



United Nations
Environment
Programme



Distr.
GENERAL

UNEP/Bio.Div.3/6
20 June 1990

ORIGINAL: ENGLISH

**AD HOC WORKING GROUP OF EXPERTS
ON BIOLOGICAL DIVERSITY**

**Third session
Geneva, 9-13 July 1990**

**Relationship Between Intellectual Property Rights and
Access to Genetic Resources and Biotechnology**

1. The hopes placed in the development of biotechnology completely alter the perception of the value of biological diversity. Today it is possible to transfer virtually any gene to any organism. This means that all existing genes, ~~all the organisms which contain them and all the environments~~ containing these organisms are resources that can be used for productive purposes. Thus, the aggregate of biological diversity can be defined as a capital stock of known or unknown genetic resources. Zones of biological diversity which formerly had no economic value should therefore today have a value reflecting the potential value of the genetic resources they contain. This value is all the more discernible in that such zones are threatened by ~~changes leading to an irreversible loss of biological diversity, such as~~ deforestation, desertification and large-scale projects which have an impact on the environment.

2. Given these environmental developments, an arrangement must be devised to guarantee the preservation of biological diversity. Recognizing that genetic resources are part of the common heritage of mankind is a necessary but insufficient step. Since these resources are a collective asset, everyone is ready to use them, but no one has an incentive to conserve them. These problems of incentive are all the more important since genetic diversity is found mainly in the countries of the South, where technologies and funds are often lacking. Both experience and economic theory show that recognition of common ownership in a regime of pure competition tends to lead to the exhaustion of a natural resource. It is therefore absolutely vital to devise corrective measures (taxes, quotas, etc.) or joint management mechanisms, such as provision of compensation to conservers by users, which lead to a degree of efficiency in the exploitation of the resource.

3. Against this background, it is necessary to analyse the various forms of intellectual property and the way in which it can improve the play of market forces with a view to the long-term conservation of biological diversity. In the case of plant varieties, a specific convention was concluded between a number of industrialized countries in 1961: the Convention of the International Union for the Protection of New Varieties of Plants (UPOV Convention). Plant varieties law differs profoundly from patent law: the invention is protected, but the plant resource is open to free access without payment. The use of a variety protected by plant breeder's rights is free as a source of initial variability in a breeding programme. The new variety created can be covered by another right, which is quite independent of the first one. Furthermore, a farmer who has bought a batch of seeds from a seed company is entitled to retain a portion of his crop to re-sow his field the following year. This is what is known as the farmer's privilege, which means that a farmer pays only once for the technology contained in the batch of seeds he has bought, and that he can dispose of all the subsequent generations freely and without payment.

4. Owing to technological and industrial development, the fragile balance of the UPOV Convention is today under threat. On the one hand, stronger protection is sought for biotechnological inventions in the form of an extension of industrial patents to living organisms. On the other hand, UPOV reacts by limiting access to varieties. The draft revision of the UPOV Convention introduces the concept of dependence (a variety "essentially

derived" from another variety protected by plant breeder's rights cannot be used commercially without the permission of the breeder of the protected variety). This development is being hastened by the inclusion of the concept of intellectual property in the agreements of the General Agreement on Tariffs and Trade. If the positions of the OECD countries are adopted, living matter will be covered by patents and the developing countries will accede to the international conventions on industrial property.

5. This development is worrying, in view of the undeniable importance of the principle of free access. In the view of experts (economists and breeders) this principle has been one of the essential factors in advances in genetics since the beginning of the twentieth century. The initiatives which quite rightly seek to correct certain biases in the existing system (farmer's rights, the draft convention on biodiversity of the International Union for Conservation of Nature and Natural Resources) must not be allowed to result in a closing up of the system, for that would be against everyone's interests.

6. It is therefore suggested that the UPOV Convention be drawn on to harness intellectual property rights to the task of ensuring that more efficient use is made of biological diversity. On the one hand, the Convention could be extended to other categories of organisms, and it would be desirable for the developing countries to accede to it. On the other hand, the various specific provisions of the Convention (free access, farmer's privilege) all constitute means of transferring technology which could be suitably used within the framework of North-South relations.

7. However, use of the mechanisms outlined above will probably not be sufficient to meet all the direct and indirect costs of the conservation of biological diversity. These costs are estimated at a minimum of \$500 million a year. It is, of course, possible to suggest the encouragement of voluntary contributions by industry, foundations or citizens' organizations. However, there is no alternative to the establishment of a fund financed by means of mandatory contributions from Governments. A solution accommodating the three sources of funding should be examined.

8. The choice of areas to be conserved will necessarily require a full inventory leading to the establishment of a world list of areas of outstanding importance for the conservation of biological diversity (IUCN draft convention). The selection of conservation options might make use of recent methods of cost/benefit analysis (models with an "option value" approach).

9. In the field of genetics, the use of resources is inseparable from the use of technologies. It is therefore essential to link the use of the international fund with the necessary technology-transfer operations. In many cases, monetary compensation for the costs of conservation will not be the most suitable method. Compensation mechanisms along the lines of technology-for-nature swaps may therefore be suggested. The role of the international fund will be to finance projects rather than organizations. The management body might serve as an exchange to match the supply of technology with the demand.

10. Biological diversity must be paid for in the form of technology rather than in cash. Two elements of biological diversity should give rise to remuneration: the preservation of areas of diversity, and the removal of genetic resources. Where the preservation of areas and the removal of genetic resources results in a loss of earnings for the country of origin of a resource (for example, elimination of an export resource, as in the case of vanilla), these two elements must be a source of substantial payments. The payment may be smaller in the case of removal of a genetic resource which results in profit to the remover, without causing a loss to the original possessor of the resource.

11. Such payments must be made in the form of technology. In this connection, patent law seems rather negative, whereas the extension of the UPOV Convention is positive. It allows for the transfer of technology in the form of free access, farmer's privilege, low-cost licences, or even free licences in the case of food shortages. It also allows for participation by the countries of the North in breeding/conservation programmes in the countries of the South, which might take various forms - provision of qualified personnel for training and research; provision of laboratory equipment and genetic material; and the use of International Agricultural Research Centres.