

Discussion Paper

A Clearing-House
Mechanism to Promote
And Facilitate Technical and
Scientific Cooperation

Under the UN Convention on
Biological Diversity

22 & 23 November, 1994
Carnival's Crystal Palace
Nassau, Bahamas

TABLE OF CONTENTS

INTRODUCTION

The Establishment of a Clearing-House Mechanism to Promote and Facilitate Technical and Scientific Cooperation	3
Preliminary Programme	4

PROPOSAL

A Clearing-House Mechanism for Technical and Scientific Cooperation

Introduction	7
Policy Aspects of the Clearing-House Mechanism	8
Work Programme Towards Establishment of the Mechanism	10
Establishment of the Clearing-House Mechanism	11
Conclusion	11

CLEARING-HOUSE MECHANISM PERSPECTIVES

The "Facilitator": A New Mechanism to Strengthen the Equitable and Sustainable Use of Biodiversity

What has happened recently with the sustainable use of biodiversity?	13
What are the equity issues about marketing biodiversity today?	14
What are the problems with the development of an equitable market mechanism?	15
What is this proposed Facilitating Mechanism?	16
Is there any support for this approach?	18
What happens next?	18
How does this relate to the Convention on Biological Diversity?	19
What are the expected benefits from such a Facilitator?	20
References	21

The Aims, Scope, Functions and Governance of a Broad-Based Clearing-House Under the Convention of Biological Diversity

Introduction	23
Aims	24
Scope	24
Functions	25
Governance and Funding	29

ANNEXES

(Round Table Reports from Latin America/Caribbean, Africa and Asia)

Annex 1: (Latin America and Caribbean)

Developing a Facilitating Mechanism for the Equitable and Sustainable Use of Biodiversity: Achieving National Objectives through Regional Collaboration 31

Annex 2: (Africa)

Coordinated Arrangements for the Conservation and Sustainable Use of Genetic Resources, Material and Technology Transfer and Benefit Sharing . 37

Annex 3: (Asia)

Assessment, Conservation and the Sustainable Use of Genetic Resources: Achieving National Objectives Through Regional Collaboration 43

Introduction

The object of the Convention on Biological Diversity is the conservation of gemplasm, both *in situ* and *ex situ* and the sustainable use of biological diversity in a similar manner. Systems that embody biological diversity are to be found in all parts of the World. However it is in developing countries of the World, often only industrialised to a limited degree, that a large part of the rich biologically diverse areas are to be found and are in daily use. It is also areas mainly in developing countries that indigenous human populations manage, for their own benefit and conserve extremely rich areas of biodiversity, in order to obtain many of the goods and services necessary for existence. Such repositories of resources of biodiversity are also of interest to commercial enterprises, mainly in developed countries. These are often the developers of resources of biodiversity, though from collection, characterisation, chemical compound isolation, product development, marketing to full production.

Equity considerations suggest that, as well as utilising their resources of biodiversity, *in situ*, the use made of certain resources by interests outside the country should take account of benefit sharing and compensation in terms of financial recognition and technology sharing as well as in other ways. The transfer of benefits is most likely to be significant for the resource host country if "value added" occurs to that represented by the primary resource. It is access to technologies and other development, marketing and financial expertise that will assure mutually equitable arrangements are promoted. Such promotion may require some sort of *facilitating mechanism* to be available, which might be part of a "*clearing house*" arrangement dealing with scientific and technical, financial, legal and other requirements. Such an arrangement might operate at the country level or regionally, co-ordinating multi-country

concerns, expertise and action. The establishment of a clearing house mechanism to promote and facilitate technical and scientific co-operation is envisaged under Article 18 of the Convention on Biodiversity.

In order to explore views on co-ordinated action in relation to facilitating mechanisms and a clearing-house, the Government of Sweden supported the Stockholm Environment Institute in holding a series of round-table discussions on such issues. The Stockholm Environment Institute obtained the collaboration of the International Academy of the Environment in Geneva in this. A round-table was held in Cuernavaca, Mexico in April, 1994, in Nairobi, Kenya in September, 1994 and at Bogor, Indonesia in October, 1994. These regional round-tables allowed a range of issues to be discussed, including that of regional scientific and technical co-operation through the clearing-house mechanism envisaged in the Convention. Summaries of these deliberations are appended here as annexes.

Following these round-tables a meeting has been arranged in advance of the first meeting of the Conference of the Parties to the Convention of Biological Diversity to consider further the matter of the establishment of a clearing-house under the Convention. How this will be established is to be the subject of a decision at the first COP meeting (Article 18). The meeting in advance of the COP has been arranged at the initiative of the Interim Secretariat to the Convention on Biological Diversity and is hosted by the Governments of the Bahamas and Sweden. The Government of Sweden agreed with the Interim Secretariat that the Stockholm Environment Institute should arrange this meeting. The discussion will be based on the note by the Interim Secretariat on a Clearing-House mechanism for Technical and Scientific Co-operation; a paper by the International Academy of the Environment on 'The Facilitator': a new Mechanism to Strengthen the Equitable and Sustainable Use of Biodiversity; a paper from the Stockholm Environment Institute on the Aims, Scope, Functions and Governance of a broad-based Clearing-House under the Convention on Biological Diversity. These three documents are included here, together with the outline programme of the meeting.

It is envisaged that the meeting may identify a complementary version of proposals for the establishment of a clearing-house that will be useful when this is discussed at the meeting of the Conference of the Parties.

The Establishment of a Clearing-House Mechanism to Promote and Facilitate Technical and Scientific Cooperation

*The Swedish Government has been asked by the Interim Secretariat to the Convention of Biological Diversity to host an informal workshop on clearing-house mechanisms prior to the Conference of Parties. Upon the request from the Swedish Government, Stockholm Environment Institute has organised an informal workshop between **22 and 23 November, 1994** to discuss the establishment of a clearing house mechanism to promote and facilitate technical and scientific co-operation. The meeting will be held at Carnivals Crystal Palace Resort and co-hosted by the **Government of the Bahamas** and the **Government of Sweden**.*

PRELIMINARY PROGRAMME

Monday, 21 November

Arrival

20.00 Cocktail Reception at Nassau Beach Hotel

Tuesday, 22 November

09.00 **Opening Session**

Opening remarks; Purpose and objectives of the workshop
Michael J. Chadwick (Stockholm Environment Institute)

09.30 **Plenary Presentations****1. Clearing-House mechanism for technical and scientific co-operation**

Arturo Martinez (Interim Secretariat, Geneva)
Followed by discussion

10.00 Coffee

10.30 **2. Facilitator mechanisms**

William Lesser and Anatole Krattiger (International Academy of the Environment, Geneva)
Followed by discussion

11.00 **3. A broad-based clearing house under the Convention:**

Michael J. Chadwick (Stockholm Environment Institute, Sweden)
Followed by discussion

11.30 **General Discussion**

12.30 Lunch

13.30 **Discussion on policy aspects of a clearing-house under the Convention:****1. Scope**

15.00 Coffee

15.30 **2. Functions and aims**

18.00 Session closes

19.00 Dinner

Wednesday, 23 November

- 09.00 **Continued Discussion on policy aspects of a clearing-house under the Convention**
- 2. Functions and aims**
- 10.00 Coffee
- 10.30 **3. Governance**
- 12.00 Lunch
- 13.00 **4. Funding**
- 15.00 Coffee
- 15.30 **Conference room paper outline**
- 18.00 Workshop closes

CONFERENCE OF THE PARTIES
TO THE CONVENTION
ON BIOLOGICAL DIVERSITY

First meeting
Nassau, 28 November - 9 December 1994
Item 6.4 of the provisional agenda

A Clearing-House Mechanism for Technical and Scientific Cooperation

Note by the Interim Secretariat

1. INTRODUCTION

- 1 Article 18, paragraph 3, of the Convention states that, at its first meeting, the Conference of the Parties shall determine how to establish a clearing-house mechanism to promote and facilitate technical and scientific cooperation.
- 2 In preparing this item for consideration by the first meeting of the Conference of the Parties, the second session of the Intergovernmental Committee had before it on this subject a note by the Interim Secretariat as well as recommendations of the Open-ended Intergovernmental Meeting of Scientific Experts on Biological Diversity (UNEP/CBD/IC/2/11). On the basis of these, the Committee suggested a number of guidelines for the establishment of a clearing-house mechanism under the Convention presented in the report of its second session (UNEP/CBD/COP/1/4, sect. 4.1.4, paras. 125-133).
- 3 The present note builds upon those guidelines in presenting several proposals relating to the policy aspects of a clearing-house mechanism under the Convention, which the meeting is invited to consider and decide, and on the basis of which further work towards developing the concept and operation of the clearing-house mechanism can be undertaken. The note also outlines an approach and a programme of work to be carried out in 1995, the results of which may facilitate the work of the Conference of the Parties in establishing the clearing-house mechanism under the Convention.

- 4 The meeting is requested to consider and decide on these policy aspects for the clearing-house mechanism presented below and to approve the approach and proposed programme of work towards its establishment.

2. POLICY ASPECTS OF THE CLEARING-HOUSE MECHANISM

- 5 The following proposals relating to policy aspects are proposed for consideration:

2.1 Scope

- (a) The clearing-house mechanism should be established on an incremental basis, beginning with a limited number of focused subject areas based on the needs of the parties for scientific and technical cooperation in carrying out their obligations under the Convention; these subject areas would be expanded in number and scope as the mechanism develops operational experience and as the needs of parties evolve;
- (b) In the early stages of operation the mechanism should seek to limit the categories of users, with priority being given to servicing the needs of parties, expanding to include other users as its capacity develops;
- (c) In the early stages of operation the subject areas should be geared to support and facilitate activities that parties can be expected to undertake in the early stages of implementation of the Convention; thus, the mechanism would seek to provide information on, and refer to, sources of support for:
- (i) National strategies, plans and programmes, including legislation, for implementing the Convention;
 - (ii) Expertise and access to technical and scientific data (including databases of related Conventions);
 - (iii) Programmes and projects at the national, regional and international level on conservation of biological diversity and sustainable use of its components;
 - (iv) Methodologies and technologies for assessing and valuing biological resources and for analysing requirements for their conservation and sustainable use;
 - (v) Benefits to be derived from the use of genetic resources and sharing of benefits from such use;
 - (vi) Traditional knowledge to conserve biological diversity and sustainably use its components;
 - (vii) Socio-economic research.

2.2 Functions

- 6 The clearing-house mechanism should focus in the early stages of operation on the provision of information and referral services to facilitate:
 - (a) Scientific cooperation (scientific data on ecosystems, species and genetic resources and biological diversity, as well as methodologies for assessing, valuing and conserving them);
 - (b) Technical cooperation (information on technology sources and on brokerage services);
 - (c) Policy development (in the development of national strategies and programmes and in the formulation of legislation).

- 7 At a later stage of its operation a brokerage service may be offered by the clearing-house mechanism to facilitate development of agreements between parties for access to genetic resources and their information including indigenous knowledge, transfer of technology and sharing of benefits.

2.3 Operations

- 8 The following operational characteristics of the mechanism are proposed:
 - (a) Access to the services provided by the mechanism should be through a variety of means, namely:
 - (i) On-line electronic database;
 - (ii) Direct electronic;
 - (iii) Diskette;
 - (iv) Printed information;
 - (b) The range of information held by the mechanism should be known and available to all users; it should be available in comprehensible standardized formats in order to be accessible to a wide range of users;
 - (c) The mechanism should avoid duplicating services or information already provided by existing centres; the clearing-house mechanism under the Convention should therefore take the form of "a clearing-house of clearing-houses", or a switching centre, making most effective use of other entities, with which cooperative agreements may need to be developed;
 - (d) The mechanism should establish and/or link with national, subregional and regional centres of information, for which technical and financial assistance for capacity-building may be necessary.

2.4 Governance

9. The following proposals are made regarding the governance of the clearing-house mechanism:
 - (a) The clearing-house mechanism would be subject to periodic evaluation and review by the Conference of the Parties;
 - (b) The Subsidiary Body on Scientific, Technical and Technological Advice would have oversight of its operation on behalf of the Conference of the Parties and would evaluate its operations and effectiveness and recommend modifications to the Conference of the Parties;
 - (c) The coordination of the mechanism would be undertaken by the Secretariat to the Convention and the "switching centre" located within the Secretariat;
 - (d) An Advisory Committee to the Secretariat of approximately 8-10 representatives of cooperating centres would be established to provide technical advice on the operational aspects of the mechanism.

3. WORK PROGRAMME TOWARDS ESTABLISHMENT OF THE MECHANISM

10. On the basis of the decisions at the present meeting of the Conference of the Parties on the above policy aspects, further work will be undertaken during 1995 to prepare the basis for a pilot phase of operation of the mechanism. This work will involve the following tasks:
 - (a) To identify the range of existing clearing-house mechanisms (national, regional and international) and correlate their information base with the subject areas and type of service to be offered in the initial phase;
 - (b) To discuss the terms of, and arrangements, for their participation in the clearing-house mechanism and develop draft agreements for participation where necessary;
 - (c) To analyse and characterize immediate needs of parties to assist their implementation of the Convention and especially needs/possibilities for scientific and technical cooperation;
 - (d) To assess most appropriate forms for packaging/disseminating information (print, electronic mail, diskette, etc.);
 - (e) To select countries which have immediate need and capacity to access the clearing-house mechanism (institutional arrangements, personnel, electronic connections, computer hardware, etc.) for a pilot exercise;

- (f) To assess needs of other interested parties for bringing them "on-line" and estimate financial requirements;
 - (g) To design and estimate the cost of a pilot phase operation.
11. The capacity and support cost required for carrying out the above tasks has been reflected in the 1995 budget for the Secretariat.
 12. The results of the above tasks would be presented to the second meeting of the Conference of the Parties after consideration by the Subsidiary Body on Scientific, Technical and Technological Advice, if possible, depending on the timing of its first meeting. It is proposed that a pilot phase of operation could then take place in the period 1996 - 1998 based on the decision of the second meeting of the Conference of the Parties on its design and financing.
 13. The pilot operation could be designed:
 - (a) To institute the information and referral service in keeping with the policy decisions of the present meeting;
 - (b) To assist interested parties in building, where needed, the human and institutional capacity to access the services of the mechanism;
 - (c) To assist in strengthening centres at regional, subregional and national level, as appropriate, in order to build the framework in which the mechanism could eventually operate on a decentralized basis and ensure wider access.
 14. At its first meeting, the Conference of the Parties may wish to consider how the pilot phase operation should be financed, in particular whether it should be designated as a programme priority under the financial mechanism of the Convention.

4. ESTABLISHMENT OF THE CLEARING-HOUSE MECHANISM

15. The evaluation of the pilot phase operation would take place as part of an overall assessment of progress under the Convention, as proposed in the medium-term programme of work of the Conference of the Parties (see UNEP/CBD/COP/1/13). On the basis of this evaluation and the recommendations of the Subsidiary Body on Scientific, Technical and Technological Advice, adjustments could be made by the Conference of the Parties to the concept, structure, functions, and operations in order to establish the permanent clearing-house mechanism under the Convention.

5. CONCLUSION

16. The meeting is invited to consider the above proposals and:
 - (a) To decide on the policy that would guide further work towards establishing the clearing-house mechanism;

- (b) To authorize the further work outlined to be undertaken by the Secretariat in 1995;
- (c) To advise on the financing possibilities for a pilot phase operation.

The "Facilitator": A New Mechanism to Strengthen the Equitable and Sustainable Use of Biodiversity*

1. WHAT HAS HAPPENED RECENTLY WITH THE SUSTAINABLE USE OF BIODIVERSITY?

Humankind has of course always and ultimately been completely dependent on biodiversity. For millennia the balance was sustainable; while there is evidence of human-induced extinction, the impact of people on the environment made relatively limited irreversible changes. That however has changed in the 20th century as a result of a combination and interaction of industrialisation, rising living and consumption standards, and increasing populations. As a consequence, biodiversity began to be lost as our utilisation of these resources was no longer sustainable, and species began to disappear at rates estimated to be up to 250 species per day.

Underlying the loss was the concept that biodiversity was the "common heritage of mankind". Operationally this meant it belonged to no one and hence few in decision-making positions valued it. And what is not valued is not fostered. This unsustainable and irresponsible practice began to change in the latter part of this century in response to several key factors. First, with losses mounting, biodiversity gained attention as it could no longer be pretended it was unlimited. Through growing scarcity, value was implied. These concerns were reflected in the farsighted Earth Summit in Rio in 1992. In addition, biotechnology emerged during this period as a reality, enhancing both the speed and range of product development and increasing

* Paper prepared by Anatole Krattiger and William Lesser, International Academy of the Environment, Geneva.

the value of genetic resources by making genetic transfers possible. Modern biotechnologies enable us to tap into biological resources in new and novel ways that give additional value to biodiversity.

It has long been recognised that 70–80 percent of this biodiversity is in the South, yet it is the private sector in the North that invests US\$9 billion into biotechnology R&D¼ almost double the GNP of Costa Rica. Hence the basis for exchange has been strengthened as a result of advances in biotechnology. The South supplies the materials for applications in the North. South–South exchanges are possible in the more distant future, but investments in excess of US\$ 200 million over a ten year period for the development of a single successful pharmaceutical product limit the number of developing countries which can become full players at this time.

This process is known as bioprospecting, recognising that biopesticides and environmental applications, among others, are the targets along with pharmaceuticals. An event which occurred in 1991 focused attention on this form of use of biodiversity. That event of course is the agreement between Merck and INBio for the payment of collection fees and a subsequent royalty on any commercial products for the opportunity to screen samples from Costa Rica. The search for new compounds based on natural products has led to many pharmaceutical companies entering into alliances or limited partnerships with major research institutions (Reid *et al.*, 1993).

In recognition of this renewed interest in genetic resources, the Convention on Biological Diversity (hereafter the Convention) was drafted stipulating that it is the right of sovereign governments to regulate access to their biodiversity (Articles). This means that more and more nations are now enacting laws whereby companies need to enter into agreements in order to have access to such genetic resources. This may be in the form of contracts or of material transfer agreements that stipulate (equitable) benefit sharing arrangements.

2. WHAT ARE THE EQUITY ISSUES ABOUT MARKETING BIODIVERSITY TODAY?

It must be emphasised that equity is important for both moral reasons and for the need to share benefits as a means of encouraging conservation. However, equity is in the eyes of the beholder; different individuals can reasonably come to very different conclusions. Part of this is related to the kind of use, and part to cultural values. These matters cannot easily be resolved, at least in the short run. However, there is one impartial valuing mechanism for biodiversity, the market mechanism (assuming it works properly), without prejudice or penalty to certain groups.

Of course, the market is limited in what it measures, but it does provide a starting point and serves as a source of much needed funds for national and local use. Hence an approach to equity is making the market for the sustainable uses of biodiversity work properly, and sharing the returns according to the real contribution to the final use value. The facilitating mechanism proposed here¼ the "Facilitator" for short¼ is directed to improving the market operations so as to reflect better the legitimate contributions of genetic resources.

A related matter is the knowledge of local and indigenous peoples which is often so important in identifying materials with potential uses in medicines, agriculture, and other areas. Because control over knowledge is lost once shared, these groups in

the past have received little monetary benefit for their traditional knowledge. Yet, viewed impartially, that knowledge does have real value (i.e. value in terms of the reduced searching needed to find a product of value). Indeed, a new pharmaceutical company, Shaman Pharmaceutical, was established expressly to use traditional knowledge as an initial "screening" process in identifying plants with possible medicinal properties. The Facilitator can also assist in the determination of the value for that knowledge for groups which choose to share it (see also Burnard, 1994).

It should be stressed here that biodiversity is not only of significant value to the biodiversity-rich but otherwise developing countries. Indeed, developing countries have derived and are deriving great benefits from their flora and fauna. The traditional peoples of these biodiversity-rich countries are dependent on the continued viability of their biodiversity resources for their economic, social and cultural well-being. In no way is it suggested here that a dollar from the North has more intrinsic worth than the non-monetary wealth generated within developing countries from the use of their biodiversity.

3. WHAT ARE THE PROBLEMS WITH THE DEVELOPMENT OF AN EQUITABLE MARKET MECHANISM?

At the moment, countries seeking to market their genetic resources, as well as firms seeking access to these materials, are uncertain how to proceed under the new expectations brought about to a large extent by the Convention. The number of requests for assistance received by INBio is indicative of this factor, namely the complexities of such agreements, particularly from the perspective of sellers.

Despite these problems, large firms will soon have found all the tropical country partners they can accommodate. Attention must then move to the large number of smaller firms in the North as well as in the South. Making arrangements for these smaller firms will entail a series of additional steps: prospects must be identified as part of a marketing effort; intellectual property rights (IPRs) must be extended and reinterpreted to meet the combined new needs of the technology and the position of the marketer, now a developing country; and means must be found to instigate and reapportion risks implicit in new ventures among sellers, buyers and specialised intermediaries.

Unfortunately, prospecting is often presented as something new. This is not strictly correct, but the considerable interest in it is recent. The excitement stemming from prospecting revenues is having an unfortunate side effect in emphasising the perceived newness of this opportunity. Newness implies uncertainty, which attracts risk takers. This is an important issue with biodiversity prospecting, because the continued emphasis on newness will tend to discourage participation until a less risky standard practice emerges. The purpose of proposing a Facilitator is to contribute to, and hasten, the emergence of that standard practice. Technology transfer can be defined as the geographic movement of productive capacity.

Genetic material too is a technology, for it is the means of developing a range of new products; it is productive capacity in an unrefined form. But its sale is technology transfer with significant differences, the major differences being the transfer is predominately south-north and secondarily south-south as opposed to the familiar north-south movement; and the materials are natural products which create technical and

institutional complexities (see Lesser, 1994). Before the transfer of genetic technology can be made routine, the consequences of these differences must be identified and a procedure established for testing and practising transfer mechanisms.

Transferring technology to smaller firms in the north will require a more substantial effort. A clearinghouse is needed for the identification of sellers and buyers, the most basic function of a broker. Additionally, participants will require information on exchange terms so that sellers are assured of equitable terms and buyers of avoiding expenses which would render them non-competitive.

An exchange of general price information not associated with any specific transactions is a common role for a trade association. In this case, a not-for-profit entity must initially take on the task while the market/industry develop. Moreover, contract terms are more complex than simple prices, so that information on other terms of trade components and training must be provided as well.

S 4 M . ?

In recognition of the problems discussed above related to technology transfer, and of the likely benefits of voluntarily sharing expertise on a regional basis, a "Facilitator" mechanism *biological diversity* - *conservation and development* is proposed. The proposed approach is developed as a "mirror image" of the existing organisation ISAAA, the International Service for the Acquisition of Agri-biotech Applications (see James 1991; Krattiger and James, 1994), a recent entity aimed at transferring proprietary agricultural biotechnology applications from industrialised to developing countries for their benefit.

41 Purpose and Scope

The purpose of the Facilitator is to enable on a voluntary use basis equitable and sustainable deals between sources and users of genetic resources, and in doing so promote co-operation in the transfer of technological, human, and information resources and skills to countries in the region. This would be accomplished by providing information and training directed to making the market work more efficiently and the negotiators more equal in skills.

Biodiversity prospecting would be the initial primary focus of facilitation activities, but bioprospecting is understood to encompass actual commercial deals and the development of technological capacity in source countries, in harmony with national policy and the aspirations of local communities and indigenous peoples.

42 Mandate and Functions

In a general sense, the Facilitator would function as an active and honest broker and conduit for information relevant to biodiversity prospecting and related legal, institutional, scientific, conservation, and business aspects as follows:

A. Provide honest broker services linking sellers and buyers, and underwrite initial agreements, by:

- 1 assisting genetic technology providing countries in assessing needs and opportunities in genoplasm marketing;
- 1 helping national and international agencies to identify and execute arrangements for the sustainable use of genetic resources;
- 1 supporting these agencies in recognising the implications of sale conditions, including the provision of price and other prevailing terms of trade information; and
- 1 raising the necessary funds to underwrite the initial brokered agreements.

The underwriting of initial agreements reduces the perceived risk and therefore the worry of market entry. The honest broker service presumes that the Facilitator has a comprehensive database of relevant information about genetic technology providers (availability of genetic technology, level of pre-screening, level of classification, size of potential collections) and potential users (interest of firms, universities and institutes).

B. Identify agreements which will provide for the necessary technical training of national marketing specialists, scientists and policy makers, by:

- 1 providing training in technology marketing and contract negotiation for public agencies, NGOs and the private sector;
- 1 encouraging the genetic technology user to share in-house knowledge and experience with the genetic technology providing entity under the brokered agreements;
- 1 identifying opportunities and making arrangements for technical and scientific training in prospecting and screening activities; and
- 1 support the provision of access to necessary equipment for these activities.

C. Assist governments, on request, in the identification and implementation of legislation suited to the country's role as technology seller by:

- 1 facilitating the establishment of an independent panel of experts to provide advice upon request;
- 1 arranging for relevant meetings to discuss interpretations and extensions of IPRs for genetic technology, and their resulting economic and social implications; and
- 1 developing specific workshops to share information as well as targeted training programmes and internships.

4.3 Institutional and funding requirements

It is evident that the Facilitator, to meet the objectives, must be an independent honest broker entity with no vested interests in bilateral arrangements, and must operate at the crossroads of genetic technology providers and users, development agencies, and information. Hence, a number of facilitating mechanisms are being explored and include: a new non-profit institution; an intergovernmental regional body; an existing regional or international institution that could be strengthened; and a regional expression (role) of the Convention's clearing house mechanism.

The form that the Facilitator would take will influence its source of funding. If the institutional mechanism is going to be successful in the long term, then high quality deals will have to be made without which the mechanism would not be sustainable. This means that, at least initially, the Facilitator would need to build up its capacity in one narrow area. Different funding options and their implications are being now considered during the feasibility study (see below).

5. IS THERE ANY SUPPORT FOR THIS APPROACH?

In order to test the idea of a Facilitator, the International Academy of the Environment organised a Round Table from 7-9 April 1994 in Guanajuato, Mexico, initially focusing on Latin America and the Caribbean (see IAE, 1994; Kattiger, 1994). Twenty-three individuals, including representatives government, the Convention, indigenous peoples organisations, the private sector, academia, and NGOs participated and further refined the concept. Despite the diversity of participants, there was general agreement that this Facilitator is needed but the participants recognised that there is also a need to sample the opinions of a broader constituency. Hence, they commissioned the Academy to conduct a feasibility study in Latin America and the Caribbean, which is now underway with financial support UNP and the Swiss Government.

In addition, the Stockholm Environment Institute (SEI) organised, in collaboration with the Academy, two further Round Tables, in September in Africa (SEI/IAE, 1994a) and in October in Asia (SEI/IAE, 1994b), to discuss and consult on a regional basis about several issues under the Convention, including the Facilitator. In Asia, in particular, the concept received unexpectedly high attention and the participants concluded that 'the Facilitator should be seen as one of a number of potential institutions which may be helpful in promoting technology co-operation and transfer related to sustainable use of genetic resources in the Asian region. The fact that a clearing house mechanism is likely to be set up under the Convention should in no way prevent or preclude regional efforts to establish and experiment with a multiplicity of facilitating mechanisms and institutions' (SEI/IAE, 1994b).

6. WHAT HAPPENS NEXT?

The wide consultations under the feasibility study, as well as those of the African and Asian Round Tables, will form the basis for a decision on how to proceed. The *Technical Consultation on the Clearing House Mechanism under the Convention*, a conference organised by SEI and the Academy on behalf of the Swedish Government, is

also part of this wide consultation. All responses will be incorporated in the final document to be completed in April 1995. Beyond the feasibility study, the following strategy is being contemplated which comprises several activities to be performed simultaneously:

- 1 develop a limited number of case study projects in selected countries around which to structure the initial brokering and training activities;
- 1 raise necessary funds, initially to establish pilot projects, later to carry out the regular activities and to underwrite brokered deals;
- 1 establish the services initially on a pilot project basis; and
- 1 review progress after a determined time frame (2-3 years), in consultation with collaborating institutions and, based on the experience, determine how the services should be adapted to respond to the needs and priorities.

7. HOW DOES THIS RELATE TO THE CONVENTION ON BIOLOGICAL DIVERSITY?

The Facilitator, as described here, could play an important role in, and go a long way towards, determining and implementing what Article 1 of the Convention means in practice as opposed to a philosophical contribution (i.e. "the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources"). Fairness and equity have several components (recognition, control and remuneration) and are cultivated in their interpretation. Remuneration, for example, for indigenous contributions needs to be quite elaborate and for the time being can best be solved through contracts. Contracts are difficult to draft if they are to protect the interests of the resource-selling country. Additionally, specific information is required on exchange terms so that these countries are assured of terms that are "equitable", meaning terms that represent a "fair" share of their real contributions. It is in this context that a voluntary facilitating mechanism would contribute much in raising the stake in these deals; in adding a certain comfort level that will increase participation; and in sharing information and building expertise that developing countries would not otherwise have access to.

More specifically, the Facilitator responds to several explicit objectives of the Convention, namely:

- 1 the strengthening of co-operation between government and the private sector (Article 10 (e));
- 1 the recognition and direct involvement of local traditional societies (Article 10 (c));
- 1 the establishment of more standard practices for access to genetic resources (Articles 15.2, 15.5 and 15.7);

- 1 the facilitation of biotechnology transfer, and other technologies, for the sustainable use of biodiversity (Articles 16.1, 16.4, 19.1 and 19.2);
- 1 the provision of information, on a confidential basis where necessary, particularly to developing countries (Article 17); and finally,
- 1 the contribution to scientific and technological cooperation (Article 18).

The latter point relates to the clearing house to be established under the Convention. It is likely that this will include in the longer term a number of the functions that the Facilitator proposed here might have. In any case, the Facilitator would be one of a number of potential institutions which promote technology cooperation and transfer related to equitable and sustainable use of genetic resources. The fact that a clearing house mechanism is to be set up should not preclude regional efforts. As and when the clearing house is developed as an effective institution, it is likely that other facilitating mechanisms will have been developed and would ally themselves with the clearing house under the Convention.

8. WHAT ARE THE EXPECTED BENEFITS FROM SUCH A FACILITATOR?

The proposed Facilitator is intended to enhance an existing and ongoing process, the sustainable use and commercialisation of germplasm. By hastening a standard practice of exchanging this material, people will benefit from earlier access to new products, including medicines. Germplasm providers will receive funds for what was previously given free of charge, which will indirectly provide an incentive for conservation. Other tangible benefits are the provision of training services for technology marketing and contract negotiation, and arrangements for scientific and technical training. More proactively, the Facilitator implements several exchanges, initialising the exchange process in a secure, risk-free environment.

Tangible benefits from such a Facilitator are an instillation of trust between the ~~various~~

Trust in this case will be based on several factors. These are principally the experience of having completed mutually beneficial arrangements, and the confidence to negotiate is based on that knowledge and experience. Until such a trust level is achieved, the exchange process will remain a sporadic and uncertain one when what is needed is an iteratively accepted system. There are short-term profits to be made from special arrangements, but the real benefits for conservation resulting from such deals will come from the proper channelling of the accrued benefits to conservation and to communities that depend on biodiversity.

It is really to the facilitation of that sustainable use and to the equitable sharing of the benefits derived from that use that the Facilitator is directed.

REFERENCES

- Burnand, P.-A. 1994. The Use and Value of "Indigenous Knowledge" for Identifying New Medicines. Working Paper No. 17. International Academy of the Environment, Geneva.
- IAE. 1994. Developing a Facilitating Mechanism for the Equitable and Sustainable Use of Biodiversity in Latin America and the Caribbean. Round Table Report, 7-9 April, Cuernavaca. International Academy of the Environment, Geneva.
- James, C. 1991. The Transfer of Proprietary Agricultural Biotechnology Applications from the Industrial Countries to the Developing Ones. *World Agriculture* 85:5-24.
- Krattiger, A.F. (ed.) 1994. *The Equitable and Sustainable Use of Biodiversity: Perspectives from Latin America and the Caribbean*. Academy Paper No. 1. International Academy of the Environment, Geneva.
- Krattiger, A.F. and C. James. 1994. ISAAA: A new international organization to transfer proprietary biotechnology to developing countries. *Dev* 9(4)-10(1):36-39.
- Lesser, W.H. 1994. Institutional Mechanisms Supporting Trade in Genetic Materials: Issues under the Convention on Biological Diversity and GATT/TRIPS. *Environment* No 4. UNEP, Geneva.
- Lesser, W.H. and A.F. Krattiger. 1994. Marketing "Genetic Technology" in New South-North and South-South Technology Flow Processes: The Role of a New Facilitating Mechanism. In *Marketing Genetic Biodiversity* (Krattiger *et al.* Eds.). IUCN, Gland & International Academy of the Environment, Geneva.
- Reid, W.V., S.A. Laird, C.A. Meyer, R. Gómez, A. Sittenfeld, D.H. Janzen, M.A. Gollin and C. Juma. 1993. *Biodiversity Prospecting: Using Genetic Resources for Sustainable Development*. World Resources Institute, Washington D.C.
- SEI/IAE. 1994a. Co-ordinated Arrangements for the Conservation and Sustainable Use of Genetic Resources, Material and Technology Transfer, and Benefit Sharing. Report of an African Round Table, 9-10 September 1994, Nairobi, Kenya. Stockholm Environment Institute, Stockholm, in collaboration with the International Academy of the Environment, Geneva.
- SEI/IAE. 1994b. Assessment, Conservation and the Sustainable Use of Genetic Resources: Achieving National Objectives through Regional Collaboration. Report of an Asian Round Table, 11-13 October 1994, Bogor, Indonesia. Stockholm Environment Institute, Stockholm, in collaboration with the International Academy of the Environment, Geneva.

The Aims, Scope, Functions and Governance of a Broad-Based Clearing-House Under the Convention of Biological Diversity*

1. INTRODUCTION

Article 18 of the Convention on Biological Diversity envisages the establishment of a clearing-house mechanism to promote and facilitate technical and scientific co-operation in relation to the overall objectives of the Convention. These are to conserve biological diversity, to ensure the sustainable use of its components and the fair and equitable sharing of benefits arising out of the utilisation of genetic resources. The Convention sees this in the context of appropriate access to genetic resources, appropriate transfer of relevant technologies and appropriate funding, so that it is reasonable to consider that any clearing-house arrangement for technical and scientific co-operation might address all of these related aspects.

The task of how to establish a clearing-house arrangement is given to the Conference of the Parties at its first meeting and it is likely that various options and approaches will be considered. It may be that the best way to do this is by adopting a structured approach whereby the various elements involved in technical and scientific co-operation are identified in a progressive manner, simulating implementation of effective conservation and sustainable use of biological resources.

* This discussion paper has been prepared by Michael J. Chadwick and Ivar Virgin of the Stockholm Environment Institute. In its preparation it has benefited from consultations with Anatole F. Krattiger and William H. Lesser of the International Academy of the Environment in Geneva, Mr. Ulf Svensson, Swedish Ministry for Foreign Affairs and Mr Johan Bodegård, Swedish Ministry of Environment and Natural Resources.

Conservation and sustainable use is about the management of biological resources. Thus, management efforts should re-inforce and not conflict with local traditions, aspirations and practices if they are to succeed. Just as gemplasm conservation can be implemented both *in situ* and *ex situ*, so can the utilisation of genetic resources. Mainly in developing countries, indigenous people and local communities conserve and manage *in situ*, for their own livelihood, richly diverse biological resources. But such resources are also of interest to commercial enterprises, mainly in industrial countries where products developed from the resources are marketed. There is concern therefore that there should be a fair and equitable transfer of resources by way of payment and compensation back to gene-source countries, not only to meet management and opportunity costs, but also for the material developed to the marketable product stage. Furthermore scientific and technical co-operation is seen as strengthening national capabilities by building human resources and institutions. This kind of technology sharing and enhancement would include the additional and indigenous technologies and involve co-operation in training, joint research programmes and joint ventures for technological development. As this raises issues of property rights there are, in turn, logical links with financial terms and agreements, contractual agreements, arbitration and conciliation as well as the mere transfer and sharing of information essential to scientific and technical co-operation.

These considerations suggest that, perhaps, the concept of a 'clearing-house' should be a rather broad one, developed 'layer by layer' and encompassing much of the 'activity package' needed for the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources. However, in order for a clearing-house to be operational, initial sectorial limitation may be needed. This could be attained by the clearing-house covering a large number of topics under the Convention and concentrating on fewer functions; or by limiting the scope of the topics of the clearing-house and expanding the number and the complexity of functions as experience and resources are developed. The latter approach has the advantage of giving priority to the important aspects of technical and scientific co-operation as decided by COP. It also provides a structure of work that encourages a gradual build-up of the activities and functions.

2. AIMS

The aims of a clearing-house are predicated under Article 1 of the Convention and embrace conservation, sustainable use, benefit sharing, technology sharing and funding. Article 18 deals specifically with technical and scientific co-operation and how the establishment of a clearing-house mechanism to promote and facilitate this technical and scientific co-operation might be approached.

3. SCOPE

The scope of the clearing-house should embrace both conservation and the sustainable use of resources of biological diversity as well as the fair and equitable sharing of the benefits that arise. It should focus on encouraging partnerships that build scientific and technical capacity. Two basic lines of work that should be given priority can be identified.

The first is the value-added process, encompassing a chain of activities, starting with taxonomic field work to identify species and genetic resources, focusing on their role in the ecosystem and progressing to an assessment of their potential value as raw material for new products. This calls for a broader concept of the role of taxonomists (including experts from ethnobotany and phytochemistry), going back to the Linnéan tradition of seeking practical use of micro-organisms, plants and animals and adding to this the scientific study of their role in the ecosystem. The second and third step in the chain is the characterisation of valuable compounds and development of products. The final step is the marketing of new products based on identified biological resources.

This process is of vital interest to the economic sector with production based on biological resources, including the pharmaceutical and chemical industry as well as the agricultural, forestry and fisheries and associated products sector.

A second line of work is the development of new methods for ecological resource management. This encompasses also a chain of activities. It starts with ecological research, focusing on developing a better understanding of ecosystem function and the processes that shape ecosystem structure and determine biodiversity. The second step is the application of ecological research to land-use, fisheries and coastal zone management, developing new ecologically sustainable production methods. The final step is the introduction of new production methods in the above sectors. This line of work calls for capacity building through fruitful co-operation between ecological scientists and industrial research. Cross disciplinary research can be promoted through the creation of biodiversity research centres, programmes and networks.

The two lines of work can be linked through the fruitful exchange of information and scientific knowledge. For example, knowledge of ecosystem functioning and processes is important for the management of gene reserves that might be seen as the basis for bioprospecting.

In conclusion, a clearing-house mechanism under the Convention should have a narrow scope focused on: i) bioprospecting and ii) ecologically sustainable use of biological resources through conservation.

4

FUNCTIONS

The clearing-house would promote its operation by transferring information and facilitating information exchange, share, transfer and develop technological skills, develop human and institutional resources and encourage co-operation where the national resource base is limited or under-developed, or where duplication would be wasteful. The ability of the developing countries to increase their benefits from their biological resources will depend largely on the extent to which they are able to integrate modern biotechnology and genetic resource management into their developmental strategy. Furthermore, in promoting ecologically sustainable development of agriculture, forestry and fisheries, lessons should be learned from mistakes made in the developed countries. The clearing-house would promote scientific co-operation and technology sharing, including the use of indigenous and traditional technologies, co-operation in training, joint research programmes and joint ventures for the development of technologies. Thus, the functions of the clearing-house might span provision of information that encourages operative technical and scientific development, promoting partnerships for the conservation and development of a resource; advice

on promoting ventures including co-operative risk sharing and, on request, policy option identification; advice on and promotion of honest brokering of financial and other arrangements; advice on sources of assistance with contractual agreements, including arbitration; and in taking initiatives in approaching and encouraging parties in any of these.

The chain of activities described and amenable to co-operative efforts could be seen as different levels of ambition, from efforts in information acquisition to arbitration and conciliation in the course of realising and promoting commercial ventures. Immediate realization of all of these aspects is not feasible in a newly established clearing-house but, according to priorities established by the Conference of Parties to the Convention, activities would expand as experience and resources are developed and demand dictated. The gradual build-up of functions also creates a basis for confidence building. When realizing brokering and negotiations of deals the parties must have full confidence in the clearing-house mechanism as a neutral institution. It should be noted that the number of functions of a clearing-house listed below includes the activities performed by a central clearing-house (a clearing-house of clearing-houses) and its regional branches.

4.1 Information

A wealth of information on biodiversity issues including conservation *in situ* sustainable use, *ex situ* development, commercialisation and much other relevant data already exists. The co-ordination of this information, in a collated form, so that it may be accessed appropriately, is extremely important. This will allow the information to be used, gaps to be identified, avoid duplication of effort and allow information priorities to be set. It must be emphasised that exchanging information is not a straightforward process. To facilitate use world wide, information should be in an acceptable and digestible format for a wide range of users.

The clearing-house would have to maintain an electronic communication network providing information as well as referral services. It would be operated through on-line electronic data bases, direct electronic, diskette and print source means and ensure an open exchange of information. However, the clearing-house needs to address the complex juridical questions arising from open exchange of information. It needs to be organised in such a way that it respects intellectual property rights protection for suppliers of genetic material and resource data as well as suppliers of technology.

Thus, a clearing-house would have to maintain an electronic communication network providing information and referral services in appropriate forms for a wide range of users.

4.2 Co-operative technical and scientific development

Co-operation at the technical and scientific level may require that there is a move beyond the provision of facilities to share information. Consultation and co-operative procedures for arriving at appropriate knowledge bases may be required and may involve co-operative research activities. A clearing-house could provide or gather a network of experts including both individuals, subject groups and institutions in fields

ranging from sustainable agriculture, forestry and aquatic resource utilisation, conservation, and bioprospecting (involving taxonomy and phytochemical screening and analysis of samples). This roster of experts (individuals and institutions) could be established at a regional or global level. This could include scientific collaboration and technical development for *in situ* and *ex situ* conservation and sustainable use of biological diversity as well as an ecological understanding of the habitats in which they occur. This would enable the suppliers of biological resources, on the one hand, and suppliers of sources of technology, on the other, to benefit from collaborative ventures. This could include specific measures that build on the technological and scientific competence already available in the country as well as the acquisition of foreign technology.

The clearing-house would actively promote scientific and technical co-operation for the sustainable utilisation of biological resources expanding the complexity of its operation from the more passive 'switchboard' approach.

4.3 Promotion of partnerships for the conservation and development of a resource

This function would service the co-operative technical and scientific development by way of information gathered from existing research and development activities. This could be done by institutional linkages through collaboration, harmonisation and complementation of projects and programs. This would help avoid unnecessary duplication and identify areas for new collaboration research and development work. The clearing-house would also identify target areas and potential entrepreneurs where conditions are advantageous for commercial enterprises based on the sustainable utilisation of a biological resource. This could involve linking parts together that are seeking advice from the clearing house as well as actively facilitate potential beneficial and equitable relations between, for example, agents in the developing countries with those in the developed countries. In terms of capacity building the clearing-house would identify needs, and potential partners that would fill the gaps between the country's needs and expertise available.

In practical terms the clearing-house would develop equitable and productive relations between the providers, developers, users and marketers of biological resources.

4.4 Advice on promoting ventures including risk sharing and policy option identification

Technology transfer on its own is limited in what it can achieve through traditional arrangements. There is a need for fiscal and regulatory incentives to promote innovative conservation and commercial action, where this is appropriate. Assistance will be required in taking up the appropriate venture with other countries, institutions and private companies. Investments to take advantage of commercial opportunities could be tied to conservation and sustainable use and initiative risks could be shared in making appropriate investments and policy promotion. Regional co-operative facilitators could enhance benefits and risk-sharing between, for example, the corporate sector and countries in the region. This would also address the issue of resources

common to several countries throughout the region. Upon request such options identified for countries or regional groupings could be formulated in national policies.

The clearing-house would make available the scientific, technical and market management expertise needed to effect and encourage commercial ventures where the infrastructure is deficient.

4.5 Advice on and promotion of honest brokering of financial and other arrangements

Control of genetic material, and remuneration from the user of the material is essential to the conservation, sustainable use and other fair and equitable sharing of benefits arising from the use of genetic resources. At present there are only limited provisions for returning benefits to communities that have conserved resources, cultivated plants and bred animals incrementally over generations.

The collection and distribution of revenue linked to licensing agencies have been proposed in diverse forms. However, in the absence of any generally implemented schemes whereby fees or levies from commercial enterprises involved in a relevant activity are distributed according to an agreed formula, there will be a need for individually brokered arrangements. Advice on such arrangements, that operates receipts for the units providing the genetic material, and do so in a co-ordinated manner in relation to other sources of provision, will be required if conservation and sustainable use is to be fostered.

The clearing-house should provide advice in this area as well as taking active steps to arrange specific brokering activities.

4.6 Advice on sources of assistance with contractual agreements

Contractual arrangements and agreements for access to sources of biological diversity are in place and experience with their operation is accumulating. A much cited example is INBio in Costa Rica. Information deriving from analysis and informed consideration from these arrangements, and the experience of them, should be made available to others contemplating agreements relating to bioprospecting and product development from biological resources. Such advice could be based on reviews of legal and institutional arrangements related to biodiversity issues, of national laws and focal institutions interacting with commercial interests. Risk-benefit analysis of bioprospecting and development deals could be assessed. Information relating to existing or proposed policies, particularly country or regional situations and the status of commercial enterprises would be made available.

Thus the clearing house would develop or support expertise in risk-benefit analysis of financial arrangements and in contractual agreements to ensure equity.

4.7 Making initiatives in approaching and encouraging parties

A purely passive or responsive role for a clearing-house mechanism would run the risk of dealing only with those countries or country groups already actively, or at least partially, aware of the critical issues that need attention in the conservation, utilisation

tion and benefit sharing realms of biological resources. To ensure equity more generally, an active role by the clearinghouse is critical. It should also, when possible, achieve the goal of geographical balance.

Thus, the clearinghouse would assist parties seeking advice as well as link partners. Moreover, it would actively develop equitable partnerships when conditions for conservation and sustainable use are favorable.

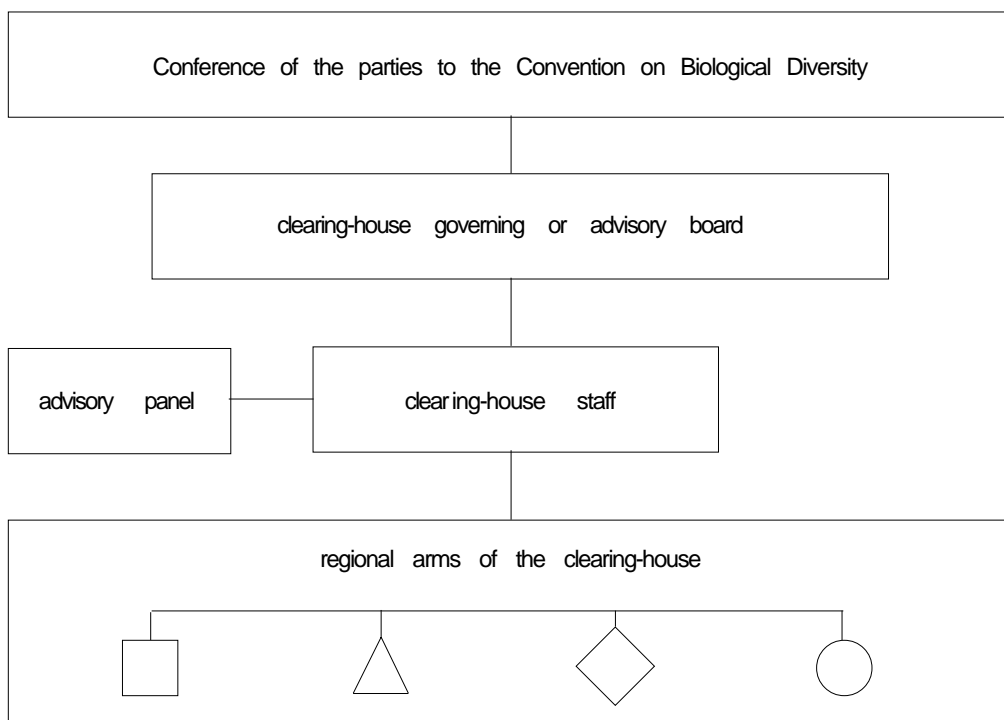
5. GOVERNANCE AND FUNDING

The following considerations relating to the governance and funding of a clearinghouse mechanism under the Convention are offered.

1.5 ORGANIZATION

The clearinghouse would operate under the guidance of the Conference of the Parties to the Convention on Biological Diversity. It would work under a representative Advisory (or Governing) Board of 15-20 appointed members, taking account of regional balance. The staff of the clearinghouse, would be assisted by an Advisory Panel consisting of scientific, technical, commercial and other practitioners. The executive head and staff of the clearinghouse will be recruited from amongst those with entrepreneurial and commercial skills as well as those with scientific, technical, legal and other expertise.

Diagram 1. Organisation of the clearinghouse



The clearinghouse will find mechanisms suitable for working regionally. Different forms might be appropriate for different regions. Examples are:

- 1 The use of an existing inter-governmental agency or consortium of agencies. Such bodies have experience of the regional approach to specific issues, are presently in existence and have well-developed and accepted methods for interacting with national governments.
- 1 A specific, well-funded regional institution could undertake a regional clearinghouse function either for profit or in a non-profit making capacity or a private sector firm or institute acting in similar manner.
- 1 An autonomous organisation set up by governments of the region (or perhaps, by certain agencies within governments) who would have non-voting representatives on the board along with external experts. This could be set up as regional co-operative facilitator where benefits and risks are shared between the corporate sector and the countries in the region.
- 1 A regional expression (role) of the Convention's clearinghouse mechanism
- 1 Other existing internationally-recognised centres of expertise (Such as CIAR bodies)

In certain cases it will be necessary to assess the competence and legitimacy of the organisation or bodies acting on the regional clearinghouse or facilitating mechanism. UN agencies might take on this assessment.

All regional clearinghouses, or facilitating mechanisms acting as clearinghouses on a regional basis, would be responsible to the Advisory Board of the Clearing-House and ultimately to the Conference of the Parties.

52 Funding

The ClearingHouse will need to meet its administrative costs and find funding for the co-operative ventures and projects it promotes. The administrative costs of the ClearingHouse will be recovered in a flexible manner from the budget of the Convention and from other sources, such as service fees, when these become available.

Co-operative ventures and projects will be financed by seeking funds for specific projects and ventures from bilateral funds, multilateral sources and, where appropriate, from industry and private financial concerns. The identification of such sources of funds should be a programme priority under the financial mechanism of the Convention.

Information provisions and co-operative technical and scientific development, including research encouragement, along with proactive initiatives by the clearinghouse, would have to be financed, at least initially, from the budget of the Convention and source fees. Biological resource development, venture promotion and risk-sharing, promotion of financial arrangements and advice on contractual agreements will be more amenable to funding from aid sources, commercial commission or other private arrangements. Expansion of the clearinghouse activities will depend on its ability to increasingly recover costs and raise funds.

Annexes

ANNEX 1 :

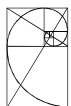
Developing a Facilitating Mechanism for the Equitable and Sustainable Use of Biodiversity: Achieving National Objectives through Regional Collaboration

ANNEX 2 :

Coordinated Arrangements for the Conservation and Sustainable Use of Genetic Resources, Material and Technology Transfer and Benefit Sharing

ANNEX 3 :

Assessment, Conservation and the Sustainable Use of Genetic Resources: Achieving National Objectives Through Regional Collaboration



SEI STOCKHOLM
ENVIRONMENT
INSTITUTE



ACADEMIE INTERNATIONALE
DE L'ENVIRONNEMENT - GENEVE
INTERNATIONAL ACADEMY
OF THE ENVIRONMENT - GENEVA

Annex 1

Developing a Facilitating Mechanism for the Equitable and Sustainable Use of Biodiversity: Achieving National Objectives through Regional Collaboration

Report of a Round Table, 7-9 April 1994 Cuernavaca, Mexico
Organized by the International Academy of the Environment, Geneva

EXECUTIVE SUMMARY

Background and Justification

The focus of the Convention on Biological Diversity on conservation, the sustainable use of biodiversity components, and the equitable sharing of the benefits of this use, has broadened the opportunities, as well as the responsibilities, of a range of entities involved with the conservation of genetic resources. Indigenous and local communities, for example, are increasingly being confronted with suggestions on how to utilise their traditional knowledge, while scientists and government agencies are realising that they must expand their considerations to include both opportunities for commercialisation and benefit sharing. Although fundamental changes come slowly, the rapid pace of development regarding biodiversity issues, particularly at the international level, precludes a long gestation period in facing these issues.

In recognition of the likely benefits of voluntarily sharing expertise on a regional basis, and to facilitate technology transfer, a "Facilitator" mechanism was proposed and first presented at the Global Biodiversity Forum, held at IUCN, prior to the October 1993 meeting of the Intergovernmental Committee on the Convention on Biological Diversity. The proposed Facilitator would need to be a non-profit entity that could provide the following services:

1. honest broker services linking sellers and buyers, and underwriting agreements;
1. identification of agreements to provide for the necessary technical training of national marketing specialists, scientists and policy makers; and
1. assistance to governments, on request, in the identification and implementation of IPR legislation suited to the country's role as a technology seller.

The purpose of the Round Table (the subject of this report), organised by the International Academy of the Environment and sponsored by the Academy and the Swiss Government, was to explore, with a limited number of participants, the needs for, and possible functions and structures of, such a facilitating mechanism. In terms of the Convention, the Facilitator concept centres around the complex areas of technology transfer (Article 16 of the Convention), of a clearinghouse mechanism to provide and facilitate technical and scientific cooperation (Article 18.3), of sustainable use of biodiversity (Article 10), of sharing benefits derived from the use of biodiversity (Article 19.2) through the involvement of, and equitable sharing of benefits with, indigenous and local communities (Article 8J).

The Round Table focused on the Latin American and Caribbean (LAC) region because the resource base and approaches are likely to be more similar at the regional level.

PROCESS

Twenty-three individuals participated, including nationals from LAC and representatives from academic institutions, indigenous groups, NGOs, multilateral agencies, the Convention and the private sector. Emphasis was placed on personal perceptions and involved three components:

1. Country reports from eight countries of LAC where the speaker's personal assessment of national goals for biodiversity, and problems and limitations in achieving those goals was particularly emphasised.
2. Institutional mechanisms focusing on activities among various constituencies; experience and perspectives of private sector users of genetic resources; and multilateral and regional agencies and NGOs involved in technology transfer and the use and conservation of biodiversity.
3. Development of an action plan setting out the subsequent steps within LAC, and options on sharing the Round Table experience with other geographical regions. The basis for the action agenda was the group reports from the preceding steps.

OUTCOME AND OUTPUT

The participants, despite their diversity in backgrounds and national situations, were in broad agreement as to the immediate need for biodiversity conservation and the strengthening of sustainable use activities, and the benefits to be derived from regional and sub-regional collaboration on a voluntary basis. The participants also agreed that the focus of such aims should be specific, so as to permit rapid progress while identifying linkages to conservation and equity. The concept of the Facilitator-or of a special type of "clearing house" mechanism-was further developed and refined in recognition that there is a need to provide a centre and focus for a regionalised broker, for training assistance and for information exchange on a voluntary basis. Three categories of principal activities were identified:

- 1 An information network on scientific, local community and commercialisation issues, among others, to foster collaboration and technology transfer.
- 2 Sustainable use and commercialisation options: a multi-faceted objective involving: education and training, including IPR issues and their multiple effects; consideration of the potential effects of new legislation and required modifications to existing legislation (e.g. access to genetic resources), for equity reasons; and specifics of collaborative and commercialisation agreements, with training in negotiation and marketing.
- 3 Training: the training of specialists in conservation and sustainable use in emerging and under-represented disciplines, with attention to scientific capacity.

The discussions led to the conclusion that the above could be incorporated into a broker facility that would undertake activities and provide services as follows:

- 1 develop equitable linkages among providers/recipients of biodiversity products, including the formulation of agreements, contracts and licenses to transfer, share and acquire these products;
- 1 provide advice on, and evaluation of, relevant existing and possible new legislation (including IPR and issues of access) that will ensure protection, at different levels, for providers, recipients and the source of biodiversity-derived products;
- 1 conduct activities to facilitate the process of commercialisation of biodiversity-derived products and to reinforce the sustainable use of biodiversity; and to assist such commercialisation and transfer of biodiversity-derived products between countries within IAC, from the industrial North to IAC, or vice versa;
- 1 enhance parity in the overall sustainable use of biodiversity, instead of relying on the "donor-recipient" model;
- 1 facilitate regional/sub-regional harmonisation of legislation and policies in IAC related to appropriate commercialisation and protection of biodiversity; and

- 1 provide assistance in developing programs and projects to understand factors required for the development of a more equitable and sustainable use of biodiversity, including particularly the channelling of "use funds" for appropriate incentives for strengthening conservation.

FOLLOW-UP AND POSSIBLE IMPLEMENTATION ACTIVITIES

The participants recognised that there is a need to sample the opinions of a broader constituency than was represented at the Round Table. Hence, they commissioned the International Academy of the Environment, the convenor of the Round Table, to conduct a feasibility study to analyse and discuss, within the spirit of the Convention on Biological Diversity, the need for, objectives of, and institutional arrangements for a facilitating mechanism, initially focusing on IAC. Draft Terms of Reference for the feasibility study were prepared by the participants.

The study should determine the priorities and preferences of the identified institutions which should include the following: mandate; need for selected national or multi-national/regional programs; prioritisation of the functions and specific objectives of the Facilitator, and strategies for their implementation; structure, staffing, and location options; possible status and governance; possible affiliation of the Facilitator, bearing in mind that the Facilitator must be neutral and impartial in order to be effective and credible; cost estimates for implementation; and funding options.

The Academy and UNEP agreed in June to fund the feasibility study and a small group of people attended the Round Table are forming an advisory group to oversee the study. Several consultants from IAC are also participating. It is hoped that the study will be completed by April 1995. The participants further encouraged the Academy and the Stockholm Environment Institute (SEI) to develop related Round Tables for Africa and Asia. The follow-up regional Round Tables have been completed by SEI, in collaboration with the Academy, in September 1994 in Kenya and in October 1994 in Indonesia. The results of these two additional Round Tables will form the basis, together with the Facilitator concept, for an Informal Conference on Clearing House Mechanisms, organised by SEI in collaboration with the Academy, on 22-23 November in the Bahamas, on behalf of the Swedish Government.

NOTE

The Round Table encouraged a frank and open exchange of information and opinions. This report is the result of the combined efforts and comments of all the participants. While identifying areas of broad as well as specific agreement, the report also incorporates a range of individual impressions and opinions. Although a few of the points contained in this report did not necessarily obtain consensus from all participants, we believe that the range of personal insights contributed to the success of the Round Table and is one of the strengths of this paper. The report is offered in the hope that it will prove helpful not only to the participants but to others with an interest in the equitable and sustainable use of biodiversity resources world-wide.

For further information and a copy of the background papers, please contact:

Dr. Anatole Krattiger

Associate Director
Biodiversity/Biotechnology Program
International Academy of the Environment
4, Chemin de Conches
CH-1231 Conches/Geneva, Switzerland
Phone: +41 22 789 1311
Fax: +41 22 789 2538

ACKNOWLEDGEMENTS

We would like to extend our sincere thanks and appreciation to all participants for their dedicated hard work during the three days of the Round Table, for their essential contributions and ideas, and for providing timely comments on this report. The Round Table was sponsored by the International Academy of the Environment and the Swiss Government. Several participants attended through their own means and Shaman Pharmaceuticals Inc. generously enabled the participation of an indigenous person. In addition, the Stockholm Environment Institute kindly sponsored the participation of a rapporteur.

Annex 2

Coordinated Arrangements for the Conservation and Sustainable Use of Genetic Resources, Material and Technology Transfer and Benefit Sharing

Report of a Round Table, 9-10 September 1994 Nairobi, Kenya

Organized by the Stockholm Environment Institute (SEI) in collaboration with the International Academy of the Environment, Geneva

EXECUTIVE SUMMARY¹

Background

This Round Table, organised by the Stockholm Environment Institute in collaboration with the International Academy of the Environment was held in Nairobi, Kenya on 9 and 10 September 1994. It is part of a world-wide initiative undertaken on behalf of the Swedish Government. The meeting was the second such Round Table and followed that organised by the International Academy of the Environment in Mexico from 7-9 April 1994 that focused on the sustainable and equitable use of genetic resources in the region and how to achieve national objectives through regional collaboration.

Developing countries are the main repository of the resources of biodiversity whereas today many users and marketers of these resources are in developed coun-

¹ The frank and open exchange of information and opinions was encouraged for the Round Table. This report is the result of the combined efforts and comments of all the participants. While identifying areas of broad as well as specific agreement, the report also incorporates a range of individual impressions and opinions. Although there was no attempt to obtain consensus from participants, we believe that the range of personal insights expressed contributed to the success of the Round Table and is one of the strengths of this paper. The report is offered in the hope that it will prove helpful not only to the participants but to others with an interest in the equitable and sustainable use of biodiversity resources world-wide.

tries. Fairness and equity demands that developing countries receive just benefits and compensation where use is made of their biodiversity resources by others, but this presupposes that a certain capacity to negotiate partnerships, collaborations or other agreements be reached. Benefits will be optimised in these situations if value is added to that represented by the primary resource. In order for developing countries to promote such activities, preferential access to technologies, including biotechnology is required and in most cases this will be facilitated if technological cooperation arrangements are established between agents in developed countries and developing countries and that technology transfer and sharing is a feature of this cooperation. The Convention on Biological Diversity (hereafter the Convention) provides an impetus and positive framework for such arrangements but specificity needs to be developed for its effective implementation. To make progress in the understanding of these issues in an African context and to devise pragmatic options were the singular objectives of this Round Table.

THE ROUND TABLE PROCESS

Experts from a range of African countries, stretching from Egypt to Ghana to South Africa along with resource persons from outside the region, participated in the Round Table. These included representatives from both developed and developing countries, and ranged from NGOs to the private sector, and to bilateral/multilateral agencies.

Opening remarks focused on the purpose and objectives of the event and were followed by five commissioned papers intended to focus on issues pertinent to Africa and to implementing the Convention. Discussion led to the series of conclusions detailed below.

THE DISCUSSION

In accordance with the regional focus, the emphasis remained on co-operative means and mechanisms for achieving national and sub-regional goals, in part by exploring a range of interrelated issues as follows:

- 1 terms of access to genetic resources and means of fair and equitable sharing;
- 1 mechanism for national and regional capacity building;
- 1 technological cooperation and technology transfer to enhance technology sharing; and
- 1 possible multilateral arrangements and co-operative arrangements for establishing a "clearing house" mechanism to facilitate the use of genetic resources.

The five papers presented were:

- 1 Policy issues and the legal framework for regulated access (*C. Juma, ACTIS, Nairobi, Kenya*).
- 1 Sharing the benefits of bioprospecting (*C. Weiss, International Organisation of Chemical Sciences for Development, USA*).
- 1 Conservation enhancement: indigenous peoples and local communities (*D. Posey, Oxford University, UK and C. Kabuye, National Museum of Kenya, Nairobi*).

- 1 A scientific and economic framework for wild and cultivated biodiversity maintenance and enhancement (*S.N. Njuguna and C. Martinet, IUCN, Kenya and Switzerland*).
- 1 Regional institutional mechanisms for training, processing and servicing (*A.F. Krattiger and W.H. Lesser, International Academy of the Environment, Geneva, Switzerland*).

In the papers, diverse means of controlling access to genetic materials, such as material transfer agreements, codes-of-conduct and protocols were identified. Accessing biotechnologies means access to genetic material has to be coupled with long-term human capacity building. Pharmaceutical prospecting has received much attention as a potentially high-valued use of genetic resources. It involves collection and screening in a sequential approach - to developing capacity and technical competence. Long term technical collaboration agreements are, therefore, the most appropriate approach.

The rights and role of indigenous peoples were addressed without attempting to define the complex and contentious nature of this in the African context. Indigenous peoples world-wide seek recognition, both in acknowledgement and financial terms, for their contributions to the conservation and use of genetic resources. Existing practices and intellectual property rights are inadequate and hence unethical. Additionally, indigenous peoples want the power to say no to access and use when it conflicts with values or threatens conservation. It is important to link utilisation with the conservation of biodiversity.

The report on the outcome of the preceding Round Table in Latin America and the Caribbean, including the decision to proceed with a feasibility study of a proactive regional "Facilitator" approach, led to a discussion of specific actions as opposed to preparatory capacity building. An unease with proceeding immediately with specifics was expressed, preferring to develop further skills first. Many of those skills would be in scientific areas as well as in negotiation and project management. On the other hand, the option that immediate action would better identify the key needs for further training was also expressed anew. In the short term, the skills necessary could be contracted from outside the region or more likely from trained Africans currently employed elsewhere. Broad, intra-regional cooperation could be problematic because of the absence of appropriate continent-wide institutions.

Needs and opportunities were identified, including research requirements and training. These range from the skills for operating a regional gene bank to cataloguing indigenous knowledge to the very specific needs of screening genetic materials for possible pharmaceutical uses. More specific, near-term opportunities were identified and examples noted. In relation to biodiversity conservation, the importance of *sustainable* use of genetic resources and the establishment of a direct link with conservation was stressed.

Detailed discussions focused on:

- 1 Bioprospecting and biodiversity.
- 2 Capacity building/Institutional building.
- 3 Training.
- 4 Biotechnology for biodiversity.
- 5 Biodiversity conservation.

OUTPUT AND CONCLUSIONS

Some essential conclusions can be drawn from the discussions. There is a need for the development of national and regional strategies, projects or programmes for the conservation and sustainable use of biodiversity in accordance with the Convention. There is also a need to strengthen human resource and institutional development as key elements to enhance capacity for the sustainable use of biodiversity resources that incorporate the essential elements of the Convention. The emergence of new partnerships that incorporate the comparative advantages of the various constituencies collaborating on a single objective must be encouraged. Capacity building is essential as a foundation for this.

Specifically, it was concluded at the Round Table that:

- 1 New approaches are needed in the context of the Convention. It is necessary to incorporate equity into projects. Thus projects would provide a framework for sharing benefits and for incorporating local and indigenous populations in the decision-making process.
- 1 Human resource and institutional development programs need to be strengthened. These are key elements to enhance capacity for the sustainable use of biodiversity resources that effectively incorporates the essential components of the Convention (e.g. prior informed consent, equity, fair sharing of benefits).
- 1 Biodiversity Country Studies are an essential and important component to initiate the process of effective conservation and equitable and sustainable use of biodiversity.
- 1 Institutions in Africa, such as universities and specialised institutes, have the necessary capacity and technologies but that these are often under-used.
- 1 The gap between private and public sector and public interests is often a matter of perception. The private sector is a major element, in providing capital, technologies or other skills, but also as a partner and agent of change.
- 1 Training and capacity building have two aspects: Training that begins at a relatively low level to increase capacity from below. A complementary approach is building upon existing centres of excellence and, by incorporation of sustainable project elements, increasing the circle of training to other constituencies associated with the projects.

For further information and a copy of the background papers, please contact:

Dr. Ivar Virgin

Stockholm Environment Institute
Box 2142
S-103 14 Stockholm, Sweden
Phone: +46 8 723 0260
Fax: +46 8 723 0348

Dr. Anatole Krattiger

Associate Director
Biodiversity/Biotechnology Program
International Academy of the Environment
4, Chemin de Conches
CH-1231 Conches/Geneva, Switzerland
Phone: +41 22 789 1311
Fax: +41 22 789 2538

ACKNOWLEDGEMENTS

We would like to extend our sincere thanks and appreciation to all participants for their dedicated hard work during the two days of the Round Table, for their essential contributions and ideas, and for providing timely comments on this report.

The Round Table was sponsored by the Swedish Government and organised by the Stockholm Environment Institute in collaboration with the International Academy of the Environment. Several participants attended through their own means and the African Centre for Technology Studies (ACTS) generously provided for the local arrangements.

Annex 3

Assessment, Conservation and the Sustainable Use of Genetic Resources: Achieving National Objectives Through Regional Collaboration

Report of a Round Table, 10-13 October 1994 Bogor, Indonesia

Organized by the Stockholm Environment Institute in collaboration with
the International Academy of the Environment, Geneva

BACKGROUND

This Round Table, organised by the Stockholm Environment Institute in collaboration with the International Academy of the Environment was held in Bogor, Indonesia, 10-13 October 1994, being a part of a world-wide initiative undertaken on behalf of the Swedish Government. The meeting was the third such Round Table following the two previously held in Kenya and Mexico as earlier described. The objectives of the meeting were to identify key issues pertinent to Asia in conservation and sustainable use of biological resources, such as access to genetic resources, equity and regional coordination.

THE ROUND TABLE PROCESS

Thirty-two individuals were invited to participate strictly representing themselves. They were selected on the basis of expertise and past contribution to the subject matter. Regional and international expertise from diverse backgrounds and constituencies, varying ecosystems, and distinct experiences in the sustainable use of biodiversity were represented at the meeting. Invited nationals were from Australia, Bangladesh, P.R. China, India, Indonesia, Japan, Singapore, Sri Lanka, Thailand, Malaysia, Papua New Guinea and the Philippines.

THE DISCUSSION

The first part of the Round Table consisted of several sessions where many participants made short presentations related to three topics:

Terrestrial and aquatic resources in the region and their utilisation - The sustainable use of marine resources in the region as well as development of pharmaceutical products using traditional knowledge and modern high throughput screening.

The assessment, conservation and use of genetic resources - The prospect for new technologies for rapid biodiversity assessment as well as requirements for conservation and equitable use of genetic material.

Regional co-ordination and collaboration mechanisms - Approaches to facilitating and clearing-house mechanisms to strengthen equitable and sustainable use of biodiversity as well as scientific and technical co-operation.

Based on these presentations several important topics were identified, all related to conservation and sustainable use of biological resources. The discussion centred around:

- 1 The context of aquatic resources
- 1 National and regional institutional strategies
- 1 Arrangements between local communities and institutions
- 1 Facilitating and clearing-house mechanisms

OUTPUT AND CONCLUSIONS

The context of aquatic resources

Several threats to marine and freshwater resources were addressed including over-fishing, habitat destruction and pollution. More basic studies need to be undertaken to improve the overall understanding of the aquatic ecosystem and efforts should be made to educate and assist people to avoid its destruction. Since marine resources are shared between countries in the region, there is a call for regional collaboration on sustainable use and conservation strategies.

National and regional institutional strategies

Several needs and options were presented:

- 1 The need for an integrated approach for *in situ* conservation, considering social, economic, cultural and scientific aspects, particularly in respect to protected areas. To achieve this, institutional and human capacities need to be developed through integrated training at the regional level. This should be coupled to the strengthening of public awareness of the value of biodiversity conservation.
- 1 Common regional policy to strengthen the sustainable use of genetic resources, especially regarding bioprospecting. Harmonisation of regional approaches could be facilitated through the creation of a regional clearing-house mechanism.

- 1 Institutional linkage through collaboration and harmonisation of projects and programmes within the region to strengthen the transfer and exchange of scientific knowledge and technology. The proposed ASEAN Biodiversity Centre, to be established in the Philippines, can be the focal point in data networking and information sharing in the region.

Arrangements between local communities and institutions

A key aspect of conservation and sustainable use of biological resources is the empowerment of local communities. The indigenous people and local communities are dependent on the continued viability of their biological resources for their economic, social and cultural well being. Bioprospecting plays a minor role in the genetic resource utilisation for local communities, the more important part is played by the resources which actually can be, or are being, utilised and improved by the local communities. An important component of community empowerment is to close the gap between institutions, NGOs and local communities. This could lead to multidirectional education that would benefit all parties concerned. Essentially two options for collaboration between the aforesaid entities were identified:

- i) Local inventory programmes to catalogue community-based biodiversity resources as well as the current and potential utilisation. In this context, comparative studies on selected rural communities in specific regions, different habitats, ecosystems and countries would be valuable;
- ii) Community-based training programmes on how to manage local genetic resources, to market them and negotiate deals. Training on value-added activities such as agricultural improvements and medicinal plant utilisation is also essential.

Facilitating and clearing-house mechanisms

Regional facilitating mechanisms and a clearing-house mechanism under the Convention were outlined for promoting technical and scientific co-operation related to the conservation and sustainable use of biological resources.

Regional facilitating mechanisms

The purpose of the facilitating mechanisms would be to enable fair and equitable agreements between sources and users of genetic resources, and in so doing, promote co-operation in the transfer of technological, human and information resources and skills to countries in the region. Increasing interest and activity in the area of bioprospecting would be the initial primary focus of facilitation activities. However, bioprospecting is understood to encompass not only commercial agreements but also development of technological capacity in source countries, in consonance with, the needs and aspirations of local communities and indigenous peoples. It is also meant to attend to the conservation and restoration of the ecosystems in which genetic resources are exploited.

The facilitating mechanisms would function as an active and honest broker and conduit for information relevant to bioprospecting and related legal, institutional, scientific, conservation and business aspects. Based on the possible functions, a number of facilitating mechanisms with different forms might be worth experimenting with in the region. This includes a private sector firm or institute (set up either on a profit-making or non-profit basis) or an intergovernmental regional body formally under the Convention's clearing-house mechanism.

A broad-based clearing-house under the Convention

The clearing-house would facilitate the promotion of scientific and technical co-operation. Its functions would fall into three broad categories of activity: strictly impartial advice, facilitation and brokerage. They span across the following areas:

- 1 provision of information
- 1 co-operative technical and scientific development
- 1 advice for promoting ventures including co-operative risk sharing and, on request, policy option identification
- 1 promotion of partnerships for the conservation and development of a resource
- 1 advice on and promotion of honest brokering of financial and other arrangements
- 1 advice on the sources of assistance with contractual arrangements
- 1 taking initiatives in approaching and encouraging parties in any of the above

The clearing-house under the Convention should focus on bioprospecting and ecologically sustainable use of biological resources through conservation. It would operate under the guidance of the Conference of Parties and work under a representative Advisory (or Governing) Board and assisted by an Advisory Panel consisting of scientific, technical, commercial and other practitioners. The clearing-house would adopt, as a primary method of working, contributions from existing institutions, organisations and corporations, particularly at the regional level, as appropriate. Administrative costs of the clearing-house would be recovered in a flexible manner from the budget of the Convention and from other sources such as service fees, as when available. Co-operative ventures and projects could be financed by seeking support from bilateral funds, multi-lateral sources and, where appropriate, from industry and private financial concerns.

For further information, please contact:

Dr. Ivar Virgin

Stockholm Environment Institute
Box 2142
S-103 14 Stockholm, Sweden
Phone: +46 8 723 0260
Fax: +46 8 723 0348

Dr. Anatole Krattiger

Associate Director
Biodiversity/Biotechnology Program
International Academy of the Environment
4, Chemin de Conches
CH-1231 Conches/Geneva, Switzerland
Phone: +41 22 789 1311
Fax: +41 22 789 2538

ACKNOWLEDGEMENTS

We would like to extend our sincere thanks and appreciation to all participants for their dedicated hard work during the two days of the Round Table, for their essential contributions and ideas, and for providing timely comments on this report.

The Round Table was sponsored by the Swedish Government and organised by the Stockholm Environment Institute in collaboration with the International Academy of the Environment. Several participants attended through their own means and Dr. Setijati D. Sastrapradja of the Indonesian National Committee on Genetic Resources generously provided for the local arrangements.