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## La Agenda 21 y la conservación de la biodiversidad

Agenda 21 and the conservation of biodiversity

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La diversidad biológica es la diversidad de la vida, abarcando tanto la diversidad y variabilidad de genes al interior de una población, como las especies, las comunidades y ecosistemas que éstas conforman (McMinn 1991). Actualmente existe creciente preocupación por el estado de la diversidad biológica mundial, en consideración a que actividades como la sobreexplotación y la destrucción de hábitat están amenazándola. De hecho, la riqueza biológica está disminuyendo a tasas crecientes, empobreciendo la biota contemporánea (Wilson 1988).

La extinción de especies y la consecuente pérdida de biodiversidad es un problema biológico y social, por cuanto afecta no sólo la estructura y dinámica de los sistemas vivos, sino que además afecta la base de recursos reales y potenciales, de los cuales la Humanidad obtiene bienes y servicios que redundan en una mejor calidad de vida (McNeely *et al.* 1990). Esta reducción de biodiversidad implica que podrían perderse especies que aún no han sido conocidas por la ciencia (May 1988). De hecho, la riqueza biológica de muchos países y regiones geográficas del mundo no ha sido debidamente estudiada, incluyendo Chile.

La Conferencia de Naciones Unidas sobre Ambiente y Desarrollo (Río de Janeiro, 1992) adoptó una resolución respecto a la conservación de la biodiversidad, dedicándole un capítulo especial dentro del temario abordado. El objetivo de éste, el llamado Capítulo 15 de la Agenda 21, es "mejorar la conservación de la diversidad biológica y el uso sustentable de los recursos biológicos, así como apoyar la Convención sobre Diversidad Biológica". Este capítulo describe las bases que determinan la

necesidad de actuar sobre esta materia, define sus objetivos, las actividades requeridas sobre investigación, formación de recursos humanos, legislación, coordinación nacional, regional e internacional, entre otros.

En Chile, durante 1991, la Comisión Nacional de Investigación Científica y Tecnológica (CONICYT) constituyó, en calidad de cuerpo colegiado asesor, un Comité Nacional de Diversidad Biológica. Entre otras funciones, el Comité debe asesorar a CONICYT en materias de Biodiversidad, incluyendo el ejecutar las acciones pertinentes para determinar la riqueza biológica nacional, el conformar un catastro nacional de investigadores en biodiversidad, el realizar y facilitar la formación de recursos humanos calificados, el identificar y apoyar proyectos en biodiversidad, junto con cualquier otra acción técnica sobre la diversidad biológica. En función de este mandato amplio, el Comité ha estimado adecuado difundir ampliamente el Capítulo 15: Conservación de la Diversidad Biológica. La Secretaría General de la Conferencia de las Naciones Unidas sobre el Medio Ambiente y Desarrollo ha autorizado la publicación del Capítulo 15, atendida la necesidad de dar máxima cobertura a la difusión de lo acordado por los países signatarios de la Agenda 21.

Las proposiciones contenidas en el Capítulo 15 deberán ser consideradas dentro de los planes de conservación de la biodiversidad de cada país. En Chile, el Comité Nacional de Diversidad Biológica estudiará el estado del conocimiento sobre la biodiversidad chilena, la capacidad científica disponible, la demanda de información por diferentes sectores de la sociedad y la capacidad de formar recursos

humanos a través de un taller a realizarse en noviembre 1992 (Simonetti *et al.* en prensa). En este trabajo las recomendaciones del Capítulo 15 serán debidamente consideradas al momento de proponer acciones tendientes a elaborar una política respecto de la investigación y formación de recursos humanos en biodiversidad en Chile.

Conocer y conservar la riqueza biológica es una responsabilidad compartida por todos. Esperamos que la difusión del Capítulo 15 facilite la discusión y proposición de nuevas ideas y acciones sobre la investigación, uso y conservación de la biodiversidad.

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## United Nations Conference on Environment & Development

### 15. CONSERVATION OF BIOLOGICAL DIVERSITY\*

#### BACKGROUND

15.1. The objectives and activities in this chapter of Agenda 21 are intended to improve the conservation of biological diversity and the sustainable use of biological resources, as well as to support the Convention on Biological Diversity.

#### INTRODUCTION

15.2. Our planet's essential goods and services depend on the variety and variability of genes, species, populations and ecosystems. Biological resources feed and clothe us and provide housing, medicines and spiritual nourishment. The natural ecosystems of forests, savannahs, pastures and rangelands, deserts, tundras, rivers, lakes and seas contain most of the Earth's biodiversity. Farmers' fields and gardens are also of great importance as repositories, while gene banks, botanical gardens, zoos and other germplasm repositories make a small but significant contribution. The current decline in biodiversity is largely the result of human activity and represents a serious threat to human development.

#### *Programme Area: Conservation of biological diversity*

15.3. *Basis for action.* Despite mounting efforts over the past 20 years, the loss of the world's biological diversity, mainly from

habitat destruction, over-harvesting, pollution and the inappropriate introduction of foreign plants and animals, has continued. Biological resources constitute a capital asset with great potential for yielding sustainable benefits. Urgent and decisive action is needed to conserve and maintain genes, species and ecosystems, with a view to the sustainable management and use of biological resources. Capacities for the assessment, study and systematic observation and evaluation of biodiversity need to be reinforced at national and international levels. Effective national action and international cooperation are required for the *in situ* protection of ecosystems, for the *ex situ* conservation of biological and genetic resources and for the enhancement of ecosystem functions. The participation and support of local communities are elements essential to the success of such an approach. Recent advances in biotechnology have pointed up the likely potential for agriculture, health and welfare and for environmental purposes of the genetic material contained in plants, animals and micro-organisms. At the same time, it is particularly important in this context to stress that States have the sovereign right to exploit their own biological resources pursuant to their environmental policies, as well as the responsibility to conserve their biodiversity and use their biological resources sustainably, and to ensure that activities within their jurisdiction or control do not cause damage to the biological diversity of other States or of areas beyond the limits of national jurisdiction.

15.4. *Objectives.* Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and regional, intergovernmental and non-governmental organizations, the private sector and financial institutions, and taking into consideration

(\*) This is a final, advanced version of chapter 15 of Agenda 21, as adopted by the Plenary in Rio de Janeiro, on June 14, 1992. This document is subject to further editing and translation into the official languages, and will be published by the United Nations for the 47th Session of the General Assembly.

indigenous people and their communities, as well as social and economic factors, should:

(a) Press for the early entry into force of the Convention on Biological Diversity, with the widest possible participation;

(b) Develop national strategies for the conservation of biological diversity and the sustainable use of biological resources;

(c) Integrate strategies for the conservation of biological diversity and the sustainable use of biological resources into national development strategies and/or plans;

(d) Take appropriate measures for the fair and equitable sharing of benefits derived from research and development and use of biological and genetic resources, including biotechnology, between the sources of those resources and those who use them;

(e) Carry out country studies, as appropriate, on the conservation of biological diversity and the sustainable use of biological resources, including analyses of relevant costs and benefits, with particular reference to socio-economic aspects;

(f) Produce regularly update world reports on biodiversity based upon national assessments;

(g) Recognize and foster the traditional methods and the knowledge of indigenous people and their communities, emphasizing the particular role of women, relevant to the conservation of biological diversity and the sustainable use of biological resources, and ensure the opportunity for the participation of those groups in the economic and commercial benefits derived from the use of such traditional methods and knowledge;<sup>1</sup>

(h) Implement mechanisms for the improvement, generation, development and sustainable use of biotechnology and its safe transfer, particular to developing countries, taking account of the potential contribution of biotechnology to the conservation of biological diversity and the sustainable use of biological resources;<sup>2</sup>

(i) Promote broader international and regional cooperation in furthering scientific and economic understanding of the importance of biodiversity and its functions in ecosystems;

(j) Develop measures and arrangements to implement the rights of countries of origin of genetic resources or countries providing genetic resources, as defined in the Convention

on Biological Diversity, particularly developing countries, to benefit from the biotechnological development and the commercial utilisation of products derived from such resources.<sup>2/8</sup>

### *Activities*

15.5. *Management-related activities.* Governments at the appropriate levels, consistent with national policies and practices, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental organizations and with the support of indigenous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate:

(a) Develop new or strengthen existing strategies, plans or programmes of action for the conservation of biological diversity and the sustainable use of biological resources, taking account of education and training needs;<sup>3</sup>

(b) Integrate strategies for the conservation of biological diversity and the sustainable use of biological and genetic resources into relevant sectoral or cross-sectoral plans, programmes and policies, with particular reference to the special importance of terrestrial and aquatic biological and genetic resources for food and agriculture;<sup>4</sup>

(c) Undertake country studies or use other methods to identify components of biological diversity important for its conservation and for the sustainable use of biological resources, ascribe values to biological and genetic resources, identify processes and activities with significant impacts upon biological diversity, evaluate the potential economic implications of the conservation of biological diversity and the sustainable use of biological and genetic resources, and suggest priority action;

(d) Take effective economic, social and other appropriate incentive measures to encourage the conservation of biological diversity and the sustainable use of biological resources, including the promotion of sustainable production systems, such as traditional methods of agriculture, agroforestry, forestry, range and wildlife management, which use, maintain or increase biodiversity;<sup>4</sup>

(e) Subject to national legislation, take action to respect, record, protect and promote the wider application of the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles for the conservation of biological diversity and the sustainable use of biological resources, with a view to the fair and equitable sharing of the benefits arising, and promote mechanisms to involve those communities, including women, in the conservation and management of ecosystems;<sup>1</sup>

(f) Undertake long-term research into the importance of biodiversity for the functioning of ecosystems and the role of ecosystems in producing goods, environmental services and other values supporting sustainable development, with particular reference to the biology and reproductive capacities of key terrestrial and aquatic species, including native, cultivated and cultured species; new observation and inventory techniques; ecological conditions necessary for biodiversity conservation and continued evolution; and social behaviour and nutrition habits dependent on natural ecosystems, where women play key roles. The work should be undertaken with the widest possible participation, especially of indigenous people and their communities, including women;<sup>1</sup>

(g) Take action where necessary for the conservation of biological diversity through the *in situ* conservation of ecosystems and natural habitats, as well as primitive cultivars and their wild relatives, and the maintenance and recovery of viable populations of species in their natural surroundings, and implement *ex situ* measures, preferably in the source country. *In situ* measures should include the reinforcement of terrestrial, marine and aquatic protected area systems and embrace, *inter alia*, vulnerable freshwater and other wetlands and coastal ecosystems, such as estuaries, coral reefs and mangroves;<sup>5</sup>

(h) Promote the rehabilitation and restoration of damaged ecosystems and the recovery of threatened and endangered species;

(i) Develop policies to encourage the conservation of biodiversity and the sustainable use of biological and genetic resources on private lands;

(j) Promote environmentally sound and sustainable development in areas adjacent to

protected areas with a view to furthering protection of these areas;

(k) Introduce appropriate environmental impact assessment procedures for proposed projects likely to have significant impacts upon biological diversity, providing for suitable information to be made widely available and for public participation, where appropriate, and encourage the assessment of the impacts of relevant policies and programmes on biological diversity;

(l) Promote, where appropriate, the establishment and strengthening of national inventory, regulation or management and control systems related to biological resources, at the appropriate level;

(m) Take measures to encourage a greater understanding and appreciation of the value of biological diversity, as manifested both in its component parts and in the ecosystem services provided.

15.6. *Data and information.* Government at the appropriate level, consistent with national policies and practices, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental organizations and with the support of indigenous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate:<sup>6</sup>

(a) Regularly collate, evaluate and exchange information on the conservation of biological diversity and the sustainable use of biological resources;

(b) Develop methodologies with a view to undertaking systematic sampling and evaluation on a national basis of the components of biological diversity identified by means of country studies;

(c) Initiate or further develop methodologies and begin or continue work on surveys at the appropriate level on the status of ecosystems and establish baseline information on biological and genetic resources, including those in terrestrial, aquatic, coastal and marine ecosystems, as well as inventories undertaken with the participation of local and indigenous people and their communities;

(d) Identify and evaluate the potential economic and social implications and benefits

of the conservation and sustainable use of terrestrial and aquatic species in each country, building upon the results of country studies;

(e) Undertake the updating, analysis and interpretation of data derived from the identification, sampling and evaluation activities described above;

(f) Collect, assess and make available relevant and reliable information in a timely manner and in a form suitable for decision-making at all levels, with the full support and participation of local and indigenous people and their communities.

*15.7. International and regional cooperation and coordination.* Governments at the appropriate level, with the cooperation of the relevant United Nations bodies and, as appropriate, intergovernmental organizations, and with the support of indigenous people and their communities, non-governmental organizations and other groups, including the business and scientific communities, and consistent with the requirements of international law, should, as appropriate:

(a) Consider the establishment or strengthening of national or international capabilities and networks for the exchange of data and information of relevance to the conservation of biological diversity and the sustainable use of biological and genetic resources;<sup>6</sup>

(b) Produce regularly updated world reports on biodiversity based upon national assessment in all countries;

(c) Promote technical and scientific cooperation in the field of conservation of biological diversity and the sustainable use of biological and genetic resources. Special attention should be given to the development and strengthening of national capabilities by means of human resource development and institution-building, including the transfer of technology and/or development of research and management facilities, such as herbaria, museums, gene banks, and laboratories, related to the conservation of biodiversity;<sup>7</sup>

(d) Without prejudice to the relevant provisions of the Convention on Biological Diversity, facilitate for this chapter the transfer of technologies relevant to the conservation of biological diversity and the sustainable use of biological resources or technologies that make use of genetic resources and cause no

significant damage to the environment, in conformity with Chapter 34, and recognising that technology includes biotechnology;<sup>27</sup>

(e) Promote cooperation between the parties to relevant international conventions and action plans with the aim of strengthening and coordinating efforts to conserve biological diversity and the sustainable use of biological resources;

(f) Strengthen support for international and regional instruments, programmes and action plans concerned with the conservation of biological diversity and the sustainable use of biological resources;

(g) Promote improved international coordination of measures for the effective conservation and management of endangered/non-pest migratory species, including appropriate levels of support for the establishment and management of protected areas in transboundary locations;

(h) Promote national efforts with respect to surveys, data collection, sampling and evaluation, and the maintenance of gene banks.

#### *Means of implementation*

*15.8. Financing and cost evaluation.* The UNCED Secretariat has estimated the average total annual cost (1993-2000) of implementing the activities of this Chapter to be about \$ 3.5 billion including about \$ 1.75 billion from the international community on grant or concessional terms. These are indicative and order of magnitude estimates only and have not been reviewed by governments. Actual costs and financial terms, including any that are non-concessional, will depend upon, *inter alia*, the specific strategies and programmes governments decide upon for implementation.

*15.9. Scientific and technological means.* Specific aspects to be addressed include the need to develop:

(a) Efficient methodologies for baseline surveys and inventories, as well as for the systematic sampling and evaluation of biological resources;

(b) methods and technologies for the conservation of biological diversity and the sustainable use of biological resources;

(c) Improved and diversified methods for *ex situ* conservation with a view to the

long-term conservation of genetic resources of importance for research and development.

15.10 *Human resource development*. There is a need, where appropriate, to:

(a) Increase the number and/or make more efficient use of trained personnel in scientific and technological fields relevant to the conservation of biological diversity and the sustainable use of biological resources;

(b) Maintain or establish programmes for scientific and technical educational and training of managers and professionals, especially in developing countries, on measures for the identification, conservation of biological diversity and the sustainable use of biological resources;

(c) Promote and encourage understanding of the importance of the measures required for the conservation of biological diversity and the sustainable use of biological resources at all policy-making and decision-making levels in Governments, business enterprises and lending institutions, and promote and encourage the inclusion of these topics in educational programmes.

15.11 *Capacity-building*. There is a need, where appropriate, to:

(a) Strengthen existing institutions and/or establish new ones responsible for the conservation of biological diversity and to consider the development of mechanisms such as national biodiversity institutes or centres;

(b) Continue to build capacity for the conservation of biological diversity and the sustainable use of biological resources in all relevant sectors;

(c) Build capacity, especially within Governments, business enterprises and bilateral and multilateral development agencies, for integrating biodiversity concerns, potential benefits and opportunity cost calculations into project design, implementation and evaluation processes, as well as for evaluating the impact on biological diversity of proposed development projects;

(d) Enhance the capacity of governmental and private institutions, at the appropriate level, responsible for protected area planning and management to undertake intersectoral coordination and planning with other governmental institutions, non-governmental organizations and, where appropriate, indigenous people and their communities.

#### NOTES

- 1 See chap. 26 (Recognizing and strengthening the role of indigenous people and their communities) and chap. 24 (Global action for women towards sustainable and equitable development).
- 2 See chap. 16 (Environmentally sound management of biotechnology).
- 3 See chap. 36 (Promoting education, public awareness and training).
- 4 See chap. 14 (Promoting sustainable agriculture and rural development) and chap. 11 (Combating deforestation).
- 5 See chap. 17 (Protection of the oceans, all kinds of seas, including enclosed and semi-enclosed seas, and coastal areas and the protection, rational use and development of their living resources).
- 6 See chap. 40 (Information for decision-making).
- 7 See chap. 34 (Transfer of environmentally sound technology, cooperation and capacity building).
- 8 Article 2 "Use of terms" of the Convention on Biological Diversity includes the following definitions:—  
 "Country of origin of genetic resources" means the country which possesses those genetic resources in *in situ* conditions.  
 "Country providing genetic resources" means the country supplying genetic resources collected from *in situ* sources, including populations of both wild and domesticated species, or taken from *ex situ* sources, which may or may not have originated in that country.