

# The Role of the Convention on Biological Diversity and the Cartagena Protocol on Biosafety in Minimizing Adverse Effects of Invasive Alien Species and Living Modified Organisms<sup>1</sup>

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## Abstract

This paper describes the Convention on Biological Diversity and the Biosafety Protocol and their role in relation to minimizing the adverse effects of alien species and living modified organisms (LMOs).

The introduction of alien species into ecosystems has the potential to adversely affect biological diversity. The Convention on Biological Diversity (CBD), an international agreement with 182 member countries including 53 in Africa, requires parties to prevent the introduction of, control or eradicate those alien species that threaten ecosystems, habitats or species. The parties to the Convention have developed guiding principles for the prevention, introduction, and mitigation of impacts of alien species, which are an important guide for managing species introductions. The Convention also addresses the more specific issue of biosafety, referring to the need to protect the environment and human health from the possible adverse effects of organisms that are modified using techniques of modern biotechnology. The parties to the Convention developed and adopted an agreement on biosafety, known as the Cartagena Protocol on Biosafety, aimed at ensuring an adequate level of protection in the safe transfer, handling and use of living modified organisms (LMOs) resulting from modern biotechnology.

Some key provisions of the Protocol include requirements for: (i) an advance informed agreement regarding the trans-boundary movement of LMOs intended for introduction into the environment; (ii) risk assessment and risk management; (iii) handling, transport, packaging, and identification of LMOs; (iv) capacity building; and (v) information sharing. Significant progress has been made towards operationalizing a number of these provisions, particularly those with procedural requirements, in preparation for entry into force of the Protocol.

## The Convention on Biological Diversity

The world's biological diversity provides humanity with an abundance of goods and produce, including food, energy, and fibers. It is also the foundation for natural processes that help control soil erosion, purify water and air, and recycle carbon and nutrients. Furthermore, the genetic resources associated with biological diversity are useful in the development of pesticides, vaccines, more productive strains of crops and fish, and other resources. They

are also the cornerstones of biotechnology development.

It has been understood for decades that many human activities affect the distribution and abundance of species and, therefore, impact biological diversity. Numerous initiatives in the 1970s and 1980s aimed to stem the loss of species and ecosystems. A consensus gradually emerged, however, that the Earth's genetic resources could be conserved and sustainably used only through international cooperation and funding, based on the introduction

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<sup>1</sup> The views presented in this paper do not necessarily represent the views of the Secretariat of Convention on Biological Diversity.

of a suitable international legally binding instrument.

As a result, the Convention on Biological Diversity, negotiated under the auspices of the United Nations Environment Programme (UNEP), was adopted in 1992 and entered into force in 1993. Its aims are the conservation of biological diversity, the sustainable use of biological resources, and the fair and equitable sharing of benefits arising from the use of genetic resources.

### **Alien Species under the Convention**

The Convention on Biological Diversity states in Article 8(h) that “each Contracting Party shall, as far as possible and as appropriate, prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species.”

Given this mandate, the Convention’s member governments who together constitute the Conference of the Parties (COP) to the Convention made numerous decisions with respect to alien species, many of which are directly relevant to the management of alien species. Most importantly, the COP, at its sixth meeting in April 2002, adopted a set of guiding principles on the introduction of alien species. These guiding principles include definitions of alien species and invasive alien species (Annex 1).

At least two publications by the CBD are of direct relevance to the assessment of impacts from alien species. First, a publication on the assessment and management of alien species (SCBD 2001a) resulted from the sixth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice in 2001. Second, the CBD Secretariat conducted a review of existing international procedures, criteria and capacity for assessing risk from invasive alien species (SCDB 2001b).

Efforts on the issue of alien species under the Convention are ongoing, including as part of the work programs for marine and coastal biological diversity as well as for inland water biological diversity. Finally, a roster of experts on alien species has been established and this is accessible through the website of the Convention.

### **Biotechnology and the Need for Biosafety**

For thousands of years, people have used various techniques to modify plants and animals to

improve food production. One traditional form of genetic manipulation is selective breeding, which makes it possible to promote preferred traits such as improved growth, productivity, nutritional quality, or survival rates for food resources such as fish or crops. Today, selective breeding is being supplemented at a rapid rate by the sophisticated tools of modern biotechnology. Researchers can now take a single gene from a plant or animal cell and insert it into another species to give that species a desired characteristic such as resistance to a destructive pest or disease. The result is commonly referred to as a genetically modified organism (GMO), or as a living modified organism (LMO), resulting from modern biotechnology.

Proponents of this powerful new science argue that biotechnology has the potential, among other things, to boost the production of food resources and reduce annual variability in production due to pests, disease, and other factors. In the case of crops, this could reduce the need to clear more land for farms and for agrochemicals. In the case of fish, increased production could improve food security and reduce the probability of population collapses due to over harvesting. However, some argue that LMOs may pose risks to biological diversity depending on interactions with natural species, or may adversely affect human health.

While advances in biotechnology have great potential for improving human well-being, it is widely recognized that LMOs should be subject to adequate safety measures. Such measures, known collectively as biosafety, seek to ensure the safe transfer, handling, use, and disposal of LMOs.

With the biotechnology industry growing at a rapid rate, the international community agreed on the need to develop a legally binding biosafety protocol under the CBD. Governments recognized that while many countries with biotechnology industries already had national biosafety legislation in place, there was no binding international agreement addressing the movement of LMOs across national borders.

In 1995, the Conference of the Parties (COP) set up an open-ended ad hoc Working Group on Biosafety to draft a protocol. After several years of discussion, the COP adopted the Cartagena Protocol on Biosafety in Montreal on 29 January 2000. The Protocol is named to honor the city of Cartagena, Colombia, which had hosted the COP’s first extraordinary meeting intended to finalize and adopt the Protocol in 1999.

## The Biosafety Protocol

The Biosafety Protocol is intended to provide an international regulatory framework for the growing biotechnology industry that will reconcile the interests of international trade and the need for environmental protection. Its aim is to “contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of LMOs resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity, taking also into account risks to human health, and specifically focusing on trans-boundary movements.” The Protocol will promote the environmentally sound application of biotechnology, making it possible to benefit from biotechnology’s potential, while minimizing the risks to the environment and human health. It will also make it easier for governments, businesses, and civil society to collaborate with one another on strengthening biosafety.

The Protocol offers a number of tools for promoting biosafety:

- *Advance Informed Agreement procedure (AIA):* The Protocol sets out an advance informed agreement procedure that must be followed prior to the first shipment of an LMO intended for introduction into the environment (such as seeds or live fish). In these cases, the exporter must provide a detailed, written description of the organism to the importing country in advance of the shipment. The importer is to acknowledge receipt of this information within 90 days and then explicitly authorize the shipment within 270 days or state its reasons for rejecting the LMO. (Note: the absence of a response, however, is not to be interpreted as implying consent.)

The purpose of the AIA procedure is to ensure that recipient countries have both the opportunity and the capacity to assess risks that may be associated with an LMO before agreeing to its import. It should be stressed that the procedure applies only to the first trans-boundary movement of an LMO intended for introduction into the environment. It does not apply to LMOs in transit through a country, LMOs destined for contained use (in a scientific laboratory for example), or LMOs to be directly used as food or animal feed or for processing (such as corn or tomatoes).

- *Risk assessment and risk management framework:* Governments will decide whether or not to authorize the importation of LMOs

after assessing the associated risks. These assessments are to be undertaken in a scientific manner based on recognized risk assessment techniques, in accordance with the guidance provided in Annex III of the Protocol. In accordance with the precautionary principle, lack of scientific certainty does not prevent governments from making decisions in order to avoid potential adverse effects.

In addition, the Protocol requires governments to establish and maintain mechanisms, measures, and strategies for regulating, managing, and controlling risks identified in the risk assessment procedures.

The Protocol also recognizes the right of importing countries, in reaching a decision on import, to take into account socio-economic considerations such as the value of biological diversity to their indigenous and local communities, provided it is consistent with their international obligations.

- *Handling, transport, packaging and identification:* The Protocol provides for development of standards for the handling, transport, packaging, and identification of LMOs that are subject to intentional trans-boundary movement. Regarding documentation, LMOs that are intended for introduction into the environment must be clearly identified as LMOs, and documentation must specify the identity and relevant traits and/or characteristics, any requirements for the safe handling, storage, transport and use, the contact point for further information, and the name and address of the importer and exporter.
- *Capacity building:* The Protocol promotes international cooperation to help developing countries and countries with economies in transition build the appropriate human resources and institutional capacities. It also encourages governments to assist with scientific and technical training and to promote the transfer of technology, know-how, and financial resources. Because the Protocol is part of the Convention on Biological Diversity, biosafety activities will be eligible for support from the Convention’s “financial mechanism”. Governments are also expected to facilitate private sector involvement in capacity building.

One aspect of capacity building for implementation of the Protocol has been the formation of a roster of experts. Governments have been invited to nominate experts

who are specialized in fields relevant to implementation of the Protocol. The roster of experts will ultimately be a valuable resource for assisting governments in assessing risks and benefits of LMOs.

- *Biosafety Clearing-House:* The Protocol establishes a Biosafety Clearing-House to facilitate the exchange of scientific, technical, environmental and legal information on living modified organisms. The Clearing-House will also include information on national laws and regulations applying to LMOs not covered by the AIA procedure, namely, agricultural commodities to be directly used as food, feed, or for processing, and LMOs in transit or contained use. This information will be vital for enabling governments to implement the Protocol.
- *Public awareness:* While the Protocol concentrates on international action, it recognizes that national measures are essential to making its procedures effective. Member governments, therefore, commit themselves to promoting public awareness, ensuring public access to information, and consulting the public in decisions about biosafety. They must also take national measures to prevent illegal shipments and accidental releases of LMOs, and they must notify affected or potentially affected states in the event that an unintentional trans-boundary movement occurs.

## Current Status of the Protocol

Only after 50 governments have ratified (or acceded to) the Protocol, will the agreement enter into force and become legally binding on its members. More than 100 governments signed the Protocol indicating their intent to ratify it. However, the process of ratification takes varying degrees of time within each country, and as of mid-March 2002, only 13 countries had ratified. Once there are 50 ratifications, a decision-making body called the Meeting of the Parties to the Protocol (MOP) will manage the Protocol's development and implementation. Annex 2 and 3 list the African countries that are Parties to the Convention, signatories to the Protocol, and Parties to the Protocol as of 26 March 2002.

Until entry into force, governments will continue to discuss biosafety and the Protocol within an Intergovernmental Committee for the Cartagena Protocol on Biosafety (ICCP). The ICCP has been mandated by the Conference of the Parties (COP) to prepare for the first Meeting of the Parties to

the Protocol, at which time the ICCP will cease to exist.

The first meeting of the ICCP was held in December 2000 and was attended by 578 participants from 82 governments and 133 United Nations bodies, inter-governmental, non-governmental and industry organizations. The meeting considered issues that had been identified by COP 5, namely: information sharing and the Biosafety Clearing-House; capacity building; decision-making procedures; handling, transport, packaging and identification; and compliance. The conclusions and recommendations of the meeting are contained in its report (document UNEP/CBD/ICCP/1/9) available on the website of the Secretariat.

The second meeting of the ICCP held in October 2001 discussed additional issues concerning liability and redress, monitoring and reporting, the Secretariat, guidance to the financial mechanism, rules of procedure for the meeting of the parties, consideration of other issues necessary for effective implementation of the Protocol, and elaboration of a draft provisional agenda for the first meeting of the parties.

Following recommendations of ICCP-1 and ICCP-2, many steps have been taken towards the implementation of the Protocol including the development of a pilot phase of the Biosafety Clearing House, development of a roster of experts, development of a database of capacity building initiatives, establishment of links with other organizations involved in biosafety regulation and capacity building, and initial development of documentation requirements for the handling, transport, packaging and identification of alien species.

## References

- SCBD (Secretariat for the Convention on Biological Diversity). 2001a. Assessment and management of alien species that threaten ecosystem, habitats and species. Abstracts of keynote addresses and posters presented at the sixth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice, held in Montreal, Canada, 12-16 March 2001. Montreal, SCBD, 146 p. (CBD Technical Paper No. 1).
- SCBD (Secretariat for the Convention on Biological Diversity). 2001b. Report on existing international procedures, criteria and capacity for assessing risk from invasive alien species. Information document UNEP/CBD/SBSTTA/6/INF/6 prepared for the sixth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice, held in Montreal, Canada, 12-16 March 2001.

## **Annex 1**

### **Guiding Principle for the Prevention, Introduction and Mitigation of Impacts of Alien Species**

#### **Introduction**

This document provides all governments and organizations with guidance for developing effective strategies to minimize the spread and impact of invasive alien species. While each country faces unique challenges and will need to develop context-specific solutions, the Guiding Principles give governments clear direction and a set of goals to aim toward. The extent to which these Guiding Principles can be implemented ultimately depends on available resources. Their purpose is to assist governments to combat invasive alien species as an integral component of conservation and economic development. Because these 15 principles are non-binding, they can be more readily amended and expanded through the Convention on Biological Diversity's processes as we learn more about this problem and its effective solutions.

According to Article 3 of the Convention on Biological Diversity, 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.

The terms as defined in the footnote are used in the Guiding Principles below. Also, while applying these Guiding Principles, due consideration must be given to the fact that ecosystems are dynamic over time and so the natural distribution of species might vary without involvement of a human agent.

#### **A. General**

##### **Guiding principle 1: Precautionary approach**

Given the unpredictability of the pathways and impacts on biological diversity of invasive alien species, efforts to identify and prevent unintentional introductions as well as decisions concerning intentional introductions should be based on the precautionary approach, in

particular with reference to risk analysis, in accordance with the guiding principles below. The Precautionary Approach is that set forth in principle 15 of the 1992 Rio Declaration on Environment and Development and in the preamble of the Convention on Biological Diversity. The precautionary approach should also be applied when considering eradication, containment and control measures in relation to alien species that have become established. Lack of scientific certainty about the various implications of an invasion should not be used as a reason for postponing or failing to take appropriate eradication, containment and control measures.

##### **Guiding principle 2: Three-stage hierarchical approach**

1. Prevention is generally far more cost effective and environmentally desirable than measures taken following introduction and establishment of an invasive alien species.
2. Priority should be given to preventing the introduction of invasive alien species, between and within States. If an invasive alien species has been introduced, early detection and rapid action are crucial to prevent its establishment. The preferred response is often to eradicate the organisms as soon as possible (principle 13). In the event that eradication is not feasible or resources are not available for its eradication, containment (principle 14) and long-term control measures (principle 15) should be implemented. Any examination of benefits and costs (environmental, economic and social) should be done on a long-term basis.

##### **Guiding principle 3: Ecosystem approach**

Measures to deal with invasive alien species should, as appropriate, be based on the ecosystem approach, as described in decision V/6 of the Conference of the Parties.

##### **Guiding principle 4: The role of States**

1. In the context of invasive alien species, States should recognize the risk that activities within their jurisdiction or control may pose to other States as a potential source of invasive alien species, and should take appropriate individual and cooperative actions to minimize that risk, including the provision

of any available information on invasive behaviour or invasive potential of a species.

2. Examples of such activities include:
  - (a) the intentional transfer of an invasive alien species to another State (even if it is harmless in the State of origin); and
  - (b) the intentional introduction of an alien species into their own State if there is a risk of that species subsequently spreading (with or without a human vector) into another State and becoming invasive;
  - (c) activities that may lead to unintentional introductions, even where the introduced species is harmless in the state of origin.
3. To help States minimize the spread and impact of invasive alien species, States should identify, as far as possible, species that could become invasive and make such information available to other States.

### **Guiding principle 5: Research and monitoring**

In order to develop an adequate knowledge base to address the problem, it is important that States undertake research on and monitoring of invasive alien species, as appropriate. These efforts should attempt to include a baseline taxonomic study of biodiversity. In addition to these data, monitoring is the key to early detection of new invasive alien species. Monitoring should include both targeted and general surveys, and benefit from the involvement of other sectors, including indigenous and local communities. Research on an invasive alien species should include a thorough identification of the invasive species and should document: (a) the history and ecology of invasion (origin, pathways and time-period); (b) the biological characteristics of the invasive alien species; and (c) the associated impacts at the ecosystem, species and genetic level and also social and economic impacts, and how they change over time.

### **Guiding principle 6: Education and public awareness**

Raising the public's awareness of the invasive alien species is crucial to the successful management of invasive alien species. Therefore, it is important that States should promote education and public awareness of the causes of invasion and the risks associated with the introduction of alien species. When mitigation measures are required, education

and public-awareness-oriented programmes should be set in motion so as to engage indigenous and local communities and appropriate sector groups in support of such measures.

## **B. Prevention**

### **Guiding principle 7: Border control and quarantine measures**

1. States should implement border controls and quarantine measures for alien species that are or could become invasive to ensure that:
  - (a) intentional introductions of alien species are subject to appropriate authorization (principle 10);
  - (b) unintentional or unauthorized introductions of alien species are minimized.
2. States should consider putting in place appropriate measures to control introductions of invasive alien species within the State according to national legislation and policies where they exist.
3. These measures should be based on a risk analysis of the threats posed by alien species and their potential pathways of entry. Existing appropriate governmental agencies or authorities should be strengthened and broadened as necessary, and staff should be properly trained to implement these measures. Early detection systems and regional and international coordination are essential to prevention.

### **Guiding principle 8: Exchange of information**

1. States should assist in the development of an inventory and synthesis of relevant databases, including taxonomic and specimen databases, and the development of information systems and an interoperable distributed network of databases for compilation and dissemination of information on alien species for use in the context of any prevention, introduction, monitoring and mitigation activities. This information should include incident lists, potential threats to neighbouring countries, information on taxonomy, ecology and genetics of invasive alien species and on control methods, whenever available. The wide dissemination of this information, as well as national, regional and international guidelines, procedures and recommendations

such as those being compiled by the Global Invasive Species Programme should also be facilitated through, *inter alia*, the clearing-house mechanism of the Convention on Biological Diversity.

2. The States should provide all relevant information on their specific import requirements for alien species, in particular those that have already been identified as invasive, and make this information available to other States.

### **Guiding principle 9: Cooperation, including capacity building**

Depending on the situation, a State's response might be purely internal (within the country), or may require a cooperative effort between two or more countries. Such efforts may include:

- (a) programmes developed to share information on invasive alien species, their potential uneasiness and invasion pathways, with a particular emphasis on cooperation among neighboring countries, between trading partners, and among countries with similar ecosystems and histories of invasion. Particular attention should be paid where trading partners have similar environments;
- (b) agreements between countries, on a bilateral or multilateral basis, should be developed and used to regulate trade in certain alien species, with a focus on particularly damaging invasive species;
- (c) support for capacity-building programmes for States that lack the expertise and resources, including financial, to assess and reduce the risks and to mitigate the effects when introduction and establishment of alien species has taken place. Such capacity building may involve technology transfer and the development of training programmes;
- (d) cooperative research efforts and funding efforts toward the identification, prevention, early detection, monitoring and control of invasive alien species.

## **C. Introduction of species**

### **Guiding principle 10: Intentional introduction**

1. No first-time intentional introduction or subsequent introductions of an alien species already invasive or potentially invasive within a country should take place without prior

authorization from a competent authority of the recipient State(s). An appropriate risk analysis, which may include an environmental impact assessment, should be carried out as part of the evaluation process before coming to a decision on whether or not to authorize a proposed introduction to the country or to new ecological regions within a country. States should make all efforts to permit only those species that are unlikely to threaten biological diversity. The burden of proof that a proposed introduction is unlikely to threaten biological diversity should be with the proposer of the introduction or be assigned as appropriate by the recipient State. Authorization of an introduction may, where appropriate, be accompanied by conditions (e.g., preparation of a mitigation plan, monitoring procedures, payment for assessment and management, or containment requirements).

2. Decisions concerning intentional introductions should be based on the precautionary approach, including within a risk analysis framework, set forth in principle 15 of the 1992 Rio Declaration on Environment and Development, and the preamble of the Convention on Biological Diversity. Where there is a threat of reduction or loss of biological diversity, lack of sufficient scientific certainty and knowledge regarding an alien species should not prevent a competent authority from taking a decision with regard to the intentional introduction of such alien species to prevent the spread and adverse impact of invasive alien species.

### **Guiding principle 11: Unintentional introductions**

1. All States should have in place provisions to address unintentional introductions (or intentional introductions that have become established and invasive). These could include statutory and regulatory measures and establishment or strengthening of institutions and agencies with appropriate responsibilities. Operational resources should be sufficient to allow for rapid and effective action.
2. Common pathways leading to unintentional introductions need to be identified and appropriate provisions to minimize such introductions should be in place. Sectoral activities, such as fisheries, agriculture, forestry, horticulture, shipping (including the discharge of ballast waters), ground and air transportation,

construction projects, landscaping, aquaculture including ornamental aquaculture, tourism, the pet industry and game-farming, are often pathways for unintentional introductions. Environmental impact assessment of such activities should address the risk of unintentional introduction of invasive alien species. Wherever appropriate, a risk analysis of the unintentional introduction of invasive alien species should be conducted for these pathways.

## **D. Mitigation of impacts**

### **Guiding principle 12: Mitigation of impacts**

Once the establishment of an invasive alien species has been detected, States, individually and cooperatively, should take appropriate steps such as eradication, containment and control, to mitigate adverse effects. Techniques used for eradication, containment or control should be safe to humans, the environment and agriculture as well as ethically acceptable to stakeholders in the areas affected by the invasive alien species. Mitigation measures should take place in the earliest possible stage of invasion, on the basis of the precautionary approach. Consistent with national policy or legislation, an individual or entity responsible for the introduction of invasive alien species should bear the costs of control measures and biological diversity restoration where it is established that they failed to comply with the national laws and regulations. Hence, early detection of new introductions of potentially or known invasive alien species is important, and needs to be combined with the capacity to take rapid follow-up action.

### **Guiding principle 13: Eradication**

Where it is feasible, eradication is often the best course of action to deal with the introduction and establishment of invasive alien species. The best opportunity for eradicating invasive alien species is in the early stages of invasion, when populations are small and localized; hence, early detection systems focused on high-risk entry points can be critically useful while post-eradication monitoring may be necessary. Community support is often essential to achieve success in eradication work, and is particularly effective when developed through consultation. Consideration should also be given to secondary effects on biological diversity.

### **Guiding principle 14: Containment**

When eradication is not appropriate, limiting the spread (containment) of invasive alien species is often an appropriate strategy in cases where the range of the organisms or of a population is small enough to make such efforts feasible. Regular monitoring is essential and needs to be linked with quick action to eradicate any new outbreaks.

### **Guiding principle 15: Control**

Control measures should focus on reducing the damage caused as well as reducing the number of the invasive alien species. Effective control will often rely on a range of integrated management techniques, including mechanical control, chemical control, biological control and habitat management, implemented according to existing national regulations and international codes.

**Annex 2. List of 53 African countries that are parties to the Convention on Biological Diversity.**

Algeria	Ethiopia	Niger
Angola	Gabon	Nigeria
Benin	Gambia	Rwanda
Botswana	Ghana	Sao Tome and Principe
Burkina Faso	Guinea	Senegal
Burundi	Guinea Bissau	Seychelles
Cameron	Kenya	Sierra Leone
Cape Verde	Lesotho	Somalia
Central African Republic	Liberia	South Africa
Chad	Libyan Arab Jamahiriya	Sudan
Comoros	Madagascar	Swaziland
Congo	Malawi	Togo
Côte d'Ivoire	Mali	Tunisia
Dem. Rep. of the Congo	Mauritania	Uganda
Djibouti	Mauritius	United Rep. of Tanzania
Egypt	Morocco	Zambia
Equatorial Guinea	Mozambique	Zimbabwe
Eritrea	Namibia	

**Annex 3. The 30 African countries that are signatories to or have acceded to the Biosafety Protocol. Those marked with an asterisk are parties to the Protocol.**

Algeria	Gambia	Namibia
Benin	Guinea	Niger
Botswana	Kenya *	Nigeria
Burkina Faso	Lesotho *	Rwanda
Cameroon	Liberia *	Senegal
Central African Republic	Madagascar	Seychelles
Chad	Malawi	Togo
Congo	Mali	Tunisia
Egypt	Morocco	Uganda *
Ethiopia	Mozambique	Zimbabwe

\* As of 26 March 2002, four African countries are parties to the Protocol. Kenya and Uganda have ratified the Protocol, while Lesotho and Liberia have acceded to the Protocol.