



Sharing the benefits from genetic resource use

Genes, and the biochemicals they encode, are used to develop products by a variety of industries: pharmaceutical, herbal medicine, personal care, cosmetics, horticulture, crop production and biotechnology. Despite the potential gains, however, few local communities have benefited from bioprospecting¹ to date.

Genetic resources often originate from tropical regions, where they are found in greatest diversity. In some cases they are collected from lands inhabited by local communities, and traditional knowledge is used to identify potentially valuable resources. However, the benefits from the commercial use of these genetic resources have largely been enjoyed by companies and research institutes in the North.

These organisations have the technology for product development, and can obtain intellectual property rights (IPRs) and patents on novel products to protect investments in research and development.

Although the CBD highlights the need for benefit-sharing with local and indigenous communities, it leaves benefit-sharing policy to be defined in national law.

What constitutes genetic material and resources?

The Convention on Biological Diversity (CBD) defines genetic material as '*any material of plant, animal, microbial, or other origin containing functional units of heredity*', and genetic resources as '*genetic material of actual or potential value*'. It calls for '*the fair and equitable sharing of the benefits arising out of the utilization of genetic resources*'.

The problem of *ex situ* collection

Although the global markets for crops and pharmaceuticals that have been developed from genetic resources are considerable, benefit sharing with local communities is limited because genetic resources are usually acquired from *ex situ* sources (e.g. gene banks and botanical gardens). The majority of these resources are not bound by the CBD because they were collected before its entry into force. Similarly, ethnobotanical knowledge is usually obtained from published sources rather than directly from indigenous and local communities. However, almost all pharmaceutical companies use some *in situ* material collected from protected areas or community lands, and this demand is likely to continue, provided national access legislation does not become too restrictive.

What the Convention on Biological Diversity has to say about benefit sharing

Article 15(7) requires Parties to *'take legislative, administrative or policy measures...with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources'*. Access should be subject to *the prior informed consent* of the Party providing the resources, and on *mutually agreed terms*.

Article 8 (j) requires Parties to *'respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles...and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices'*.

Recognising community rights

Indigenous and local communities play an important role in the management and conservation of genetic resources, and in the development of traditional knowledge, and often depend on these resources for their livelihoods and cultural practices. However, the CBD does not provide clear legal rights to local communities over their knowledge or genetic resources.

Legislation on access to genetic resources² should be developed with the active participation of local and indigenous communities and require their prior informed consent (PIC) for the use of their genetic resources and/or traditional knowledge. For example, PIC from

indigenous communities in the Philippines is required for collections of genetic resources within their ancestral domains. Applications will only be approved when a 'PIC certificate' is submitted, signed by the local community or local authority.

Countries should also develop *sui generis*³ laws to protect traditional knowledge, that are in accordance with customary law, have the active support of indigenous people, and form part of a broader strategy for implementing Article 8(j) of the CBD (see text box). Much traditional knowledge is ineligible for patent protection because it is in the public domain. Furthermore, applying an Intellectual Property Rights (IPR) model that is based on the notion of private property to knowledge which is collectively owned by a community or ethnic group, could undermine the cultural basis on which the existence of such knowledge depends.

The WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) does not recognise the contribution of traditional knowledge, or the need for benefit-sharing. To improve compatibility with the CBD, certificates of origin could be introduced at national and/or international level, obliging patent applications to provide evidence of PIC from the country of origin and local community. Another option is to introduce a global system to protect traditional knowledge at WTO level.

Local communities have long relied upon a range of wild medicinal plants. Pharmaceutical companies that wish to make use of these plants need to engage in benefit-sharing contracts, based on the rights of the local community as recognised in national law, over genetic resources, traditional knowledge, natural resources and land.



WWW.CANNONMURIRAUTKARI

Non-binding measures can be used to reinforce community resource rights. Examples include community biodiversity registers, local access protocols and codes of conduct for collectors and users. Motivation on the part of companies and intermediaries, who collect resources on their behalf, will be essential to ensure that benefits are shared with local and indigenous communities.

Benefit-sharing in practice

Although benefit-sharing with local communities is still uncommon, a number of examples exist, particularly in the pharmaceutical and herbal medicine sectors (see text box). The benefits can include fees per sample, up-front payments, milestone payments and royalty payments on product sales, and can provide short- and long-term employment as well as finance for community development and biodiversity projects. Non-monetary benefits include training, capacity building and involvement in research and development.

Local communities can benefit most when:

- a range of benefits are shared, including non-monetary benefits, to enable communities to add value to their resources;
- the resources are supplied by the community after initial collection, and harvested on a sustainable basis;
- initiatives are community-driven as with the sale of medicinal plants and related products.

Specific benefit-sharing arrangements are subject to mutually agreed terms, on a case by case basis. In the pharmaceutical sector, royalties are only possible if a commercial product is developed⁵, which can take 10–15 years, while in the herbal medicine sector, benefits are usually greater in the short- and medium-term, and lower in the long-term.

Establishing benefit-sharing agreements

The practical difficulty of obtaining PIC represents an important constraint to benefit-sharing with local communities. For foreign users or in-country scientists, the challenge is to know from which community PIC is required, and how to undertake the consultation without excessive complication or delay. For a community, the challenge is to understand the proposed terms and negotiate a fair deal. PIC will be facilitated if indigenous and local communities are represented on a committee or by a focal point established to approve access applications.

Examples of benefit-sharing agreements

1. Kani people, India

The Tropical Botanic Garden and Research Institute (TBGRI) in Kerala, developed an energy-giving drug 'jeevani' using information from two Kani tribes. TBGRI obtained a patent for the drug and granted a licence for its manufacture and sale to an Indian pharmaceutical company for a fee of \$25,000. TBGRI agreed to share 50% of the fee and royalties with the Kani of Kerala, through a trust fund for development and biodiversity activities.

2. Aguaruna people, Peru

The International Cooperative Biodiversity Group⁴ in Peru involves Washington University (WU), Aguaruna and Huambisa communities, two Peruvian universities and Monsanto-Searle Co (M-S), in three agreements:

- Biological Collecting Agreement between the Aguaruna and Huambisa Peoples (represented by four organisations) and WU, with basic terms of sample collection and benefit sharing;
- licence option agreement between WU and M-S that covers financial benefits including royalties;
- know-how licence between the Aguaruna and M-S that outlines the use of traditional knowledge by M-S and specific benefits.

Short- and medium-term benefits from research activities and advance payments were dedicated to those communities actively involved, and long-term contingent benefits (e.g. royalties) to all Aguaruna communities.

Trust funds can be used to share benefits equitably at local level through projects identified by the community. They should be managed by the community according to agreed objectives. It may be necessary to consult and compensate a number of communities if, for example, there is a common cultural heritage and shared traditional knowledge in the area. Two funds might be established, one for the communities that are directly involved and a 'common fund' to which eligible communities can apply. This type of arrangement will be facilitated if traditional systems of governance are still in place.

Complications arise if the genetic resources or knowledge occur over large areas, since ownership of the resources may then be contested. If the same genetic resources occur within regions occupied by many communities and several countries, then some form of international agreement backed by national legislation would be required to regulate bioprospectors going to places where no licence is required.

The role for development cooperation

The CBD obliges developed countries to provide finance through the Global Environment Facility (GEF) for implementation of the CBD

in developing countries. However, additional assistance is needed to enhance benefit-sharing with local communities, for example to:

- Encourage benefit-sharing of genetic resources from *ex situ* resources, such as gene banks and botanical gardens (e.g. by developing a protocol to the CBD), and improve compatibility between the CBD and WTO/TRIPS.
- With the participation of local and indigenous communities, develop clear and efficient legislation (a) to regulate access to resources that require PIC, (b) to protect traditional knowledge and (c) to strengthen the capacity for implementation of benefit-sharing.
- Reinforce PIC requirements through community biodiversity registers, local access protocols, codes of conduct, monitoring of exports, and improved recognition (in law and in practice) of community rights over land and natural resources.
- Facilitate the establishment of benefit-sharing partnerships with indigenous and local communities by developing PIC guidelines, strengthening representation of indigenous and local communities at national level, and raising awareness of communities in potential collection areas.
- Build the capacity of local communities to add value to resources, strengthen links to markets and establish community-driven ventures.
- Engage the private sector in access debates and facilitate dialogue between stakeholders.
- Support measures in user countries by promoting best practice for industry, complementary legislation, monitoring of imports and information sharing.

¹ Bioprospecting is the search for useful genes and biochemicals.

² Access laws have been introduced, or are being developed, in some 50 countries.

³ *sui generis* means 'unique' or 'of its own kind'. Peru is the only country so far to have developed such a law.

⁴ Established by the US National Institute of Health, National Science Foundation and USAID to promote bioprospecting and share benefits with local communities in a number of countries.

⁵ Approximately 1 in 10,000 genetic samples will result in a commercial drug.

This Biodiversity Brief is based on a draft by Krystyna Swiderska of the International Institute for Environment and Development, and was edited by the BDP and Martyn Murray (MGM Consulting Ltd).

This Brief was funded by the European Commission Budget Line B7-6200 and the UK DFID. Opinions expressed in this document are the contributors' alone, and do not necessarily reflect those of the European Commission, DFID or IUCN. The Brief does not imply any opinion on the legal status of any country, territory or sea, or their boundaries.



Further information:

- CBD <http://www.biodiv.org>.
- Genetic biodiversity <http://www.rafi.org> and <http://www.grain.org>.
- IIED <http://www.iied.org>.
- ten Kate, K. and Laird, S. (1999) *The Commercial use of Biodiversity: Access to Genetic Resources and Benefit-Sharing*.
- Research <http://www.idrc.ca>.
- Workshop on 'Best Practices for Access to Genetic Resources', co-sponsored by DGXI, EC, January 1998, Cordoba, Spain.
- reference to other Biodiversity Briefs is denoted as (see BB#).

Website

All Biodiversity Development Project (BDP) documents can be found on the website: <http://europa.eu.int/comm/development/sector/environment>