



Perspectives

Access and Benefit Sharing as an Innovative Financing Mechanism

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Abstract: One of the significant roadblocks in negotiations and implementation of multilateral environment agreements (MEAs) is that of resource mobilisation. During the eleventh Conference of Parties to the Convention on Biological Diversity (CBD-COP 11) held in 2012, Parties to the CBD agreed to develop a roadmap for raising adequate and predictable finances for realising the Strategic Plan of the CBD. By 2015, Parties need to develop resource mobilisation frameworks with a focus on realising finances using innovative approaches and models. A series of consultations, expert studies are already prepared to provide inputs for innovative financing options at national level. This article focuses on using the Access and Benefit Sharing (ABS) frameworks at national level as an innovative financing option and suggests ways of raising finances for conservation action and effective implementation of the Nagoya Protocol on ABS.

Key Words: ABS, Nagoya Protocol, CBD, Innovative Financing, High Level Panel on Resource Mobilisation

1. Introduction

During the Eleventh Meeting of Conference of Parties to the Convention on Biological Diversity (CBD COP 11), the first High Level Panel on Global Assessment of Resources for Implementing the Strategic Plan for Biodiversity 2011-2020 presented its report.

The Panel produced eight key messages:¹

- Implementation and delivery of the Targets requires the development of an appropriate and coherent political and institutional framework and strong political will, particularly at the national and regional level.

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- Investment in natural capital will deliver significant co-benefits for sustainable development.
- Existing evidence suggests that benefits are likely to significantly outweigh costs.
- There are clear differences in the relative scale of investment required to deliver the various Targets. In addition, the investment needed to deliver a Target is not necessarily correlated to its importance.
- Many factors affect the magnitude of the estimates of the investments needed to achieve each of the Targets. These include the scope of the activities to be costed and associated investment opportunities and the potential synergies among Targets as well as uncertainties arising from limitations in data and methodologies.
- There are many inter-linkages and co-dependencies to consider both between the Targets themselves, and between the Targets and other national policy goals.
- Funding from a diverse range of international and national sources, and across different policy areas is required to secure the full range of economic and social benefits to be gained from meeting the Aichi Targets.
- Further research is vital to help further develop and refine the estimates.

The CBD COP 11 through its Decision XI/4 welcomed the initial findings of the Panel and invited the Panel to provide a more bottoms-up approach to the assessment and requested a report to be presented to CBD COP 12 in October 2014.

Currently, the Panel is preparing its final submission to the CBD COP 12 in October 2014. In addition, an informal dialogue on innovative finances to achieve the CBD Strategic Plan (2011-2020) and the related Aichi Targets is also underway that aims to identify options on how countries can generate finances to deal with the three objectives of the CBD, viz. conservation, sustainable use and access and benefit sharing (ABS). A review of the outcomes from the above two processes, so far, indicate the following:

- Countries need to review and consolidate national budgets for biodiversity. While many countries are making significant investments into conservation and sustainable management actions, there is very limited focus on the third objective of CBD.
- In addition to looking at external funding sources to achieve the biodiversity targets set in 2010, countries also need to revisit funding strategies within countries with an aim to generate predictable, sustainable and local finances to achieve the CBD objectives.
- There is a need to undertake an assessment on how investment in conservation, sustainable use and ABS actions could generate revenues and livelihood opportunities at local and national level. This is where the economic valuation of conservation and related actions come into play an important role.

While it is clear that lot of attention is provided to deal with the conservation and sustainable use and management actions, relatively less is known about how to deal with ABS related issues from a national perspective. This is particularly true in the context of discussions within the High Level Panel and the informal dialogue processes.

Considering the work undertaken by the High Level Panel (HLP) thus far and based on the publicly available documents of the HLP, this article attempts to focus on the following issues. First, the need to focus on Aichi Biodiversity Target 16 related to Nagoya Protocol on Access and Benefit Sharing (ABS) within the overall framework of actions under the ongoing HLP discussions. Second, suggest principles for a functional ABS system at national level that contributes to financing and lastly suggests options to focus on ABS issues as a source of innovative financing for biodiversity conservation.

2. What do the Financing *Pundits* say about Innovative Financing?

The Global Monitoring Report for Innovative Financing in 2010 (CBD 2010) identified the following key trends on the issue of financing to realising biodiversity related goals.

- Innovative international agreements are key to resource mobilisation for biodiversity objectives;

- National financial support to biodiversity can be too insignificant to be visible in national budgetary reports, and is often discretionary in nature;
- Global Environment Facility has many reasons to celebrate its support to biodiversity, but impacts remain to be fully seen;
- The decade-long increasing trends in bilateral assistance to biodiversity were reversed during the last part of the last decade;
- Multilateral financing and technical cooperation calls for longer-term perspective on biodiversity governance;
- Large non-governmental organisations have a diverse pool of funding sources, and act as a barometer of global biodiversity funding;
- Sustainable use and change of biodiversity and ecosystem services is a matter of financial integration;
- Regional and sub-regional gaps in resource mobilisation are a policy and programmatic bind spot;
- Tapping enormous values of biodiversity and ecosystem services is within reach;
- Increased attention to climate change funding can be an opportunity and challenge for biodiversity; and
- The Convention's ability to mobilise financial resources is under watch.

The same report in Chapter 10, Outlook – Back to 2020, highlights that the market for genetic resources seeks to capitalise on the commercial value of genetic and biochemical resources, particularly in the pharmaceutical, biotechnological and agricultural industries. Similar to mineral exploration, the exploration of the commercial use of valuable genetic material is called biodiversity prospecting or bioprospecting. The fast disappearance of species and habitats and restrictive regimes on access and benefit sharing has made bioprospecting science and practice not so attractive across both developed and developing countries. Pharmaceutical industry analysts warn that each medicinal plant lost in the tropical rainforests could lose drug firms possible sales of more than US\$ 200 million. Similarly, lack of clarity and transparency in national access and benefit sharing policies will cost the prospecting industry dearly (Pisupati *et al.* 2007).

However, there is limited literature on how the lack of transparency, legal certainty and predictability of access and benefit sharing instruments in support of biodiversity objectives are impacting the possible sustainable use of enormous biodiversity in a manner that contributes to economic and human well-being. If over 50 per cent of pharmaceutical products in the market now are derived from genetic resources or inspired by natural compounds (Zotchev *et al.* 2012), the global market for pharmaceutical products alone should hold enormous resourcing potential for prospecting based financing for biodiversity conservation agenda.

ABS related discussions in the run up to the adoption of Nagoya Protocol in 2010 focused on administrative and legal issues related to providing access, securing benefits and confirming compliance to the Protocol through setting up of appropriate monitoring and tracking mechanisms. However, there has been limited focus on how ABS mechanism could contribute effectively to better prospect genetic resources to secure economic and livelihood gains for local people as well as contribute to conservation and sustainable use actions.

The result of this gap has been the difficulties national level policy makers face in convincing stakeholders on the need to put in place a national ABS framework that is not merely a response to country's obligations under the CBD and Nagoya Protocol but a mechanism that can bring in a new perspective of resource centric development model at local level where the providers of resources use ABS as a tool to secure developmental benefits that are easy to realise, non-bureaucratic, less expensive and predictable.

The TEEB Report (2010) outlines the options for re-casting the economic models for development using biodiversity and ecosystems as base. Considering that the potential of biodiversity is so immense and if access to such resources need to be based on principles of fairness and equity, time has come for us to address the issue of how ABS actions could benefit from economic valuation methods and also assess the potential of ABS to contribute to raising finances, at local level for conservation and development work. But the question remains as to how much it costs to put in place a functional ABS system to achieve the implementation of the Nagoya Protocol (Target 16 of the Aichi Biodiversity Target). The HLP (Phase 1) report highlights that for realising Aichi Target 16 on Nagoya

Protocol there is a need for investment to the tune of US\$ 55-313 millions and average annual expenditure estimated to be US\$ 7-30 millions (Sharma *et al.* 2012). Going by these figures this is not an insurmountable problem to raise the finances for achieving the Target.

3. Can ABS be an Innovative Financing Mechanism?

Certainly ABS can be an innovative financing mechanism. However, limited attempts have been made to recognise the potential of ABS as a source of financing that is predictable, sustainable and long-term besides being managed from community perspectives.

In the interest to ensure that the Nagoya Protocol comes into force soon, several initiatives and activities seem to focus on reiterating the obvious, i.e. it is important to achieve the ABS objectives of the CBD and implementation of Nagoya Protocol which needs both capacities and funding. There have been limited efforts to re-visit the ABS agenda from the experiences of communities and practitioners. In a report titled, "Learning from Practitioners: ABS Experiences from Enterprising Communities", Subramanian and Pisupati (2009) demonstrated the on-going local actions to translate the potential of ABS to empower and enable communities deal with biodiversity conservation through innovative approaches. Continuing this, the National Biodiversity Authority (NBA) in India compiled a set of case studies on how communities are able to implement the ABS provisions at local level in a manner that contributes to economic well-being and raising sustainable and long-term financing for conservation action (Bhatt *et al.* 2010).

While there have been a few significant examples of ABS agreements highlighting the market potential of the model, these examples are few and far between and are a long way from the initial expectations of large benefits that would fuel the conservation. One significant reason for this has been the lack of practical strategies for ABS implementation from the perspective of ABS as an innovative financing mechanism for biodiversity conservation. The practicality of these strategies is based on three foundational principles, which are:

- The monetary and non-monetary benefits from ABS must significantly exceed the costs of setting up and implementing an ABS regulatory framework;

- Innovative models for benefit sharing should be developed; and
- ABS must necessarily lead to conservation and sustainable use of biodiversity through an effective combination of rights and incentives.

4. The Principles of a Functional ABS System

This section will elaborate on the principles of a functional ABS system.

4.1 Monetary and non-monetary benefits of ABS must significantly outweigh costs of setting up and implementing an ABS regulatory framework

Systems for implementing ABS can either be protectionist or facilitative. Protectionist ABS systems are necessarily cost intensive because of the intangible nature of genetic resources and associated traditional knowledge making the tracking and monitoring of their utilisation an extremely expensive and difficult task.

The Nagoya Protocol provides for a variety of innovations to aid in tracking and monitoring such as certificates of compliance, unique identifiers and checkpoints. Despite this, experience of implementing ABS legal frameworks has shown that it is near impossible to ensure even a preponderance of compliance purely through a penal system involving tight access controls, high surveillance and tough penalties. In fact while this limited compliance with the ABS laws of provider countries could have something to do with insufficient user country measures, it is undeniable that compliance with ABS laws even within provider countries is limited at best.

This reality raises questions regarding the usefulness of establishing expensive protectionist ABS frameworks that are, in the long run, unable to offset these costs through the limited benefits they generate. Furthermore, it challenges the dominant perspective that understands ABS as a regulatory system for preventing biopiracy at all costs rather than approaching ABS as a business model that could generate a steady stream of revenues to incentivise conservation and sustainable use of biodiversity.

The implications of a protectionist ABS system invariably include high transaction and opportunity costs for potential research and commercial users of genetic resources and associated traditional knowledge. These high

costs often result in a paradoxical counter-productivity that forces users to figure out ways to beat the system or disinvest from R&D on products that are based on genetic resources and associated traditional knowledge. It could also potentially drive users to other jurisdictions where ABS laws are less restrictive and more facilitative. Ultimately, protectionist ABS systems, at best, show case high profile prosecutions of misappropriation with a lot of media attention but with very minimal revenues arising from ABS.

The alternative to protectionist ABS systems is a facilitative ABS system that approaches ABS as a business model to generate benefits for conservation. Facilitative ABS frameworks are characterised by low set up costs and are designed to make it expensive for businesses to enter into the brown economy and attractive to enter into green economy. The aim of a facilitative ABS system is to incentivise compliance by designing easy to comply with ABS laws that focus on facilitating access for the law-abiding majority of users rather than restricting access to circumvent the minority of biopirates.

A facilitative ABS system could for example develop a two-step process for ABS approvals, where the first step involves a scoping permit and the second step involves an actualisation permit. During the scoping phase, a quick approval is provided since the R&D is still at the stage of exploratory research. During the actualisation phase, an ABS agreement is negotiated since there is greater clarity of the benefits likely to be incurred. Countries like South Africa and Bhutan are currently experimenting with such facilitative ABS systems.²

The advantages of such a facilitative ABS system are many. While there will always be a minority of users of genetic resources and associated traditional knowledge that would violate the laws in a facilitative system, the majority of users will subscribe to these laws due to ease of compliance. Facilitative ABS systems are also likely to lead to increased private investment in green economy (i.e. R&D in genetic resources and associated traditional knowledge) due to comparatively lower entry costs when compared with the brown economy. Ultimately facilitative ABS systems would to high revenues from ABS, which outstrips the revenues from other brown economy models.

4.2 Innovative models for benefit sharing should be developed

Innovation around ABS models could occur in three possible ways. They are:

- Prioritising modest but steady revenues from ABS over infrequent but big pay offs;
- Prioritising cooperation over competition when it comes to shared genetic resources and associated traditional knowledge; and
- Prioritising incentives over penalties to motivate compliance with ABS laws.

Elaborations on each of these innovative models could be as follows:

4.2.1 Prioritising modest but steady revenues from ABS over infrequent but big pay offs

Facilitative ABS systems do not focus on infrequent but potentially big pay offs where ABS is seen as a way to secure extraordinary profits from blockbuster drugs or cosmetics. In fact, facilitative ABS systems are designed to capture modest but steady revenues. The benefits to be shared from each ABS agreement are pegged at a level that appreciates market realities and the R&D costs incurred by companies and researchers. Realistic market related benefit sharing has the advantage of incentivising users to enter into ABS agreements and attracting more investment in sectors that rely on utilising genetic resources and associated traditional knowledge.

Innovative models of facilitative ABS systems incorporate a variety of ways to capture benefits along the value chain rather than only through mutually agreed terms. These could include deposits, taxes and fees. An ABS tax, for example, could be imposed on companies and research institutions developing products based on the utilisation of genetic resources and associated traditional knowledge and could be transferred all the way to the end consumer of these products.

Access fee and processing fees could be charged at the point of application for bioprospecting permits and could be used to offset the costs incurred in processing bioprospecting applications. Security deposits could be required when genetic resources are accessed for the scoping phase of bioprospecting, which could be returned at the completion of this phase. These security deposits could be channeled into an ABS fund and the interest from these security deposits could be used to fund community conservation

projects. The security deposits themselves could be viewed as short-term interest free loans that the provider country can use to finance its ABS implementation strategies.³

4.2.2 Prioritising cooperation over competition when it comes to shared genetic resources and associated traditional knowledge

Genetic resources and associated traditional knowledge are usually common pool resources that are shared between countries and communities. ABS related competition between countries and communities sharing these resources invariably lead to cherry picking by users leading to a race to the bottom that force lower benefits and regulations. A way to overcome this is for countries and communities to experiment with pooling shared resources and knowledge and developing cost-efficient regional rather than a national regulating authorities and ABS funds.

4.2.3 Prioritising incentives over penalties to motivate compliance with ABS laws

While much discussion has ensued around penalties (sticks) to ensure compliance with domestic ABS regulatory frameworks, there hasn't been much thought around incentives (carrots) to motivate benefit sharing. Carrots could include: (i) ABS certification (like fair-trade certification); (ii) tax subsidies for users who engage in ABS and increased taxes for those who don't; (iii) government investment and low interest loans for research institutes and companies involved in R&D relating to genetic resources and associated traditional knowledge; and (iv) risk sharing where publicly funded research and public sector companies engage in initial R&D on specific genetic resources and associated traditional knowledge after which they invite private companies to enter into ABS agreements to do further R&D based on useful leads.

4.3 ABS must necessarily lead to conservation and sustainable use of biodiversity through an effective combination of rights and incentives

In our efforts to effectively implement ABS it is critical that we do not forget that the sole purpose of ABS as an innovative financing mechanism is to lead to conservation and sustainable use of Nature. Hence, the litmus test for

every ABS framework is whether it actually leads to conservation through incentivising and recognising of the rights of the stewards of biodiversity. It would, therefore, be critical to explore how ABS, for example, could support conservation and incentivising models like protected areas, biotrade and community enterprises.

4.3.1 ABS and Protected Areas

Can benefits resulting from bioprospecting in protected areas (including community conserved areas) be directed to defray the opportunity and operational costs of maintaining these protected areas? There are useful examples such as conservancies in Namibia where benefits from commercial hunting, tourism and harvesting in community run conservancies flow back to these communities thereby generating livelihoods and positively impacting conservation and sustainable use (Hoole 2010). Models such as this that recognise the rights and incentivise the local stewards of biodiversity are important to ensure ABS works.

4.3.2 ABS and Biotrade

Can using ABS augment existing biotrade value chains? For example, can a community engaged in sustainable harvesting as a part of a biotrade value chain sell their harvest at a premium price (rather than the market price) and require the bioprospector to buy the harvest only from them in exchange for the use of their traditional knowledge? While hitherto a community would earn a livelihood by the sale of their harvest (biotrade), ABS could strengthen existing biotrade by adding on a premium for the use of genetic resources and associated traditional knowledge that is over and beyond the cost of labour for harvesting biological resource itself. Organisations like the Union for Ethical Biotrade (UEBT) are exploring options such as this to outline a range of options detailing how ABS can be mainstreamed into biotrade transactions.

4.3.3 ABS and Community Enterprises

Can a community enterprise relying upon the utilisation of the community's genetic resources and/or associated traditional knowledge seek investment from a company or research institute as a part of an ABS agreement? For example, the community can offer the company or research institute 30 per

cent equity share in the community enterprise along with permission to do further R&D on the community resource and/or knowledge in exchange for the company or institute investing money in the community enterprise. This can be a different kind of an ABS agreement where communities are partners in the business rather than purely beneficiaries (Subramanian and Pisupati 2009).

5. Options to make ABS as an Innovative Financing Mechanism

The access and benefit sharing objective of the CBD was put in place to ensure there is fairness and equity with regard to sharing and using of genetic resources and that benefits of using the resources are ploughed back to continue conservation and sustainable management of biodiversity. Using this objective, the Nagoya Protocol was adopted during CBD COP 10 meeting in 2010. Through its meetings the Intergovernmental Committee on Nagoya Protocol (ICNP) called for measures for speedy entry into force of the Protocol and to establish national mechanisms to derive benefits of such implementation.

Literature on bioprospecting, the act of using biological resources for new products, typically examines the relationships between end users (academics, pharmaceutical industry, etc.) and local communities or countries of origin of resources (Laird and Wynberg 2008). This is the archetypal and mainstreaming framework. Equity in this scenario concerns how much end users are willing to pay and share benefits with providers of resources based on a fair calculation of costs of value addition and income generation by the user. However, this literature demonstrates that bioprospecting contracts many times fail to facilitate equitable distribution of benefits, conservation of biodiversity, or address the concerns of local stakeholders. An additional issue raised in the literature is the effectiveness of CBD provisions on inter- and intra-community equity in economic transactions related to biodiversity (Barrett and Lybbert 2010). Specifically, attention is drawn to the lack of literature and analyses detailing studies related to the distribution of benefits and costs among communities.

On the other hand, communities are experimenting with unconventional ways of dealing with using biological and genetic resources by providing access to them and generating specific benefits. In a series of case studies

focusing on the above, the National Biodiversity Authority in India compiled information on how several activities related to value addition on local resources have contributed to innovative but local mechanisms of facilitated access to resources and generation of benefits that are shared using locally relevant practices and criteria (Bhatt *et al.* 2012). Table 1 highlights some of the examples of interventions that could potentially contribute to making ABS systems work at local level using established practices and experiences. The study also explores on making the interventions currently underway as sources of long term financing for conservation action at national and local levels aligning with the principles of ABS.

Though this is an unconventional approach to looking at ABS, the interventions have all been long identified as sources for community based natural resource management and securing livelihoods and contributing to development. Table 1 presents a suite of options to link such interventions using the ABS linkages and identified options for financing national actions related to CBD.

It is important, however, to mainstream these actions in a manner that links to implementation of ABS framework at local level. National and local actions are needed for this.

Table 1: Types of Interventions and their Linkages with Access and Benefit Sharing

Intervention	Access Issues	Benefit Accrual	ABS Link	Financing Dimension
Primary Health Care Product Development	Access to medicinal plants and herbs, associated traditional knowledge on use(s)	Pricing mechanism for products, consolidation and availability of markets and quality, certification measures	Market links to production and bio-trade, community led enterprise development	Long term, sustainable financing, volumes based on quality of product, market set-up and advertisement

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Trade in Forest Produce, including non-timber forest produce	Access rights with communities, tenure of rights defined, resource base identified and secured	Linking with suitable prospector yields better price for produce, supply-demand issues define quantum of benefits and its sustainability	Empowering local communities with negotiation skills, value-addition could provide a long term resource use framework that is sustainable and equitable	The volumes of financing accrued here may be limited but it is sustainable and decisions on using for conservation is in the hands of communities and local official making financing for conservation work at local level
Innovative REDD + Actions	Forest restoration and conservation with access to resources, including carbon	Carbon dioxide accruals and related revenues to support conservation of areas and livelihoods	The activity pursued in India provides the link between REDD+ intervention and ABS mechanism with a 30 year project period	Forests conserved, carbon credits used for conservation, access related regulations linked to benefit accrual and sharing among communities
Agrobiodiversity conservation	Local varieties with special property and culinary features identified, markets developed and communities provide facilitated access to national and regional markets	Sale proceeds to be provided as conservation and development funds, local cooperatives support conservation and management of special indigenous varieties with market links	Communities empowered to identify potential resources for markets and trade in a manner access is informed and with consent and benefits shared equitably. Combines ABS provisions under the ITPGRFA and Nagoya Protocol	The identification of niche markets and fixation of quality and prices contribute to use of local material for securing adequate finances contributing to livelihoods and incomes

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<p>Use of Non-Timber Forest Produce</p>	<p>Communities provided with secure rights for collection, marketing and use of resources, including for trade</p>	<p>The communities manage the resources and restrict access to resources that are sustainable and value-added. Prices and market links provide the options for range of benefits including food security and income generation</p>	<p>Local level resource use, fixation of economic values for resources and pre-determination of benefits and nature contribute to access that is facilitated, benefit volumes that is negotiated and usage of accrued benefits determined by communities</p>	<p>Contributes to regular and pre-determined incomes and contributes to sustainable financing that is not based on subsidies or grants</p>
<p>Ecotourism</p>	<p>With the involvement of local people, access to designated areas managed in a manner the biodiversity resource base form the incentive for willingness to pay by the visitors. Access to the areas and resources facilitated as per principles of prior consent, agreed terms of benefit sharing and the related</p>	<p>Benefit accrual directly linked to local management of resources and their availability</p>	<p>Local enterprise development coupled with benefit sharing that is sustainable and contribute to management of resources offer a base for engagement of local people and their development</p>	<p>Willingness to Pay is not only on use/sighting of resources in an ecotourism enterprise but could also be based on sustainable management of resource base and local empowerment. Financial resource mobilisation can be local and regional but consistent with suitable empowerment of local people</p>

Note: For detailed case studies based on the above approaches, please see Bhatt *et al.* (2010).

6. Conclusions

The need of the hour in a post-Nagoya process is a paradigm shift in the way perceptions about ABS systems are placed. We need to stop looking at ABS through the lenses of the Nagoya Protocol negotiations where the focus is to prevent biopiracy at all costs. Instead we now have to start viewing ABS as an innovative financing mechanism than a regulatory burden. It can also be convincingly argued that such actions could contribute to the new paradigm of Green Economy which is now struggling to find grips at national and local levels. Such bottoms up approach need to be considered by the High Level Panel in their final submission to CBD COP 12.

Linking the arguments to ensuring putting in place a functional ABS regime at national level (Target 16), it can now be argued that investing in national processes related to making ABS frameworks functional should consider approaches that promote ABS as one of the possible options for raising finances to achieve the goals set under the CBD. Going by the estimate of the report of High Level Panel on Resource Mobilisation presented in 2012, it costs anywhere between US\$ 7-33 million per year to achieve this Target. The GEF 5 portfolio allocation for ABS related components alone are up to US\$ 40 millions⁴ with a possible similar or increased figure that can assigned for the next funding cycles of 2014-2018 (GEF 6 replenishment). Additionally, about US\$ 10 millions are available under the Nagoya Protocol Implementation Fund (NPIF) which has limited number of countries accessing the funding.⁵ Combining these with funding from other initiatives such as the multi-donor, multi-regional ABS capacity building initiative for Africa, Pacific and the Caribbean as well as other ABS projects in the pipeline, it is promising that adequate funding needed to earnestly begin actions to realise Target 16 is available. Considering the need for finances to operationalise a functional ABS systems, based on the case study undertaken in Ecuador (Albán *et al.* 2013), it might cost anywhere between US\$ 2-3 millions per country to implement the Protocol at national level. Time has come for Parties to CBD to review this situation and move forward progressively in manner the ABS framework is developed not as a legal centered approach making the process heavy administratively

and legally but as a resource centered approach that offers streamlined opportunities to raise local resources for implementing the Nagoya Protocol.

Endnotes

- ¹ UNEP/CBD/COP/11/14/Add.2
- ² While the South African National Environment Management: Biodiversity Act divides bioprospecting into a discovery phase and commercialisation phase, Bhutan's ABS policy (currently under discussion) divides bioprospecting into the scoping phase and the actualisation phase.
- ³ Bhutan's ABS policy (currently under discussion) incorporates a system of security deposits during the scoping phase of bioprospecting with the aim of securing a financial guarantee in exchange for relaxed access procedures during the scoping phase of bioprospecting. The aim of the security deposit is to also keep the bar for entry high enough so as to attract only serious companies capable of providing such guarantees rather than risky fly by night operators.
- ⁴ GEF/R.5/31/CRP.1 May 2010
- ⁵ GEF/C.40/11/Rev.1 May 2011

References

- Barrett, Christopher B. and Travis J. Lybbert. 2000. "Is Bioprospecting A Viable Strategy for Conserving Tropical Ecosystems?" *Ecological Economics*, 34: 293-300.
- Bhatt, Seema, Sanjay K Bavikatte and Suneetha M Subramanain. 2010. *Community Based Experiences on Access and Benefit Sharing*. National Biodiversity Authority, India
- CBD. 2010. *Global Monitoring Report 2010 – Innovative Financing for Biodiversity*. Convention of Biological Diversity (CBD). Available at: <http://www.cbd.int/financial/doc/global-monitoring-report-en.pdf>
- Albán, M., R. Ulloa, L. Barrera, J. Busch, C. Vollberg, L. Suárez and F. de Koning. 2013. *National Level Evaluation of Financing Needs for the Implementation of the Aichi Biodiversity Targets in Ecuador*. Ministry of Environment Ecuador, Conservation International Ecuador, Secretariat of the Convention on Biological Diversity. Ecuador.
- Hoole, Arthur Frederick. 2010. "Place-Power-Prognosis: Community Based Conservation, Partnerships and Ecotourism Enterprise in Namibia." *International Journal of the Commons*, 4 (10): 78-99.
- Laird, S.A. and R. Wynberg. 2008. *Access and Benefit-sharing in Practice: Trends in Partnerships Across Sectors*. CBD Technical Series 38 Volumes I, II and III. Montreal: Secretariat of the Convention on Biological Diversity
- Pisupati, Balakrishna, Seizo Sumida, Toru Okuda, Satoshi Nimura, Katsuhiko Ando, Manabu Suto, Yoshiyasu Yabusaki, Junko Watanabe, A. H. Zakri, and Suneetha M Subramanian. 2007. *ABS Case Studies*. United Nations University Institute of Advanced Studies (UNU-IAS) and Japan Bioindustry Association (JBA), Japan.

- TEEB. 2010. *The Economics of Ecosystems and Biodiversity: Mainstreaming the Economics of Nature: A Synthesis of the Approach, Conclusions and Recommendations of TEEB*. The Economics of Ecosystems and Biodiversity (TEEB), Switzerland.
- Sharma, Ravi, Markus Lehmann, Valerie Normand, John Scott, David Duthie, Edjigayehu Seyoum-Edjigu, Beatrice Gomez and David Cooper. 2012. "Input to the report of the High Level Panel on Global Assessment of Resources for Implementing the Strategic Plan 2011-2020". Secretariat of the Convention on Biological Diversity (SCBD), Montreal.
- Subramanian, Suneetha M. and Balakrishna Pisupati. 2009. *Learning from Practitioners: Benefit Sharing Perspectives from Enterprising Communities*. UNU-IAS, UNEP, Japan.
- Zotchev, S. B., Olga N Sekurova and Leonard Katz. 2012. "Genome-based Bioprospecting of Microbes for New Therapeutics." *Current Opinion in Biotechnology*, 23(6): 941-947.