



# Access and Benefit Sharing from Genetic Resources and Associated Traditional Knowledge

## What the Nagoya Protocol Means for Mountain Communities

Extending over 3,500 km, the Hindu Kush Himalayan ecoregion is host to the world's highest ecosystems and a variety of environments. Mountain environments are extremely rich in biodiversity because of the varied altitude, climatic conditions, geological and biophysical conditions, and soils. Many rare plant and animal species inhabit this region, including relic species from the glacial period. About 30% of the Himalayan flora is endemic. About 9,000 plant species have been reported in the primary forests of the eastern Himalayas, and the total number of plant species in the region is estimated to be as high as 25,000, or 10% of the world's flora. The fauna in the region is as rich and diverse as the plant life. Endemic species include, for instance, the giant panda, golden monkey, sika deer, takin, red panda, lynx, and musk deer. The wealth of genetic information contained in this rich diversity – and the traditional knowledge associated with it – is a potential source of significant benefits for the people of the Hindu Kush Himalayas. The Nagoya Protocol establishes the rights of indigenous and local communities and states to get benefits from genetic resources and associated traditional knowledge accessed for bioprospecting.

## What are Genetic Resources?

The Convention on Biological Diversity (CBD) defines genetic resources as the functional unit of heredity – the DNA within plants and animals that defines their biological characteristics. All biological resources – plants and animals and their constituent parts (leaves, seeds, cells, blood, etc.) – contain these genetic resources and information. Knowledge about the structure and composition of genetic resources can be used in the development of both natural and synthetic products. The search for genetic resources in the natural environment for potential use in product development is called bioprospecting.

Owing to their inaccessibility, mountain genetic resources have not been much explored in the Hindu Kush Himalayas. However, with increasing consumer interest in natural products, the use of plant and animal genetic resources in the food, pharmaceutical, and cosmetic industries is likely to rise. The tremendous genetic resources and associated traditional knowledge of the region have great scope for future commercial and non-commercial purposes.

To ensure the conservation and sustainable use of such valuable genetic resources, as well as fair trade and social equity, it is vital to guarantee the sharing of benefits resulting from the use of genetic resources and associated

## What is the Nagoya Protocol?

The Nagoya Protocol is a supplementary agreement to the Convention on Biological Diversity. It provides a transparent legal framework for the effective implementation of one of the three objectives of the CBD – the fair and equitable sharing of benefits arising from the use of genetic resources – thereby contributing to the conservation and sustainable use of biodiversity. It does this by:

- establishing legal conditions for access to genetic resources and benefit sharing; and
- mandating that incentives be provided to indigenous and local communities for conservation and sustainable use of genetic resources.

Ultimately the implementation of the protocol is intended to enhance the contributions of biodiversity to development and human wellbeing.



traditional knowledge. However, the principles of a free market and rapid globalization make fair and equitable benefit sharing a complex matter. Both the Convention on Biological Diversity (CBD) and the 2001 International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) recognize the rights of countries to control and regulate the use of their genetic resources and associated traditional knowledge and aim to ensure the fair and equitable sharing of the benefits derived from genetic resources.

Since CBD went into force almost 20 years ago, technological advances have led to fundamental changes in drug discovery, plant breeding, crop improvement, and the development of new cosmetics and foods. These modern developments have engendered a burgeoning bioprospecting industry – which in turn has created a greater need for measures to govern access to the genetic resources and associated traditional knowledge used in these activities and to ensure fair and equitable sharing of the benefits from them. However, provisions in the CBD do not adequately address these issues. The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, adopted on 29 October 2010 in Nagoya, Japan, was created to fill this gap. Implementation of this protocol at the domestic level in the countries of the Hindu Kush Himalayan region will ensure legal certainty for both the providers and users of mountain genetic resources and associated traditional knowledge, benefiting local communities and supporting their conservation efforts.

The Nagoya Protocol sets out certain core obligations for countries that are Parties to it. In particular, countries agree to establish domestic legislation in relation to three core elements: access to genetic resources, benefit sharing, and compliance.

## Key Elements of the Nagoya Protocol

### Access

There is no universal definition for access to genetic resources. In the context of the Nagoya Protocol, access to genetic resources means entering into a location where genetic resources are found for surveying activities; for acquisition of genetic resources for non-commercial purposes; or for their study/examination for scientific and/or commercial purposes. The protocol does not refer to access to biological resources; in other words it does not relate to the harvesting of timber, fuelwood, leaf litter, animal fodder, medicinal and aromatic plants, wild fruits and vegetables, etc.; measurement of forest growth; or collection of biological samples for commodity trade.

The definition of access varies according to national legislation and practice. Access may include:

- entry in a location or place where genetic resources are found;
- surveying activities for potential commercial or non-commercial use in product development;
- collecting samples or otherwise obtaining genetic resources and/or associated traditional knowledge;

- the use of genetic resources and/or associated traditional knowledge to make products; and
- the study or systematic investigation of genetic resources for scientific and/or commercial purposes.

### Benefit sharing

Benefit sharing refers to the sharing of any benefits from the use of genetic resources, community knowledge, traditional knowledge, technologies, innovations, or practices under terms mutually agreed by the providers and users of the resources. This includes both monetary and non-monetary compensation for the use of genetic resources.

Examples of monetary compensation are up-front payments, access fees, milestone payments, licence fees, research funding and salaries, infrastructure development, joint ventures, or joint ownership of intellectual property rights. Non-monetary compensation can include the sharing of research results, collaboration in scientific research, participation in product development, collaboration in education and training, technology transfer, capacity building, and the establishment of permanent academic networks.

### Compliance

In the context of access and benefit sharing, compliance means following or working in accordance with the pertinent guidelines or legislation. For example, anyone interested in taking samples of genetic resources from a mountain location for possible use in research or in development of a drug product, food, or cosmetic must follow the established legal procedures of the applicable international or domestic law. If the law includes a provision on disclosure, the user must disclose the source of origin of the genetic resource or associated knowledge to comply with the law.

### Prior informed consent

The Nagoya Protocol establishes that access to genetic resources must be subject to prior informed consent. This means that prior to performing any bioprospecting activity in a certain location, for example surveying or taking genetic/biological resources samples or associated traditional knowledge from a location or community, the user of the resource must inform the concerned government and indigenous and local communities and obtain their consent. This process recognizes indigenous and local communities' inherent rights to their resources and respects their

legitimate authority to require that third parties enter into an equal and respectful relationship with them. It promotes shared responsibility and cooperation and allows the providers of genetic resources and associated traditional knowledge to specify conditions that users of the resources must meet. Obtaining prior informed consent can be a complex and time-consuming process, in which many companies and most indigenous communities lack expertise. However, companies recognize that without consent and an agreement for access and benefit sharing, collecting samples and using traditional knowledge to develop products could result in the final product being legally contested.

### Mutually agreed terms

Another important element of the Nagoya protocol is mutually agreed terms. This means that agreement must be reached between the provider of genetic resources and associated traditional knowledge and the user with respect to the conditions of access and the benefits to be shared between them that may arise from commercial or other uses of these resources. In the mountain context, since indigenous and local communities have poor or no capacity to enter into agreements with bioprospectors, the competent government authority will initially need to facilitate the process and at the same time enhance local capacity to enter into agreements.

### Traditional knowledge

Under the Nagoya Protocol, the prior informed consent of indigenous and local communities must be obtained for provision of access not only to their genetic resources, but also to their traditional knowledge, for example, knowledge on the use of local plants in healing or knowledge about developing new landraces.



## Implementation of the Nagoya Protocol

The success of the Nagoya Protocol depends on effective implementation at the national level. Tools and mechanisms of the protocol designed to aid national implementation include:

- suggestions for forward-looking domestic legislation that establishes national focal points and competent national authorities to serve as contact points for information, granting access, or mediating on issues of compliance;
- establishing a clearinghouse to share information on access and benefit sharing requirements, national focal points, and competent national authorities;
- capacity building to support key aspects of implementation based on a country's self-assessment of national needs and priorities, including its capacity to develop domestic access and benefit sharing legislation to implement the Nagoya Protocol, to negotiate mutually agreed terms, and to develop in-country research capabilities and institutions;
- awareness raising;
- technology transfer; and
- targeted financial support for capacity building and development initiatives through the Nagoya Protocol's financial mechanism, the Global Environment Facility.

## Supporting Implementation of the Nagoya Protocol in Himalayan Countries

Of the eight countries of the Hindu Kush Himalayan region (Afghanistan, Bangladesh, Bhutan, China, India, Myanmar, Nepal, and Pakistan) only one, India, has ratified the Nagoya Protocol, while Bangladesh and Bhutan have signed it. In this context there is a long way to go for its implementation. However, since all the countries in the region are parties to the CBD, and since the Nagoya Protocol is supplementary legislation to the CBD, countries should begin to move forward in developing domestic mechanisms to implement the protocol.



India and Bhutan have made some progress in this respect. Each of these countries has a biodiversity law in force which addresses access and benefit sharing of genetic resources and associated traditional knowledge. China has amended its domestic law to incorporate elements of access and benefit sharing of genetic resources and is developing an umbrella biodiversity law. The other countries of the region are currently developing their biodiversity laws.

The countries of the region require support to identify the key issues pertaining to the implementation of the Nagoya Protocol and awareness raising at different levels. ICIMOD, in collaboration with its partners in the region, is lending support through:

- awareness raising about the Nagoya Protocol at the local, provincial, national, and regional levels;
- supporting documentation of traditional knowledge systems at ICIMOD pilot sites;
- building national capacity to implement the Nagoya Protocol; and
- developing transboundary regional cooperation on access and benefit sharing.



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