

Access and Benefit Sharing

Policy Concerns

FOR SOUTH ASIAN COUNTRIES

INTRODUCTION

The South Asian region is endowed with very rich biodiversity. Two of the 12 mega-biodiversity centers of the world are situated here and it has more than 15,000 endemic species of plants.¹ The region is also the primary and secondary centers of diversity for many crop plants and owns large genetic diversity in these crops and in few more crops introduced from elsewhere. Biodiversity is intrinsically associated with the way of life of peoples, largely contributing to the evolution of a vast amount of rich traditional knowledge (TK) on the conservation and sustainable use of biodiversity. This region is relatively weak in technological capability, more so in the frontier areas of science, which could be applied for turning the TK and bio-resource wealth into economic strength and removal of rampant hunger and poverty.

Access and benefit sharing (ABS) is an important principle of equity recognised and legitimised in Convention on Biological Diversity (CBD).² The provision of benefit sharing is seen as a trade off between the technologically-strong North and the biodiversity-rich South to serve the mutual interest arising from biodiversity.

THE ABS FRAMEWORK

Article 15 of CBD provides a framework for the implementation of ABS. In recognition of the sovereign rights of states over their natural resources, national governments, subject to their national laws, are conferred the authority to determine access to genetic resources. Contracting Parties (CPs) are required to create conditions, subject to allowed safeguards, to facilitate access to genetic resources for environmentally sound uses by other CPs. Access to genetic resources, where agreed, shall be on mutually agreed terms (MATs) and also on prior informed consent (PIC) of the CP providing the access. The providing and accessing CPs are required to establish legal, administrative and policy measures on MATs to ensure fair and equitable sharing of the technological benefits arising from research and development, and the economic benefits arising from the commercial utilisation of genetic resources. Article 8 (j) provides for equitable sharing of benefits arising from the utilisation of knowledge, innovations and practices of indigenous and local communities embodying traditional life styles relevant for conservation and sus-

tainable use of biological diversity. Access to such knowledge, subject to national laws, has to be with approval and involvement of the holders of such knowledge. Benefit sharing, therefore, involves technology transfer, information exchange, technical and scientific cooperation, capability building in science and technology, including biotechnology for distributive benefits and financial resources and mechanism.

Realising the lack of capacity and preparedness of many countries in implementing ABS, particularly in involving stakeholders in access to genetic resources and benefit sharing processes, the Conference of Parties (CoPs) constituted an *Ad-hoc* Open-ended Working Group to develop guidelines and other approaches on ABS. These guidelines, drafted in 2001, were adopted in 2002 by the CoP 6 and are popularly known as "The Bonn Guidelines on Access and Benefit Sharing". The Bonn Guidelines were further improved in clarity, legal definitions and cost-effective applicability by the Working Group in 2003 and adopted by the CoP 7 at Kuala Lumpur in 2004.³

In the mean time, the World Summit on Sustainable Development called for action to negotiate an international regime, within the framework of CBD, to promote the mechanism for fair and equitable benefit sharing arising out of the utilisation of genetic resources and associated TK. In pursuance of this, the CoP 7 defined the terms of reference for such negotiation, including the process, scope, nature and other elements elaborating the international regime.⁴ Such a regime is expected to evolve certification of origin/source/legal provenance of genetic resources with a view to ensuring legal certainty for users while assuring providers that their resources are used in conformity with legal obligations and would help in establishing transparency and traceability of access.



BENEFIT SHARING

Benefit sharing is a process that follows access to biodiversity and associated TK by parties external to the holder community or country. Benefits can be of monetary or non-monetary in nature⁵ (See Table 1). The centrality of benefit sharing lies in the fair and equitable manner it is done. 'Fair' may imply the natural justice applicable to the distributive parity between the Accessing Contracting Party (ACP) and the Providing Contracting Party (PCP) either in monetary or non-monetary transfer. 'Equitable' may define the distributive process governing the monetary or non-monetary benefits. Because the ability of both the parties are not equal in the realistic assessment of the benefits and in most situations is in advantageous position to the ACP, there is a strong ethical dimension to the fair and equitable benefit sharing. Benefit sharing may essentially involve types of benefits, timing of benefits, distribution of benefits, and the mechanisms of benefit sharing. On case-to-case basis, one or more of the benefits can be negotiated and availed, depending on the material, context and parties involved.

The timing of the benefits may be stipulated and scheduled, again on case-to-case basis, on short-term, medium-term and long-term basis, including up-front payments, milestone payments and royalties and non-monetary benefits, as mutually agreed. Pursuant to MATs already established, benefits should be shared fairly and equitably with all those, who have been identified as having contributed to the resource management and scientific and/or commercial process. These beneficiaries could be governmental, non-governmen-

tal or academic institutions and indigenous and local communities.

Mechanisms for benefit sharing need to be flexible within the framework satisfying fairness and equity. It is desirable that such mechanisms give importance to capacity building in scientific research and technology development, building trust funds and joint ventures and granting preferential licences. The benefit sharing policy of biodiversity-rich countries needs to promote conservation and sustainable use of biological diversity and build technological capability either by accessing relevant technologies or by gaining skill to use such technologies with a view to becoming self-reliant in generating marketable value added products, processes and services from the native resources.

PRIOR INFORMED CONSENT

The PIC concept has its origins in medical treatment with patients providing consent to treatment based on information provided by a doctor or surgeon. In international law, PIC was earlier used in the context of transboundary movements of hazardous wastes. The legal PCP of the plant genetic resource (PGR), according to CBD, is the national governments or their authorised agencies. The PCP is required to define a framework, which will facilitate provision of relevant and adequate information on the material to the ACP. The PCP has the prerogative to allow access without PIC.⁶ However, in the case of access to TK, innovations and practices of indigenous and local communities, according to the CoPs, PIC or prior informed approval should be obtained from the holders of such knowledge, innovations and practices.⁷ The Bonn Guidelines deal with the extent and scope of prior information to be provided by the ACP and whether the PCP can prescribe different format for securing prior information on different PGRs, particularly the ones related to food and agriculture and associated TK.⁸ Essential elements include legal certainty; defined timeline; clarity of process; facilitation of access at minimum cost; transparency and legality in the restriction of access; access with approval of the competent national authority or stakeholders as required under the national law; mechanism for consulting relevant stakeholders; and clarity on the specific intended use(s). It is desirable to have a national registration system to record all access applications and the decisions relating to them.

Table 1

NON-EXHAUSTIVE LIST OF BENEFITS TO THE COMMUNITIES

MONETARY BENEFITS	NON-MONETARY BENEFITS
<ul style="list-style-type: none"> • Collection fee • Research grant • Income from the sale of product • Royalty from the new product • Income from the sale of plant and animal genetic resources 	<ul style="list-style-type: none"> • Training to personnel for their capacity building • Technology transfer • Joint research • Joint authorship on patent • Exchange of staff and researcher • Exchange of information

Source: Sherchand, Laxman. 2001. "Access to Agro-Biodiversity and Benefit Sharing in Nepal". Paper presented at the *Judges' Sensitisation Programme on Multilateral Environmental Agreement*. Organised by Judges Society Nepal and IUCN-Nepal, 21-23 July, Biratnagar.

MUTUALLY AGREED TERMS

Article 15 (7) of CBD requires each CP to institute legal and administrative measures for fair and equitable sharing of

Box 1

ISSUES UNDER MATs

MATs can include:

- details on the genetic resource accessed;
- recognition of sovereign rights of the country of origin;
- limitations, if any, on the possible use of the material;
- terms of agreement, which are liable for renegotiation and conditions for such eventuality;
- conditions defining the transfer of material to the third party in accessed and altered form;
- conditions to respect the customary use of biological resources in accordance with traditional practices of the indigenous and local communities;
- codes of conduct to be adhered by the PCPs and the ACPs;
- areas identified for capacity building, joint research, etc;
- possibility of joint ownership of intellectual property rights (IPRs) according to the degree of contribution and common rights on inventions and right for common consent to grant licences;
- provisions regarding the sharing of benefits arising from the commercial and other utilisation of genetic resources and their derivatives and products; and
- treatment of confidential information.

the results of research and development and the benefits arising from the commercial and other utilisation of genetic resources and to ensure that such sharing shall be upon MATs. MATs could cover the conditions, obligations, procedures, types, timing, distribution and mechanisms of benefits to be shared (*See Box 1*). These can vary depending on what is regarded as fair and equitable in a given transaction and context. The Bonn Guidelines stipulate legal certainty and clarity of the agreement; minimisation of transaction costs; inclusion of provisions on user and provider obligations, in particular, in relation to safeguarding the livelihood rights of the indigenous and local communities; and a reasonable timeframe for negotiation and unambiguously setting out all terms as written agreement.

GENETIC RESOURCES AND CGRFA

Biodiversity, until the enforcement of CBD, was dealt with as an open asset, freely accessed and used by all with no distinction to its place of origin. During this period, several parties had built up collections of biodiversity components, particularly crop PGRs, from various countries. Many of such collections are located in the International Agricultural Research Centers

(IARCs) governed by the Consultative Group on International Agricultural Research (CGIAR) and several private institutions in developed countries. According to CGIAR, about 660,000 plant variety accessions representing nearly 95 percent of the genetic diversity in more than 35 major crops, and about 20 percent of their wild species, nearly 70 percent of them collected from developing countries, are being kept as *ex situ* accessions in 11 IARCs.⁹ The number and other important details of other private collections of genetic resources – established by seed companies and biotechnology firms – are neither acknowledged nor disclosed. Similarly, data are not available on the microbial collections being held in the Microbial Resource Centers (MIRCENs) of developed countries.¹⁰ All these collections, which were actually made prior to the coming into force of CBD and being kept outside the territorial or legal sovereignty of the respective countries of origin, are excluded from the legal ambit of CBD and consequent ABS entitlement to the original providers. The danger of non-disclosure of these collections is that the holders of these private collections are left unchecked from adding to these collections by piracy and claiming all collections as pre-CBD. This severely short-circuits the sovereign rights accorded to those countries, whose genetic resources are transferred and retained as private collections.

The Nairobi Final Act of the Conference for the Adoption of the Agreed Text of CBD also mandated the follow up action within the United Nations Food and Agriculture Organisation's (FAO) forum to address the outstanding matters on PGRs, particularly the access to *ex situ* collections, and on farmers' rights, both not addressed by CBD. With this mandate, the FAO Conference empowered the Commission on Genetic Resources for Food and Agriculture (CGRFA) to initiate negotiations under the auspices of FAO to revise the International Undertaking on Plant Genetic Resources (IUPGR) for food and agriculture in harmony with CBD.¹¹ An Agreement was concluded in 1994 between FAO and CGIAR to place about 532,000 of the 660,000 plant genetic accessions maintained by the latter under the "trusteeship" of the CGRFA. CGIAR, which is a non-governmental public entity and non-party to CBD, has agreed to properly maintain these accessions and to facilitate their free sharing for the purpose of conservation, research and plant breeding through a model Material Transfer Agreement (MTA) with none having right to establish IPR on them in the form they are received. The CGRFA mediated negotiations, initiated in November 1994, were concluded in 2001 with the adoption of International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA).¹²

ITPGRFA AND BENEFIT SHARING

The rationale of ITPGRFA is that the genetic variability of all crops is not uniformly distributed in the world

and hence no single country, however rich it might be for PGRs, can ensure its food and feed security, now and in future, without sharing genetic resources with other countries. ITPGRFA covers all plant genetic resources for food and agriculture (PGRFA) of specified crops, including the *ex situ* accessions left out from the ambit of CBD and the genetic resources of these crops within the jurisdiction of the member countries under their management and in public domain.¹³ The PGRFA jurisdiction of each member also extends to those being held by natural and legal persons, including the public and private sectors and farming communities.¹⁴ The framework of ITPGRFA seeks to facilitate a multilateral system (MLS) of access, and fair and equitable benefit sharing in conformity with CBD, allowing members to exercise the option for legislating on farmers' rights.¹⁵ ITPGRFA elaborates farmers' rights as the right to save, use, exchange and sell farm-saved seed and other propagating material; the right over the TK relevant to PGRFA; the right to fair and equitable sharing of the benefits arising from the utilisation of PGRFA; and the right to participate in the decision making process at the national level on matters related to PGRFA. The benefit sharing provisions of ITPGRFA require a determined payment into the Global Crop Diversity Trust when genetic material from the MLS is used to produce a product like a new variety that is commercialised. The scope of benefit sharing set out in CBD is not always linked to IPR and profit accrued therefrom, although there is a cultivated impression that patents alone may bring larger benefits.

A Governing Body (GB) of member countries holds the responsibility to oversee the administration of ITPGRFA with authority to review the access to PGRFA and to expand the coverage of PGR relevant to food and feed security.¹⁶ The GB is also empowered to have legal superintendence over concerned CGIAR institutions for the purpose of providing policy guidance relating to *ex situ* collections held by them; authority for periodic monitoring of the access and use of PGRFA from CGIAR centers; assist for the appropriate management and administration of these *ex situ* collections under the authority of CGIAR; and decide on evacuating and transferring these collections from any CGIAR centre, with the approval of the host country. In case the maintenance of these collections are impeded or threatened by whatever event, ITPGRFA requires the concerned IARCs to identify the geographic origin of all accessions and allow access by 'owner' countries to those accessions originated from their jurisdiction without MTAs.¹⁷ ITPGRFA encourages all natural and legal persons, such as seed companies and



biotechnology firms, within the jurisdiction of each member, to come under MLS. The GB is authorised to decide on the continued access to the MLS by those private parties, which have not brought their collections of PGRFA under MLS.¹⁸

The IARCs *ex situ* PGRFA accessions have better database, which includes source of origin, as collected or received by the IARC, and on important descriptors. Based on this database, ITPGRFA discriminates the PGRFA originating from the jurisdiction of a member as those being held in the IARCs and those accessible from *in situ* state from the geographical limits of the member. While this 'quasi-ownership' of members on the *ex situ* accessions of IARCs offers no role to them in deciding on its access by other members, members retain the right to decide on access to their *in situ* PGRFA in consistence with CBD and in conformity with their

relevant national legislation, wherever such legislation exists.¹⁹ The multilateral access to these two groups of PGR belonging to a member is to be regulated under a MTA to be prescribed under ITPGRFA and the decision on benefit sharing is to be taken by the GB. The MTA allows continuous exchange of PGRFA by recipients and in such cases, trace-

ability of the PGR in relation to its origin/source/legal provenance assumes importance.

TRIPS AND ABS

CBD seeks to couple the conservation and use of biological resources with equity in the benefits of such use. This coupling process provides a feedback from the user end to strengthen incentives for conservation of biological diversity and for providing an economic context to *in situ* conservation. Achieving this necessarily involves a range of activities, wherein equitable benefit sharing tends to play a pivotal role. Equitable benefit sharing brings forth divergent interests, some of them are inconsistent with the CBD's overriding objective of achieving a balance between the biodiversity-rich South and the technologically-advanced North. Furthermore, the economic aspects of handling biological diversity are essentially governed by other internationally binding rules, especially the patent right provisions of the Trade Related Aspects of Intellectual Property Rights (TRIPS) Agreement of the World Trade Organisation (WTO). Since access to knowledge and technology is a key objective of CBD, apprehensions have come, largely from biodiversity-rich countries, on achieving this goal with the granting and recognition of IPRs in activities relating to biological diversity.

In respect of PGR and TK, TRIPS epitomises the asymmetry between the western and rest of the world per-

TRIPS, ABS AND SOVEREIGN RIGHTS

TRIPS can challenge the sovereign right the states have over their biodiversity. In a given national context, IPR protected material, particularly patented plant varieties and their components, may no longer be accessible to third parties without the consent of the owner. The access either need not be granted or can be subject to payment of high license fees and the acceptance of far-reaching conditions, which can amount to a *de facto* denial of access. The patent on plant varieties or plant breeder's right will promote increasing proportion of biological diversity into private ownership, precluding their unconditional use, particularly for breeding superior commercial varieties.

ceptions on innovation and knowledge system and the entrenched inequity created with the protective IPR treatment provided to the so called 'formal innovations' and denial of such protective treatment to 'informal innovations' achieved by farmers and local communities.²⁰ This asymmetry within TRIPS can adversely affect the process of ABS in different ways (See Box 2).

There are enough indications that the new processes and products of biotechnology will occupy a crucial position over the coming years, which will make access to or control over biological/genetic resources of increasing strategic importance. Genetic/living material serves both as the feedstock for the generation of biotechnological innovations and as a technological medium (microorganisms, plants, animals) through which innovations are actually realised for commercial advantages. These economic potentials from biodiversity along with the extreme polarity between technological strength and biological wealth and the increasing stringency in IPR are promoting biodiversity-rich countries to place tougher conditions of benefit sharing for access to their resources. Technology transfer, particularly the state-of-the-art technologies like biotechnology, relevant to the commercial use of biodiversity, is part of the CBD goal²¹, which the biodiversity-rich countries are keen to avail under the benefit sharing scheme. However, technology transfer is impeded by prohibitive price tags attached to the IPRs on innovations accompanying these technologies.

Thus, access to resources is being complicated due to the proprietary rights established on genetic resources by biodiversity-rich PCP and refusal to transfer technology by technologically-strong ACP. Furthermore, there can be far reaching consequences in access arrangements depending on the way proprietary rights are granted in developed countries over innovations generated on the genetic material originating from the developing countries. For instance, when proprietary rights

are defined so broadly as to cover germplasm from developing countries – including possibly even unmodified plants or plant components – such claims can, in practice, lead to unlawful appropriation of genetic resources and associated TK from the countries of their origin, which, in effect, would undermine the national sovereignty of member states over their *in-situ* genetic resources. For instance, patenting being allowed to gene sequences in many developed countries is one of the TRIPS routes through which developing countries can lose their national sovereignty over their biodiversity. These patents are allowed to genes that have merely been isolated from the genome of a natural organism with identification of their function. This tantamounts to allowing patenting of natural gene sequences without any technological modification to the sequence. For example, an unmodified full-length DNA from *Bacillus thuringiensis* (Bt gene sequence) was patented.²² Since commercial interests in biotechnology function at the gene level, the access interest is essentially at the genomic level rather than at the germplasm level. When economically important gene(s) from a genetic resource is patented, the conceivable consequence is that the legitimate sovereignty of the state, where the genetic resource originates, is nullified or surpassed, with respect to these patented gene(s). This, in turn, can seriously undermine the opportunity of the developing countries to use national genetic resources for increasing their net domestic product and promoting development, including reducing poverty. Therefore, the restriction in the MTAs on establishment of IPR on the material 'in the form received' needs to be extended also to the components of the material. This will restrict patenting only to those gene sequences of accessed PGR, which have been substantially modified.



CONCLUSION

A majority of people in South Asia depend on agriculture and related activities for their livelihood. More importantly, there is no other region in the world where biodiversity has such a close linkage with people's livelihood. Biodiversity is intrinsically linked with people's lives, also contributing to the evolution of a vast amount of rich TK. However, the region lacks technological capability, which can turn the bio-resource and related TK wealth into economic strength and contribute to

poverty reduction. A fair and equitable mechanism of ABS could, therefore, be instrumental for these countries to capitalise on their bio-resources and related TK. CBD provides them an opportunity to establish a legal framework for proper ABS regime at the national level. ITPGRFA also provides them an opportunity to recognise farmers' rights relating to PGRFA and implement them at the national level. While devising policy and legal frameworks on ABS, these countries should



be cautions with regard to the implications of the TRIPS Agreement. For instance, patenting provision under TRIPS can complicate the benefit sharing process and developing countries can also lose their national sovereignty over their biodiversity.

ENDNOTES

- ¹ Conservation International. 2005. Biodiversity hotspots. http://www.biodiversityhotspots.org/xp/Hotspots/hotspots_by_region.
- ² CBD was adopted on 5 June 1992 at the UN Conference on Environment and Development at Rio de Janeiro, Brazil, participated by 157 countries. This legally binding Convention came into force on 29 December 1993. Currently, 188 countries are Parties to this Convention.
- ³ Recommendations of the Second Meeting of the Working Group held from 1-5 December 2003, Montreal, Canada. Available at UNEP/CBD/COP/7/6.
- ⁴ Access to Genetic Resources and Benefit Sharing International Regime on Access and Benefit Sharing. Available at <http://www.biodiv.org/programmes/socio-eco/benefit/regime.asp>.
- ⁵ Article 15.5 of CBD.

- ⁶ CoP 5, Decision V/16, 2000.
- ⁷ CoP 6, Decision VI/24, 2001, the Bonn Guidelines.
- ⁸ Largely based on CoP 6, 2001, the Bonn Guidelines, Annexure II.
- ⁹ CGIAR collections are claimed to hold 95 percent of domesticated species and 60 percent of wild species of wheat, 15 percent of maize, 40 percent of potatoes, 5 percent of sugar crops, etc. See FAO. 1996. *World State Report*. Rome: 276, Available at www.cgiar.org/research/res_genebanks.html
- ¹⁰ UNDP. 1994. *Conserving Indigenous Knowledge, Integrating Two Systems of Innovation*. An Independent Study by the Rural Advancement Foundation International, New York: 15
- ¹¹ Resolution 7/93. IUPGR for Food and Agriculture under CGRFA was first established by the FAO Conference Resolution 8/83 participated by 113 countries to ensure exploration, conservation, evaluation and making available for crop improvement.
- ¹² ITPGRFA, concluded in 3 November 2001, is a legally binding treaty and this came into force on 29 June 2004.
- ¹³ Articles 1, 3 and 11 of ITPGRFA.
- ¹⁴ Article 11(3) of ITPGRFA.
- ¹⁵ Articles 9 to 13 of ITPGRFA.
- ¹⁶ Article 19 of ITPGRFA.
- ¹⁷ Article 15(1) (b) (ii) of ITPGRFA.
- ¹⁸ Article 11.4 of ITPGRFA.
- ¹⁹ Article 12(3)(h) of ITPGRFA.
- ²⁰ Crucible II Group. 2000. *Seeding Solutions*, Rome: IPGRI (International Plant Genetic Resources Institute) and Uppsala: DHF (Dag Hammarskjöld Foundation):10
- ²¹ Articles 16 and 19 of CBD .
- ²² Correa, C. 2000. *Intellectual Property Rights, the WTO and Developing Countries: The TRIPS Agreement and Policy Options*, London and New York: Zed Books Ltd., and Penang: Third World Network: 172, 179

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