ($42-$47 billion). The subsidies further undervalue biodiversity in relation to these sectors (see also fourth point) as well as eat up precious, scare government resources. Removal of these subsidies can free substantial resources that could be used for biodiversity conservation and at the same time reduce reliance on external resources. Their removal is, however, extremely difficult to implement because recipients

(Contd.,)
dependency and political powerful and of supporters and beneficiaries. Second, make better use of existing resources. This is related to the final point below, entails setting priorities as well as using financial mechanisms that address both biodiversity and development concerns as well as using the most cost-effective financial mechanisms. Third, enhance existing public budget support, which should include cross-sectoral transfers as payment for the recognition of the support that biodiversity provides to other sectors and sources of public revenues. This exercise should identify the true financing gap.

- **Eighth, how much can an IFM contribute towards the implementation of NBSAP?**
  This exercise should provide estimates or how much funds an IFM can generate for NBSAP implementation.

- **Finally, assess whether the select IFMs are acceptable and sustainable source of finances?**
  This exercise should address issues such as the select IFMs are politically, economically and practically acceptable at all level; consistent with conservation and development goals; shift reliance from conventional mechanisms; are simple, cheap and easy to implement; and provide sustainable level of financial resources for immediate and long-term implementation. We emphasise that financing mechanisms should not conflict with other a country strategic, political or development goals (e.g. such poverty alleviation, promoting particular sectors, etc.) in fact, as we have demonstrated above, that both could be simultaneously enhanced. Furthermore, assess whether financing measures are the most cost-effective or do they entail creating large and costly bureaucracies. We also emphasise that even new and innovative sources are limited in amount and scope to some extent, that is, they may not be able to meet all the NBSAPs funding.
requirements. It is, therefore, crucial to prioritise activities, such as irreversible damage to ecosystems and biodiversity, protecting critical watershed, etc. that needs to be financed. Finally, it is also vital to develop a sound strategy that brings into play a phasing in of mechanisms and is well planned with clear institutional responsibilities and time frames.

By providing answers to these (step by step) questions a practical, realistic financial strategy for NBSAPs implementation should be generated. Clearly, as some of the IFMs in many Asian countries have not been tried and tested, experimentation and adaptation to that country's particular context will be required. This may mean that the financial strategy be adjusted and refined accordingly. At the end of the above exercise the following should be evident: what it will cost to implement the NBSAP; what resources are realistically currently available? What is the financing gap? How will additional finances be raised through IFMs, which also give the correct incentives to economic actors to conserve and sustainably use biodiversity? And, will the IFMs be acceptable and sustainable source of finances?
6. REFERENCES

a) Literature Consulted


b) **Web-sites Consulted**

11. http://www.audubon.com
17. http://www.firstusa.com
IUCN - The World Conservation Union

Founded in 1948, The World Conservation Union brings together states, government agencies and a diverse range of non-governmental organizations in a unique world partnership: over 980 members in all, spread across some 140 countries.

As a Union, IUCN seeks to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

The World Conservation Union builds on the strengths of its members, networks and partners to enhance their capacity and to support global alliances to safeguard natural resources at local, regional and global levels.

Regional Biodiversity Programme, Asia (RBP)

IUCN’s Regional Biodiversity Programme, Asia (RBP) was founded in 1996 and seeks to promote the effective implementation of the Convention on Biological Diversity in the region. One of the principal areas of focus of the Regional Program is the development and implementation of National Biodiversity Strategies and Action Plans (NBSAPs) in Asia.

IUCN Regional Biodiversity Programme, Asia
53, Horton Place
Colombo 7
Sri Lanka

Tel/Fax: ++94 74 710439 (direct)
Fax: ++94 1 682470
E-mail: iucn-rbp@slt.net.lk
URL: rbp-iucn.lk