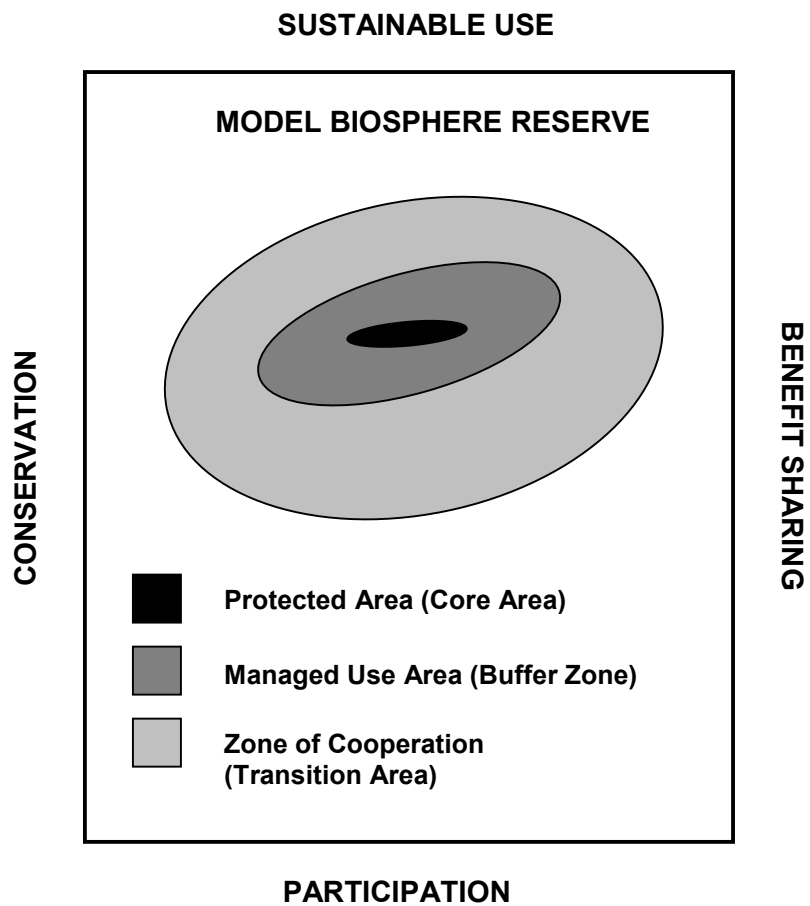


Lothar Gündling

**IMPLEMENTING THE CONVENTION  
ON BIOLOGICAL DIVERSITY ON THE GROUND -  
THE EXAMPLE OF BIOSPHERE RESERVES**



**IMPLEMENTING  
THE CONVENTION ON BIOLOGICAL DIVERSITY  
ON THE GROUND**

-

**THE EXAMPLE OF BIOSPHERE RESERVES**

**Study prepared by**

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## 1 Background and objectives of the study

### 1.1 The Convention on Biological Diversity

The Convention on Biological Diversity signed at the United Nations Conference on Environment and Development in 1992 and recognized today by almost all nations as binding reflects a **new approach to conservation** in various respects:

- The Convention deals comprehensively with **all aspects of conservation**; it deals with conservation of nature and natural resources, with protection of species and their habitats and other areas worth of protection; it aims at establishing a system of protected areas by which ecosystems forming the basis of life on earth globally can be preserved or can be restored so that they can fulfil their functions.
- The Convention deals with both the conservation of biological diversity and the **sustainable use** of its components; it requires the Parties to the Convention to protect biological diversity where necessary and to allow for the use of its components where this is feasible and sustainable.
- The Convention, beyond conservation and sustainable use of biodiversity, addresses aspects of **social justice** by providing mechanisms of **sharing the benefits** from the use of biological resources, particularly genetic resources; it undertakes to ensure that all nations, developed and developing nations alike, as well as all stakeholders, national governments and local and indigenous communities, benefit from the use of biological resources wherever and whenever this use is sustainable.

It may be fair to state that the Convention on Biological Diversity is more than a legal instrument for conservation. Looking at the objectives, the approaches and instruments, and the rules and requirements provided, the Convention intends to bring about new attitudes of man towards nature and natural resources. It requires protection and allows sustainable use, both being possible only if careful management is practised. Thus the Convention may be considered not only an instrument for conservation but also an instrument aiming at rational planning and prudent use of natural resources.

Some 30 years ago the 16th UNESCO General Conference on 23 October 1970 adopted the **Programme „Man and the Biosphere“ (MAB)** which was a programme to lay down the scientific basis for sustainable development and conservation of natural resources of the biosphere. From the very beginning it was designed as a programme, which looked at both, **conservation and sustainable use of natural resources**. Human behaviour and human activities were included from the outset – an early attempt to integrate ecological and economic aspects.

### 1.2 „Biosphere Reserves“

In 1971 it was decided to use the term „Biosphere reserves“ for the landscape areas declared by UNESCO for purposes of the MAB Programme. A UNESCO Task Force worked out the concept of biosphere reserves in 1974. In 1976 the international biosphere reserve network was launched which today includes more than 300 biosphere reserves in all parts of the world. Biosphere reserves were perceived as tools to implement the objectives of the MAB. They were defined as large and representative parts of the natural

## Background and objectives of the study

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and cultural landscape. The international network of biosphere reserves was to protect the ecosystem types and the biogeographical units of the earth<sup>1</sup>.

Biosphere reserves were considered „a key component of the MAB’s objective for achieving a sustainable balance between the sometimes conflicting goals of conserving biological diversity, promoting economic development and maintaining associated cultural values.“<sup>2</sup>

After the Rio Conference in 1992 and the signing and entry-into-force of the Convention on Biological Diversity the similarities or more precisely: the **common concept** reflected in the two „regimes“ became apparent.

The MAB International Coordination Council at its 12<sup>th</sup> session in January 1993 decided on five priority subjects, which were to further develop the MAB Programme 14 Project Areas. These priority subjects were:

- Protection of biodiversity and ecological processes;
- Elaboration of strategies for sustainable use;
- Promotion of information and environmental education;
- Establishment of a training structure;
- Establishment of a global environmental monitoring system.

These priority subjects were to be implemented basically in biosphere reserves.<sup>3</sup>

The International Conference on Biosphere Reserves, held in Seville from 20 to 25 March 1995, based upon Resolution 27/C/2.3 of the UNESCO General Conference, drew up the „**Seville Strategy**” for **Biosphere Reserves** and the „**Strategy for Biosphere Reserves as well as the Statutory Framework for the World Network of Biosphere Reserves**”. Both documents make various explicit links to the Convention on Biological Diversity:

- The first chapter „Biosphere reserves: the first twenty years“ quoting the major objectives of the Convention on Biological Diversity states that „Biosphere reserves promote this integrated approach and are thus well-placed to contribute to the implementation of the Convention.“
- The chapter „The vision from Seville for the 21<sup>st</sup> century“ refers to the Rio Conference of 1992 and the major texts adopted at the Conference (Agenda 21, Convention on Biological Diversity and Framework Convention on Climate Change) and states that the global community „needs working examples that encapsulate the ideas of UNCED for promoting both conservation and sustainable development. These examples can only work if they express all the social, cultural, spiritual and economic needs of society and are also based on sound science. ... Biosphere reserves offer such models. Rather than forming islands in a world increasingly affected by severe human impacts, they can become theatres for reconciling people and nature; they can bring knowledge of the past to the needs of the fu-

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<sup>1</sup> Staendige Arbeitsgruppe der Biosphaerenreservate in Deutschland, Biosphaerenreservate in Deutschland, Leitlinien fuer Schutz, Pflege und Entwicklung, Berlin/Heidelberg, 1995, p. 4-5.

<sup>2</sup> Seville Strategy for Biosphere Reserves 1995

<sup>3</sup> Arbeitsgruppe, Biosphaerenreservate in Deutschland, p. 4.

ture; and they can demonstrate how to overcome the problems of the sectoral nature of our institutions. In short biosphere reserves are much more than just protected areas.“

- The 10 „key directions“ considered to be the foundations of the new strategy include: „(1) Strengthen the contribution that biosphere reserves make to the implementation of international agreements promoting conservation and sustainable development, especially to the Convention on Biological Diversity and other agreements, such as those on climate change, desertification and forests.“ And: „(7) Reflect more fully the human dimensions of biosphere reserves. Connections should be made between cultural and biological diversity. Traditional knowledge and genetic resources should be conserved, and their role in sustainable development should be recognized and encouraged.“
- The Strategy, Goal I, Objective I.2 recommends as measures to be taken at the national level: „2. Integrate biosphere reserves in strategies for biodiversity conservation and sustainable use, in plans for protected areas, and in the national biodiversity strategies and action plans provided for in Article 6 of the Convention on Biological Diversity.“ And: „3. When applicable, include projects to strengthen and develop biosphere reserves in programmes, to be initiated and funded under the Convention on Biological Diversity, and other multilateral conventions.“ In Goal II, Objective II.1, the Strategy recommends at the national level: „2. Incorporate biosphere reserves into plans for implementing the sustainable use goals of Agenda 21 and the Convention on Biological Diversity.“
- The Statutory Framework of the World Network of Biosphere Reserves provides in Article 2 para. 2: „The Network constitutes a tool for the conservation of biological diversity and the sustainable use of its components, thus contributing to the objectives of the Convention on Biological Diversity and other pertinent Conventions and instruments.“

### 1.3 Convergence of concepts

The links between the Convention on Biological Diversity and the concept of biosphere reserves are as numerous as they are evident, and the international community of conservation, especially UNESCO and the MAB Programme are increasingly aware of it. What is needed today is the broadening and deepening of this awareness followed by practice, which is oriented towards implementation of the two „regimes“ in such a way that both are mutually supportive. Biosphere reserves established and managed in many countries around the world appear to be an important practice upon which the implementation of the Convention on Biological Diversity can build. We need ideas and strategies for bringing together establishment and management of biosphere reserves and the implementation of the Convention on Biological Diversity. Biosphere reserves can and should be used more to make the important objectives of the Convention a reality.

It is an extremely fascinating and challenging issue. The present study attempts to make a start to take up the challenge; it is however not more than a very first step. Its objectives are modest; it is to reflect on where analysis may go and to illustrate how the two „regimes“ are linked to each other. The study undertakes to compare the concepts upon which the Convention on Biological Diversity on the one hand and the biosphere reserves on the other are based. Also, it looks at the experience of three biosphere reserves in Germany (Pfaelzer Wald, Rhoen and Suedost-Ruegen) using them as examples or case studies.

## Background and objectives of the study

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Next steps may include:

- Broadening the analysis by considering more case studies, in particular case studies from around the world;
- Based on such broad analysis, development of strategies on how biosphere reserves can best be used to contribute to the objectives of the Convention on Biological Diversity, preferably by preparing practical guides designed for political decision-makers, administrators and managers.

## 2 The Convention on Biological Diversity: basic elements of the concept

### 2.1 Conservation, sustainable use, sharing of benefits

The Convention on Biological Diversity, signed at the United Nations Conference on Environment and Development in 1992, entered into force on 29 December 1993. Today it is an almost universal legal instrument being ratified or adhered to by more than 180 Parties (states, regional economic integration organisations and the EU).<sup>4</sup>

In accordance with Article 1 of the Convention the objectives are:

- the conservation of biological diversity;
- the sustainable use of its components and
- the fair and equitable sharing of the benefits arising out of the utilization of genetic resources.

The Convention on Biological Diversity intends to overcome the traditional dichotomy of ecology and economy by requiring conservation of biological diversity where necessary (Art. 8 u. 9) and allowing for sustainable use (Art. 10) of its components where possible. Biological diversity is described in terms of three levels:

1. Genetic diversity,
2. Species diversity,
3. Ecosystem diversity.<sup>5</sup>

Article 2 of the Convention on Biological Diversity therefore contains the following definition:

„Biological diversity means the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems. „

The Convention on Biological Diversity sets out a **framework for conservation and sustainable use of biological diversity**. It begins with planning requirements making it a duty of the Parties to plan for conservation and sustainable use and integrate these plans in development plans (Article 6). It requires to identify the components of biodiversity and thus provide for a solid basis of planning and plan-implementation (Article 7). It sets out an entire programme for in-situ conservation and requires, as complementary approaches, ex-situ measures (Articles 8 and 9 respectively). To meet the sustainable use objectives Parties have to ensure sustainability of uses of flora and fauna (Article 10). Finally, Parties are under the obligation to ensure that processes which may undermine or threaten to undermine conservation and sustainable use of biodiversity are controlled using Environmental Impact Assessment (EIA) procedures, interestingly for both, projects and plans as well as strategies and programmes (Article 14).

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<sup>4</sup> For current state of ratifications see: [www.CBD.org](http://www.CBD.org)

<sup>5</sup> Glowka/Burhenne-Guilmin/Synge (1994), A Guide to the Convention on Biological Diversity, p. 16, for more details.

**Genetic resources** are the „raw material” for many modern technological developments such as biotechnology and genetic engineering. Most companies in these sectors are seated in developed countries while the important part of biological diversity concentrates in developing countries. This raises issues of equity and social justice and forms the background for the inclusion in the Convention of mechanisms of sharing the benefits from the use of genetic resources. In the past, most developing countries felt that they did not benefit from the „ecological treasure“ which could be found in their flora and fauna.

To address disproportionality and to strengthen the position of the developing countries the Convention on Biological Diversity now regulates access to genetic resources (Art. 15) and creates various obligations to transfer technology (Art. 16), as can be seen from the following box.

Box No. 1

*Article 15. Access to Genetic Resources*

1. Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.
2. Each Contracting Party shall endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of this Convention.
3. For the purpose of this Convention, the genetic resources being provided by a Contracting Party, as referred to in this Article and Articles 16 and 19, are only those that are provided by Contracting Parties that are countries of origin of such resources or by the Parties that have acquired the genetic resources in accordance with this Convention.
4. Access, where granted, shall be on mutually agreed terms and subject to the provisions of this Article.
5. Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party.
6. Each Contracting Party shall endeavour to develop and carry out scientific research based on genetic resources provided by other Contracting Parties with the full participation of, and where possible in, such Contracting Parties.
7. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, and in accordance with Articles 16 and 19 and, where necessary, through the financial mechanism established by Articles 20 and 21 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. Such sharing shall be upon mutually agreed terms.

*Article 16. Access to and Transfer of Technology*

1. Each Contracting Party, recognizing that technology includes biotechnology, and that both access to and transfer of technology among Contracting Parties are essential elements for the attainment of the objectives of this Convention, undertakes subject to the provisions of this Article to provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment.
2. Access to and transfer of technology referred to in paragraph 1 above to developing countries shall be provided and/or facilitated under fair and most favourable terms, including on concessional and

preferential terms where mutually agreed, and, where necessary, in accordance with the financial mechanism established by Articles 20 and 21. In the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided on terms, which recognize and are consistent with the adequate and effective protection of intellectual property rights. The application of this paragraph shall be consistent with paragraphs 3, 4 and 5 below.

3. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that Contracting Parties, in particular those that are developing countries, which provide genetic resources are provided access to and transfer of technology which makes use of those resources, on mutually agreed terms, including technology protected by patents and other intellectual property rights, where necessary, through the provisions of Articles 20 and 21 and in accordance with international law and consistent with paragraphs 4 and 5 below.
4. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilitates access to, joint development and transfer of technology referred to in paragraph 1 above for the benefit of both governmental institutions and the private sector of developing countries and in this regard shall abide by the obligations included in paragraphs 1, 2 and 3 above.
5. The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives.

As a framework convention the Convention on Biological Diversity does not regulate all aspects of conservation and sustainable use as well as the issues of benefit sharing in full details and therefore requires further implementation, both at the national and the international level.<sup>6</sup> The Convention on Biological Diversity is a framework agreement in two respects: Neither are the provisions expressed as „hard” and specific obligations as in, for example, the CITES<sup>7</sup>. Nor does the Convention on Biological Diversity intend to set specific targets, as does, for example, the 1992 European Directive on the Protection of Natural and Semi-natural Habitats and of Wild Fauna and Flora<sup>8</sup>, which lists hundreds of species which should be restored at „satisfactory levels“.<sup>9</sup>

Therefore, the Convention on Biological Diversity will practically be as effective only as **implementation** will be at the national and international level. At the national level, the corresponding laws, regulations, ordinances, contracts and other relevant legal instruments have to be harmonized where existing, or be established where not yet available. At the international level the Convention on Biological Diversity envisages further agreements, called protocols, for example on biological safety<sup>10</sup> forestry conservation and sustainable use, marine biodiversity conservation or sustainable tourism. The recent negotiations on the Biosafety Protocol have demonstrated how difficult it is to work out a binding international agreement containing „hard” and precise obligations to address economically sensitive matters.

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<sup>6</sup> Gündling (1995), Die Biodiversitätskonvention, in: GTZ (Hrsg.), Biologische Vielfalt erhalten, p. 23.

<sup>7</sup> Convention on International Trade in Endangered Species of Wild Fauna and Flora

<sup>8</sup> Official Journal EC, 22/7/1992 No. L 206/7.

<sup>9</sup> Glowka/Burhenne-Guilmin/Syngé (1994), A Guide to the Convention on Biological Diversity, p. 1.

<sup>10</sup> See Art. 19 III Convention on Biological Diversity.

## 2.2 Regulating conservation and sustainable use of biodiversity

As pointed out, the Convention aims at both, the protection and the sustainable use of nature. Relevant provisions of the Convention on Biological Diversity in this context are Art. 6 and 7, 8, 9 and 10. Therefore we take a closer look on the obligations, which these provisions contain:

### Planning

An essential tool of biodiversity conservation and sustainable use is planning. Under the heading of „general measures for the conservation and sustainable use“ (Art. 6) the Convention on Biological Diversity requires:

- to develop national strategies, plans and programmes, and
- to integrate conservation and sustainable use of biodiversity into relevant sectoral and cross-sectoral plans, programmes and policies.

Article 6 requires a two-step approach: to establish biodiversity strategies, plans and programmes and to integrate these strategies, plans and programmes into development plans. Integrated planning implies that the various plans established influence each other: development planning must consider biodiversity aspects and conversely, biodiversity planning must take into account developmental aspects.

### *In-Situ* - Conservation

Article 8 concerns protection of biological diversity in its natural surroundings; it is the main pillar of the conservation framework in the Convention.<sup>11</sup>

The in-situ conservation obligations contained in the CBD are clearly given priority. „In-situ conservation“ is defined in Article 2 as:

*„the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties“.*

Article 8 (a) - (m) provides for a complex programme of obligations of the Parties concerning the in-situ conservation. The most important obligations are:

- establishment of a system of protected areas where special measures need to be taken;
- regulation or management of biological resources important for the conservation of biological diversity whether within or outside protected areas;
- protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings;
- promotion of environmentally sound and sustainable development in areas adjacent to protected areas;
- rehabilitation and restoration of degraded ecosystems;

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<sup>11</sup> Swanson (1997), Global Action for Biodiversity, p. 82.

- establishment and maintenance of means to regulate, manage or control the risks of living modified organisms;
- control of introduction of alien species;
- protection of threatened species and populations;
- regulation and management of processes and categories which have significant adverse effects on biological diversity;
- respect, preservation and maintenance of knowledge, innovations and practices of indigenous and local communities.

### **Ex-Situ Conservation**

Measures of ex-situ conservation are to complement the in-situ measures required under the Convention. The Convention defines in Article 2:

*„Ex-situ conservation means the conservation of components of biological diversity outside their natural habitats“.*

Ex-situ measures include the establishment and maintenance of facilities for ex-situ conservation of and research on plants, animals and micro-organisms, recovery and rehabilitation of threatened species and their reintroduction into their natural habitats and the regulation and management of collection of biological resources from natural habitats for ex-situ conservation purposes.<sup>12</sup> The Convention clearly indicates the preference for ex-situ conservation measures in the country of origin.<sup>13</sup>

### **Sustainable use**

Article 10 of the Convention addresses the issues of sustainable use of components of biological diversity. In Article 2 the Convention defines:

*„Sustainable use means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations“.*

Parties are under the general obligation to integrate conservation and sustainable use into national decision-making. The Convention, again, recognizes the interdependence of both: **Conservation cannot be successful if it does not take up, where feasible, considerations of use; use of components of biodiversity cannot be sustainable if conservation necessities are not respected.** By qualifying biodiversity as a resource one takes into account the economic needs of the people; this creates consciousness that biodiversity is worth being protected, not only because of its intrinsic value but also for its economic potential.

According to Article 10 (a) - (e) of the Convention each Party shall:

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<sup>12</sup> Article 9 (b), (c), (d).

<sup>13</sup> See Article 9 (a) and (b).

## The Convention on Biological Diversity: basic elements of the concept

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- integrate consideration of conservation and sustainable use of biological resources into national decision-making;
- adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity;
- protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;
- support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and
- encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable uses of biological resources.

Article 10 of the Convention on Biological Diversity is a considerable challenge to national legislation, for example on legislation on forestry or wildlife. In the past, such legislation often was use-oriented without taking into account modern requirements of conservation. Therefore in most countries there are good reasons to review and revise legislation on the use of components of biodiversity such as wildlife, forestry, fisheries, collection of fruits and natural products and the like.

Special efforts will be necessary to preserve traditional cultural practices. In many cases they have proven to be environmentally sound; however, it has also been proven that, under an economic point of view, they are often not profitable.

### 3 The Biosphere Reserve: basic elements of the concept

#### 3.1 The UNESCO MAB Programme

##### Evolution of the UNESCO MAB Programme

As early as in 1970, at its 16<sup>th</sup> General Conference, the United Nations Educational, Scientific and Cultural Organisation (UNESCO) established the *Man and the Biosphere (MAB) Programme* as an international, interdisciplinary programme to develop and improve the basis for sustainable use and for effective conservation of the biosphere's natural resources.<sup>14</sup> An International Co-ordinating Council was established as the body responsible for the implementation of the programme.<sup>15</sup>

Acknowledging that conserving biological diversity, promoting economic development, and maintaining associated cultural values often prove to be conflicting goals, a Task Force of the MAB Programme developed the concept of biosphere reserves in 1974. Subsequently a network of biosphere reserves was launched in 1976.

Over the years, efforts increased to enhance the functioning of the network and further develop the concept of biosphere reserves within the MAB Programme. In 1984, an Action Plan for Biosphere Reserves was endorsed by the UNESCO General Conference and by the Governing Council of UNEP.<sup>16</sup>

The Earth Summit in Rio de Janeiro in 1992, with the adoption of the Convention on Biological Diversity, and other major international environmental instruments, gave another input to the development of the MAB Programme and the concept of biosphere reserves. At that time, an Advisory Committee for Biosphere Reserves had been established by the Executive Board of UNESCO, which found that it was time to evaluate the effectiveness of the 1984 Action Plan, to analyze its implementation, and to develop a strategy for biosphere reserves as the world moved towards the 21st Century.

##### Seville Strategy

In accordance with Resolution 27/C/2.3 of the General Conference, UNESCO organised the International Conference on Biosphere Reserves, held from 20 to 25 March 1995, at the invitation of the Spanish authorities in Seville (Spain). The Conference, assembling some 400 experts from 102 countries and 15 international and regional organisations, drew up the *Seville Strategy for Biosphere Reserves* and elaborated a draft *Statutory Framework for the World Network of Biosphere Reserves*, both adopted by the UNESCO General Conference in November 1995.<sup>17</sup>

The Seville Strategy identifies the specific role of biosphere reserves in developing a new vision of the relationship between conservation and development. It provides recommendations for developing effective biosphere reserves addressing the different political levels, i.e. the international (including regional),

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<sup>14</sup> UNESCO, General Conference, 16th Sess., Resolution 2.313 (1970) – Records of the General Conference, 16th Session, Paris, 12 Oct. – 14 Nov. 1970, Vol. I (Resolutions), p. 35–38.

<sup>15</sup> Article IV of the Statutes of the International Co-ordinating Council of the Programme on Man and the Biosphere, Annex to Resolution 2.313.

<sup>16</sup> The 1984 Action Plan was a result of the First International Biosphere Reserve Congress jointly convened, in Minsk (Belarus), by UNESCO and UNEP, in cooperation with FAO and IUCN, in 1983.

<sup>17</sup> The „Seville Strategy” and the Statutory Framework for the World Network of Biosphere Reserves (hereinafter: Statutory Framework) are reproduced in the Annexes of the Study.

national and the level of the individual reserve. It sets out the conditions for the appropriate functioning of the World Network of Biosphere Reserves (hereinafter: Network), including the recommendation of „implementation indicators”, i.e. a check-list of actions that will enable all involved to follow and evaluate the implementation of the Strategy.<sup>18</sup>

The Statutory Framework outlines the criteria and procedure of designation according to which terrestrial or coastal/marine ecosystems or a combination thereof can be recognised as biosphere reserve within the MAB Programme.<sup>19</sup>

### **Objectives, functions and criteria of Biosphere Reserves**

According to the Preamble („Introduction”) of the Statutory Framework, the overall objective of biosphere reserves within the MAB Programme is to promote and demonstrate a **balanced relationship between humans and the biosphere**.<sup>20</sup>

Each biosphere reserve should encompass a „mosaic of ecological systems” which is representative of major biogeographic regions.<sup>21</sup> It is intended to fulfil three basic functions, which are complementary and mutually re-inforcing:

- conservation function,
- development function, and
- logistic function.

Its conservation function is to prescribe genetic resources, species, ecosystems and landscapes. Its development function is to foster sustainable economic and human development. Its logistical support function is to facilitate demonstration projects, environmental education and training, and research and monitoring.<sup>22</sup>

Physically, each biosphere reserve should contain three elements:

1. one or more *core areas*, which are securely protected sites for conserving biological diversity, monitoring minimally disturbed ecosystems, and undertaking non-destructive research and other low-impact uses (such as education);
2. clearly identified *buffer zones*, which usually surround or adjoin the core areas, and are used for cooperative activities compatible with sound ecological practices, including environmental education, recreation, ecotourism and applied and basic research; and
3. flexible *transition areas*, or areas of cooperation, which may contain a variety of agricultural activities, settlements and other uses and in which local communities, management agencies, scientists, non-governmental organizations, cultural groups, economic interests and other stakeholders work together to manage and sustainably develop the area's resources.<sup>23</sup>

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<sup>18</sup> For a detailed description of the Sevilla Strategy see UNESCO's MAB-website in the Internet, <http://www.unesco.org/mab/stry-1.htm>.

<sup>19</sup> Statutory Framework, see below, Annex III.

<sup>20</sup> Introduction of the Statutory Framework, first paragraph.

<sup>21</sup> Statutory Framework, Article 4.1.

<sup>22</sup> Statutory Framework, Article 3.

<sup>23</sup> Statutory Framework, Article 4.5.

Thus, though containing one or several securely protected site or sites (core areas), the biosphere reserve in the whole is not designed to be an area of strict conservation of nature, but rather should include a gradation of human interventions.<sup>24</sup>

### **The designation procedure**

Biosphere reserves are nominated by national governments for inclusion in the Network by the International Co-ordinating Council (ICC) of the MAB programme. The designation procedure basically is as follows:<sup>25</sup>

- (a) States, through National MAB Committees where appropriate, forward nominations with supporting documentation to the Secretariat after having reviewed potential sites, taking into account the criteria as defined in Article 4;
- (b) The Secretariat verifies the content and supporting documentation: in the case of incomplete nomination, the Secretariat requests the missing information from the nominating State;
- (c) Nominations will be considered by the Advisory Committee for Biosphere Reserves for recommendation to ICC
- (d) The ICC of the MAB programme takes a decision on nominations for designation. The Director-General of UNESCO notifies the State concerned of the decision of ICC.

States are encouraged to examine and improve the adequacy of any existing biosphere reserve, and to propose extension as appropriate, to enable it to function fully within the Network. Proposals for extension follow the same procedure as described above for new designations.

Besides the mentioned provisions, the Statutory Framework further addresses participation in the Network (Article 7), regional and thematic sub-networks (Article 8) as well as the periodic review of the status of each biosphere reserve (Article 9).

As of 2000, 368 sites in 91 countries have been designated as biosphere reserves and included in the Network by the International Co-ordinating Council of the MAB Programme.<sup>26</sup>

From 23 to 27 October 2000 the meeting „Seville + 5” was held in Pamplona, Spain. The purpose was to monitor the implementation of the Seville Strategy during the first five years. A series of recommendations resulted from the meeting, addressing MAB National Committees, the regional biosphere networks, the biosphere reserve managers/coordinators, and the MAB Secretariat. One of the recommendations of particular interest in this context is given in the box below:

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<sup>24</sup> Statutory Framework, Article 4.1.

<sup>25</sup> Statutory Framework, Article 5.

<sup>26</sup> A list of all recognized biosphere reserves is available at <http://www.unesco.org/mab/brlist.htm>.

*Seville + 5 Meeting (2000), Rec. No. 4*

*Biosphere Reserve as models for land management and approaches to sustainable development*

Recommendations

Site and national authorities should strengthen the involvement and participation of local people in sustainable resource management and development through training, participatory rural appraisals and community workshops. Only when the local communities and NGOs become active partners in planning, management and decision making within biosphere reserves, can it be said that support from local people has been truly secured.

The knowledge of social sciences is crucial for gaining support from the local communities. National authorities should make a greater effort to improve interdisciplinary studies, particularly those bringing together natural sciences and social sciences, within their biosphere reserves.

Site and national authorities should develop and use national and local information systems, where applicable, as a basis for promoting integrated land management and approaches to sustainable development in biosphere reserves. These systems should enhance information exchange among resource users, and take advantage of all forms of knowledge, especially indigenous knowledge.

National authorities, aided where appropriate by the Secretariat, should develop technical guidelines for land use and land tenure in biosphere reserves, as well as guidelines for the use of marine resources, based on experience from different countries. These technical guidelines should address the issue of conflict resolution in land use and land management practices.

Biosphere reserves should have clearly stated management objectives (in accordance with the biosphere reserve zonation) which serve to integrate the biosphere reserve in regional planning, including in coastal marine areas. These management objectives should also include socio-economic dimensions. For this, site and national authorities should assist the implementation of the BRIM process. National authorities assisted where appropriate by the Secretariat should develop indicators for evaluating and monitoring the progress of biosphere reserves in pursuing sustainable development at the regional scale.

Regional planning must involve all stakeholder groups. In order to ensure equal participation of these stakeholder groups, national authorities should help to build technical capacity to design, raise funds, and implement biosphere reserve activities.

Site and national authorities should compile and publish successful experience of integrating biosphere reserves into regional planning.

### 3.2 Biosphere Reserves in Germany

The Statutory Framework is a - non-binding - regulatory framework; states are explicitly encouraged to elaborate and implement national criteria for biosphere reserves on their territory. These national criteria may and have to take into account the special conditions of the State concerned.<sup>27</sup> In Germany, national criteria for designation and evaluation of biosphere reserves<sup>28</sup> as well as guidelines<sup>29</sup> for protection, maintenance and development of the German biosphere reserves have been developed by the German National MAB Committee.<sup>30</sup> Worldwide, there are more than 120 National MAB Committees in UNESCO member states, nominated by the respective governments. Usually comprising representatives of the different governmental levels (national, provincial, state, county etc.) and other relevant public authorities as well as representatives of environmentally relevant scientific disciplines (research institutions etc.), they have the key role in implementation of the MAB Programme at the national level.

In the **Criteria for Designation and Evaluation of Biosphere Reserves** the German National MAB Committee has laid down the criteria of the Statutory Framework, in a more detailed manner:

- As to representativeness, the German Criteria require the biosphere reserve to contain ecosystem complexes that are not yet sufficiently well-represented in biosphere reserves in Germany;<sup>31</sup>
- As to size, the biosphere reserves should, as a rule, comprise at least 30,000 ha and not more than 150,000 ha;<sup>32</sup> and
- As to the three types of zones, mentioned in Article 4.5 of the Statutory Framework, the German Criteria require that the core area must take up at least 3%, the buffer zone at least 10%, and the transition area at least 50% of the total area.<sup>33</sup> The core area should be surrounded by the buffer zone, and it must be legally protected as a national park or nature reserve under German law<sup>34</sup>

Currently, there are fourteen biosphere reserves designated within the MAB Programme in Germany,<sup>35</sup> whereby one, by now, constitutes a transfrontier biosphere reserve, together with a French biosphere reserve.<sup>36</sup> Three of the German biosphere reserves are described in more details below.

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<sup>27</sup> Introduction of the Statutory Framework, last paragraph.

<sup>28</sup> Criteria for Designation and Evaluation of Biosphere Reserves, published by the German National Committee for the UNESCO MAB Programme, Federal Agency for Nature Conservation, Stefan Weidenhammer (ed.), Bonn 1996, (hereinafter: German Criteria).

<sup>29</sup> Guidelines for Protection, Maintenance and Development of the German Biosphere Reserves (Excerpt in English language), published by the Standing Working Group of the Biosphere Reserves in Germany, Bonn, 1995.

<sup>30</sup> The German National MAB Committee was founded in 1972. It is linked to the Standing Working Group of the Biosphere Reserves in Germany, which co-ordinates the administration of the different biosphere reserves in Germany.

<sup>31</sup> Criterion (1), German Criteria, p.7.

<sup>32</sup> Criterion (2), German Criteria, p.7.

<sup>33</sup> Criteria (4), (5), and (7), German Criteria, p.7.

<sup>34</sup> Criteria (6) and (9), German Criteria, p.7.

<sup>35</sup> For a list of the biosphere reserves in Germany as well as a map showing their location, see <http://www.unesco.org/mab/br/brdir/europe-n/germany.htm> (including links to the individual biosphere reserves). For status and characteristics of the individual biosphere reserves in Germany see also Guidelines, pp. 19 et seq.

Recently the **Federal Nature Conservation Act** (Bundesnaturschutzgesetz) has been amended to include, in the categories of protected areas, also the concept of biosphere reserves (Section 14a of the Act). The definition basically follows the internationally recognized terminology. The interesting point is that **the law treats biosphere reserves as a category of protected areas**. The law, while recognizing the peculiarities of biosphere reserves still requires the Laender to protect them „like nature protection areas (Naturschutzgebiete) or landscape protection areas (Landschaftsschutzgebiete)“ (Section 14a para. 2 of the Act).

This recent legislative development definitely merits a more careful analysis; its history as well as its implications is worth being described. However, the present study, at this point of time, cannot provide such analysis.

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<sup>36</sup> The German biosphere reserve „Naturpark Pfälzerwald“ and the adjacent French biosphere reserve „Parc Naturel Régional des Vosges du Nord“ were approved as transfrontier biosphere reserve within the MAB Programme in 1998.

## 4 Examples of biosphere reserves in Germany

### 4.1 The Biosphere Reserve „Naturpark Pfaelzerwald”

#### Size and location

The *Biosphere Reserve „Naturpark Pfaelzerwald”* is situated in the South West of the German *Land Rheinland-Pfalz* (state of Rhineland-Palatinate), in its South sharing a common border with France. With a size of 179.800 ha – stretching up to 60 km north to south, and 30-40 km west to east – it is the third largest of the biosphere reserves in Germany.

#### Natural characteristics

The *Pfaelzerwald* (Palatinate Forest) is the largest coherent area of forest in Germany. 75% of the biosphere reserve's surface is covered with forest, the rest being meadowland, farmland – and vineyards, being the major characteristic of the eastern part of the reserve („Weinstraße”). Slightly over 100 towns and small communities account for roughly 160.000 people living in the biosphere reserve.

The most typical geological formation is the sandstone (*Buntsandstein*), which builds up most of the Palatinate mountains and hills.

#### Historical background and organisational structure

The whole area of the biosphere reserve of today has been designated as nature park (*Naturpark*) under German law. In 1982, a society (*Verein*)<sup>37</sup> was established as the body responsible for the co-ordination of conservation and development of the nature park - the „Naturpark Pfaelzerwald e.V.”. At the initiative of this body, the UNESCO's MAB Programme recognized the area as *Biosphere Reserve „Naturpark Pfaelzerwald”* in 1992.

The new status required some changes in the organisational structure; however, the main functions of co-ordinating and developing the biosphere reserve continue to be carried out by the above-mentioned *Verein „Naturpark Pfaelzerwald e.V.”*. It consists of representatives of public authorities<sup>38</sup> as well as of several non-profit-organisations<sup>39</sup>. In addition, the board is linked to the relevant ministries of the *Land Rheinland-Pfalz* and to the German Federal Ministry of Environmental Protection, Nature Conservation and Nuclear Safety.

The legal form of a „*Verein*” has proven to be the ideal structure, which is flexible enough to integrate the different interests represented by the different members, at the same time being intertwined with, but not a part of, the state machinery.

Since 1998 the biosphere reserve is recognized by UNESCO as transfrontier biosphere reserve in conjunction with the adjacent French biosphere reserve, the regional national park „Vosges du Nord”<sup>40</sup>. The

<sup>37</sup> A Verein is an association, union or society constituted as a juridical person under German national law.

<sup>38</sup> Representatives from the local communities, towns and counties (Kreise), and their regional association (Bezirksverband Pfalz).

<sup>39</sup> Mainly environmental interest groups and interest groups devoted to hiking and other forms of tourism.

<sup>40</sup> Parc naturel régional des Vosges du Nord, 122.000 ha, was recognized within the MAB Programme in 1988.

co-operation and exchange of experiences between the German and the French biosphere reserve administration have developed in a very fruitful manner.<sup>41</sup>

### Financial Situation

The biosphere reserve is financed by the members of the *Verein „Naturpark Pfaelzerwald e.V.“*, i.e. mainly by the public authorities being member to the *Verein*, which is the *Bezirksverband Pfalz* and the local communities and towns in the biosphere reserve. Notwithstanding the fact that the reserve receives additional funding from the European Union for a number of particular projects, the overall financial means of the biosphere reserve are insufficient. In particular, the administration office is short of staff: In comparison to the French partner, *Vosges du Nord*, the administration of the German reserve disposes of less than a third of the former's „manpower” to manage an area which is one and a half times bigger.

### Zonation

When the *Naturpark Pfaelzerwald* became a biosphere reserve, in 1992, the core area was envisaged to be 0.8%.<sup>42</sup> At the moment, the process of re-zonation of the reserve is still ongoing. It is foreseen that the core area will account for 2.0 – 2,5 % of the reserve area. The buffer zone will account for 28-30 %, and the transition area will make up around 70% of the biosphere reserve.

### Objectives and their implementation

#### *Biodiversity*

It is the main objective of biosphere reserves to conserve a high level of biodiversity. This is the key function of the core area(s) of the biosphere reserve where human intervention is reduced to a minimum or zero. The main emphasis of the concept of biosphere reserves, however, lies on the reconciliation of conservation of biological resources with their sustainable economic use, while maintaining associated cultural values.

Thus, the objective of conserving biodiversity underpins any measure, which is undertaken or initiated by the biosphere reserve's administration within the buffer zone, as well as in the transition area. Examples of such measures are given within the context of the different fields of human activities within the biosphere reserve, which are described in the following subparagraphs.

#### *Research and scientific programmes*

To a large extent, a prerequisite for conservation is to gather knowledge about the biodiversity actually existing within the biosphere reserve. As a first step, cartographic measures have been carried out throughout the area. After 1992, these measures have been intensified, and, as a second step, a Geographic Informationssystem (GIS) was established. GIS is a comprehensive computer-based system of collecting and analysing information concerning biodiversity - including information on the distribution

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<sup>41</sup> Currently, a working group is dealing with the question of whether, and how, this co-operation may, eventually, lead to the establishment of one common integrated administration of the transfrontier biosphere reserve.

<sup>42</sup> It is composed of several smaller portions, located in those parts of forest, which are the closest to being pristine and which are most suitable as part of the strictly protected core area.

of flora and fauna throughout the reserve, genetic information of particular species, information on biotopes and other ecosystems and on their interrelation.

Concerning most of the biosphere's species of animals, and their distribution, there is, however, still a need for more information with regard to their distribution and their genetics.<sup>43</sup>

### *Economic Activities*

#### Viniculture

Wine growing has traditionally shaped the landscape along the eastern border of the reserve (the so-called „Weinstrasse“), particularly with its terraces up the hills. However, with internationally increasing competition in the wine market, it has become harder to survive, in particular for the smaller traditional vintages. The use of large machines and „high tech“ production processes has become almost indispensable. As a result, vineyards have become larger, rendering the landscape more monotonous.

One of the objectives of the biosphere reserve has, therefore, become to help maintaining the traditional forms of terrace-type vineyards within the transition area between the mountains and the plains of the Rhine area (the „Haardttrand“). A second objective has been to re-organise the vineyards in lines parallel to the mountains (not transverse), and to integrate characteristic trees and other plants within the vineyards. Both measures have not only given back the landscape much of its former character, but also mitigated the problem of floodings of the Rhine River.

#### Forestry

Almost all of the biosphere reserve's forest is public land, mostly owned by the *Land* of Rheinland-Pfalz. The absence of private ownership makes it easier to keep the quantities of harvest at a sustainable level and to keep a diversification of species of trees.<sup>44</sup> After bad experiences with monocultures not being able to resist the severe storms like the ones during the early 1990ies, it has become desirable to keep a mix of trees in terms of species as well as in terms of age – not only from the perspective of conservation of biodiversity, but also from an economic point of view.<sup>45</sup>

The well-functioning collaboration between the biosphere reserve's administration and the Forest Service is a key factor in the sustainable development of the reserve – last, but not least, because of the important

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<sup>43</sup> One of the current projects is, e.g., the monitoring of the distribution of the lynx, which has recently been re-appearing in the region of the reserve. Another project is to look into particularities of the forest's „second floor“, i.e. the zone of the treetops, which often represent ecosystems of their own. Most of the research projects, though often initiated by the biosphere reserve's administration, are carried out by universities, such as the nearby University of Kaiserslautern, or by private research institutions.

<sup>44</sup> A good example are the oak trees, which mostly grow in the centre of the Palatinate Forest (as well as in Bavaria), and which need some 300 years to grow old. The Forest Service of Rheinland-Pfalz has – in collaboration with its Bavarian counterpart – been able to keep the amount of wood cut and released into the market at a sustainable yield and the prize at the necessary high level.

<sup>45</sup> Fortunately, the logging of individual trees has become possible in a profitable and sustainable manner with the introduction of modern harvester machines, which are also very small and light, and thus, eliminate the problem of the „autobahn“ within the forest.

role the Forest Service plays in the implementation of the concept of the biosphere reserve and the individual projects.<sup>46</sup>

### Tourism

Traditionally, the *Pfaelzerwald* has been a place of recreation for the people living and working in the larger cities in the Rhine region, east of the reserve (in particular, Mannheim, Ludwigshafen, and Karlsruhe). In recent years, tourism in the biosphere reserve has been steadily increasing. The main activity is hiking.<sup>47</sup> As many castles with historic background are dispersed throughout the whole territory, the biosphere reserve also suits new trends, like the combination of hiking and „sight-seeing” or other events under the heading „nature & culture”. The goal of the biosphere reserve is to find and to promote forms of so-called „soft tourism”.<sup>48</sup>

### Agriculture

There is little agriculture – other than wine growing – but nonetheless it has an important function in the biosphere reserve. As 75% of the biosphere reserve’s surface is covered by forest, it is desirable to keep and to cultivate open spaces, which remain within the *Pfaelzerwald*. This is important for conservation purposes, as many open spaces, e.g. moist meadows or ponds, serve as biotopes for rare species. Secondly, these spaces form an integral part of the biosphere reserve and make up one of its characteristics. In order to avoid that these areas just become overgrown by trees – rendering the reserve „a dark forest” – the administration of the biosphere reserve motivates farmers to make use of these spaces as pastures.<sup>49</sup>

### Industry

The industrial sector is very small within the biosphere reserve. The major cities in the plains east of the reserve are much more attractive and more suitable for the location of factories. There are, however, some pilot projects within the reserve regarding modern process engineering and new environmental technologies.

### Education and public awareness

By definition, biosphere reserves are sites where the objective of reconciling biodiversity conservation and maintenance of cultural values with economic development is tested *and demonstrated*. Therefore, to increase public awareness and to enhance education regarding the concepts of biosphere reserves, and sustainable development, is another major task of the biosphere reserve Naturpark Pfaelzerwald.

One tool of public relations is the logo of the Biosphere Reserve Naturpark Pfaelzerwald, which has been publicly introduced in 2000 through the presentation at a major public event. Information about the re-

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<sup>46</sup> The Forest Service is part of the Ministry of Forestry, Agriculture and Vintage of Rheinland-Pfalz.

<sup>47</sup> The „Pfaelzerwald-Verein”, a non-profit organisation, which exists for almost 100 years, and a member of the administrative body of the reserve („Naturpark Pfaelzerwald e.V.”), takes care of the designation of the trails, producing of maps etc.

<sup>48</sup> A good example is grape gathering during the holidays; in fact, many vine dressers have included the service of a guest house on their premises. Other current projects are opening up some parts of the forest for mountain-biking, where this is possible in a sustainable manner, and without intrusion into sensitive wildlife habitats.

<sup>49</sup> Concerning the type of animal most suitable for the individual area, promising experiments with Scottish cattle have been carried out recently. Projects like this one are always carried out in combination with monitoring of the effects of the introduction of the new species on the existing flora and fauna.

serve is presented in museums<sup>50</sup>, in the recently opened „Biosphere Reserve House” for the transfrontier biosphere reserve<sup>51</sup>, and in information centres located close to or within the reserve. The administration office also publishes brochures, handouts and posters providing information.

Furthermore, and maybe most importantly, plans are being discussed with the state ministry of education on how to integrate the concept of biosphere reserves in the curriculum at the schools in Rheinland-Pfalz in the near future.

## 4.2 The Biosphere Reserve „Rhoen”

### Historical development

In March 1991 the Biosphere Reserve „Rhoen” has been accepted by UNESCO and become part of the international programme „Man and the Biosphere“. It covers an area of 185 000 ha. 122 000 people are living within the area which means 66 residents/ km<sup>2</sup>. As a transboundary reserve it is situated within the states (Laender) of Bavaria, Hessen and Thuringen. In each of the states the Biosphere Reserve „Rhoen” has a separate administration, which is part of the respective state-administration. The status of the biosphere reserve administration varies in the three states.

### Concept and characteristics of the Biosphere Reserve „Rhoen”

Unlike other biosphere reserves, the Biosphere Reserve „Rhoen” is not famous for endemic species. Therefore, instead of protecting endangered flora and fauna, the main concern of the Biosphere Reserve Rhoen is the maintenance of a **traditional cultural landscape** through supporting traditional agricultural systems, which have proved to be environmentally friendly and sustainable but are more and more threatened by the decrease in the number of farms and the income of the farmers. Since the natural conditions of agricultural production are rather unfavourable to face international or even national competition the development of quality economy is crucial in this context.

Especially in Thuringen and Bavaria tourism is an important factor. Primarily tourists from adjacent regions visit the Biosphere Reserve Rhoen to spend 3-5 days in the reserve doing sports such as hiking, mountainbiking, paragliding, skiing etc. The Biosphere Reserve Rhoen initiates and supports projects to establish sustainable and environmentally sound tourism in the area of the Biosphere Reserve Rhoen.

### Evolution and success

In a first step the administration of the Biosphere Reserve Rhoen has been looking for a range of agricultural products with potential importance in terms of regional marketing. As a result of a project carried out in 1999 it has been discovered that over 200 kinds of apples are found within the Biosphere Reserve Rhoen, some of them having extraordinary characteristics. Another successful pilot project with regard to regional marketing, widely known, is the Rhoen sheep.

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<sup>50</sup> A good representation of the reserve can be found at the „Pfalzmuseum fuer Naturkunde”, Bad Duerkheim.

<sup>51</sup> The „Biosphaerenhaus Pfaelzerwald / Nordvogesen“ is located within the German part of the reserve at Fischbach, close to the French border. As a project it was presented at the „Expo 2000” in Hannover. See in the Internet under [www.biosphaerenhaus.de](http://www.biosphaerenhaus.de) .

To create a platform for business partnerships the Biosphere Reserve Rhoen has been looking for business partners which contribute to the biosphere reserve idea in terms of innovative and environmentally friendly products and help create or safeguard jobs. To guarantee an ecological standard these business partners have to meet different criteria. „Biosphere Reserve Rhoen Business Partners“ in agriculture meet the EU Council Regulation for organic production of agricultural products and indications, including livestock production<sup>52</sup>.

„Biosphere Reserve Rhoen Business Partners“ meet criteria, which were set up together with local and external experts - a process which took about two years. Criteria for regional grocery stores are being developed. By end of 2000 twenty farms and one brewery have become „Biosphere Reserve Rhoen Business Partners“; ten restaurants have applied.

Another recent achievement is the development of a mountainbike map in collaboration with the „Rhoenclub e.V.“. Especially to enable mountain biking in a protected area a regulation governing the protection of the area had to be amended. This project is considered to be a success in the process of developing regional sustainable tourism.

Although in the Biosphere Reserve Rhoen no endemic species are being found the number of protected animals is developing very positively. For example the number of bird of pray counted in 2000 was three times higher than in 1991.<sup>53</sup>

To strengthen the consciousness for the idea of a biosphere reserve the Biosphere Reserve Rhoen offers a variety of information, holiday programmes and informal activities.<sup>54</sup> Some ten thousand people visit the visitor centres throughout the reserve each year, which shows the level of acceptance by visitors but also by the local population.

### **Conflicts and problems**

Many of the initiatives are just pilot projects depending on a small number of local actors, and most projects concern mainly agricultural business. Furthermore consumers do not necessarily notice that the products are linked with the biosphere reserve.

One reason for the lack of consciousness may be that there is no uniform authorised product label for all Biosphere Reserve Rhoen-related products.

Conflicts arise where residents claim rights, which may be in conflict with proposed projects of the Biosphere Reserve Rhoen. Especially in Bavaria and in Hessen the legal basis for the Biosphere Reserve Rhoen-administration is insufficient; in these states the biosphere reserve administration has no formal administrative authority and regulatory powers. Therefore it has not been involved in local planning. It may often be the case that such planning is not entirely in conformity with the objectives and proposed activities of the Biosphere Reserve Rhoen.

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<sup>52</sup> Regulation No 1804/99.

<sup>53</sup> Facts and exact list concerning the development of flora and fauna in the Biosphere Reserve Rhoen can be found in: Bornholdt/Braun/Kress, Erfolgskontrollen im abgeschlossenen Naturschutzgroßprojekt „Hohe Rhoen/Lange Rhoen“, 2000.

<sup>54</sup> see [www.rhoen.net/Biosphaerenreservat](http://www.rhoen.net/Biosphaerenreservat).

Although the number of farms decreases, a major problem is pollution of ground water resulting from agricultural practices.

In the Bavarian part of the Biosphere Reserve Rhoen there is only one guard employed to observe the protected areas within the reserve - obviously not enough to guarantee that there are no violations.

Finally the Biosphere Reserve Rhoen suffers from a general problem, which affects all biosphere reserves in Germany: An official and formal meeting of representatives from all national biosphere reserves is not existing. Instead, there are only informal meetings, which lack funding and political influence.

### **Perspectives**

The successful pilot projects demonstrate the potentials of the Biosphere Reserve Rhoen. Although the Biosphere Reserve Rhoen is still experimenting the increasing numbers of „Biosphere Reserve Rhoen Business Partners“ show that after about nine years there is a solid basis for positive economic developments in the nearer future. But as in the years before still most of the projects cannot be realised without funding by the programmes of EC or the federal government.

Therefore, in order to meet the financial needs concerning the setting up of management structures and advertisement campaigns, the Biosphere Reserve Rhoen is continuing to apply for EC funding for a project in the framework of LEADER+.

Concerning the legal status of the Biosphere Reserve Rhoen administrations which is not uniform in the three parts (Bavaria, Hessen and Thuringen) there is obviously a need for a harmonized and strong legal status. In Bavaria and Hessen the Biosphere Reserve Rhoen need to have the status to be involved in regional and local planning. To assimilate the legal status of the Biosphere Reserve Rhoen administrations, the three states involved should seriously consider the option of concluding a formal administrative agreement. Concepts for such an agreement do exist but could not be realised because of political impediments.

Since most of the projects still depend on a few local actors one of the main objectives in the next time will be to strengthen consciousness of the consumers, farmers and potential „Biosphere Reserve Rhoen Business Partners“.

Therefore one of the next steps will be the development of eco-management and audit schemes for farms and the introduction of a uniform label. The experiences have shown that extern consultants play an important role in such processes.

As a final conclusion, the example of the Biosphere Reserve Rhoen shows that there is a potential for the sustainable use in the form of sustainable agricultural business and sustainable tourism. The recently initiated projects are indications that it is possible to meet the needs of both people and nature in an economically attractive way.

## **4.3 Biosphere Reserve „Suedost-Ruegen“**

### **Historical development**

The Biosphere Reserve „Suedost-Ruegen“ (Southeast Ruegen) was established by Regulation adopted by the then Council of Ministers of the German Democratic Republic on 12 September 1990 and entered into

## Examples of biosphere reserves in Germany

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force on 1 October 1990. It has been part of the „National Parks Programme” worked out in 1989/90 in the wake of German re-unification.

As the other legal instruments forming the National Parks Programme the Regulation establishing the biosphere reserve reflected strong commitments. It requires establishing a management plan for the protection and development in the area of Southeast Ruegen. The management plan, which is to be a framework plan must respect ecological, social and economic aspects and in particular must include a concept for transport and tourism. A tourism concept has been developed in the early 1990ies.

The administration of the biosphere reserve has a strong legal basis. It has the authority to pursue public interests and therefore, has the standing to participate in administrative procedures, in particular planning procedures. It can submit statements and recommendations, which may influence decision-making in a way so that development projects take into account conservation and sustainable use aspects.

The Biosphere Reserve administration has used its status and rights in the past rather effectively. It has been involved in important decision-making processes and has exercised considerable influence. Its role has however, also created controversies, and the administration today faces the challenge that it has to fight the reputation of being an obstacle for development projects. These controversies and conflicts cannot be analysed here; it may be sufficient to indicate that these conflicts obviously have a lot to do with different understandings of „development” - to some, it may be the expectation to realise benefits from individual investments in a short period of time while others understand development as a strategy to secure income and welfare for society in the long run.

The administration in the recent past has increased its initiatives with regard to economic activities. With the modest resources available, it launched projects such as the „Jobmotor Ruegen”. A major problem the administration faces is the limitation in powers and capacities to back up and support such initiatives; despite its administrative status it is an authority, which covers only a particular sector and does not have the resources, which other public authorities may have to support economic initiatives.

### **Evolution and success**

Since its establishment the biosphere reserve has carried out a large number of activities in a variety of areas. They are compiled in the brochure „Nationalparkamt Ruegen: Die ersten 10 Jahre 1990 – 2000 – Eine Uebersicht”.

Interesting here are the types of activities, to a lesser extent the individual activities. The activities cover:

- Development of concepts and studies;
- Raising of public awareness and environmental education;
- Infrastructure measures;
- Restoration and rehabilitation;
- Landscape conservation;
- Species protection;
- Contributions and projects for sustainable development;

- Support programmes;
- Involvement in administrative procedures (land use planning, licensing procedures and infrastructure procedures).

The Biosphere Reserve has made substantial if not most – contributions to what is called „Model region Ruegen“. Components of the model region concept include:

- Nature conservation project East-Ruegen Bodden landscape;
- Project „Regionalisation of agriculture and fisheries in the Ruegen District (Landkreis Ruegen)“;
- Ecological concepts for agricultural landscapes;
- Peasant market Ruegen;
- Ruegen wood fare;
- Mediation project „Model Region Ruegen“;
- „Job-motor Biosphere“;
- Contribution to Ruegen Marketing Strategy;
- Contributions to the development of concepts by the Ruegen District (Landkreis Ruegen).



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## 5 Perspectives

The comparison of the concepts of the Convention on Biological Diversity and the Biosphere Reserves as well as the brief look at three biosphere reserves in Germany, by way of examples, may allow for the following concluding observations:

- Biosphere reserves established around the world during the last 25 years and forming an international network have accumulated enormously rich experience. They are based on a concept, which is also the basis of the Convention on Biological Diversity: the integration of conservation and sustainable use of biological diversity.
- The Convention on Biological Diversity attempts to reach out beyond the traditional frontiers of nature conservation in that:
  - It provides flexible regimes for area and species protection;
  - It aims at bringing together area protection and species protection;
  - It allows for sustainable use wherever the state of biodiversity allows for such sustainable use;
  - It addresses developments outside protected areas and habitats;
  - It requires to control processes which may have detrimental impacts on biodiversity;
  - It takes into account the need for human activities and requires to work towards reconciling them with the imperatives of conservation;
  - It requires to involve the people and local communities living from or being dependent on components of biodiversity;
  - It calls for the respect and promotion of traditional lifestyles, which are in support of the objectives of the Convention, i.e. conservation and sustainable use of biodiversity.
- Such a holistic approach forms the basis of biosphere reserves for several decades now. Integration of both, the protection of the natural environment and the protection of the landscape shaped by human cultures, constitutes the main objective pursued by biosphere reserves. This objective implies taking natural phenomena and human activities equally seriously and working towards their harmonization, applying a truly participatory approach by which all concerned may have the chance to have their say.
- Biosphere reserves not only provide examples and good practices, which may be illustrative for how the Convention on Biological Diversity may be implemented. It is this but it is more: Biosphere reserves can and should be used to as tools for implementing the Convention on Biological Diversity. Awareness is growing about the links between the two concepts. Needed are now ideas and strategies for how biosphere reserves can fulfil their role in implementing the Convention. To help generate such ideas and strategies more case studies on biosphere reserves from around the world may be useful.

As a practical consequence, biosphere reserve regimes may be reviewed to ensure that they comply with the objectives and obligations of the Convention on Biological Diversity. Many existing regimes will be in line with the Convention on Biological Diversity so that the major emphasis should be on mobilising support for the biosphere reserves. Should existing regimes of biosphere reserves not be in conformity

with the Convention on Biological Diversity – or should there be gaps – modification of the regimes may be in order. In addition, more and new biosphere reserves may be established for purposes of implementing the Convention. Biosphere reserves may, thus become one of the most powerful tools to implement the Convention on Biological Diversity.

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## Annex I

### *CONVENTION ON BIOLOGICAL DIVERSITY*

*5 JUNE 1992*

#### *Preamble*

*The Contracting Parties,*

*Conscious* of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components,

*Conscious also* of the importance of biological diversity for evolution and for maintaining life-sustaining systems of the biosphere,

*Affirming* that the conservation of biological diversity is a common concern of humankind,

*Reaffirming* that States have sovereign rights over their own biological resources,

*Reaffirming also* that States are responsible for conserving their biological diversity and for using their biological resources in a sustainable manner,

*Concerned* that biological diversity is being significantly reduced by certain human activities,

*Aware* of the general lack of information and knowledge regarding biological diversity and of the urgent need to develop scientific, technical and institutional capacities to provide the basic understanding upon which to plan and implement appropriate measures,

*Noting* that it is vital to anticipate, prevent and attack the causes of significant reduction or loss of biological diversity at source,

*Noting also* that where there is a threat of significant reduction or loss of biological diversity, lack of full scientific certainty should not be used as a reason for postponing measures to avoid or minimize such a threat,

*Noting further* that the fundamental requirement for the conservation of biological diversity is the *in-situ* conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings,

*Noting further* that *ex-situ* measures, preferably in the country of origin, also have an important role to play, *Recognizing* the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits

arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components,

*Recognizing also* the vital role that women play in the conservation and sustainable use of biological diversity and affirming the need for the full participation of women at all levels of policy-making and implementation for biological diversity conservation,

*Stressing* the importance of, and the need to promote, international, regional and global cooperation among States and intergovernmental organizations and the non-governmental sector for the conservation of biological diversity and the sustainable use of its components,

*Acknowledging* that the provision of new and additional financial resources and appropriate access to relevant technologies can be expected to make a substantial difference in the world's ability to address the loss of biological diversity,

*Acknowledging further* that special provision is required to meet the needs of developing countries, including the provision of new and additional financial resources and appropriate access to relevant technologies,

*Noting* in this regard the special conditions of the least developed countries and Small Island States,

*Acknowledging* that substantial investments are required to conserve biological diversity and that there is the expectation of a broad range of environmental, economic and social benefits from those investments,

*Recognizing* that economic and social development and poverty eradication are the first and overriding priorities of developing countries,

*Aware* that conservation and sustainable use of biological diversity is of critical importance for meeting the food, health and other needs of the growing world population, for which purpose access to and sharing of both genetic resources and technologies are essential,

*Noting* that, ultimately, the conservation and sustainable use of biological diversity will strengthen friendly relations among States and contribute to peace for humankind,

*Desiring* to enhance and complement existing international arrangements for the conservation of biological diversity and sustainable use of its components, and

*Determined* to conserve and sustainable use biological diversity for the benefit of present and future generations,

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Have agreed as follows:

*Article 1. Objectives*

The objectives of this Convention, to be pursued in accordance with its relevant provisions, are the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

*Article 2. Use of Terms*

For the purposes of this Convention:

„*Biological diversity*“ means the variability among living organisms from all sources including, *inter alia*, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.

„*Biological resources*“ includes genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity.

„*Biotechnology*“ means any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use.

„*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.

„*Domesticated or cultivated species*“ means species in which the evolutionary process has been influenced by humans to meet their needs.

„*Ecosystem*“ means a dynamic complex of plant, animal and microorganism communities and their non-living environment interacting as a functional unit.

„*Ex-situ conservation*“ means the conservation of components of biological diversity outside their natural habitats.

„*Genetic material*“ means any material of plant, animal, microbial or other origin containing functional units of heredity.

„*Genetic resources*“ means genetic material of actual or potential value.

„*Habitat*“ means the place or type of site where an organism or population naturally occurs.

„*In-situ conditions*“ means conditions where genetic resources exist within ecosystems and natural habitats, and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.

„*In-situ conservation*“ means the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties.

„*Protected area*“ means a geographically defined area, which is designated or regulated and managed to achieve specific conservation objectives.

„*Regional economic integration organization*“ means an organization constituted by sovereign States of a given region, to which its member States have transferred competence in respect of matters governed by this Convention and which has been duly authorized, in accordance with its internal procedures, to sign, ratify, accept, approve or accede to it.

„*Sustainable use*“ means the use of components of biological diversity in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

„*Technology*“ includes biotechnology.

### *Article 3. Principle*

States have, in accordance with the Charter of the United Nations and the principles of international law, the sovereign right to exploit their own resources pursuant to their own environmental policies, and the responsibility to ensure that activities within their jurisdiction or control do not cause damage to the environment of other States or of areas beyond the limits of national jurisdiction.

### *Article 4. Jurisdictional Scope*

Subject to the rights of other States, and except as otherwise expressly provided in this Convention, the provisions of this Convention apply, in relation to each Contracting Party:

(a) In the case of components of biological diversity, in areas within the limits of its national jurisdiction; and

(b) In the case of processes and activities, regardless of where their effects occur, carried out under its jurisdiction or control, within the area of its national jurisdiction or beyond the limits of national jurisdiction.

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*Article 5. Cooperation*

Each Contracting Party shall, as far as possible and as appropriate, cooperate with other Contracting Parties, directly or, where appropriate, through competent international organizations, in respect of areas beyond national jurisdiction and on other matters of mutual interest, for the conservation and sustainable use of biological diversity.

*Article 6. General Measures for Conservation and Sustainable Use*

Each Contracting Party shall, in accordance with its particular conditions and capabilities:

- (a) Develop national strategies, plans or programmes for the conservation and sustainable use of biological diversity or adapt for this purpose existing strategies, plans or programmes which shall reflect, *inter alia*, the measures set out in this Convention relevant to the Contracting Party concerned; and
- (b) Integrate, as far as possible and as appropriate, the conservation and sustainable use of biological diversity into relevant sectoral or cross-sectoral plans, programmes and policies.

*Article 7. Identification and Monitoring*

Each Contracting Party shall, as far as possible and as appropriate, in particular for the purposes of Articles 8 to 10:

- (a) Identify components of biological diversity important for its conservation and sustainable use having regard to the indicative list of categories set down in Annex I
- (b) Monitor, through sampling and other techniques, the components of biological diversity identified pursuant to subparagraph
- (a) Above, paying particular attention to those requiring urgent conservation measures and those which offer the greatest potential for sustainable use
- (c) Identify processes and categories of activities which have or are likely to have significant adverse impacts on the conservation and sustainable use of biological diversity, and monitor their effects through sampling and other techniques; and (d) Maintain and organize, by any mechanism data, derived from identification and monitoring activities pursuant to subparagraphs (a), (b) and (c) above.

*Article 8. In-situ Conservation*

Each Contracting Party shall, as far as possible and as appropriate:

- (a) Establish a system of protected areas or areas where special measures need to be taken to conserve biological diversity;
- (b) Develop, where necessary, guidelines for the selection, establishment and management of protected areas or areas where special measures need to be taken to conserve biological diversity;

- (c) Regulate or manage biological resources important for the conservation of biological diversity whether within or outside protected areas, with a view to ensuring their conservation and sustainable use;
- (d) Promote the protection of ecosystems, natural habitats and the maintenance of viable populations of species in natural surroundings
- (e) Promote environmentally sound and sustainable development in areas adjacent to protected areas with a view to furthering protection of these areas
- (f) Rehabilitate and restore degraded ecosystems and promote the recovery of threatened species, *inter alia*, through the development and implementation of plans or other management strategies;
- (g) Establish or maintain means to regulate, manage or control the risks associated with the use and release of living modified organisms resulting from biotechnology which are likely to have adverse environmental impacts that could affect the conservation and sustainable use of biological diversity, taking also into account the risks to human health;
- (h) Prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species;
- (i) Endeavour to provide the conditions needed for compatibility between present uses and the conservation of biological diversity and the sustainable use of its components;
- (j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices;
- (k) Develop or maintain necessary legislation and/or other regulatory provisions for the protection of threatened species and populations;
- (l) Where a significant adverse effect on biological diversity has been determined pursuant to Article 7, regulate or manage the relevant processes and categories of activities; and
- (m) Cooperate in providing financial and other support for *in-situ* conservation outlined in subparagraphs (a) to (l) above, particularly to developing countries.

*Article 9. Ex-situ Conservation*

Each Contracting Party shall, as far as possible and as appropriate, and predominantly for the purpose of complementing *in-situ* measures:

- (a) Adopt measures for the *ex-situ* conservation of components of biological diversity, preferably in the country of origin of such components

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- (b) Establish and maintain facilities for *ex-situ* conservation of and research on plants, animals and micro-organisms, preferably in the country of origin of genetic resources;
  - (c) Adopt measures for the recovery and rehabilitation of threatened species and for their reintroduction into their natural habitats under appropriate conditions
  - (d) Regulate and manage collection of biological resources from natural habitats for *ex-situ* conservation purposes so as not to threaten ecosystems and *in-situ* populations of species, except where special temporary *ex-situ* measures are required under subparagraph (c) above; and
  - (e) Cooperate in providing financial and other support for *ex-situ* conservation outlined in subparagraphs (a) to (d) above and in the establishment and maintenance of *ex-situ* conservation facilities in developing countries.

*Article 10. Sustainable Use of Components of Biological Diversity*

Each Contracting Party shall, as far as possible and as appropriate:

- (a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making
- (b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity
- (c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;
- (d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and
- (e) Encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.

*Article 11. Incentive Measures*

Each Contracting Party shall, as far as possible and as appropriate, adopt economically and socially sound measures that act as incentives for the conservation and sustainable use of components of biological diversity.

*Article 12. Research and Training*

The Contracting Parties, taking into account the special needs of developing countries, shall:

- (a) Establish and maintain programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components and provide support for such education and training for the specific needs of developing countries;
- (b) Promote and encourage research which contributes to the conservation and sustainable use of biological diversity, particularly in developing countries, *inter alia*, in accordance with decisions of the Conference of the Parties taken in consequence of recommendations of the Subsidiary Body on Scientific, Technical and Technological Advice; and
- (c) In keeping with the provisions of Articles 16, 18 and 20 promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources.

*Article 13. Public Education and Awareness*

The Contracting Parties shall:

- (a) Promote and encourage understanding of the importance of, and the measures required for, the conservation of biological diversity, as well as its propagation through media, and the inclusion of these topics in educational programmes; and
- (b) Cooperate, as appropriate, with other States and international organizations in developing educational and public awareness programmes, with respect to conservation and sustainable use of biological diversity.

*Article 14. Impact Assessment and Minimizing Adverse Impacts*

1. Each Contracting Party, as far as possible and as appropriate, shall:
  - (a) Introduce appropriate procedures requiring environmental impact assessment of its proposed projects that are likely to have significant adverse effects on biological diversity with a view to avoiding or minimizing such effects and, where appropriate, allow for public participation in such procedures;
  - (b) Introduce appropriate arrangements to ensure that the environmental consequences of its programmes and policies that are likely to have significant adverse impacts on biological diversity are duly taken into account
  - (c) Promote, on the basis of reciprocity, notification, exchange of information and consultation on activities under their jurisdiction or control which are likely to significantly affect adversely the biological diversity of other States or areas beyond the limits of national jurisdiction, by encouraging the conclusion of bilateral, regional or multilateral arrangements, as appropriate;
  - (d) In the case of imminent or grave danger or damage, originating under its jurisdiction or control, to biological diversity within the area under jurisdiction of other States or in areas beyond the limits of

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national jurisdiction, notify immediately the potentially affected States of such danger or damage, as well as initiate action to prevent or minimize such danger or damage; and (e) Promote national arrangements for emergency responses to activities or events, whether caused naturally or otherwise, which present a grave and imminent danger to biological diversity and encourage international cooperation to supplement such national efforts and, where appropriate and agreed by the States or regional economic integration organizations concerned, to establish joint contingency plans.

2. The Conference of the Parties shall examine, on the basis of studies to be carried out, the issue of liability and redress, including restoration and compensation, for damage to biological diversity, except where such liability is a purely internal matter.

*Article 15. Access to Genetic Resources*

1. Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation.
2. Each Contracting Party shall endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of this Convention.
3. For the purpose of this Convention, the genetic resources being provided by a Contracting Party, as referred to in this Article and Articles 16 and 19, are only those that are provided by Contracting Parties that are countries of origin of such resources or by the Parties that have acquired the genetic resources in accordance with this Convention.
4. Access, where granted, shall be on mutually agreed terms and subject to the provisions of this Article.
5. Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party.
6. Each Contracting Party shall endeavour to develop and carry out scientific research based on genetic resources provided by other Contracting Parties with the full participation of, and where possible in, such Contracting Parties.
7. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, and in accordance with Articles 16 and 19 and, where necessary, through the financial mechanism established by Articles 20 and 21 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. Such sharing shall be upon mutually agreed terms.

*Article 16. Access to and Transfer of Technology*

1. Each Contracting Party, recognizing that technology includes biotechnology, and that both access to and transfer of technology among Contracting Parties are essential elements for the attainment of the objectives of this Convention, undertakes subject to the provisions of this Article to provide and/or facilitate access for and transfer to other Contracting Parties of technologies that are relevant to the conservation and sustainable use of biological diversity or make use of genetic resources and do not cause significant damage to the environment.
2. Access to and transfer of technology referred to in paragraph 1 above to developing countries shall be provided and/or facilitated under fair and most favourable terms, including on concessional and preferential terms where mutually agreed, and, where necessary, in accordance with the financial mechanism established by Articles 20 and 21. In the case of technology subject to patents and other intellectual property rights, such access and transfer shall be provided on terms, which recognize and are consistent with the adequate and effective protection of intellectual property rights. The application of this paragraph shall be consistent with paragraphs 3, 4 and 5 below.
3. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that Contracting Parties, in particular those that are developing countries, which provide genetic resources are provided access to and transfer of technology which makes use of those resources, on mutually agreed terms, including technology protected by patents and other intellectual property rights, where necessary, through the provisions of Articles 20 and 21 and in accordance with international law and consistent with paragraphs 4 and 5 below.
4. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, with the aim that the private sector facilitates access to, joint development and transfer of technology referred to in paragraph 1 above for the benefit of both governmental institutions and the private sector of developing countries and in this regard shall abide by the obligations included in paragraphs 1, 2 and 3 above.
5. The Contracting Parties, recognizing that patents and other intellectual property rights may have an influence on the implementation of this Convention, shall cooperate in this regard subject to national legislation and international law in order to ensure that such rights are supportive of and do not run counter to its objectives.

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*Article 17. Exchange of Information*

1. The Contracting Parties shall facilitate the exchange of information, from all publicly available sources, relevant to the conservation and sustainable use of biological diversity, taking into account the special needs of developing countries.
2. Such exchange of information shall include exchange of results of technical, scientific and socio-economic research, as well as information on training and surveying programmes, specialized knowledge, indigenous and traditional knowledge as such and in combination with the technologies referred to in Article 16, paragraph 1. It shall also, where feasible, include repatriation of information.

*Article 18. Technical and Scientific Cooperation*

1. The Contracting Parties shall promote international technical and scientific cooperation in the field of conservation and sustainable use of biological diversity, where necessary, through the appropriate international and national institutions.
2. Each Contracting Party shall promote technical and scientific cooperation with other Contracting Parties, in particular developing countries, in implementing this Convention, *inter alia*, through the development and implementation of national policies. In promoting such cooperation, special attention should be given to the development and strengthening of national capabilities, by means of human resources development and institution building.
3. The Conference of the Parties, at its first meeting, shall determine how to establish a clearing-house mechanism to promote and facilitate technical and scientific cooperation.
4. The Contracting Parties shall, in accordance with national legislation and policies, encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of this Convention. For this purpose, the Contracting Parties shall also promote cooperation in the training of personnel and exchange of experts.
5. The Contracting Parties shall, subject to mutual agreement, promote the establishment of joint research programmes and joint ventures for the development of technologies relevant to the objectives of this Convention.

*Article 19. Handling of Biotechnology and Distribution of its Benefits*

1. Each Contracting Party shall take legislative, administrative or policy measures, as appropriate, to provide for the effective participation in biotechnological research activities by those Contracting Parties, especially developing countries, which provide the genetic resources for such research, and where feasible in such Contracting Parties.

2. Each Contracting Party shall take all practicable measures to promote and advance priority access on a fair and equitable basis by Contracting Parties, especially developing countries, to the results and benefits arising from biotechnologies based upon genetic resources provided by those Contracting Parties. Such access shall be on mutually agreed terms.
3. The Parties shall consider the need for and modalities of a protocol setting out appropriate procedures, including, in particular, advance informed agreement, in the field of the safe transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effect on the conservation and sustainable use of biological diversity.
4. Each Contracting Party shall, directly or by requiring any natural or legal person under its jurisdiction providing the organisms referred to in paragraph 3 above, provide any available information about the use and safety regulations required by that Contracting Party in handling such organisms, as well as any available information on the potential adverse impact of the specific organisms concerned to the Contracting Party into which those organisms are to be introduced.

*Article 20. Financial Resources*

1. Each Contracting Party undertakes to provide, in accordance with its capabilities, financial support and incentives in respect of those national activities, which are intended to achieve the objectives of this Convention, in accordance with its national plans, priorities, and programmes.
2. The developed country Parties shall provide new and additional financial resources to enable developing country Parties to meet the agreed full incremental costs to them of implementing measures which fulfil the obligations of this Convention and to benefit from its provisions and which costs are agreed between a developing country Party and the institutional structure referred to in Article 21, in accordance with policy, strategy, programme priorities and eligibility criteria and an indicative list of incremental costs established by the Conference of the Parties. Other Parties, including countries undergoing the process of transition to a market economy, may voluntarily assume the obligations of the developed country Parties. For the purpose of this Article, the Conference of the Parties, shall at its first meeting establish a list of developed country Parties and other Parties, which voluntarily assume the obligations of the developed country Parties. The Conference of the Parties shall periodically review and if necessary amend the list. Contributions from other countries and sources on a voluntary basis would also be encouraged. The implementation of these commitments shall take into account the need for adequacy, predictability and timely flow of funds and the importance of burden sharing among the contributing Parties included in the list.
3. The developed country Parties may also provide, and developing country Parties avail themselves of, financial resources related to the implementation of this Convention through bilateral, regional and other multilateral channels.

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4. The extent to which developing country Parties will effectively implement their commitments under this Convention will depend on the effective implementation by developed country Parties of their commitments under this Convention related to financial resources and transfer of technology and will take fully into account the fact that economic and social development and eradication of poverty are the first and overriding priorities of the developing country Parties.
  5. The Parties shall take full account of the specific needs and special situation of least developed countries in their actions with regard to funding and transfer of technology.
  6. The Contracting Parties shall also take into consideration the special conditions resulting from the dependence on, distribution and location of, biological diversity within developing country Parties, in particular small island States.
  7. Consideration shall also be given to the special situation of developing countries, including those that are most environmentally vulnerable, such as those with arid and semi-arid zones, coastal and mountainous areas.

*Article 21. Financial Mechanism*

1. There shall be a mechanism for the provision of financial resources to developing country Parties for purposes of this Convention on a grant or concessional basis the essential elements of which are described in this Article. The mechanism shall function under the authority and guidance of, and be accountable to, the Conference of the Parties for purposes of this Convention. The operations of the mechanism shall be carried out by such institutional structure as may be decided upon by the Conference of the Parties at its first meeting. For purposes of this Convention, the Conference of the Parties shall determine the policy, strategy, programme priorities and eligibility criteria relating to the access to and utilization of such resources. The contributions shall be such as to take into account the need for predictability, adequacy and timely flow of funds referred to in Article 20 in accordance with the amount of resources needed to be decided periodically by the Conference of the Parties and the importance of burden-sharing among the contributing Parties included in the list referred to in Article 20, paragraph 2. Voluntary contributions may also be made by the developed country Parties and by other countries and sources. The mechanism shall operate within a democratic and transparent system of governance.
2. Pursuant to the objectives of this Convention, the Conference of the Parties shall at its first meeting determine the policy, strategy and programme priorities, as well as detailed criteria and guidelines for eligibility for access to and utilization of the financial resources including monitoring and evaluation on a regular basis of such utilization. The Conference of the Parties shall decide on the arrangements to give effect to paragraph 1 above after consultation with the institutional structure entrusted with the operation of the financial mechanism.

3. The Conference of the Parties shall review the effectiveness of the mechanism established under this Article, including the criteria and guidelines referred to in paragraph 2 above, not less than two years after the entry into force of this Convention and thereafter on a regular basis. Based on such review, it shall take appropriate action to improve the effectiveness of the mechanism if necessary.
4. The Contracting Parties shall consider strengthening existing financial institutions to provide financial resources for the conservation and sustainable use of biological diversity.

*Article 22. Relationship with Other International Conventions*

1. The provisions of this Convention shall not affect the rights and obligations of any Contracting Party deriving from any existing international agreement, except where the exercise of those rights and obligations would cause a serious damage or threat to biological diversity.
2. Contracting Parties shall implement this Convention with respect to the marine environment consistently with the rights and obligations of States under the law of the sea.

*Article 23. Conference of the Parties*

1. A Conference of the Parties is hereby established. The Executive Director of the United Nations Environment Programme shall convene the first meeting of the Conference of the Parties not later than one year after the entry into force of this Convention. Thereafter, ordinary meetings of the Conference of the Parties shall be held at regular intervals to be determined by the Conference at its first meeting.
2. Extraordinary meetings of the Conference of the Parties shall be held at such other times as may be deemed necessary by the Conference, or at the written request of any Party, provided that, within six months of the request being communicated to them by the Secretariat, it is supported by at least one third of the Parties.
3. The Conference of the Parties shall by consensus agree upon and adopt rules of procedure for itself and for any subsidiary body it may establish, as well as financial rules governing the funding of the Secretariat. At each ordinary meeting, it shall adopt a budget for the financial period until the next ordinary meeting.
4. The Conference of the Parties shall keep under review the implementation of this Convention, and, for this purpose, shall: (a) Establish the form and the intervals for transmitting the information to be submitted in accordance with Article 26 and consider such information as well as reports submitted by any subsidiary body; (b) Review scientific, technical and technological advice on biological diversity provided in accordance with Article 25; (c) Consider and adopt, as required, protocols in accordance with Article 28; (d) Consider and adopt, as required, in accordance with Articles 29 and 30, amendments to this Convention and its annexes; (e) Consider amendments to any protocol, as well as

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to any annexes thereto, and, if so decided, recommend their adoption to the parties to the protocol concerned; (f) Consider and adopt, as required, in accordance with Article 30, additional annexes to this Convention; (g) Establish such subsidiary bodies, particularly to provide scientific and technical advice, as are deemed necessary for the implementation of this Convention; (h) Contact, through the Secretariat, the executive bodies of conventions dealing with matters covered by this Convention with a view to establishing appropriate forms of cooperation with them; and (i) Consider and undertake any additional action that may be required for the achievement of the purposes of this Convention in the light of experience gained in its operation.

5. The United Nations, its specialized agencies and the International Atomic Energy Agency, as well as any State not Party to this Convention, may be represented as observers at meetings of the Conference of the Parties. Any other body or agency, whether governmental or non-governmental, qualified in fields relating to conservation and sustainable use of biological diversity, which has informed the Secretariat of its wish to be represented as an observer at a meeting of the Conference of the Parties, may be admitted unless at least one third of the Parties present object. The admission and participation of observers shall be subject to the rules of procedure adopted by the Conference of the Parties.

#### *Article 24. Secretariat*

1. A secretariat is hereby established. Its functions shall be:
  - (a) To arrange for and service meetings of the Conference of the Parties provided for in Article 23
  - (b) To perform the functions assigned to it by any protocol
  - (c) To prepare reports on the execution of its functions under this Convention and present them to the Conference of the Parties
  - (d) To coordinate with other relevant international bodies and, in particular to enter into such administrative and contractual arrangements as may be required for the effective discharge of its functions and
  - (e) To perform such other functions as may be determined by the Conference of the Parties.
2. At its first ordinary meeting, the Conference of the Parties shall designate the secretariat from amongst those existing competent international organizations, which have signified their willingness to carry out the secretariat functions under this Convention.

#### *Article 25. Subsidiary Body on Scientific, Technical and Technological Advice*

1. A subsidiary body for the provision of scientific, technical and technological advice is hereby established to provide the Conference of the Parties and, as appropriate, its other subsidiary bodies with timely advice relating to the implementation of this Convention. This body shall be open to participation by all Parties and shall be multidisciplinary. It shall comprise government representatives compe-

tent in the relevant field of expertise. It shall report regularly to the Conference of the Parties on all aspects of its work.

2. Under the authority of and in accordance with guidelines laid down by the Conference of the Parties, and upon its request, this body shall:
  - (a) Provide scientific and technical assessments of the status of biological diversity
  - (b) Prepare scientific and technical assessments of the effects of types of measures taken in accordance with the provisions of this Convention
  - (c) Identify innovative, efficient and state-of-the-art technologies and know-how relating to the conservation and sustainable use of biological diversity and advise on the ways and means of promoting development and/or transferring such technologies
  - (d) Provide advice on scientific programmes and international cooperation in research and development related to conservation and sustainable use of biological diversity and
  - (e) Respond to scientific, technical, technological and methodological questions that the Conference of the Parties and its subsidiary bodies may put to the body.

The functions, terms of reference, organization and operation of this body may be further elaborated by the Conference of the Parties.

*Article 26. Reports*

Each Contracting Party shall, at intervals to be determined by the Conference of the Parties, present to the Conference of the Parties, reports on measures, which it has taken for the implementation of the provisions of this Convention and their effectiveness in meeting the objectives of this Convention.

*Article 27. Settlement of Disputes*

1. In the event of a dispute between Contracting Parties concerning the interpretation or application of this Convention, the parties concerned shall seek solution by negotiation.
2. If the parties concerned cannot reach agreement by negotiation, they may jointly seek the good offices of, or request mediation by, a third party.
3. When ratifying, accepting, approving or acceding to this Convention, or at any time thereafter, a State or regional economic integration organization may declare in writing to the Depositary that for a dispute not resolved in accordance with paragraph 1 or paragraph 2 above, it accepts one or both of the following means of dispute settlement as compulsory:
  - (a) Arbitration in accordance with the procedure laid down in Part 1 of Annex II
  - (b) Submission of the dispute to the International Court of Justice.

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4. If the parties to the dispute have not, in accordance with paragraph 3 above, accepted the same or any procedure, the dispute shall be submitted to conciliation in accordance with Part 2 of Annex II unless the parties otherwise agree.
  5. The provisions of this Article shall apply with respect to any protocol except as otherwise provided in the protocol concerned.

*Article 28. Adoption of Protocols*

1. The Contracting Parties shall cooperate in the formulation and adoption of protocols to this Convention.
2. Protocols shall be adopted at a meeting of the Conference of the Parties. 3. The text of any proposed protocol shall be communicated to the Contracting Parties by the Secretariat at least six months before such a meeting.

*Article 29. Amendment of the Convention or Protocols*

1. Amendments to this Convention may be proposed by any Contracting Party. Any Party to that protocol may propose amendments to any protocol.
2. Amendments to this Convention shall be adopted at a meeting of the Conference of the Parties. Amendments to any protocol shall be adopted at a meeting of the Parties to the Protocol in question. The text of any proposed amendment to this Convention or to any protocol, except as may otherwise be provided in such protocol, shall be communicated to the Parties to the instrument in question by the secretariat at least six months before the meeting at which it is proposed for adoption. The secretariat shall also communicate proposed amendments to the signatories to this Convention for information.
3. The Parties shall make every effort to reach agreement on any proposed amendment to this Convention or to any protocol by consensus. If all efforts at consensus have been exhausted, and no agreement reached, the amendment shall as a last resort be adopted by a two-third majority vote of the Parties to the instrument in question present and voting at the meeting, and shall be submitted by the Depositary to all Parties for ratification, acceptance or approval.
4. Ratification, acceptance or approval of amendments shall be notified to the Depositary in writing. Amendments adopted in accordance with paragraph 3 above shall enter into force among Parties having accepted them on the ninetieth day after the deposit of instruments of ratification, acceptance or approval by at least two thirds of the Contracting Parties to this Convention or of the Parties to the protocol concerned, except as may otherwise be provided in such protocol. Thereafter the amendments shall enter into force for any other Party on the ninetieth day after that Party deposits its instrument of ratification, acceptance or approval of the amendments.

5. For the purposes of this Article, „Parties present and voting“ means Parties present and casting an affirmative or negative vote.

*Article 30. Adoption and Amendment of Annexes*

1. The annexes to this Convention or to any protocol shall form an integral part of the Convention or of such protocol, as the case may be, and, unless expressly provided otherwise, a reference to this Convention or its protocols constitutes at the same time a reference to any annexes thereto. Such annexes shall be restricted to procedural, scientific, technical and administrative matters.
2. Except as may be otherwise provided in any protocol with respect to its annexes, the following procedure shall apply to the proposal, adoption and entry into force of additional annexes to this Convention or of annexes to any protocol:
  - (a) Annexes to this Convention or to any protocol shall be proposed and adopted according to the procedure laid down in Article 29;
  - (b) Any Party that is unable to approve an additional annex to this Convention or an annex to any protocol to which it is Party shall so notify the Depositary, in writing, within one year from the date of the communication of the adoption by the Depositary. The Depositary shall without delay notify all Parties of any such notification received. A Party may at any time withdraw a previous declaration of objection and the annexes shall thereupon enter into force for that Party subject to subparagraph (c) below;
  - (c) On the expiry of one year from the date of the communication of the adoption by the Depositary, the annex shall enter into force for all Parties to this Convention or to any protocol concerned which have not submitted a notification in accordance with the provisions of subparagraph (b) above.
3. The proposal, adoption and entry into force of amendments to annexes to this Convention or to any protocol shall be subject to the same procedure as for the proposal, adoption and entry into force of annexes to the Convention or annexes to any protocol.
4. If an additional annex or an amendment to an annex is related to an amendment to this Convention or to any protocol, the additional annex or amendment shall not enter into force until such time as the amendment to the Convention or to the protocol concerned enters into force.

*Article 31. Right to Vote*

1. Except as provided for in paragraph 2 below, each Contracting Party to this Convention or to any protocol shall have one vote.
2. Regional economic integration organizations, in matters within their competence, shall exercise their right to vote with a number of votes equal to the number of their member States, which are Contracting Parties to this Convention or the relevant protocol. Such organizations shall not exercise their right to vote if their member States exercise theirs, and vice versa.

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*Article 32. Relationship between this Convention and Its Protocols*

1. A State or a regional economic integration organization may not become a Party to a protocol unless it is, or becomes at the same time, a Contracting Party to this Convention.
2. Decisions under any protocol shall be taken only by the Parties to the protocol concerned. Any Contracting Party that has not ratified, accepted or approved a protocol may participate as an observer in any meeting of the parties to that protocol.

*Article 33. Signature*

This Convention shall be open for signature at Rio de Janeiro by all States and any regional economic integration organization from 5 June 1992 until 14 June 1992, and at the United Nations Headquarters in New York from 15 June 1992 to 4 June 1993.

*Article 34. Ratification, Acceptance or Approval*

1. This Convention and any protocol shall be subject to ratification, acceptance or approval by States and by regional economic integration organizations. Instruments of ratification, acceptance or approval shall be deposited with the Depositary.
2. Any organization referred to in paragraph 1 above which becomes a Contracting Party to this Convention or any protocol without any of its member States being a Contracting Party shall be bound by all the obligations under the Convention or the protocol, as the case may be. In the case of such organizations, one or more of whose member States is a Contracting Party to this Convention or relevant protocol, the organization and its member States shall decide on their respective responsibilities for the performance of their obligations under the Convention or protocol, as the case may be. In such cases, the organization and the member States shall not be entitled to exercise rights under the Convention or relevant protocol concurrently.
3. In their instruments of ratification, acceptance or approval, the organizations referred to in paragraph 1 above shall declare the extent of their competence with respect to the matters governed by the Convention or the relevant protocol. These organizations shall also inform the Depositary of any relevant modification in the extent of their competence.

*Article 35. Accession*

1. This Convention and any protocol shall be open for accession by States and by regional economic integration organizations from the date on which the Convention or the protocol concerned is closed for signature. The instruments of accession shall be deposited with the Depositary.
2. In their instruments of accession, the organizations referred to in paragraph 1 above shall declare the extent of their competence with respect to the matters governed by the Convention or the relevant

protocol. These organizations shall also inform the Depositary of any relevant modification in the extent of their competence.

3. The provisions of Article 34, paragraph 2, shall apply to regional economic integration organizations, which accede to this Convention or any protocol.

*Article 36. Entry Into Force*

1. This Convention shall enter into force on the ninetieth day after the date of deposit of the thirtieth instrument of ratification, acceptance, approval or accession.
2. Any protocol shall enter into force on the ninetieth day after the date of deposit of the number of instruments of ratification, acceptance, approval or accession, specified in that protocol, has been deposited.
3. For each Contracting Party, which ratifies, accepts or approves this Convention or accedes thereto after the deposit of the thirtieth instrument of ratification, acceptance, approval or accession, it shall enter into force on the ninetieth day after the date of deposit by such Contracting Party of its instrument of ratification, acceptance, approval or accession.
4. Any protocol, except as otherwise provided in such protocol, shall enter into force for a Contracting Party that ratifies, accepts or approves that protocol or accedes thereto after its entry into force pursuant to paragraph 2 above, on the ninetieth day after the date on which that Contracting Party deposits its instrument of ratification, acceptance, approval or accession, or on the date on which this Convention enters into force for that Contracting Party, whichever shall be the later.
5. For the purposes of paragraphs 1 and 2 above, any instrument deposited by a regional economic integration organization shall not be counted as additional to those deposited by member States of such organization.

*Article 37. Reservations*

No reservations may be made to this Convention.

*Article 38. Withdrawals*

1. At any time after two years from the date on which this Convention has entered into force for a Contracting Party, that Contracting Party may withdraw from the Convention by giving written notification to the Depositary.
2. Any such withdrawal shall take place upon expiry of one year after the date of its receipt by the Depositary, or on such later date as may be specified in the notification of the withdrawal.
3. Any Contracting Party, which withdraws from this Convention, shall be considered as also having withdrawn from any protocol to which it is party.

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*Article 39. Financial Interim Arrangements*

Provided that it has been fully restructured in accordance with the requirements of Article 21, the Global Environment Facility of the United Nations Development Programme, the United Nations Environment Programme and the International Bank for Reconstruction and Development shall be the institutional structure referred to in Article 21 on an interim basis, for the period between the entry into force of this Convention and the first meeting of the Conference of the Parties or until the Conference of the Parties decides which institutional structure will be designated in accordance with Article 21.

*Article 40. Secretariat Interim Arrangements*

The secretariat to be provided by the Executive Director of the United Nations Environment Programme shall be the secretariat referred to in Article 24, paragraph 2, on an interim basis for the period between the entry into force of this Convention and the first meeting of the Conference of the Parties.

*Article 41. Depositary*

The Secretary-General of the United Nations shall assume the functions of Depositary of this Convention and any protocols.

*Article 42. Authentic Texts*

The original of this Convention, of which the Arabic, Chinese, English, French, Russian and Spanish texts are equally authentic, shall be deposited with the Secretary-General of the United Nations.

IN WITNESS WHEREOF the undersigned, being duly authorized to that effect, have signed this Convention.

Done at Rio de Janeiro on this fifth day of June, one thousand nine hundred and ninety-two.

*Annex I***IDENTIFICATION AND MONITORING**

1. Ecosystems and habitats: containing high diversity, large numbers of endemic or threatened species, or wilderness; required by migratory species; of social, economic, cultural or scientific importance; or, which are representative, unique or associated with key evolutionary or other biological processes;
2. Species and communities which are: threatened; wild relatives of domesticated or cultivated species; of medicinal, agricultural or other economic value; or social, scientific or cultural importance; or importance for research into the conservation and sustainable use of biological diversity, such as indicator species; and
3. Described genomes and genes of social, scientific or economic importance.

*Annex II*

Part 1

**ARBITRATION**

*Article 1*

The claimant party shall notify the secretariat that the parties are referring a dispute to arbitration pursuant to Article 27. The notification shall state the subject-matter of arbitration and include, in particular, the articles of the Convention or the protocol, the

interpretation or application of which are at issue. If the parties don't agree on the subject matter of the dispute before the President of the tribunal is designated, the arbitral tribunal shall determine the subject matter. The secretariat shall forward the information thus received to all Contracting Parties to this Convention or to the protocol concerned.

*Article 2*

1. In disputes between two parties, the arbitral tribunal shall consist of three members. Each of the parties to the dispute shall appoint an arbitrator and the two arbitrators so appointed shall designate by common agreement the third arbitrator who shall be the President of the tribunal. The latter shall not be a national of one of the parties to the dispute, nor have his or her usual place of residence in the territory of one of these parties, nor be employed by any of them, nor have dealt with the case in any other capacity.
2. In disputes between more than two parties, parties in the same interest shall appoint one arbitrator jointly by agreement.
3. Any vacancy shall be filled in the manner prescribed for the initial appointment.

*Article 3*

1. If the President of the arbitral tribunal has not been designated within two months of the appointment of the second arbitrator, the Secretary-General of the United Nations shall, at the request of a party, designate the President within a further two-month period.
2. If one of the parties to the dispute does not appoint an arbitrator within two months of receipt of the request, the other party may inform the Secretary-General who shall make the designation within a further two-month period.

*Article 4*

The arbitral tribunal shall render its decisions in accordance with the provisions of this Convention, any protocols concerned, and international law.

*Article 5*

Unless the parties to the dispute otherwise agree, the arbitral tribunal shall determine its own rules of procedure.

*Article 6*

The arbitral tribunal may, at the request of one of the parties, recommend essential interim measures of protection.

*Article 7*

The parties to the dispute shall facilitate the work of the arbitral tribunal and, in particular, using all means at their disposal, shall: (a) Provide it with all relevant documents, information and facilities; and (b) Enable it, when necessary, to call witnesses or experts and receive their evidence.

*Article 8*

The parties and the arbitrators are under an obligation to protect the confidentiality of any information they receive in confidence during the proceedings of the arbitral tribunal.

*Article 9*

Unless the arbitral tribunal determines otherwise because of the particular circumstances of the case, the costs of the tribunal shall be borne by the parties to the dispute in equal shares. The tribunal shall keep a record of all its costs, and shall furnish a final statement thereof to the parties.

*Article 10*

Any Contracting Party that has an interest of a legal nature in the subject matter of the dispute, which may be affected by the decision in the case, may intervene in the proceedings with the consent of the tribunal.

*Article 11*

The tribunal may hear and determine counterclaims arising directly out of the subject matter of the dispute.

*Article 12*

Decisions both on procedure and substance of the arbitral tribunal shall be taken by a majority vote of its members.

*Article 13*

If one of the parties to the dispute does not appear before the arbitral tribunal or fails to defend its case, the other party may request the tribunal to continue the proceedings and to make its award. Absence of a

party or a failure of a party to defend its case shall not constitute a bar to the proceedings. Before rendering its final

decision, the arbitral tribunal must satisfy itself that the claim is well founded in fact and law.

*Article 14*

The tribunal shall render its final decision within five months of the date on which it is fully constituted unless it finds it necessary to extend the time limit for a period, which should not exceed five more months.

*Article 15*

The final decision of the arbitral tribunal shall be confined to the subject matter of the dispute and shall state the reasons on which it is based. It shall contain the names of the members who have participated and the date of the final decision. Any member of the tribunal may attach a separate or dissenting opinion to the final decision.

*Article 16*

The award shall be binding on the parties to the dispute. It shall be without appeal unless the parties to the dispute have agreed in advance to an appellate procedure.

*Article 17*

Either party for decision to the arbitral tribunal, which rendered it, may submit any controversy, which may arise between the parties to the dispute as regards the interpretation or manner of implementation of the final decision.

Part 2

**CONCILIATION**

*Article 1*

A conciliation commission shall be created upon the request of one of the parties to the dispute. The commission shall, unless the parties otherwise agree, be composed of five members, two appointed by each Party concerned and a President chosen jointly by those members.

*Article 2*

In disputes between more than two parties, parties in the same interest shall appoint their members of the commission jointly by agreement. Where two or more parties have separate interests or there is a disagreement as to whether they are of the same interest, they shall appoint their members separately.

*Article 3*

If any appointments by the parties are not made within two months of the date of the request to create a conciliation commission, the Secretary-General of the United Nations shall, if asked to do so by the party that made the request, make those appointments within a further two-month period.

*Article 4*

If a President of the conciliation commission has not been chosen within two months of the last of the members of the commission being appointed, the Secretary-General of the United Nations shall, if asked to do so by a party, designate a President within a further two-month period.

*Article 5*

The conciliation commission shall take its decisions by majority vote of its members. It shall, unless the parties to the dispute otherwise agree, determine its own procedure. It shall render a proposal for resolution of the dispute, which the parties shall consider in good faith.

*Article 6*

The commission shall decide a disagreement as to whether the conciliation commission has competence.



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## Annex II

### THE SEVILLE STRATEGY FOR BIOSPHERE RESERVES

The following Strategy provides recommendations for developing effective biosphere reserves and for setting out the conditions for the appropriate functioning of the World Network of Biosphere Reserves. It does not repeat the general principles of the Convention on Biological Diversity, nor Agenda 21, but instead identifies the specific role of biosphere reserves in developing a new vision of the relationship between conservation and development. Thus, the document is deliberately focused on a few priorities.

The Strategy suggests the level (international, national, individual biosphere reserve) at which each recommendation will be most effective. However, given the large variety of different national and local management situations, these recommended levels of actions should be seen merely as guidelines and adapted to fit the situation at hand. Note especially that the „national“ level should be interpreted to include other governmental levels higher than the individual reserve (e.g., provincial, state, county, etc.). In some countries, national or local NGOs may also be appropriate substitutes for this level. Similarly, the „international“ level often includes regional and inter-regional activities.

The Strategy also includes recommended Implementation Indicators, i.e. a checklist of actions that will enable all involved following and evaluating the implementation of the Strategy.

Criteria used in developing the Indicators were: availability (Can the information be gathered relatively easily?), simplicity (Are the data unambiguous?), and usefulness (Will the information be useful to reserve managers, National Committees, and/or the network at large?). One role of the Implementation Indicators is to assemble a database of successful implementation mechanisms and to exchange this information among all members of the network.

### GOAL I: USE BIOSPHERE RESERVES TO CONSERVE NATURAL AND CULTURAL DIVERSITY

OBJECTIVE I.1: Improve the coverage of natural and cultural biodiversity by means of the World Network of Biosphere Reserves.

Recommended at the international level:

1. Promote biosphere reserves as a means of implementing the goals of the Convention on Biological Diversity.
2. Promote a comprehensive approach to biogeographical classification that takes into account such ideas as vulnerability analysis, in order to develop a system encompassing socio-ecological factors.

Recommended at the national level:

3. Prepare a biogeographical analysis of the country as a basis, inter alia, for assessing coverage of the World Biosphere Reserve Network.

4. In light of the analysis, and taking into account existing protected areas, establish, strengthen or extend biosphere reserves as necessary, giving special attention to fragmented habitats, threatened ecosystems, and fragile and vulnerable environments, both natural and cultural.

OBJECTIVE I.2: INTEGRATE BIOSPHERE RESERVES INTO CONSERVATION PLANNING

Recommended at the international level:

1. Encourage the establishment of transboundary biosphere reserves as a means of dealing with the conservation of organisms, ecosystems, and genetic resources that cross national boundaries.

Recommended at the national level:

2. Integrate biosphere reserves in strategies for biodiversity conservation and sustainable use, in plans for protected areas, and in the national biodiversity strategies and action plans provided for in Article 6 of the Convention on Biological Diversity.
3. When applicable, include projects to strengthen and develop biosphere reserves in programmes, to be initiated and funded under the Convention on Biological Diversity, and other multilateral conventions.
4. Link biosphere reserves with each other, and with other protected areas, through green corridors and in other ways that enhance biodiversity conservation, and ensure that these links are maintained.
5. Use biosphere reserves for in situ conservation of genetic resources, including wild relatives of cultivated and domesticated species, and consider using the reserves as rehabilitation/re-introduction sites, and link them as appropriate with ex situ conservation and use programmes.

GOAL II: UTILIZE BIOSPHERE RESERVES AS MODELS OF LAND MANAGEMENT AND OF APPROACHES TO SUSTAINABLE DEVELOPMENT

OBJECTIVE II.1: Secure the support and involvement of local people

Recommended at the international level:

1. Prepare guidelines for key aspects of biosphere reserve management, including the resolution of conflicts, provision of local benefits, and involvement of stakeholders in decision-making and in responsibility for management.

Recommended at the national level:

2. Incorporate biosphere reserves into plans for implementing the sustainable-use goals of Agenda 21 and the Convention on Biological Diversity.
3. Establish, strengthen or extend biosphere reserves to include areas where traditional lifestyles and indigenous uses of biodiversity are practiced (including sacred sites), and/or

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where there are critical interactions between people and their environment (e.g. peri-urban areas, degraded rural areas, coastal areas, freshwater environments and wetlands).

4. Identify and promote the establishment of activities compatible with the goals of conservation, through the transfer of appropriate technologies which include traditional knowledge, and which promote sustainable development in the buffer and transition zones.

Recommended at the individual reserve level:

5. Survey the interests of the various stakeholders and fully involve them in planning and decision-making regarding the management and use of the reserve.
6. Identify and address factors that lead to environmental degradation and unsustainable use of biological resources.
7. Evaluate the natural products and services of the reserve, and use these evaluations to promote environmentally sound and economically sustainable income opportunities for local people.
8. Develop incentives for the conservation and sustainable use of natural resources, and develop alternative means of livelihood for local populations, when existing activities are limited or prohibited within the biosphere reserve.
9. Ensure that the benefits derived from the use of natural resources are equitably shared with the stakeholders, by such means as sharing the entrance fees, sale of natural products or handicrafts, use of local construction techniques and labour, and development of sustainable activities (e.g. agriculture, forestry, etc.).

OBJECTIVE II.2: Ensure better harmonization and interaction among the different biosphere reserve zones.

Recommended at the national level:

1. Ensure that each biosphere reserve has an effective management policy or plan and an appropriate authority or mechanism to implement it.
2. Develop means of identifying incompatibilities between the conservation and sustainable-use functions of biosphere reserves, and take measures to ensure that an appropriate balance between the functions is maintained.

Recommended at the individual reserve level:

3. Develop and establish institutional mechanisms to manage, co-ordinate and integrate the biosphere reserve's programmes and activities.

4. Establish a local consultative framework in which the reserve's economic and social stakeholders are represented, including the full range of interests (e.g. agriculture, forestry, hunting and extracting, water and energy supply, fisheries, tourism, recreation, research).

### OBJECTIVE II.3: Integrate biosphere reserves into regional planning

Recommended at the national level:

1. Include biosphere reserves in regional development policies and in regional land-use planning projects.
2. Encourage the major land-use sectors near each biosphere reserve to adopt practices favouring sustainable land-use.

Recommended at the individual reserve level:

3. Organize forums and set up demonstration sites for the examination of socio-economic and environmental problems of the region, and for the sustainable utilization of biological resources important to the region.

### GOAL III: USE BIOSPHERE RESERVES FOR RESEARCH, MONITORING, EDUCATION, AND TRAINING

#### OBJECTIVE III.1: Improve knowledge of the interactions between humans and the biosphere

Recommended at the international level:

1. Use the World Biosphere Reserve Network to conduct comparative environmental and socio-economic research, including long-term research that will require decades to complete.
2. Use the World Biosphere Reserve Network for international research programmes that deal with topics such as biological diversity, desertification, water cycles, ethnobiology and global change.
3. Use the World Biosphere Reserve Network for co-operative research programmes at the regional and inter-regional levels, such as those existing for the Southern Hemisphere, East Asia and Latin America.
4. Encourage the development of innovative, interdisciplinary research tools for biosphere reserves, including flexible modelling systems for integrating social, economic and ecological data.
5. Develop a clearing-house for research tools and methodologies in biosphere reserves
6. Encourage interactions between the World Biosphere Reserve Network and other research and education networks. Facilitate the use of biosphere reserves for collaborative research projects of consortia of universities and other institutions of higher learning and research, in the private as well as public sector, and at non-governmental, as well as governmental levels.

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Recommended at the national level:

7. Integrate biosphere reserves with national and regional scientific research programmes, and link these research activities to national and regional policies on conservation and sustainable development.

Recommended at the individual reserve level:

8. Use biosphere reserves for basic and applied research, particularly projects with a focus on local issues, interdisciplinary projects incorporating both the natural and the social sciences, and projects involving the rehabilitation of degraded ecosystems, the conservation of soils and water and the sustainable use of natural resources.
9. Develop a functional system of data management for the rational use of research and monitoring results in the management of the biosphere reserve.

#### OBJECTIVE III.2: Improve monitoring activities

Recommended at the international level:

1. Use the World Biosphere Reserve Network, at the international, regional, national and local levels, as priority long-term monitoring sites for international programmes, focused on topics such as terrestrial and marine observing systems, global change, biodiversity and forest health.
2. Encourage the adoption of standardized protocols for meta-data concerning the description of flora and fauna, to facilitate the interchange, accessibility and utilization of scientific information generated in biosphere reserves.

Recommended at the national level:

3. Encourage the participation of biosphere reserves in national programmes of ecological and environmental monitoring, and development of linkages between biosphere reserves and other monitoring sites and networks.

Recommended at the individual reserve level:

4. Use the reserve for making inventories of fauna and flora, collecting ecological and socio-economic data, making meteorological and hydrological observations, studying the effects of pollution, etc., for scientific purposes and as the basis for sound site management.
5. Use the reserve as an experimental area for the development and testing of methods and approaches for the evaluation and monitoring of biodiversity, sustainability and quality of life of its inhabitants.
6. Use the reserve for developing indicators of sustainability (in ecological, economic, social and institutional terms) for the different productive activities carried out within the buffer zones and transition areas.

7. Develop a functional system of data management for rational use of research and monitoring results in the management of the biosphere reserve.

OBJECTIVE III.3: Improve education, public awareness and involvement

Recommended at the international level:

1. Facilitate the exchange of experience and information between biosphere reserves, with a view to strengthening the involvement of volunteers and local people in biosphere reserve activities.
2. Promote the development of communication systems for diffusing information on biosphere reserves and on experiences at the field level.

Recommended at the national level:

3. Include information on conservation and sustainable use, as practiced in biosphere reserves, in school programmes and teaching manuals, and in media efforts.
4. Encourage participation of biosphere reserves in international networks and programmes, to promote crosscutting linkages in education and public awareness.

Recommended at the individual reserve level:

5. Encourage involvement of local communities, school children and other stakeholders in education and training programmes and in research and monitoring activities within biosphere reserves.
6. Produce visitors' information about the reserve, its importance for conservation and the sustainable use of biodiversity, its socio-cultural aspects, and its recreational and educational programmes and resources.
7. Promote the development of ecology field educational centres, within individual reserves, as facilities for contributing to the education of school children and other groups.

OBJECTIVE III.4: Improve training for specialists and managers

Recommended at the international level:

1. Utilize the World Biosphere Reserve Network to support and encourage international training opportunities and programmes.
2. Identify representative biosphere reserves to serve as regional training centres.

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Recommended at the national level:

3. Define the training needed by biosphere reserve managers in the 21st century and develop model training programmes on such topics as how to design and implement inventory and monitoring programmes in biosphere reserves, how to analyse and study socio-cultural conditions, how to solve conflicts, and how to manage resources co-operatively in an ecosystem or landscape context.

Recommended at the individual reserve level:

4. Use the reserve for on-site training and or national, regional and local seminars.
5. Encourage appropriate training and employment of local people and other stakeholders to enable their full participation in inventory, monitoring and research in programmes in biosphere reserves.
6. Encourage training programmes for local communities and other local agents (such as decision-makers, local leaders and agents working in production, technology transfer and community development programmes) in order to enable their full participation in the planning, management and monitoring processes of biosphere reserves.

#### GOAL IV: IMPLEMENT THE BIOSPHERE RESERVE CONCEPT

##### OBJECTIVE IV.1: Integrate the functions of biosphere reserves

Recommended at the international level:

1. Identify and publicize demonstration (model or illustrative examples of) biosphere reserves, whose experiences will be beneficial to others at the national, regional and international levels.
2. Give guidance/advice on the elaboration and periodic review of strategies and national action plans for biosphere reserves.
3. Organize forums and other information exchange mechanisms for biosphere reserve managers.
4. Prepare and disseminate information on how to develop management plans or policies for biosphere reserves.
5. Prepare guidance on management issues at biosphere reserve sites, including, inter alia, methods to ensure local participation, case studies of various management options and techniques of conflict resolution.

Recommended at the national level:

6. Ensure that each biosphere reserve has an effective management policy or plan and an appropriate authority or mechanism to implement it.

7. Encourage private sector initiatives to establish and maintain environmentally and socially sustainable activities in appropriate zones of biosphere reserves and in surrounding areas, in order to stimulate community development.
8. Develop and periodically review strategies and national action plans for biosphere reserves. These strategies should strive for complementarity and added value of biosphere reserves, with respect to other national instruments for conservation.
9. Organize forums and other information exchange mechanisms for biosphere reserve managers.

Recommended at the individual reserve level:

10. Identify and map the different zones of biosphere reserves and define their respective status.
11. Prepare, implement and monitor an overall management plan, or policy, that includes all of the zones of biosphere reserves.
12. Where necessary, in order to preserve the core area, re-plan the buffer and transition zones, according to sustainable development criteria.
13. Define and establish institutional mechanisms to manage, co-ordinate and integrate the reserve's programmes and activities.
14. Ensure that the local community participate in the planning and management of biosphere reserves.
15. Encourage private sector initiatives to establish and maintain environmentally and socially sustainable activities in the reserve and surrounding areas.

### OBJECTIVE IV.2: Strengthen the World Biosphere Reserve Network

Recommended at the international level:

1. Facilitate provision of adequate resources for implementation of the Statutory Framework of the World Network of Biosphere Reserves.
2. Facilitate the periodic review, by each country, of its biosphere reserves, as required in the Statutory Framework of the World Network of Biosphere Reserves and assist countries in taking measures to make their biosphere reserves functional.
3. Support the functioning of the Advisory Committee for Biosphere Reserves, and fully consider and utilize its recommendations and guidance.
4. Lead the development of communication among biosphere reserves, taking into account their communication and technical capabilities, and strengthen existing and planned regional or thematic networks.

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5. Develop creative connections and partnerships with other networks of similar managed areas, and with international governmental and non-governmental organizations, with goals congruent with those of biosphere reserves.
  6. Promote and facilitate twinning between biosphere reserve sites and foster transboundary reserves.
  7. Give biosphere reserves more visibility by disseminating information materials, developing communication policies and highlighting their roles as members of the World Biosphere Reserve Network.
  8. Wherever possible, advocate the inclusion of biosphere reserves in projects financed by bilateral and multilateral aid organizations
  9. Mobilize private funds, from businesses, NGOs and foundations, for the benefit of biosphere reserves.
  10. Develop standards and methodologies for collecting and exchanging various types of data and assist their application across the network of biosphere reserves.
  11. Monitor, assess and follow up on the implementation of the Seville Strategy, utilizing the Implementation Indicators and analyse the factors that aid in attainment of the indicators, as well as those that hinder such attainment.

Recommended at the national level:

12. Facilitate provision of adequate resources for implementation of the Statutory Framework of the World Network of Biosphere Reserves.
13. Develop a national-level mechanism to advise and co-ordinate the biosphere reserves; and fully considers and utilizes its recommendations and guidance.
14. Prepare an evaluation of the status and operations of each of the country's biosphere reserves, as required in the Statutory Framework and provide appropriate resources to address any deficiencies.
15. Develop creative connections and partnerships with other networks of similar managed areas, and with international governmental and non-governmental organizations, with goals congruent with those of the biosphere reserves.
16. Seek opportunities for twinning between biosphere reserves and establish transboundary biosphere reserves, where appropriate.
17. Give biosphere reserves more visibility by disseminating information materials, developing communication policies and highlighting their roles as members of the Network.
18. Include biosphere reserves in proposals for financing from international and bilateral funding mechanisms, including the Global Environment Facility.

19. Mobilize private funds, from businesses, NGOs and foundations, for the benefit of biosphere reserves.
20. Monitor, assess and follow up on the implementation of the Seville Strategy, utilizing the Implementation Indicators and analyse the factors that aid in attainment of the indicators, as well as those that hinder such attainment.

Recommended at the individual reserve level:

21. Give biosphere reserves more visibility by disseminating information materials, developing communication policies and highlighting their roles as members of the Network.
22. Mobilize private funds, from businesses, NGOs and foundations, for the benefit of biosphere reserves.
23. Monitor, assess and follow up on the implementation of the Seville Strategy, utilizing the Implementation Indicators and analyse the factors that aid in attainment of the indicators, as well as those that hinder such attainment.

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## Annex III

### THE STATUTORY FRAMEWORK OF THE WORLD NETWORK OF BIOSPHERE RESERVES

#### Introduction

#### Article 1 - Definition

#### Article 2 - World Network of Biosphere Reserves

#### Article 3 - Functions

#### Article 4 - Criteria

#### Article 5 - Designation procedure

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#### Article 7 - Participation in the Network

#### Article 8 - Regional and thematic subnetworks

#### Article 9 - Periodic review

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#### Introduction

Within UNESCO's Man and the Biosphere (MAB) programme, biosphere reserves are established to promote and demonstrate a balanced relationship between humans and the biosphere. Biosphere reserves are designated by the International Co-ordinating Council of the MAB Programme, at the request of the State concerned. Biosphere reserves, each of which remains under the sole sovereignty of the State where it is situated and thereby submitted to State legislation only, form a World Network in which participation by the States is voluntary.

The present Statutory Framework of the World Network of Biosphere Reserves has been formulated with the objectives of enhancing the effectiveness of individual biosphere reserves and strengthening common understanding, communication and co-operation at regional and international levels.

This Statutory Framework is intended to contribute to the widespread recognition of biosphere reserves and to encourage and promote good working examples. The delisting procedure foreseen should be considered as an exception to this basically positive approach, and should be applied only after careful examination, paying due respect to the cultural and socio-economic situation of the country, and after consulting the government concerned.

The text provides for the designation, support and promotion of biosphere reserves, while taking account of the diversity of national and local situations. States are encouraged to elaborate and implement national criteria for biosphere reserves, which take into account the special conditions of the State concerned.

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### Article 1 – Definition

Biosphere reserves are areas of terrestrial and coastal/marine ecosystems or a combination thereof, which are internationally recognized within the framework of UNESCO's programme on Man and the Biosphere (MAB), in accordance with the present Statutory Framework.

### Article 2 - World Network of Biosphere Reserves

1. Biosphere reserves form a worldwide network, known as the World Network of Biosphere Reserves, hereafter called the Network.
2. The Network constitutes a tool for the conservation of biological diversity and the sustainable use of its components, thus contributing to the objectives of the Convention on Biological Diversity and other pertinent conventions and instruments.
3. Individual biosphere reserves remain under the sovereign jurisdiction of the States where they are situated. Under the present Statutory Framework, States take the measures, which they deem necessary according to their national legislation.

### Article 3 – Functions

In combining the three functions below, biosphere reserves should strive to be sites of excellence to explore and demonstrate approaches to conservation and sustainable development on a regional scale: conservation - contribute to the conservation of landscapes, ecosystems, species and genetic variation;

- (i) development - foster economic and human development that is socio-culturally and ecologically sustainable;
- (ii) logistic support - support for demonstration projects, environmental education and training, research and monitoring related to local, regional, national and global issues of conservation and sustainable development.

### Article 4 – Criteria

General criteria for an area to be qualified for designation as a biosphere reserve:

It should encompass a mosaic of ecological systems representative of major biogeographic regions, including a gradation of human interventions.

It should be of significance for biological diversity conservation.

It should provide an opportunity to explore and demonstrate approaches to sustainable development on a regional scale.

It should have an appropriate size to serve the three functions of biosphere reserves, as set out in Article 3.

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It should include these functions, through appropriate zonation, recognizing:

- (a) a legally constituted core area or areas devoted to long-term protection, according to the conservation objectives of the biosphere reserve, and of sufficient size to meet these objectives;
- (b) a buffer zone or zones clearly identified and surrounding or continuous to the core area or areas, where only activities compatible with the conservation objectives can take place;
- (c) an outer transition area where sustainable resource management practices are promoted and developed.

Organizational arrangements should be provided for the involvement and participation of a suitable range of inter alia public authorities, local communities and private interests in the design and carrying out the functions of a biosphere reserve.

In addition, provisions should be made for:

- (a) mechanisms to manage human use and activities in the buffer zone or zones;
- (b) a management policy or plan for the area as a biosphere reserve;
- (c) a designated authority or mechanism to implement this policy or plan;
- (d) programmes for research, monitoring, education and training.

#### Article 5 - Designation procedure

The International Co-ordinating Council (ICC) of the MAB programme in accordance with the following procedure designates biosphere reserves for inclusion in the Network:

- (a) as, through National MAB Committees where appropriate, forward nominations with supporting documentation to the secretariat after having reviewed potential sites, taking into account the criteria as defined in Article 4;
- (b) the secretariat verifies the content and supporting documentation: in the case of incomplete nomination, the secretariat requests the missing information from the nominating State;
- (c) nominations will be considered by the Advisory Committee for Biosphere Reserves for recommendation to ICC;
- (d) ICC of the MAB programme takes a decision on nominations for designation. The Director-General of UNESCO notifies the State concerned of the decision of ICC.

States are encouraged to examine and improve the adequacy of any existing biosphere reserve, and to propose extension as appropriate, to enable it to function fully within the Network. Proposals for extension follow the same procedure as described above for new designations.

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Biosphere reserves, which have been designated before the adoption of the present Statutory Framework, are considered to be already part of the Network. The provisions of the Statutory Framework therefore apply to them.

### Article 6 – Publicity

1. The designation of an area as a biosphere reserve should be given appropriate publicity by the State and authorities concerned, including commemorative plaques and dissemination of information material.
2. Biosphere reserves within the Network, as well as the objectives, should be given appropriate and continuing promotion.

### Article 7 - Participation in the Network

1. States participate in or facilitate co-operative activities of the Network, including scientific research and monitoring, at the global, regional and subregional levels.
2. The appropriate authorities should make available the results of research, associated publications and other data, taking into account intellectual property rights, in order to ensure the proper functioning of the Network and maximize the benefits from information exchanges.
3. States and appropriate authorities should promote environmental education and training, as well as the development of human resources, in co-operation with other biosphere reserves in the Network.

### Article 8 - Regional and thematic subnetworks

States should encourage the constitution and co-operative operation of regional and/or thematic subnetworks of biosphere reserves, and promote development of information exchanges, including electronic information, within the framework of these subnetworks.

### Article 9 - Periodic review

1. The status of each biosphere reserve should be subject to a periodic review every ten years, based on a report prepared by the concerned authority, on the basis of the criteria of Article 4, and forwarded to the secretariat by the State concerned.
2. The report will be considered by the Advisory Committee for Biosphere Reserves for recommendation to ICC.
3. The Committee will examine the periodic reports from States concerned.
4. If ICC considers that the status or management of the biosphere reserve is satisfactory, or has improved since designation or the last review; ICC will formally recognize this.

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5. ICC considers that the biosphere reserve no longer satisfies the criteria contained in Article 4; it may recommend that the State concerned take measures to ensure conformity with the provisions of Article 4, taking into account the cultural and socio-economic context of the State concerned. ICC indicates to the secretariat actions that it should take to assist the State concerned in the implementation of such measures.
  6. Should ICC find that the biosphere reserve in question still does not satisfy the criteria contained in Article 4, within a reasonable period; the area will no longer be referred to as a biosphere reserve which is part of the Network.
  7. Director-General of UNESCO notifies the State concerned of the decision of ICC.
  8. Should a State wish to remove a biosphere reserve under its jurisdiction from the Network, it notifies the secretariat. This notification shall be transmitted to ICC for information. The area will then no longer be referred to as a biosphere reserve, which is part of the Network.

#### Article 10 – Secretariat

1. UNESCO shall act as the secretariat of the Network and be responsible for its functioning and promotion. The secretariat shall facilitate communication and interaction among individual biosphere reserves and among experts. UNESCO shall also develop and maintain a worldwide accessible information system on biosphere reserves, to be linked to other relevant initiatives.
2. In order to reinforce individual biosphere reserves and the functioning of the Network and subnetworks, UNESCO shall seek financial support from bilateral and multilateral sources.
3. Lists of biosphere reserves forming part of the Network, their objectives and descriptive details, shall be updated, published and distributed by the secretariat periodically.