RESULTS OF THE PILOT PROJECT FOR BOTANIC GARDENS:

PRINCIPLES ON ACCESS TO GENETIC RESOURCES AND BENEFIT-SHARING, COMMON POLICY GUIDELINES TO ASSIST WITH THEIR IMPLEMENTATION AND EXPLANATORY TEXT

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* Please see next page for the full list of individuals who contributed to the drafting of these documents.

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ACRONYMS AND ABBREVIATIONS

ABS	Access and Benefit-Sharing
ASEAN	Association of South East Asian Nations
CBD	Convention on Biological Diversity
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPG	Common Policy Guidelines
DFID	Department for International Development
EC	European Community
FAO	United Nations Food and Agriculture Organization
FRIM	Forest Research Institute Malaysia
INTA	Instituto Nacional de Tecnología Agropecuaria (Argentina)
GATT	General Agreement on Tariffs and Trade
IPR	Intellectual Property Rights
IU	International Undertaking on Plant Genetic Resources for Food and Agriculture
IUCN	International Union for Conservation of Nature
MAT	Mutually Agreed Terms
MTA	Material Transfer Agreement
OAU	Organisation of African Unity
PI	Participating Institution
PIC	Prior Informed Consent
RBG	Royal Botanic Gardens
RECIEL	Review of European Community and International Environmental Law
TRIPS	Trade Related Aspects of Intellectual Property Rights
UNAM	Universidad Nacional Autonóma de Mexico
UNEP	United Nations Environmental Programme
UPOV	Union for the Protection of New Varieties of Plants
USP	University of South Pacific
WTO	World Trade Organisation

FOREWORD

There are now over 2,000 botanic gardens worldwide. They are daily involved in the practicalities of access to genetic resources and the sharing of a wide range of benefits through collaborations with their partners around the world.

By working together, the botanical community is in a position to make a very real and very practical contribution to the rapidly evolving debate on access to genetic resources and benefit-sharing (ABS). Such a harmonised approach may help to support the conservation and sustainable use of biological diversity by facilitating the continued exchange of biological material and associated knowledge by the botanical community within the letter and spirit of the 1992 Convention on Biological Diversity (CBD).

Consisting of 28 botanic gardens and herbaria from 21 countries, the group involved in this project represents a wide range of institutional and scientific expertise. It is committed to helping similar institutions and ABS policy-makers to address the issues and find workable solutions for effective implementation of the CBD and associated national legislation.

The Project Group believes that by taking a voluntary, proactive approach, such solutions can facilitate collaborative scientific research that supports the conservation and sustainable use of biological diversity and also respect the rights of all those involved, including indigenous and local communities, and ensure that benefits are shared fairly and equitably.

When the Project Group met in Cartagena in November 2000, the members felt that it was important both to find a common approach for all participants on access and benefit-sharing and to allow room for flexibility, so that participants could find solutions tailored to their individual circumstances. Consequently, this publication contains three separate documents.

- The Principles on Access to Genetic Resources and Benefit-Sharing: Institutions are invited to endorse these non-legally binding Principles and to develop individual institutional policies that reflect both their letter and spirit.
- The Common Policy Guidelines (CPG): It is hoped that the CPG will provide a useful background for institutions preparing an institutional policy in line with the Principles.
- The Explanatory Text: This text provides additional information on issues that were raised and discussed during the project, and explains why the project participants settled on the language of the Principles and the Common Policy Guidelines.

This publication offers a number of ideas and some potential solutions for discussion. The Project Group hopes that it will be viewed as a useful starting point for institutions as they grapple with the complex issues at the heart of the ABS debate.

Nigel Taylor
Chairman of the pilot project
Head of the Living Collections Department, Royal Botanic Gardens, Kew

* The members of the Project Group are listed in Appendix 9 on page 77.

PRINCIPLES ON ACCESS TO GENETIC RESOURCES AND BENEFIT-SHARING FOR PARTICIPATING INSTITUTIONS

Participating Institutions endorse the following Principles on access to genetic resources and benefit-sharing:

Convention on Biological Diversity (CBD) and laws related to access to genetic resources and associated traditional knowledge and benefit-sharing

- Honour the letter and spirit of the CBD, The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and laws relating to access and benefit-sharing, including those relating to traditional knowledge.

Acquisition of genetic resources

- In order to obtain prior informed consent, provide a full explanation of how the genetic resources will be acquired and used.
- When acquiring genetic resources from *in situ* conditions, obtain prior informed consent from the government of the country of origin and any other relevant Stakeholders, according to applicable law and best practice.
- When acquiring genetic resources from *ex situ* collections (such as botanic gardens), obtain prior informed consent from the body governing the *ex situ* collection and any additional consents required by that body.
- When acquiring genetic resources from *ex situ* sources, whether from *ex situ* collections, commercial sources or individuals, evaluate available documentation and, where necessary, take appropriate steps to ensure that the genetic resources were acquired in accordance with applicable law and best practice.

Use and supply of genetic resources

- Use and supply genetic resources and their derivatives on terms and conditions consistent with those under which they were acquired.
- Prepare a transparent policy on the commercialisation (including plant sales) of genetic resources acquired before and since the CBD entered into force and their derivatives, whether by the Participating Institution or a recipient third party.

Use of written agreements

- Acquire genetic resources and supply genetic resources and derivatives using written agreements, where required by applicable law and best practice, setting out the terms and conditions under which the genetic resources may be acquired, used and supplied and resulting benefits shared.

Benefit-sharing

- Share fairly and equitably with the country of origin and other Stakeholders, the benefits arising from the use of genetic resources and their derivatives including non-monetary, and, in the case of commercialisation, also monetary benefits.
- Share benefits arising from the use of genetic resources acquired prior to the entry into force of the CBD, as far as possible, in the same manner as for those acquired thereafter.

Curation

In order to comply with these Principles, maintain records and mechanisms to:

- record the terms and conditions under which genetic resources are acquired;
- track the use in the Participating Institution and benefits arising from that use; and
- record supply to third parties, including the terms and conditions of supply.

Prepare a policy

- Prepare, adopt and communicate an institutional policy setting out how the Participating Institution will implement these Principles.

COMMON POLICY GUIDELINES (NOVEMBER 2000)[1]:

GUIDELINES TO ASSIST IN THE PREPARATION OF INSTITUTIONAL POLICIES BASED ON THE "PRINCIPLES ON ACCESS TO GENETIC RESOURCES AND BENEFIT-SHARING FOR PARTICIPATING INSTITUTIONS"

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SECTION 1 - INTRODUCTION

Participating Institutions have endorsed the Principles set out in Section 3 because:

- Activities involving access to genetic resources and associated traditional knowledge should be consistent with the provisions of the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and other international, regional, national and sub-national laws and policies concerning biodiversity[2].

- States have sovereign rights over their own biological resources and the authority to determine access to genetic resources rests with national governments.

- Access to genetic resources and benefit-sharing is vital for the conservation and sustainable use of biodiversity.

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[1] This document was prepared by the botanical institutions listed in the Explanatory Text.

[2] The Common Policy Guidelines do not apply to plant genetic resources for food and agriculture (PGRFA) within the scope of the multilateral system established by any revised International Undertaking on PGRFA. The terms of access and benefit-sharing for such PGRFA will be set out in part IV of the International Undertaking.

- It is essential to establish conditions that facilitate access and support scientific research, while honouring the principles of prior informed consent and benefit-sharing.

- It is essential to share the benefits arising from the use of genetic resources and their derivatives fairly and equitably with the country of origin that provided the genetic resources and with other Stakeholders, as appropriate.

- It is essential to honour the terms and conditions under which genetic resources have been acquired.

- Cooperation among botanical institutions and with governments will facilitate access to genetic resources and benefit-sharing.

It is the intent of this document to promote a harmonised basis for access and benefit-sharing among botanical institutions.

SECTION 2 - OBJECTIVE

The objective of these Common Policy Guidelines is to provide background guidance to assist Participating Institutions implement the "Principles on Access to Genetic Resources and Benefit-Sharing for Participating Institutions" set out in Section 3 of this document;

SECTION 3 – PRINCIPLES ON ACCESS TO GENETIC RESOURCES AND BENEFIT SHARING FOR PARTICIPATING INSTITUTIONS

Participating Institutions endorse the following Principles on access to genetic resources and benefit-sharing:

Convention on Biological Diversity (CBD) and laws related to access to genetic resources and associated traditional knowledge and benefit-sharing

- Honour the letter and spirit of the CBD, The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and laws relating to access and benefit-sharing, including those relating to traditional knowledge.

Acquisition of genetic resources

- In order to obtain prior informed consent, provide a full explanation of how the genetic resources will be acquired and used.
- When acquiring genetic resources from *in situ* conditions, obtain prior informed consent from the government of the country of origin and any other relevant Stakeholders, according to applicable law and best practice.
- When acquiring genetic resources from *ex situ* collections (such as botanic gardens), obtain prior informed consent from the body governing the *ex situ* collection and any additional consents required by that body.
- When acquiring genetic resources from *ex situ* sources, whether from *ex situ* collections, commercial sources or individuals, evaluate available documentation

and, where necessary, take appropriate steps to ensure that the genetic resources were acquired in accordance with applicable law and best practice.

Use and supply of genetic resources

- Use and supply genetic resources and their derivatives on terms and conditions consistent with those under which they were acquired.
- Prepare a transparent policy on the commercialisation (including plant sales) of genetic resources acquired before and since the CBD entered into force and their derivatives, whether by the Participating Institution or a recipient third party.

Use of written agreements

- Acquire genetic resources and supply genetic resources and derivatives using written agreements, where required by applicable law and best practice, setting out the terms and conditions under which the genetic resources may be acquired, used and supplied and resulting benefits shared.

Benefit-sharing

- Share fairly and equitably with the country of origin and other Stakeholders, the benefits arising from the use of genetic resources and their derivatives including non-monetary, and, in the case of commercialisation, also monetary benefits.
- Share benefits arising from the use of genetic resources acquired prior to the entry into force of the CBD, as far as possible, in the same manner as for those acquired thereafter.

Curation

- In order to comply with these Principles, maintain records and mechanisms to:
  - record the terms and conditions under which genetic resources are acquired;
  - track the use in the Participating Institution and benefits arising from that use; and
  - record supply to third parties, including the terms and conditions of supply.

Prepare a policy

- Prepare, adopt and communicate an institutional policy setting out how the Participating Institution will implement these Principles.

SECTION 4 - DEFINITIONS

In this document, the following terms have the following meanings:

Accession means a sample or specimen of **biological material** incorporated into an ***ex situ*** **collection**;

Access to genetic resources means the permission to **acquire** and use **genetic resources**;

Acquisition means obtaining possession of a material or resource, through collection or receipt;

Benefit-sharing means the sharing of benefits arising from the use, whether commercial or not, of **genetic resources** and their **derivatives,** and may include both monetary and non-monetary returns;

Biological material includes, but is not limited to, plants, plant parts or propagation material (such as seeds, cuttings, roots, bulbs, corms or leaves), fungi or other fungal material, and any other material of plant, animal, fungal, microbial or other origin and the **genetic resources** contained therein;

Biological resources includes, but are not limited to, organisms or parts thereof, populations or any biotic component of ecosystems of actual or potential value, including **genetic resources**;

Botanic garden means, but is not limited to, an institution maintaining documented collections of living and/or preserved plant **accessions** for purposes such as scientific research, conservation, sustainable use, display and education;

Commercialisation means applying for, obtaining or transferring intellectual property rights or other tangible or intangible rights by sale or licence or in any other manner, commencement of product development, conducting market research, and seeking pre-market approval and/or the sale of any resulting product;

Country of origin of **genetic resources** means the country which possesses those **genetic resources** in ***in situ* conditions**;

Derivatives includes, but are not limited to any progeny, extracts and compounds obtained from **genetic resources** and analogues of those compounds;

***Ex situ* collection** means managed, documented biological material maintained in conditions other than *in situ*;

Explanatory Text means the document [being] developed to accompany these Common Policy Guidelines;

Genetic resources means any material of plant, animal, fungal, microbial or other origin containing functional units of heredity of actual or potential value;

Herbarium means a reference collection of preserved and documented plant specimens, including those that are dried and pressed and those that are preserved in liquid;

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

Participating Institution means any **botanic garden**, **herbarium** or other institution which endorses the "Principles on Access to Genetic Resources and Benefit-Sharing for Participating Institutions" set out in Section 3 of this document and which has agreed to develop an institutional policy to implement the **Principles**;

Principles means the text set out in Section 3.

Prior informed consent means the consent of the government of the **country of origin** and of any other appropriate **Stakeholders** which must be obtained by the **Participating Institution** prior to gaining **access to genetic resources.** It must be based on full disclosure of information, such as the intended use of those **genetic resources**;

Provider means any individual or organisation, whether governmental or non-governmental, that provides **genetic resources** or **derivatives** to a **Participating Institution**;

Recipient means any individual or organisation, whether governmental or non-governmental, that acquires **genetic resources** or **derivatives** from a **Participating Institution** with its consent;

Stakeholder means an individual, organisation or group whether formal or informal, affected by, or with an interest in, the activities relating to the **acquisition**, use or supply of **genetic resources** or their **derivatives**. Stakeholders involved in conservation and the granting of collecting permits and **prior informed consent** for **access** may include relevant departments of government, local authorities, private individuals such as landowners, indigenous peoples, local communities, farmers and non-governmental organisations. Stakeholders such as these are often described in law relating to **access** and **benefit-sharing**;

Written agreement means any form of written agreement between two or more organisations or individuals setting out the terms and conditions under which one party will transfer **biological materials**. What constitutes a written agreement can take many forms, ranging from an exchange of letters and the granting of a collecting permit based on a completed application, to a shipping notice or a detailed contract (sometimes known as a material transfer agreement or access and benefit-sharing agreement). A range of different written agreements is set out for illustrative purposes in the **Explanatory Text.**

SECTION 5 - ACQUISITION

5.1 PRIOR INFORMED CONSENT

5.1.1 When it collects or otherwise gains access to genetic resources, each Participating Institution will abide by international and national applicable laws, regulations and best practice.

When obtaining access to genetic resources from *in situ* conditions, each Participating Institution will:

(a) where required, in accordance with applicable law, obtain, in writing, the prior informed consent of the government of the country of origin;

and will make reasonable and sincere efforts to:

(b) obtain and record the prior informed consent of other Stakeholders, as appropriate, for access to and use of the genetic resources concerned and associated knowledge;

(c) ensure that any collection, import, export and other handling of the genetic resources has been in accordance with all applicable law; and

(d) clarify, in writing based on a full explanation of how the genetic resources will be acquired and used, the terms and conditions under which the materials are acquired and can subsequently be used, particularly whether the materials or their derivatives may be supplied to third parties and/or commercialised.

5.1.2 When obtaining access to genetic resources from *ex situ* collections, each Participating Institution will:

(a) obtain, in writing, prior informed consent from the officer authorised to agree terms and conditions of access on behalf of the *ex situ* collection, and such other consents required as indicated by that officer for access to the genetic resources concerned and for their use;

and will make reasonable and sincere efforts to:

(b) obtain from the authorised officer of the Provider a written statement that the genetic resources were acquired and are being supplied in accordance with all applicable law and that the Provider is entitled to supply them to the Participating Institution;

(c) ensure that the export of the genetic resources or their derivatives from the country where the Provider is based, and import to the country where the Participating Institution is based, are in accordance with all applicable law; and

(d) clarify, in writing, based on a full explanation of how the genetic resources will be acquired and used, the terms and conditions under which the materials are acquired and can subsequently be used, particularly whether the materials or their derivatives may be supplied to third parties and/or commercialised.

5.1.3 When obtaining access to genetic resources from *ex situ* sources other than those in Section 5.1.2, above, for instance from commercial sources or individuals, each Participating Institution will ensure that the acquisition conforms with applicable law and best practice, and in cases where there is no applicable law, will, if appropriate, evaluate available documentation and make reasonable and sincere efforts to ascertain from the Provider that the materials were obtained in accordance with the CBD and best practice.

5.2 Use Of Written Agreements To Clarify Terms And Conditions Of Acquisition

5.2.1 When obtaining access to genetic resources, each Participating Institution will make reasonable and sincere efforts to clarify in writing the respective roles, rights and responsibilities of the Participating Institution, the Provider, the country of origin and relevant Stakeholders, as appropriate, in activities involving the acquisition and use of genetic resources.

SECTION 6 – USE

6.1 Use Where Terms And Conditions Are Clear

6.1.1 Participating Institutions will only use genetic resources for purposes consistent with the terms and conditions under which they were acquired. If a Participating Institution wishes to use such genetic resources for purposes other than those allowed by the terms and conditions under which the material was originally acquired (such as for commercial use when access was granted for non-commercial purposes), the Participating Institution will obtain approval from the Provider for such use and should specify in writing the terms and conditions of use, including fair and equitable benefit-sharing as set out in Section 9 below.

6.2 Use Where Terms And Conditions Are Not Clear

6.2.1 A Participating Institution may wish to commercialise genetic resources (or their derivatives) for which the terms and conditions under which they were acquired are not clear. In this case:

(a) if the genetic resources were acquired after the entry into force of the CBD, each Participating Institution will obtain the informed consent of the Provider (or, if the Provider is not known, the country of origin), prior to commercialising the genetic resources, and should specify in writing the terms and conditions of use, including fair and equitable benefit-sharing as set out in Section 9 below.

(b) if the genetic resources were acquired prior to the entry into force of the CBD, each Participating Institution will share benefits arising from their commercialisation according to Section 9, and will clarify, in the policy on commercialisation referred to in the Principles, whether, prior to commercialisation, they will obtain the informed consent of the Provider (or, if the Provider is not known, the country of origin).

SECTION 7 – CURATION

7.1 COLLECTION MANAGEMENT

7.1.1 Each Participating Institution acquiring genetic resources will make reasonable and sincere efforts to record and maintain data on their acquisition, including information on the Provider; country of origin; collector; and, if available, dates, accession numbers, taxon names, etc; prior informed consent and terms and conditions of use; and other relevant data associated with the acquisition of accessions in its collections in order to be able to implement the Principles.

7.1.2 Each Participating Institution will make reasonable and sincere efforts to record and maintain information concerning the use of genetic resources and their derivatives by that Participating Institution, and the benefits to that Participating Institution arising from such use.

7.1.3 Each Participating Institution will make reasonable and sincere efforts to record and maintain data on the supply of genetic resources and their derivatives, including information on the Recipient and the terms and conditions of access and benefit-sharing under which they were supplied. When providing genetic resources and their derivatives to a Recipient, each Participating Institution will also provide relevant data on their acquisition to the Recipient, as described in Section 7.1.1, particularly information on prior informed consent and conditions of use.

7.1.4 In order to be able to fulfil its commitments in the Principles now and in the future, each Participating Institution will develop and implement appropriate mechanisms to track the acquisition of genetic resources, the different uses of genetic resources and their derivatives held in its collections, their supply to Recipients, and the benefits that arise from their use.

7.2 STAFF MANAGEMENT

7.2.1 Each Participating Institution will establish systems of staff management and individual responsibilities for the implementation of and compliance with the Principles.

SECTION 8 - SUPPLY

8.1 SUPPLY OF GENETIC RESOURCES

8.1.1 Each Participating Institution may supply, whether by way of a gift, sale or loan, genetic resources or their derivatives to other Participating Institutions and third parties for conservation, research, public display, education and other purposes.

8.1.2 At the time of supplying genetic resources or their derivatives, each Participating Institution will, consistent with its policy on commercialisation referred to in the Principles, clarify with the Recipient, whether the supply is for commercial or for non-commercial purposes.

8.1.3 When supplying genetic resources or their derivatives, each Participating Institution will honour any terms and conditions to which it committed when acquiring the genetic resources, such as any terms and conditions set out in written agreements.

8.1.4 To the extent possible, when supplying genetic resources or their derivatives, each Participating Institution will treat genetic resources acquired prior to the entry into force of the CBD and those acquired after its entry into force in the same manner.

8.2 Use of Written Agreements to Clarify Terms and Conditions of Supply

8.2.1 When supplying genetic resources or their derivatives, each Participating Institution recognises the need to supply genetic resources under written agreements, which obliges each Recipient:

a) to share benefits arising from its use of the genetic resources and their derivatives fairly and equitably as set out in Section 9.

b) not to commercialise the genetic resources or their derivatives without the explicit consent of the Participating Institution providing them; and

c) not to pass the genetic resources or their derivatives on to third parties without ensuring that the third parties enter into written agreements containing terms and conditions that are no less restrictive.

SECTION 9 - BENEFIT-SHARING

9.1 Commitment to Share Benefits

9.1.1 Each Participating Institution will make reasonable and sincere efforts to share the benefits arising from the use of genetic resources and their derivatives fairly and equitably with the country of origin and other Stakeholders, as appropriate.

9.1.2 To the extent possible, each Participating Institution will share the benefits arising from the use of materials acquired prior to and after the entry into force of the CBD in the same manner.

9.2 BENEFITS

9.2.1 The object of sharing benefits is to achieve fairness and equity and to create incentives and provide resources for the conservation of biological diversity and the sustainable use of its components.

9.2.2 Benefits which Participating Institutions will share, depending upon what is fair and equitable in the circumstances, including commitments made in written agreements, may include:

- taxonomic, biochemical, ecological, horticultural and other information and data, through research results, publications and educational materials;
- access to collections and databases;
- benefits in kind, such as augmentation of national collections in the country of origin and support of community development activities;
- the transfer of technology such as hardware, software and know-how;
- training in science, *in situ* and *ex situ* conservation and management, information technology and management and administration of access and benefit-sharing;
- institutional development, strengthening and management;
- joint research and development, through collaboration in training and research programmes, participation in product development, joint ventures and co-authorship of publications; and,
- in the case of commercialisation, also monetary benefits such as royalties.

SECTION 10 - IMPLEMENTATION

10.1 DEVELOP AN INSTITUTIONAL POLICY

10.1.1 Each Participating Institution will prepare and, as appropriate, communicate its own policy setting out how it will implement the Principles, using these Common Policy Guidelines for guidance.

10.1.2 Participating Institutions may develop such policies individually or collectively, as groups or networks of institutions.

10.1.3 In order to reflect changes in international, national and other applicable law and acknowledged best practice, it may revise its own policy periodically.

10.2 BROADENING PARTICIPATION

10.2.1 The Participating Institutions endorsing the Principles are committed to working with governments and the broader botanical community, including individuals, organisations and groups dealing with genetic resources in order to develop a harmonised basis for access to genetic resources and benefit-sharing.

(SEPARATE DOCUMENT)

List of Participating Institutions endorsing the "Principles on Access to Genetic Resources and Benefit-Sharing for Participating Institutions" (as of XXXX 2000):

XXXX
XXXX
XXXX

SECTION 1 - INTRODUCTION

1. Introduction to the Convention on Biological Diversity

1.1 What is the Convention on Biological Diversity?

The Convention on Biological Diversity (CBD) is both an international treaty and an institutional framework for the on-going development of legal, policy and scientific initiatives on biological diversity. The CBD marks a milestone in international treaties. Earlier treaties deal with specific aspects of biodiversity, such as trade in endangered species (CITES), particular ecosystems (e.g. wetlands, Ramsar Convention; drylands, Convention to Combat Desertification), geographic areas (e.g. European wildlife and habitats, Berne Convention) or species (e.g. migratory species, Bonn Convention). The scope of the CBD, however, is global, covering all components of biological diversity, from ecosystems and habitats, species and communities to genomes and genes. It deals not only with the conservation of biological diversity *in situ* and *ex situ*, but also with the sustainable use of the components of biodiversity and the sharing of benefits arising out of the use of genetic resources. It provides for the possibility of treating specific issues in greater detail in the future, through the development of protocols and annexes.

Certain provisions of some other international environmental treaties address access to genetic resources. For example, CITES covers the import and export of genetic resources of 'listed' species. But the CBD is the only international treaty which expressly addresses access to genetic resources and benefit-sharing. Most importantly, in the event of a conflict between the CBD and other international treaties, if serious damage or threat to biodiversity occurs, the CBD shall prevail (Article 22).

The objectives of the CBD are described in Article 1 as follows:

> *' 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, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.'*

The term 'biological diversity' is used to describe the variability among living organisms from all sources and the ecological complexes of which they are part, including the diversity within species, between species and of ecosystems (CBD, Article 2).

The Convention was opened for signature on 5 June 1992, during the Rio Earth Summit (the United Nations Conference on Environment and Development). It entered into force on 29 December 1993, after an unusually short period during which the necessary 30 countries ratified it. As of February 2001, 179 governments and the European Community have ratified the Convention. For an up-to-date list of ratifications, see website www.biodiv.org.

Article 2 of the CBD defines 'genetic material' as any material of plant, animal, microbial or other origin containing functional units of heredity and 'genetic resources' as genetic material of actual or potential value. These definitions can cover both living and preserved materials, such as herbarium specimens. National legislation may extend the scope of the CBD, in particular, the obligation to share benefits, to the derivatives of genetic resources such as extracts derived from genetic resources.

Box 1
Treaties, Conventions, Guidelines, Principles and Codes of Conduct: What are they?

Treaties and international Conventions
Treaties and international Conventions, such as the Convention on Biological Diversity (CBD) are legally binding sources of international law which require specific standards of behaviour from the States that ratify them.

Many international Conventions are 'framework' conventions; that is, they lay out legally binding objectives and overall obligations and rights of the parties. Specific activities can then be regulated by protocols to the Convention or other instruments such as national legislation. The CBD is a 'framework' Convention.

Guidelines, Principles and Codes of Conduct
Guidelines, Principles and Codes of Conduct represent a blurring between what has been traditionally understood as 'law' and 'policy'. They are non-legally binding documents setting out statements of intent usually endorsed by the management of a particular institution and carrying a certain moral weight. They tend to be aimed at specific, often quite technical, issues: for example, access to genetic resources by botanic gardens or best practice by ethnobotanists carrying out *in situ* fieldwork.

They are often viewed as an excellent way of increasing international awareness of specific problems, providing a public forum to stimulate debate over possible solutions, and building public consensus in a particular area. They are also a useful tool for addressing, at a non-governmental level, some of the specific activities raised by a 'framework' Convention such as the CBD.

See also Bibliography, particularly Birnie and Boyle (1992) and Sands (1995).

1.2 Scope of the Convention on Biological Diversity

The CBD sets out responsibilities for:

- monitoring and identification of biodiversity;
- environmental impact assessments;
- national strategies, plans or programmes to conserve and use the components of biological diversity sustainably; and
- integrating biodiversity policy into relevant sectoral or cross-sectoral plans, programmes and policies.

The breadth of the issues covered by the CBD can be seen in Box 2.

Box 2
Main issues covered by the Convention on Biological Diversity

Preamble	Article 11. Incentive Measures
Article 1. Objectives	Article 12. Research and Training
Article 2. Use of Terms	Article 13. Public Education and Awareness
Article 3. Principle	Article 14. Impact Assessment and Minimising Adverse Impacts
Article 4. Jurisdictional Scope	Article 15. Access to Genetic Resources
Article 5. Cooperation	Article 16. Access to and Transfer of Technology
Article 6. General Measures for Conservation and Sustainable Use	Article 17. Exchange of Information
Article 7. Identification and Monitoring	Article 18. Technical and Scientific Cooperation
Article 8. In-situ Conservation	Article 19. Handling of Biotechnology and Distribution of its Benefits
Article 9. Ex-situ Conservation	Article 20. Financial Resources
Article 10. Sustainable Use of Components of Biological Diversity	Article 21. Financial Mechanism

Further information on the CBD and its implementation by Parties can be found on the CBD Secretariat's website (www.biodiv.org) and through the CBD Clearing House Mechanism (www.biodiv.org/chm/), which is a means to exchange information relating to activities under the CBD.

1.3 Where do issues of access and benefit sharing (ABS) arise in the CBD?

Many of the activities explored in the CBD, from *in situ* and *ex situ* conservation, through monitoring and assessment of the components of biological diversity, to research and training, require access to genetic resources. Therefore, although the provisions on access and benefit-sharing (ABS - primarily Articles 8(j), 15, 16 and 19) refer to a specific set of activities, they are closely linked to the rest of the Convention. Among other interpretations, the CBD can be seen as an instrument to promote the equitable exchange, on mutually agreed terms, of access to genetic resources and associated knowledge in return for finance, technology and the opportunity to participate in research.

1.4 What obligations does the CBD introduce in terms of ABS?

The CBD recognises the sovereign right of states over their biological resources and the consequent authority of national governments to determine access to genetic resources. According to the CBD, such access shall be subject to Parties' Prior Informed Consent (PIC), and on mutually agreed terms that promote the fair and equitable sharing of benefits. The CBD strikes a balance between a State's authority to regulate access to genetic resources, on the one hand, and, on the other, its obligation to facilitate access to genetic resources for environmentally sound uses by other Parties. Parties also commit not to impose restrictions that run counter to the objectives of the CBD.

The key provisions of the CBD on ABS are summarised in Box 3.

Box 3
Summary of provisions in the CBD on access to genetic resources, on the knowledge, practices and innovations of local and indigenous communities, and on benefit-sharing

Art. 8 (j)	Promote the wider application of the knowledge, innovations and practices of indigenous and local communities with their approval and involvement and encourage the equitable sharing of the benefits arising from the utilisation of the knowledge, innovations and practices of indigenous and local communities.
Art.15.1	Sovereign rights of States over their natural resources; the authority of national governments to determine access to genetic resources.
Art.15.2	Endeavour to create conditions to facilitate access to genetic resources for environmentally sound uses by other Contracting Parties and not to impose restrictions that run counter to the objectives of the CBD.
Art.15.3	Articles 15, 16 and 19 only apply to genetic resources acquired "in accordance with this Convention": *i.e.* not to those obtained prior to its entry into force or from non-parties.
Art.15.4	Access, where granted, to be on mutually agreed terms and subject to the provisions of Article 15.
Art.15.5	Access to genetic resources to be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party.
Art.15.6	Endeavour to develop and carry out scientific research based on genetic resources provided by other Contracting Parties with the full participation of, and where possible in, such Contracting Parties.

Art.15.7	Take legislative, administrative or policy measures, as appropriate, with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilisation of genetic resources with the Contracting Party providing such resources. Such sharing to be upon mutually agreed terms.
Art.16.3	Access to and transfer of technology using genetic resources to countries providing the genetic resources.
Art.19.1	Effective participation by providers of genetic resources in biotechnological research on the genetic resources they provide.
Art 19.2	Priority access on a fair and equitable basis by countries (especially developing countries) providing genetic resources to the results and benefits arising from biotechnologies based on them. Such access to be on mutually agreed terms.

As illustrated in Box 3, obligations to share benefits arise in the context of:
(a) access to genetic resources, and the need to obtain prior informed consent (See Art 15(5)); and
(b) access to the knowledge, innovations and practices of indigenous and local communities, for which the approval of the holders of that knowledge is required.

Article 8(j) of the CBD encourages, with their prior approval, the equitable sharing of benefits arising from the utilisation of the 'knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity'. In other words, the CBD seeks to encourage the traditional use of biodiversity, and recognises the value of knowledge and information associated with genetic resources. Such interests may be protected by national law and policy, for instance enshrined in traditional grazing or user rights, or in specific regulations on access to knowledge associated to genetic resources: e.g. Decision 391 of the Andean Pact.

However, even if these interests are not specifically protected in national law, institutions who endorse the Principles, thereby becoming Participating Institutions, should consider obtaining Prior Informed Consent (PIC) from indigenous and local communities, landowners and farmers, and sharing benefits. This could be relevant for Participating Institutions when collecting and publishing primary ethnobotanical information that does not involve access to actual plant material. Some useful sources of information[1] on how to work with local and indigenous communities can be found on http://users.ox.ac.uk/~wgtrr/decin.htm

1.5 How are countries implementing the provisions of the CBD on access and benefit sharing?

As States have sovereign rights over their genetic resources, the regulation of access to genetic resources is a matter for national governments (CBD Article 15(1)). Countries have a great deal of discretion to decide how to regulate access, and in practice, the number of countries developing national laws and policies on this subject is growing fast. Laws that countries have already introduced or draft laws that they are developing typically govern access by nationals and foreigners alike to genetic resources, biochemicals and traditional knowledge. They require the sharing of benefits such as royalties, technology, joint research and information, on mutually agreed terms.

Regional groups, national governments or state governments **already regulating** access to genetic resources to ensure prior informed consent and benefit-sharing include: the Andean Pact (Bolivia, Colombia, Ecuador, Peru, Venezuela); Australia (the States of Western Australia and Queensland); Brazil (the States of Acre and Amapa); Cameroon; Costa Rica; the Republic of Korea; Malaysia (the State of Sarawak); Mexico; and the Philippines.

[1] For an updated compilation of guidelines, codes and statements relevant to indigenous and local www.biodiv.org/socio-eco/traditional/art8j.asp

Regional groups and national governments **planning** to regulate access to genetic resources to ensure prior informed consent and benefit-sharing include: the member countries of the Association of South-East Asian Nations (ASEAN); Australia (the Commonwealth); Brazil; Ivory Coast; Cuba; Ethiopia; Eritrea; Fiji; the Gambia; Guatemala; India; Indonesia; Kenya; Lao PDR; Lesotho; Malawi; Malaysia (at the national level and the State of Sabah); Mozambique; Namibia; Nicaragua; Nigeria; the Organisation of African Unity; Pakistan, Papua New Guinea; Samoa; the Seychelles; the Solomon Islands; South Africa; Sri Lanka; Tanzania; Thailand; Uganda; the United States of America (within Yellowstone and other national parks), Vanuatu; Vietnam; and Yemen.

Belize, China, El Salvador, Ghana, Guyana, Hungary, Iceland, Panama, the Russian Federation and Zimbabwe **may also be planning** to regulate access to genetic resources in the near future. (Personal communication, Lyle Glowka, February 2001).

In addition, the countries which are members of the FAO Commission on Genetic Resources are currently engaged in negotiations to revise the International Undertaking on Plant Genetic Resources for Food and Agriculture (IU), in harmony with the CBD. This process is likely to lead to a new, legally-binding agreement between governments. One of the important elements of the IU is access to plant genetic resources for food and agriculture and associated benefit-sharing, as described in Box 4.

Box 4

The International Undertaking on Plant Genetic Resources for Food and Agriculture (IU)

In 1983, the member countries of the FAO Commission on Plant Genetic Resources adopted the International Undertaking (IU) on Plant Genetic Resources. The objective of the original IU, a non-binding, voluntary agreement, was to 'ensure that plant genetic resources of economic and/or social interests, particularly for agriculture, will be explored, preserved, evaluated and made available for plant breeding and scientific purposes'.

In the late 1980s, disquiet on the part of plant breeders in developed countries concerning the apparent requirement under the IU to make available their improved materials led to a series of Resolutions by the FAO Council. These qualified the principle that was espoused in the original IU that genetic resources are the 'heritage of mankind' and also qualified the meaning of 'unrestricted' availability. Concerns on the part of developing countries led to the introduction of the concept of Farmers' Rights.

The text of the CBD was adopted in the Nairobi Final Act of May 1992. Resolution 3 recognised the need to find solutions to certain issues unresolved by the CBD itself. These issues include access to *ex situ* collections not acquired in accordance with the CBD - for instance, the majority of collections held in botanic gardens acquired before the CBD entered into force - and the question of Farmers' Rights. Consequently, in April 1993, the FAO Commission agreed that the IU should be revised to be in harmony with the Convention. The FAO Commission has met several times, and continues to meet, to negotiate the revision of the IU.

The revised IU is likely to a legally-binding agreement that, among other things, establishes a multilateral system for access to certain plant genetic resources for food and agriculture (PGRFA), setting out terms and conditions for facilitated access to a list of crops for use exclusively in food and agriculture, as well as benefit-sharing. The IU is likely to address access to certain *ex situ* collections of PGRFA, including those held in the International Agricultural Research Centres (IARCs) of the Consultative Group on International Agricultural Research (CGIAR), including pre-CBD collections.

The revision of the IU is important for botanical institutions. Depending on their status as public institutions and how the IU, when revised, is implemented by the countries party to it, they may be required to facilitate access to the PGRFA within the scope of the IU on the terms and conditions it sets out, and to share benefits, as described in the IU, for any uses they make of the PGRFA that the IU covers.

For brief background information on the IU and progress with the negotiations, see the FAO Commission on Genetic Resources website www.fao.org/ag/cgrfa/default.htm and the Earth Negotiations Bulletin website: www.iisd.ca/biodiv/iu.html. For an introduction to these topics, see ten Kate and Lasén Diaz, 1997. For information on collections of agricultural interest within botanic gardens (which might therefore be subject to the terms on access and benefit-sharing of the Undertaking, when it is revised), see Hernández Bermejo, 1996.

2. Botanical institutions and the CBD

2.1 Why should Botanical Institutions concern themselves with the CBD?

The CBD came into force on 29 December 1993. All material collected prior to this date is known as 'pre-CBD material'; all material collected since this date is 'post-CBD material'. Accordingly, a large proportion of the genetic resources held in botanical institutions are pre-CBD and therefore are not subject to its provisions on access and benefit-sharing - although they may of course be subject to terms of transfer such as collecting and export permits.

However, there are a number of reasons why botanical institutions should engage in policy development and practical implementation of the CBD. For example:

- **To continue to access and exchange materials:** Botanical institutions act as an important 'clearing house', as the genetic resources they collect may be supplied to a wide range of organisations including other botanical institutions, universities, research institutions and industry. For the *ex situ* collections held in botanical institutions to be of value to science and conservation, they must be maintained and improved. This involves continued access to plant, microbial and even animal genetic resources. Also, exchange of materials between botanical institutions is necessary to facilitate taxonomic and other scientific research and ensure that the levels of diversity held in *ex situ* collections are adequate for conservation. Since 180 parties have ratified the CBD and some 50 countries are developing laws regulating access, engagement in ABS issues by the botanical community is vital.
- **To continue to build partnerships:** Clear and transparent policies on the CBD are likely to help botanical institutions continue to build valuable partnerships with other botanical institutions and access authorities around the world.
- **To continue to attract funding for their work:** Through their work in conservation and sustainable use of biodiversity, in raising public awareness and in education and training, botanical institutions are in a prime position to assist governments to fulfil obligations under the CBD. In the future, Institutions may find it less easy to attract funding opportunities if their work does not adequately reflect the CBD.

2.2 Why should botanical institutions try to develop harmonised policies?

There are a number of reasons why botanical institutions should try to develop harmonised policies on access and benefit-sharing (ABS) under the CBD. These include:

- **To clarify their positions:** Clear policies on ABS, particularly with respect to issues that are ambiguous in international and national law and policy (such as access to pre-CBD collections) can help facilitate access, promote fair partnerships and build trust.
- **To make sure policies are workable:** A voluntary, proactive approach allows botanical institutions to find clear and practical ways to address ABS which meet their own circumstances. There is a risk that laws or policies on ABS introduced without adequate participation from the botanical community may not be workable.
- **To protect the reputations of botanical institutions as a whole:** It is in the interests of botanical institutions to work together to develop, exchange and spread best practice, since this is likely to encourage their partners (such as sister institutions and access authorities world-wide) to co-operate with them on mutually beneficial projects.
- **To rationalise procedure:** Exchange of genetic resources and benefit-sharing can be facilitated and bureaucracy minimised through common standards on ABS. If all 2000 botanic gardens took very different approaches to the terms and conditions for the exchange of genetic resources, the exchange of materials could become bogged down in bureaucracy and paperwork.

- **Transparency:** Collaborators would know what to expect of institutions subscribing to published, harmonised policies, encouraging suppliers and recipients of genetic resources to work with these institutions.

2.3 Developing the Common Policy Guidelines

With these arguments for harmonisation in mind, representatives of twenty-eight botanic gardens from twenty-one countries (Argentina, Australia, Bolivia, Brazil, Cameroon, Canada, China, Colombia, Ethiopia, Fiji, Malaysia, Germany, Ghana, Mexico, Morocco, India, the Russian Federation, South Africa, Switzerland, the UK and the USA) worked together in a project co-ordinated by the CBD Unit of the Royal Botanic Gardens, Kew and funded by the UK Department for International Development (DFID). Botanic Gardens Conservation International and the International Association of Botanic Gardens also took part.

The group was chosen to be as representative as possible of the world's approximately 2000 botanic gardens. Participants came from all regions of the world and from both developing and developed countries. Some represented large and long-established botanic gardens with several hundred staff, and others came from much smaller gardens, including some newly created ones. Their countries are responding in different ways to the access and benefit-sharing provisions of the CBD. Some have already introduced access legislation, others are in the course of developing it, while yet others have no present intention of introducing such laws. Representatives from countries where there is law on access to genetic resources, such as Cameroon, Brazil, Malaysia and Colombia, were able to explain how they work within this changing legal framework. They could share this experience with other participants from countries where laws are still being developed or are likely to be implemented in the next few years. The participants felt that, if the Principles were workable for those participants already required to follow access legislation, the approach would be likely to remain practical as more countries introduce law and policy on access and benefit-sharing. The idea was that if such a diverse group could agree on a common approach, then such an approach might be helpful for the wider botanical community.

The project has involved four workshops. The first was held at the Royal Botanic Gardens, Kew, UK in December 1997, the second at Kirstenbosch Botanical Garden in Cape Town, South Africa, in September 1998, the third hosted by the Institute of Botany in Beijing, China, in May 1999 and the fourth and last, in Cartagena, Colombia, in November 2000, was hosted by the Colombian National Network of botanic gardens and Cartagena's Guillermo Piñeres Botanic Garden. In between these meetings, participants worked with the staff and management of their gardens to discuss the development of the policy and to assess their organisations' practical capabilities and needs for implementation. They also consulted with other stakeholders such as government representatives and indigenous and local communities, as well as national botanic garden networks. This process was vital and significantly influenced the drafting of the Principles and Common Policy Guidelines.

At the third workshop in Beijing the text of the 'Common Policy Guidelines' (CPG) was first agreed by the representatives from 14 botanic gardens from 11 countries. At the fourth workshop in Cartagena, drawing on experience with implementation of the CPG, the participants produced a set of 'Principles on Access to Genetic Resources and Benefit-Sharing for Participating Institutions' (Principles) and revised the CPG as background guidance.

2.4 Endorsing the Principles and using the Common Policy Guidelines to develop an institutional policy

The Principles

The botanic gardens and herbaria which met in Cartagena in November 2000 felt that it was important both to find a common approach for all participants on access and benefit-sharing, and to allow room for

flexibility so that each organisation could find a solution tailored to its individual circumstances. They concluded that the most realistic way to do this was to develop a short set of non legally binding 'Principles' which all participants could endorse and translate into their own institutional policy.

The Principles are open to the Board of Management or Director of any institution to endorse as a voluntary commitment. The list of Participating Institutions (PIs) that endorse the Principles will be displayed on a number of websites (see Annex 9).

The Common Policy Guidelines

By endorsing the Principles, each PI commits to develop its own institutional policy. There is no requirement for institutions to endorse the more detailed Common Policy Guidelines (CPG). However, institutions may find the CPG useful as tool for development of their own institutional policies.

Box 5
The legal status of the Principles and of the Common Policy Guidelines

The Principles and the Common Policy Guidelines are not legally binding.

By endorsing the Principles, a PI is making a voluntary statement of intent consistent with existing international environmental legal standards.

The Principles and the Common Policy Guidelines do however provide a blueprint to enable PIs to develop and implement self-regulatory schemes and best practices that will facilitate continued global access to genetic resources. If adopted by a sufficient number of institutions, they may, in time, come to be viewed as a first point of reference for access and benefit-sharing by the international scientific research community.

They may also empower the providers of those resources by raising awareness of the standards that can be expected from PIs.

SECTION 1 - INTRODUCTION

Participating Institutions have endorsed the Principles set out in Section 3 because:

- *Activities involving access to genetic resources and associated traditional knowledge should be consistent with the provisions of the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and other international, regional, national and sub-national laws and policies concerning biodiversity*[1].

- *States have sovereign rights over their own biological resources and the authority to determine access to genetic resources rests with national governments.*

- *Access to genetic resources and benefit-sharing is vital for the conservation and sustainable use of biodiversity.*

- *It is essential to establish conditions that facilitate access and support scientific research, while honouring the principles of prior informed consent and benefit-sharing.*

- *It is essential to share the benefits arising from the use of genetic resources and their derivatives fairly and equitably with the country of origin that provided the genetic resources and with other Stakeholders, as appropriate.*

- *It is essential to honour the terms and conditions under which genetic resources have been acquired.*

- *Cooperation among botanical institutions and with governments will facilitate access to genetic resources and benefit-sharing.*

It is the intent of this document to promote a harmonised basis for access and benefit-sharing among botanical institutions.

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[1] *The Common Policy Guidelines do not apply to plant genetic resources for food and agriculture (PGRFA) within the scope of the multilateral system established by any revised International Undertaking on PGRFA. The terms of access and benefit-sharing for such PGRFA will be set out in the International Undertaking.*

SECTION 2 - OBJECTIVE

The objective of these Common Policy Guidelines is to provide background guidance to assist Participating Institutions implement the "Principles on Access to Genetic Resources and Benefit-Sharing for Participating Institutions" set out in Section 3 of this document;

Box 6
Status and Objective of the Common Policy Guidelines

The Common Policy Guidelines (CPG) is not a legally binding document. It is intended as an aid to implementation of the Principles and as a guide to some of the key considerations that a Participating Institution (PI) may need to address whilst developing its own institutional policy.

It is also hoped that the CPG will act as a reference point to encourage informed public debate on effective implementation of the access and benefit-sharing provisions of the Convention on Biological Diversity.

SECTION 3 - PRINCIPLES ON ACCESS TO GENETIC RESOURCES AND BENEFIT SHARING FOR PARTICIPATING INSTITUTIONS

Participating Institutions endorse the following Principles on access to genetic resources and benefit-sharing:

Convention on Biological Diversity (CBD) and laws related to access to genetic resources and associated traditional knowledge and benefit-sharing

- *Honour the letter and spirit of the CBD, The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) and laws relating to access and benefit-sharing, including those relating to traditional knowledge.*

Acquisition of genetic resources

- *In order to obtain prior informed consent, provide a full explanation of how the genetic resources will be acquired and used.*
- *When acquiring genetic resources from in situ conditions, obtain prior informed consent from the government of the country of origin and any other relevant Stakeholders, according to applicable law and best practice.*
- *When acquiring genetic resources from ex situ collections (such as botanic gardens), obtain prior informed consent from the body governing the ex situ collection and any additional consents required by that body.*
- *When acquiring genetic resources from ex situ sources, whether from ex situ collections, commercial sources or individuals, evaluate available documentation and, where necessary, take appropriate steps to ensure that the genetic resources were acquired in accordance with applicable law and best practice.*

Use and supply of genetic resources

- *Use and supply genetic resources and their derivatives on terms and conditions consistent with those under which they were acquired.*
- *Prepare a transparent policy on the commercialisation (including plant sales) of genetic resources acquired before and since the CBD entered into force and their derivatives, whether by the Participating Institution or a recipient third party.*

Use of written agreements

- *Acquire genetic resources and supply genetic resources and derivatives using written agreements, where required by applicable law and best practice, setting out the terms and conditions under which the genetic resources may be acquired, used and supplied and resulting benefits shared.*

Benefit-sharing

- *Share fairly and equitably with the country of origin and other Stakeholders, the benefits arising from the use of genetic resources and their derivatives including non-monetary, and, in the case of commercialisation, also monetary benefits.*
- *Share benefits arising from the use of genetic resources acquired prior to the entry into force of the CBD, as far as possible, in the same manner as for those acquired thereafter.*

Curation

In order to comply with these Principles, maintain records and mechanisms to:

- ***record the terms and conditions under which genetic resources are acquired;***
- ***track the use in the Participating Institution and benefits arising from that use; and***
- ***record supply to third parties, including the terms and conditions of supply.***

Prepare a policy

- ***Prepare, adopt and communicate an institutional policy setting out how the Participating Institution will implement these Principles.***

The Project Group which met in Cartagena, Colombia, in November 2000 felt that it was important both to find a common approach for all participants on access and benefit-sharing (ABS) and to allow room for flexibility, so that each organisation could find a solution tailored to its individual circumstances. They concluded that the most realistic way to do this was to develop a short set of Principles, which an organisation could endorse and then translate into its own institutional policy.

The Principles are clustered under headings that reflect the key ABS activities of botanical institutions: the Convention on Biological Diversity and applicable access laws and regulations; acquisition, use and supply of genetic resources; the use of written agreements; benefit-sharing; and curation.

By endorsing the Principles – and thereby becoming a Participating Institution – organisations undertake to develop their own institutional policy, reflecting the letter and spirit of Principles. A PI may find it helpful to refer to the Common Policy Guidelines (CPG) for guidance in developing such a policy. Whilst there are some small differences between the Principles and the CPG, the CPG, together with the Explanatory Text, sets out in considerably more detail the issues that a PI may need to consider when addressing ABS. It is hoped that these documents also provide some constructive solutions.

Box 7
Legal Status of the Principles

The Principles are not legally binding.

By endorsing them, PIs are making a voluntary statement of intent consistent with existing international environmental legal standards.

The Principles do however provide a blueprint to enable PIs to develop and implement self-regulatory schemes and best practices that will facilitate continued global access to genetic resources. If adopted by a sufficient number of PIs, they may, in time, come to be viewed as a first point of reference for access and benefit-sharing by the international scientific research community.

They also empower the providers of those resources by raising awareness of the standards that can be expected from PIs wishing to access genetic resources.

SECTION 4 – DEFINITIONS

This glossary explains the definitions used in the Common Policy Guidelines (CPG). Where a word or phrase is already defined in the Convention on Biological Diversity (CBD), the CPG uses that definition. Many countries have developed or are developing national access laws to implement the CBD, and in addition, national and international groups and organisations are producing other relevant guidelines and strategies. Keeping to the definitions used in the CBD means that the CPG are flexible and suitable for use in many countries, and reduces the possibility of conflict with relevant law and practice in the future.

Accession means a sample or specimen of biological material incorporated into an ex situ collection;

'Accessioned' material is material that has been formally accepted and incorporated into a botanical institution's collection. Accessioned material may come into a botanical institution through a variety of routes. It may have been collected by staff members in the field, it may be duplicate material sent from other institutions, it may be a gift or, more rarely, purchased material.

On accession, an accession number is given to the material, or batch of material, and the following data is usually recorded: the name and address of sender, date of receipt, status of material, country where collected, name of collector, type of plant, and number of specimens (see in Bibliography the 'Herbarium Handbook'). This information can be kept on databases, which may be computerised, and which provide a summary of what can be found in a herbarium.

Since material that has been loaned remains the property of another institution or individual, it cannot be accessioned into the collections of a botanical institution.

See also Section 5, Acquisition; Section 7, Curation.

Access to genetic resources means the permission to acquire and use genetic resources;

Acquisition of genetic resources means the act of actually physically obtaining the material. It does not imply permission to use it. By contrast, 'access to genetic resources' means the permission to physically obtain and subsequently to use the genetic resources. This implies a positive and physical action to the genetic resources, going beyond, for instance, simply observing them (e.g. the passive, aesthetic, pleasure derived from looking at cut flowers or ecotourists visiting rainforests). 'Access to genetic resources' is not defined in the CBD.

A Participating Institution (PI) will obtain lawful access by following the relevant laws and regulations of the country providing the genetic resources, including obtaining Prior Informed Consent (PIC) if required by those laws, together with the import laws of the PI's country.

The uses which a PI wishes to make of genetic resources may change over time. For instance, if resources were acquired for a particular type of research and several years later, the PI wished to carry out a different type of research on those resources, a PI would need to return to the original provider and obtain consent for such change of use and for its continued access to those resources.

See also Box 8 on Functional Units of Heredity.

Acquisition means obtaining possession of a material or resource, through collection or receipt;

'Acquisition' of genetic resources is the act of obtaining possession of the physical material or resource. As stated above (see 'access to genetic resources'), this does not imply permission to use the material or resource.

See also Section 5, Acquisition.

Benefit-sharing means the sharing of benefits arising from the use, whether commercial or not, of genetic resources and their derivatives, and may include both monetary and non-monetary returns;

The rationale behind controlling access to genetic resources is to ensure the fair and equitable sharing of associated benefits. Benefits can be of many kinds. They can be monetary, such as royalties or collection fees, or, as is more often the case for botanic institutions, non-monetary, such as joint research, the sharing of information and data and education and training. The CBD does not define 'benefit-sharing'.

The Project Group decided that the CPG definition of benefit-sharing should be drawn widely to avoid restricting what might amount to fair and equitable benefits, who this might be shared with, or the way in which benefits might be shared.

See also Section 9, Benefit-Sharing.

Biological material includes, but is not limited to, plants, plant parts or propagation material (such as seeds, cuttings, roots, bulbs, corms or leaves), fungi or other fungal material, and any other material of plant, animal, fungal, microbial or other origin and the genetic resources contained therein;

Biological resources include, but are not limited to, organisms or parts thereof, populations or any biotic component of ecosystems of actual or potential value, including genetic resources;

'Biological material' is not defined in the CBD. 'Biological resources' are defined in the CBD.

There is relatively little difference between 'biological material' and 'biological resources', since all biological resources would appear to be biological material. The distinction can be seen by posing the question, 'which biological material is not a biological resource?' The answer seems to be 'biological material which do not have actual or potential value'. Depending on what is understood by 'value', it can be argued that all organisms have actual value, since they contribute to the ecosystem functions that sustain life on earth. Beyond this kind of value, most organisms have potential uses of one kind or another, so there is presumably little biological material which is not also a biological resource.

In order to keep things simple, it would be more convenient to use just one of these similar terms. However, the definition of biological material lends itself more readily to particular specimens, since it refers to specific plant parts and other kinds of material, while the definition of biological resources refers more broadly to biotic components of ecosystems and also to actual or potential value. For this reason, both terms are defined in the CPG although the term 'biological material' is used most commonly.

See also Definition of 'Genetic Resources'.

Botanic garden means, but is not limited to, an institution maintaining documented collections of living and/or preserved plant accessions for purposes such as scientific research, conservation, sustainable use, display and education;

There are now over 2000 botanic gardens world-wide. These range from large and established institutions to much smaller and newer botanic gardens. They may be independent, or attached to universities or research centres. They can be publicly or privately funded and established in a variety of ways, from parliamentary statute to private bequest. The key characteristic of a botanic garden is that it holds documented collections of plant accessions. Records will usually include the name of species, collector, date and location of collection.

For the purpose of this document, the term 'botanic gardens' includes herbaria. This does not mean that herbaria must be part of botanic gardens, or that all participating botanic gardens contain herbaria.

See also Definitions of 'Accession', 'Participating Institution', 'Genetic Resources'.

Commercialisation means applying for, obtaining or transferring intellectual property rights or other tangible or intangible rights by sale or licence or in any other manner, commencement of product development, conducting market research, and seeking pre-market approval and/or the sale of any resulting product;

The commercial use of genetic resources is one of the most challenging issues covered by the Principles and CPG. The Project Group felt that this definition reflected a balance between the interests of those carrying out the research, which often takes many years, can be extremely costly and whose results are uncertain, and those who had originally provided or had a stake in the original genetic resource.

The key for Participating Institutions is to behave in a transparent manner. PIs should develop a clear policy explaining their role in the commercialisation of genetic resources. PIs should ensure that when they acquire genetic resources, they are quite definite with the provider of those resources as to how they will be used and how any associated benefits will be shared.

The term intellectual property rights is not uniform around the world, although the position has been harmonised to some extent in those countries that are signatories to the Trade Related Aspects of Intellectual Property Rights (TRIPS) agreement of the WTO/GATT.

The term 'intangible rights' has been used in some access legislation, for example the Andean Pact, Decision 391. It is wider than just intellectual property rights. For example it can cover a right under a licence or a security interest in traditional intellectual property rights.

See also Box 23 on Plant Sales.

Country of origin of genetic resources means the country which possesses those genetic resources in in situ conditions;

The CPG uses the CBD definition of country of origin. This definition raises certain difficult issues which the CPG has sought to address.

First, this definition does not link the country of origin to the actual provision of the genetic resources. 'Country of origin' could arguably mean *any* country of origin, and a plant common to more than one country will have more than one country of origin. An example of this is the 'Peruvian Lily', now a popular ornamental plant, native to Peru, Chile and other Andean Countries. In order to address this issue,

the CPG has linked the use of the term 'country of origin' with the act of providing access to genetic resources. Activities such as benefit-sharing are therefore clearly connected to the particular country from where the resources were obtained.

Secondly, according to this definition, a country where a plant is domesticated or cultivated may also be a 'country of origin'. How should benefits should be shared in such circumstances? The project group decided to stress the role of the country of origin, but also to allow benefits to be shared with other appropriate stakeholders; for example, an intermediary institution which may have conducted original research on the plant.

See also Box 24 on Supply of cultivars and hybrids; Section 9, Benefit-Sharing.

Derivatives includes, but are not limited to any progeny, extracts and compounds obtained from genetic resources and analogues of those compounds;

The term 'Derivatives' embodies many different things.

For example, it includes the 'progeny' of plants. This means, for example, that when a PI collects seeds, it should share benefits arising from the use not only of the original seeds collected in the field, but also from any plant grown after germination: see also Box 23 on Plant Sales.

The term 'derivatives' also comprises of extracts and compounds extracted from genetic resources, some of which may not in fact be genetic resources. For example, compounds synthesised following models obtained from the study of genetic resources are derivatives, though not genetic resources.

The implications of the above for a PI depend upon whether it is acquiring or supplying derivatives. The CPG requires a PI to monitor the supply of derivatives and to share the benefits arising out of their use. However, unless obliged by national legislation, the CPG does not require a PI to obtain Prior Informed Consent for their acquisition and use.

See also definition of 'Genetic Resources' and Box 15, concerning the acquisition of derivatives.

Ex situ collection means managed, documented biological material maintained in conditions other than in situ;

An *ex situ* collection records and curates biological material outside its natural habitat. Many *ex situ* facilities provide opportunities for research, and play a central role in public education and awareness of conservation issues. Botanic gardens, for instance, have an estimated 150 million visitors annually worldwide. *Ex situ* collections can be, for example, botanic gardens, herbaria, museums, seed banks, arboreta or zoos.

Genetic resources means any material of plant, animal, fungal, microbial or other origin containing functional units of heredity of actual or potential value;

The CPG reflects the CBD definition of genetic resources. Box 8 below addresses the question of what constitutes 'functional units of heredity'.

Prior to adopting the CBD definition, the Project Group spent some time considering whether herbarium specimens are genetic resources and therefore whether they should be included in this definition of genetic resources. The Group concluded that since some herbarium specimens certainly genetic resources,

it would be advisable – and make for easier curation - for all herbarium specimens to be treated as though they were genetic resources. This decision was influenced by the following factors:

- Some existing access laws appear to cover herbarium specimens. Others may well do so in the future;
- As Box 8 below demonstrates, what constitutes a 'functional unit of heredity' is a matter of interpretation and may change as science and technologies develop;
- The CBD definition of genetic resources covers 'potential' as well as 'actual' value. Some herbarium specimens do contain functional units of heredity, and so must be genetic resources; others have the potential to be used as genetic resources in the future.

See also Section 5, Acquisition; Section 7, Curation; Section 8, Supply; Section 9, Benefit-Sharing.

Box 8
What are 'functional units of heredity'?

There is no single biological entity that fits the definition of being a unit that functions to convey hereditary information under all circumstances. To answer the question 'What is a functional unit of heredity?', it is necessary to consider which biological entities may be identified as 'units of heredity' and under what circumstances these entities may be considered 'functional' in the context of the CBD. Four candidate entities - intact living cells, whole chromosomes, genes and DNA fragments smaller than genes - can each be considered 'functional units of heredity' under some circumstances.

Living cells can be 'functional units of heredity' because they carry all of the hereditary, or genetic, information necessary for life. Living cells can reproduce and make use of smaller units of genetic information and can also be made to process genetic information from other cells. Functional genetic information, in the form of DNA, can be extracted from living cells and used in a variety of ways.

DNA (and sometimes its close counterpart RNA) carries the hereditary information to build structural and functional proteins (and a few other chemicals) and to control many cellular processes. This hereditary information is often envisioned as discrete 'packets' called 'genes.' In higher organisms ('eukaryotes' - multicellular plants, animals, fungi and some advanced single-celled organisms) DNA is packaged in chromosomes containing hundreds or thousands of genes. Chromosomes also often carry DNA information that does not participate in the biology of the cell, and thus not all DNA is organised as genes. Important genes are also found in mitochondria, sub-cellular structures that process energy in eukaryotes, and in plastids, sub-cellular structures that may be involved in light energy. Most bacteria have a single, large circular DNA molecule. However, many bacteria also contain small DNA circles called plasmids, some of which carry genes conferring antibiotic resistance. Genes in viruses are also usually DNA, but some are RNA.
Genes are important as units of heredity, but the information in DNA is divisible below the level of genes. Both in nature and the laboratory, DNA fragments smaller than genes can be exchanged among organisms with relative ease. Therefore, it is possible to consider chromosomes, genes and DNA fragments smaller than genes as all being functional units of heredity under some circumstances. Relatively small DNA fragments can be removed from one species and inserted into the germ-line of another. Restricting the definition of 'functional units' to larger fragments - such as intact chromosomes or individual genes - may therefore be considered artificially restrictive.

The ability of genetic material to be used as a resource is an important criterion by which 'function' could be judged. To retain hereditary information that can be used to produce biochemical products, an organism does not necessarily have to be 'living' or even 'intact' relative to its natural condition, because its DNA retains its biological information whether in a living cell or in a laboratory solution. However, there are plausible arguments that 'functional' would mean that a unit is able to be expressed and produce the same product that it produced in its natural form. It is equally plausible to argue that any biological specimen that contains intact DNA that can be extracted and manipulated or that can be passed to a living offspring could be considered as containing 'functional units of heredity.'

The functionality of a 'unit of heredity' in the context of a genetic resource is highly dependent upon the evolving sophistication of genetic engineering. In the 1960s, DNA extracted from biological material had little commercial value because at that time the technology to use such material did not exist. Prior to the advent of genetic engineering, 'functional units of heredity' were therefore restricted to living organisms or tissues bearing identifiable

characteristics. In the late 1990s, many methods can put extracted DNA to practical use, including transplanting functional genes from one species to another. Future technologies cannot be predicted with certainty, but, in time, it may become possible to make practical use of small DNA samples or even degraded DNA such as may be found in fragmentary, dried or preserved biological material.

What is 'functional' is clearly a question of interpretation, based on current science and technology, which is likely to change as technologies advance. The term 'functional unit' and technology are thus inextricably linked. Any carrier of hereditary information that can be passed from one organism to another could arguably be described as a 'functional unit of heredity', including, among other things, living cells, intact chromosomes or other large packages of genetic information, single genes, fragments of DNA smaller than genes, and RNA samples capable of being retrotranslated into DNA.

Source: Dr. David Galbraith, Royal Botanic Gardens, Hamilton, Canada, and personal communication with Dr. Mark Chase, Royal Botanic Gardens, Kew (from chapter 2, in ten Kate and Laird, 1999)

In situ conditions mean conditions where genetic resources exist within ecosystems and natural habitats, and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties;

The CPG reflects the CBD definition of '*in situ*' conditions. This definition applies to wild, domesticated or cultivated genetic resources. Wild genetic resources are '*in situ*' when existing in their natural surroundings. Domestic or cultivated species occur *in situ* where they exist 'in the surroundings where they have developed their distinctive characteristics'. In the case of new cultivars this could be in nurseries or botanic gardens; in the case of landraces, it could be in the traditional agricultural systems of a variety of different countries.

See also Box 22 on Supply of cultivars and hybrids; Section 9 Benefit-sharing.

Participating Institution means any botanic garden, herbarium or other institution which endorses the "Principles on Access to Genetic Resources and Benefit-Sharing for Participating Institutions" set out in Section 3 of this document and which has agreed to develop an institutional policy to implement the Principles;

At the Cartagena workshop in November 2000, the Project Group decided to widen the scope of the Principles and CPG beyond botanic gardens and herbaria to any institution such as a museum, university, genebank and zoological garden that may find this publication useful in developing its own institutional policy on access and benefit-sharing: see also Part I Introduction to the Explanatory Text.

An organisation will become a Participating Institution (PI) when it endorses the Principles.

See also Section 1, Introduction.

Prior informed consent means the consent of the government of the country of origin and of any other appropriate Stakeholders which must be obtained by the Participating Institution prior to gaining access to genetic resources. It must be based on full disclosure of information, such as the intended use of those genetic resources;

The need to obtain Prior Informed Consent (PIC) is a key aspect of the CBD: see Article 15(5). In some cases national legislation will specify precisely how PIC should be sought and exactly what information is required before consent for access can be granted.

If there is no national legislation in place, what this requirement means in practice is that prior to gaining access to the genetic resources, a Participating Institution should:

- ascertain which body or bodies in the country of origin has authority to grant such consent (a competent national authority, relevant ministry (of forests, of agriculture), national parks office etc);
- provide that body or bodies with a full written explanation of where the PI will be working, what it hopes to collect and how it intends to use the collected biological material: for instance what research will be carried out on the material, will it be supplied to third parties for further research, what benefit-sharing mechanisms are proposed: see also Box 9 below on 'unless otherwise determined'.

The PI should keep a record of all PICs granted – so that in the future it is quite clear who gave permission for the material to be accessed and on what basis that permission was granted.

Box 9
'Unless Otherwise Determined', Article 15(5) CBD

Article 15(5) of the CBD provides that 'Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party'.

Where countries have laws concerning prior informed consent, applicants for access must follow these.

It is difficult, however, to ascertain when countries have 'determined otherwise'. In the unlikely event that a country were to stipulate that it was not necessary to obtain prior informed consent, then it would clearly have 'determined otherwise'.

It is less clear whether it is necessary to obtain prior informed consent from government when there is no clear access legislation, but also no clear statement that prior informed consent is not necessary. Some commentators feel that the language in Article 15(5) means that prior informed consent from government should always be sought as between Parties to the CBD (personal communication, Lyle Glowka, April 2000), or at least should be sought unless there is a clear indication to the contrary. Others feel that prior informed consent should only be sought where it is explicitly required, arguing that where a country has not introduced clear requirements for prior informed consent it has, by default, 'determined otherwise'.

In practice, it is extremely rare for there to be no law related to prior informed consent in a country. Typically, there are systems for certain government offices (frequently, more than one office in any country) to issue collecting permits. Whether this amounts to prior informed consent is likely to depend on the level of information submitted by the applicant, for instance regarding future use of the material, since such information may influence whether the consent is 'informed'.

See also Section 5, Acquisition.

Stakeholder means an individual, organisation or group whether formal or informal, affected by, or with an interest in, the activities relating to the acquisition, use or supply of genetic resources, their progeny or derivatives. Stakeholders involved in conservation and the granting of collecting permits and prior informed consent for access may include relevant departments of government, local authorities, private individuals such as landowners, indigenous peoples, local communities, farmers and non-governmental organisations. Stakeholders such as these are often described in law relating to access and benefit-sharing;

Who should determine who has a justified 'interest' so as to be considered a Stakeholder?

In some countries, national law may identify appropriate Stakeholders. Where national law does not do so, a PI will need to work in close consultation with the government of the provider country and any

existing in-country partners (e.g. other botanic gardens) to establish who are the appropriate Stakeholders and how PIC might be obtained. When working in indigenous areas, a PI may also work with, for example, local interest groups, via a local NGO, or anthropologists, to establish as far as possible who the appropriate Stakeholders might be and how they might be best kept informed and involved.

See also Section 5, Acquisition; Bibliography.

Written agreement means any form of written agreement between two or more organisations or individuals setting out the terms and conditions under which one party will transfer biological materials. What constitutes a written agreement can take many forms, ranging from an exchange of letters and the granting of a collecting permit based on a completed application, to a shipping notice or a detailed contract (sometimes known as a material transfer agreement or access and benefit-sharing agreement). A range of different written agreements is set out for illustrative purposes in the Explanatory Text.

A written agreement setting out the terms and conditions under which biological material is transferred is an effective means of ensuring that, from the outset, both parties have a clear understanding recorded in writing of how the material may be used. This should, amongst other things, help a PI to curate the material appropriately.

A written agreement may or may not be legally enforceable. In Anglo-American law, the term 'contract' defines a certain class of agreements that are legally enforceable. To be legally enforceable, an agreement must consist of an exchange of bargained-for promises or actions in which one party promises to perform one or more actions in exchange for the other party's promise to perform or performance of one or more actions. It is vital that each party receives some benefit in return for being bound by the contract.

Each PI will need to develop written agreements that reflect the precise nature of the acquisition, use or supply envisaged and comply with its own national laws and regulations.

See also Annexes 1-8.

SECTION 5 - ACQUISITION

5.1 PRIOR INFORMED CONSENT

5.1.1 When it collects or otherwise gains access to genetic resources, each Participating Institution will abide by international and national applicable laws, regulations and best practice.

Most countries in the world, whether or not they have ratified the CBD, have in place some kind of laws or regulations governing access to genetic resources: for instance, all those acquiring resources from a particular National Park may need to obtain a collecting permit from the Parks Office; if acquiring CITES material, they will need to obtain CITES permits; they will also need to comply with any legislation governing export, and import of the resources.

More recently, to comply with the 1992 Convention on Biological Diversity (CBD), some 50 countries have either introduced or are developing laws and regulations specifically concerning access to genetic resources and benefit-sharing under the CBD (see section 1.5). Clearly Participating Institutions (PIs) will need to follow these developments and ensure that, when acquiring genetic resources, they comply with the latest laws and regulations.

The Principles and CPG do not impose any legal obligation on PIs over and above what is already imposed by applicable laws and regulations. However, in the absence of any laws and regulations relating to access to genetic resources, a PI should follow best practice in the manner in which it obtains genetic resources. What might amount to best practice, if considered by a court, would probably be based on expert evidence from other botanic institutions or individuals, text books and relevant case law. This could be used to determine the standard of behaviour that could be expected of a reasonably competent botanic institution or individual in similar circumstances. The standard may change over time.

When obtaining access to genetic resources from in situ conditions, each Participating Institution will:

The Principles and CPG distinguish between the Prior Informed Consent (PIC) needed for acquisition to genetic resources from *in situ* conditions, from *ex situ* collections such as other botanic gardens or herbaria and from other *ex situ* conditions such as commercial sources.

Why does the CPG make this distinction?
The physical collection of genetic resources from *in situ* conditions is likely to be regulated by national laws, but receipt of material already held in *ex situ* conditions, whether in the living collections of a botanic garden, or in a herbarium, may not be regulated.

A large number of herbarium specimens are regularly transferred between botanic gardens as over 90% of taxonomic research is based on herbarium specimens. As the Principles and CPG treat herbarium specimens as potential genetic resources (see discussion under definition of genetic resources, above) it would pose a considerable burden to recipient botanic gardens and herbaria if they were obliged to obtain not only the permission of the botanic garden or herbarium sending them a particular specimen, but also that of the government of the country concerned.

For this reason, the Principles and CPG distinguish between the steps PIs are obliged to take to obtain materials when they actually collect genetic resources from *in situ* conditions, and those steps they need to take to receive materials which have already been collected and are now held in *ex situ* conditions.

With respect to *ex situ* materials, it is worth noting some differences of wording between the Principles, which all PIs agree to endorse, and the CPG, which are for guidance only:

- ***Ex situ* collections:** The Principles and the CPG both require PIs to obtain PIC from the body governing the *ex situ* collection. A PI will of course also have to obtain any other consents that the body informs the PI that are necessary. But, in addition, the CPG specifies that Participating Institutions should make 'reasonable and sincere efforts' to obtain a written statement that the acquisition and supply (from *ex situ* collections) were in accordance with applicable law and best practice and that the provider is legitimately entitled to supply the genetic resources.
- ***Ex situ* sources:** The Principles state that PIs should evaluate the documentation available, and when necessary, take appropriate steps to ensure that the acquisition from *ex situ* sources[1] complied with the applicable law and best practice. The CPG is more explicit, and says that when acquiring genetic resources from *ex situ* sources other than ex situ collections, 'reasonable and sincere efforts' should be made to ensure that the acquisition conforms with applicable law and best practice and, if there is no applicable law, evaluate the documentation available and ask the provider to state that the CBD and best practice was followed. PIs should be careful when acquiring resources from *ex situ* sources. Clearly they would not wish to encourage illegal collection that endangers the conservation status of plants.

(a) where required, in accordance with applicable law, obtain, in writing, the prior informed consent of the government of the country of origin;

The CBD clearly states that those desiring access to genetic resources must first obtain Prior Informed Consent (PIC) from the government of the country of origin 'unless otherwise determined': see Article 15(5) of the CBD, and see Box 9: 'unless otherwise determined'.

In practice, this means that prior to collecting, a PI must identify precisely the areas where it wishes to collect (e.g. a National Park, protected area, forest land) and ascertain who is authorised to grant it PIC to access the resources in those areas. This could be at the national level, at the state or provincial level or even at the level of the management board of a protected area.

This is a strict requirement. At this stage, it also a challenging requirement, since many countries have yet to designate a competent national authority for PIC. Alternatively, government authority to grant access may be split between different departments depending on the nature of genetic resource and where access is sought. For example, the Ministry of Agriculture may be responsible for granting access to 'agricultural' genetic resources, the Ministry of Forests for genetic resources collected in forest areas, or the Ministry of Environment to all non-'agricultural' genetic resources. Furthermore, the manner in which access is regulated may depend upon constitutional provisions and land tenure in a given country. In countries with a federal system, access may be regulated at the state and federal level, in countries without a federal system, responsibilities may be divided between central and local government.

One of the key conclusions of the Panel of Experts on Access and Benefit-Sharing was that countries should establish a national focal point and one or more competent national authorities for access and benefit-sharing (UNEP/CBD/COP/5/8). However, this may take several years. In the meantime it is not always clear from whom PIC must be obtained.

In practice, a good place to start will be with the agency that has historically issued collecting, research or export permits. In addition, PIs can take steps to help their own staff, partners and other collectors fulfil this requirement more efficiently. These could include establishing a system to record relevant national authorities and access focal points, nominating a member of staff specifically to keep up to date with

[1] The Principles refer to the acquisition of genetic resources from any *ex situ* sources, including *ex situ* collections. The CPG distinguishes between *ex situ* collections and other *ex situ* sources.

access legislation and permitting requirements in a particular country, and keeping records of staff involvement in different countries, including useful names and contact details.

and will make reasonable and sincere efforts to:

(b) obtain and record the prior informed consent of other Stakeholders, as appropriate, for access to and use of the genetic resources concerned and associated knowledge;

The CPG states that a PI '*will*' obtain PIC from the government for access to genetic resources. However, the CPG states that a PI will make '*reasonable and* sincere *efforts*' to obtain PIC from relevant stakeholders.

This distinction stems from the lack of legal clarity in many countries as to the issue of PIC and also the difficulty in identifying which individuals' and organisations' consent may be needed at the local level. The term 'stakeholders' typically includes local communities, indigenous peoples and landowners. The practical difficulty of identifying all stakeholders, and of obtaining genuinely informed consent, means that, in many cases, PIs will not be able to give absolute guarantees that the PIC of all relevant stakeholders has been obtained. The CPG therefore suggests a standard of 'reasonable and sincere' efforts to obtain this PIC.

What amounts to 'reasonable and sincere efforts'? The standard of behaviour that a reasonably competent botanic institution or individual would follow in similar circumstances. PIs could establish internal guidelines on how stakeholders could be identified, what constitutes 'obtain and record', and who, within the PI, is responsible for assessing when 'reasonable and sincere efforts' have been made.

It is worth noting that, although, the CPG only sets a standard here of 'reasonable and sincere efforts', access or other related laws many set absolute standards. In this case, a PI must obtain all the relevant consents, consistent with Section 5.1.1 of the CPG.

(c) ensure that any collection, import, export and other handling of the genetic resources has been in accordance with all applicable law; and

As stated above, PIs should establish internal procedures to record relevant national authorities and access focal points, should nominate a member of staff specifically to keep up to date with access legislation and permitting requirements in a particular country, and should keep records of staff involvement in different countries, including useful names and contact details. This will make it considerably easier for PIs to ensure that all applicable law has been complied with in the collection and transfer of the material to the PI. However, in the absence of a single organisation charged with taking the initiative to make up-dated information readily available on access regulations in all countries[2], the issue of notification of and compliance with applicable law will remain a challenge – in the short term at least.

What is meant by 'applicable law'? It is likely to include written confirmation of government PIC for access, collection permits, CITES documentation, phytosanitary papers, valid export and import permits, and compliance with any applicable domestic legislation regarding indigenous people, private landowners' consents, environmental impact assessments etc.

[2] Pursuant to Decision COP/5/26, in UNEP/CBD/EP-ABS/2/2 para. 32 and 86, the CBD Secretariat informs that two databases are available through the Clearing House Mechanism to provide information on national focal points and competent national authorities, respectively, and notes its intention to compile a database of information on access and benefit-sharing submitted to it by Parties to the CBD.

Box 10
'Applicable law'

Rules on access and benefit-sharing can stem from international law to the customary law of local communities. For example:
International law: Convention on Biological Diversity, CITES.
Regional law: Andean Pact, EC Directives and Regulations.
National law: Applicable national law may include constitutional law, land law, property law (including intellectual property rights), conservation law, indigenous rights, laws on plant health and any specific legislation implementing CITES and the provisions on access and benefit sharing of the CBD.
Sub-national law: In particular state-level law such as the amendment of the Forest Ordinance in the State of Sarawak, Malaysia, the amendment of the Wildlife Conservation and Land Management Acts in Western Australia, and the laws on access and benefit-sharing introduced by the Brazilian states of Amapá and Acre.
Local and customary law: Local government by-laws, customary and tribal law.

(d) clarify, in writing based on a full explanation of how the genetic resources will be acquired and used, the terms and conditions under which the materials are acquired and can subsequently be used, particularly whether the materials or their derivatives may be supplied to third parties and/or commercialised.

In order to obtain Prior Informed Consent, a PI will provide the relevant government authority and will take reasonable and sincere efforts to provide any appropriate stakeholder with a full explanation of how the resources will be used by that PI.

This could be done in several ways. Preferably, any such explanation should be made in writing, so that a clear record of the parties' respective rights and responsibilities exists for posterity. For example, a PI could:

- Attach a simple statement of use to all permit applications or leave a copy of this statement with local communities: see Annex 8;
- Enter into a Material Transfer Agreement with the relevant authorities or stakeholders setting out the precise terms and conditions of acquisition and use: see Annexes 1-7.

PIs will also need to establish criteria to determine the terms and conditions that they are institutionally capable of meeting. For instance, as a condition of access, a provider of genetic resources may insist that a PI cannot place seeds in a seed list to be freely transferred to third parties. The PI will need to consider whether it is prepared to accept seed on such a basis and, if so, whether adequate internal management systems exist to ensure that the seed does not leave the PI.

It will be important for each PI to establish who, in the institution, should be responsible for making such decisions: see comment on staff management in Section 7, Curation.

See also Section 7, Curation (staff management); Section 8, Supply (commercialisation); Section 9, Benefit-Sharing.

Box 11
Summary of requirements for *in situ* acquisition (5.1.1)

Participating Institutions will:

- where required by applicable law, obtain, in writing, PIC from relevant national, regional or local government or protected area authority(ies)

and will make reasonable and sincere efforts to:

- obtain and record consent of stakeholders for access to genetic resources and associated knowledge
- all handling of genetic resources has been in accordance with all applicable law
- clarify, in writing, based on a full explanation of how the genetic resources will be acquired and used, the terms and conditions of acquisition and use, in particular, eventual supply and commercialisation.

5.1.2 When obtaining access to genetic resources from ex situ collections, each Participating Institution will:

'*Ex situ* collection' means managed, documented genetic resources maintained in conditions other than in situ. *Ex situ* collections hold records of accessioned material, including name of species, collector, date and location of collection. It is this documentation and management that makes a collection both useful and accessible.

(a) obtain, in writing, prior informed consent from the officer authorised to agree terms and conditions of access on behalf of the ex situ collection, and such other consents required as indicated by that officer for access to the genetic resources concerned and for their use;

Prior to accepting material from an *ex situ* collection, PIs should confirm with the staff member who authorises such transactions any existing terms and conditions of access and clarify whether any further consents, such as PIC from the country of origin, may be necessary.

This applies to both solicited transactions and to the more difficult question of unsolicited gifts. Many institutions receive material that has not specifically been asked for, and for which there is apparently no paper-work setting out the terms and conditions of the acquisition. Such 'unsolicited gifts' could be treated as outlined in the Annex 4.

and will make reasonable and sincere efforts to:

(b) obtain from the authorised officer of the Provider a written statement that the genetic resources were acquired and are being supplied in accordance with all applicable law and that the Provider is entitled to supply them to the Participating Institution;

PIs should make reasonable and sincere efforts to obtain a written statement from the responsible staff member of the *ex situ* collection confirming that the genetic resources were acquired and are being supplied in accordance with all applicable law. This will help the PI to ensure that it, too, has legitimately obtained the genetic resources. However, since, in reality, it may be very difficult for some *ex situ* collections give these assurances, especially concerning historical materials, the CPG does not make this an absolute requirement, but rather suggests that PIs make reasonable and sincere efforts to clarify this with the Provider.

(c) ensure that the export of the genetic resources or their derivatives from the country where the Provider is based, and import to the country where the Participating Institution is based, are in accordance with all applicable law; and

What is meant by 'applicable law'? It is likely to include written confirmation of government PIC for access, collection permits, CITES documentation, phytosanitary papers, valid export and import permits, and compliance with any applicable domestic legislation regarding indigenous people, private landowners' consents, environmental impact assessments etc: see box 10, above. It should not be too difficult to comply with this obligation, especially for post-CBD material since, these days, most resources are transferred under paperwork such as a CITES permits, shipment notices or phytosanitary certificates.

(d) clarify, in writing, based on a full explanation of how the genetic resources will be acquired and used, the terms and conditions under which the materials are acquired and can subsequently be used, particularly whether the materials or their derivatives may be supplied to third parties and/or commercialised.

A PI should make reasonable and sincere efforts to provide the *ex situ* collection with a full explanation of how the resources will be used by that PI: for instance, the kind of research that will be carried out on the resources and whether the material will be accessed by third parties such as authorised visitors.

A PI will also need to establish criteria to determine the terms and conditions that it is institutionally capable of meeting. What if resources are sent to a PI on terms and conditions that it feels it cannot accept, either because it believes they are too stringent or not fair, or because it does not have the institutional capacity to comply with them? A PI may be able to re-negotiate terms that are acceptable. Or it may feel that the scientific value of the specimens is so great that it can make a one-off exception. In some cases, PIs may not be able to accept the resources – especially if the *ex situ* collection is simply passing on resources on the same terms as it originally acquired them and it is unclear who the PI should approach in the country of origin to re-negotiate access.

It will be important for each PI to establish who in the institution should be responsible for making such decisions: see comment on staff management in Section 7, Curation.

PIs may be worried about the additional paperwork that the above activities could require. However, in many circumstances, paperwork could be significantly reduced. For instance, regular exchanges of material between two organisations could be covered by a standard agreement that would not need to be signed on each occasion but that would cover, on the same terms and conditions, all material exchanged between those two organisation over a given period. Specific conditions, or exceptions, going beyond these standard ones, would need to be dealt with separately. In Annex 5 there is an example of the kind of standard letter that could be sent out to cover such regular transactions between organisations.

Box 12
Summary of requirements for acquisition from *ex situ* collections (5.1.2)

Participating Institutions will:
- obtain, in writing, PIC from the authorised officer of the *ex situ* collection

and will make reasonable and sincere efforts to:
- obtain from authorised officer a written statement that the genetic resources were acquired and are being supplied in accordance with all applicable law and that the Provider is entitled to supply them to the PI;
- ensure export and import is in accordance with all applicable law; and
- clarify, in writing, based on a full explanation of how the genetic resources will be acquired and used, the terms and conditions of acquisition, use and supply.

5.1.3 When obtaining access to genetic resources from ex situ sources other than those in Section 5.1.2, above, for instance from commercial sources or individuals, each Participating Institution will ensure that the acquisition conforms with applicable law and best practice, and in cases where there is no applicable law, will, if appropriate, evaluate available documentation and make reasonable and sincere efforts to ascertain from the Provider that the materials were obtained in accordance with the CBD and best practice.

The market place is a source of genetic resources often overlooked by policy-makers. Collectors can obtain resources from a one-person stall in a local market or live plant material from commercial companies. In many countries there are no legal restrictions on obtaining genetic resources from such suppliers and access to genetic resources from products such as packets of seeds, herbal medicines and rattan baskets is largely unregulated.

This is why PIs must be careful when acquiring resources from *ex situ* sources. Clearly they would not wish to encourage illegal collection that endangers the conservation status of plants.

The Principles and CPG therefore require acquisition from these and other *ex situ* sources to be in accordance with the law and best practice, and require reasonable and sincere efforts to be made to ascertain whether the material was obtained in accordance with the CBD. This could be done by, for example, asking an *ex situ* source to sign a document stating that the collection had been made in accordance with local laws and exported legally. A PI could ask to see copies of sales tickets or export permits.

Box 13
Summary of requirements for acquisition from other *ex situ* sources (5.1.3)
(e.g. commercial sources or individuals)

Participating Institutions will:
- ensure that acquisition conforms with all applicable law and best practice
- when there is no applicable law and, if appropriate:
  - evaluate available documentation and
  - make reasonable and sincere efforts to ascertain that the materials were obtained by the provider in accordance with the CBD and best practice.

The Principles and CPG focus on access to genetic resources. PIs may also wish to consider issues related to the acquisition of information and images, which do not include genetic resources (see Box 14) and derivatives, which may include genetic resources (see Box 15). PIs should be aware that some countries have developed or are developing laws to deal with both these issues (see Introduction, section 1.1.5).

Box 14
Some issues to consider concerning the acquisition of information and images

- Some national access legislation covers access not only to genetic resources, but also to associated information, such as ethnobotanical data. Some permitting authorities will require that a research permit and payment of a fee for activities such as photography, even though this may not, strictly speaking, involve access to genetic resources. Participating Institutions should abide by national law, local laws and customs, as appropriate.
- Where PIs collect ethnobotanical data with possible commercial application, such as the medicinal properties of plants, and where this data is not obtained from publicly available sources but from interviews with local and indigenous communities, PIs should obtain the prior informed consent of the people from whom this information is obtained. It may also be important to maintain the confidentiality of this information.

Participating Institutions should consider developing policies to address the collecting of information, confidentiality of information, and the terms for access to data they hold.

Box 15
Some issues to consider concerning the acquisition of derivatives

It is possible that national access legislation may cover access not only to genetic resources, but also to their derivatives. Where this is the case, PIs will need to follow such laws. However, where there is no law covering access to and the export of derivatives, PIs may still wish to consider the terms under which they acquire derivatives. In some cases, there is a reasonable likelihood that a derivative is a genetic resource (for example, where it is a crude extract that may contain DNA). In this case, a PI could consider whether it wishes to use the derivative for its genetic or biochemical properties. In such circumstances, the PI may decide to seek the consent of the appropriate national authorities prior to export and use of the derivative, just as it would for material which it was sure contained genetic resources.

In other cases, for example where no biochemical or genetic use will be made of the derivative, a PI may decide that it is not necessary to obtain prior informed consent for acquisition of derivatives, even though they may contain genetic resources. In such circumstances, a PI could consider taking the decision only to use the derivative for purposes other than exploration of its biochemical or genetic properties, and only passing it on to third parties on similar terms. Should biochemical or genetic studies be intended on such materials at any stage, the PI could then go back to the appropriate authorities for permission to carry out such studies.

5.2 USE OF WRITTEN AGREEMENTS TO CLARIFY TERMS AND CONDITIONS OF ACQUISITION

5.2.1 When obtaining access to genetic resources, each Participating Institution will make reasonable and sincere efforts to clarify in writing the respective roles, rights and responsibilities of the Participating Institution, the Provider, the country of origin and relevant Stakeholders, as appropriate, in activities involving the acquisition and use of genetic resources.

This section underlines PIs' commitment to use reasonable and sincere efforts to clarify in writing the respective roles, rights and responsibilities of all the parties involved in the acquisition and transfer of genetic resources. It is a crucial aspect of the CPG, since it gives transparency and clarity to the work carried out by PIs and can be used to show third parties such as governments and other stakeholders that PIs are indeed following the letter and the spirit of the CBD.

Parties may set out the terms and conditions of acquisition and exchange in many different ways: see Annexes 1-8 on Written Agreements for further detail. The key point is that prior to the transfer actually taking place, the parties agree, in writing, the terms of the acquisition, the transfer and any subsequent use that may be made of the resources by the recipient institution.

See also Section 3, Principles; Annex 1.

SECTION 6 – USE

When an organisation acquires genetic resources, it is important that it clarifies with the provider of those resources the terms and conditions of both the acquisition and of any subsequent use. This section explains some of the issues a Participating Institution should consider when using its collections, whether pre- or post- CBD.

Establishing Terms and Conditions of Use
A PI may obtain genetic resources either by collecting from the field (in situ acquisition) or by receiving materials supplied by another ex situ collection (ex situ acquisition).

In both cases, a PI should ensure that it has obtained the Prior Informed Consent (PIC) of the relevant government authority. In order to obtain PIC, the PI should have provided that authority with a full explanation of the uses that it intends to make of the genetic resources: see statement at Annex 8.

The relevant government authority will then set out the terms and conditions of acquisition and use – typically in a collecting permit. These will probably address such issues as whether the recipient may commercialise the genetic resources or their derivatives or pass them to third parties.

It is important that PIs have the internal management and tracking systems in place to ensure compliance with these terms and conditions.

Introduction to the commercial use of genetic resources
The commercial use of genetic resources is one of the most challenging issues covered by the Principles and CPG. Some of the relevant issues are discussed in this Explanatory Document: see Box 16 below.

Box 16 **Key to Explanatory Text on Commercialisation**	
Definition of commercialisation	s.4 Definitions - page 15
Defining commercialisation	s.6 Use - page 31
Introduction to the commercial use of genetic resources	s.6 Use - page 30
Commercial and non-commercial use of genetic resources	s.6 Use - page 31
Commercialisation of pre- and post-CBD material	s.6.Use - page 31
Drafting a policy on commercialisation	s.6 Use - page 32
Standard terms in commercial contracts	s.8 Supply - page 41
The half-way house (the situation where a commercially successful outcome cannot be guaranteed)	s.8 Supply - page 42
Plant sales	s.8 Supply - page 42

The commercialisation of genetic resources is a complex and highly sensitive matter. People hold a wide range of views as to the proper role of botanical institutions such as botanic gardens, museums, herbaria and universities in profit-making activities, their use of intellectual property rights and partnerships with companies.

Some believe that all organisations working with genetic resources should work towards the sustainable use of biodiversity by, inter alia, finding new products to help people and the environment, whether they be pharmaceutical products, insecticides or new ornamental plant varieties. Others believe that 'scientific' institutions should not be involved in any 'commercial' ventures that may appear to be contrary to their not-for-profit mandate.

The debate surrounding commercialisation is ongoing. In the meantime, the key for PIs is to comply with applicable laws and to behave in a transparent manner. PIs can develop a clear, public policy explaining their role in the commercialisation of genetic resources. PIs can ensure that when they acquire genetic resources, they are quite definite with the provider of those resources as to how they may be used.

Commercial and non-commercial use of genetic resources

It is hard to make a clear distinction between 'commercial' and 'non-commercial' use. Since there is a continuum from basic research to commercial application, it is often difficult to pick the moment when the activity, or the intention of the scientists involved, becomes 'commercial'. Initial research, discovery, development and production leading to commercialisation is often the result of a long process that may take several years. As far as the intentions of those involved are concerned, there are a number of possibilities. It could be that there was no intention to find a commercial product when the research started, and that the researchers stumbled upon a discovery with potential commercial applications. Or the researchers may not have set out with the aim of finding a commercial product, but have been aware that a discovery with potential commercial applications was a possibility, ranging from the remote to the almost inevitable. Alternatively, the researchers may, from the outset, have worked on the resources with a very real hope and expectation of finding a product with potential commercial use.

The key issue in making a distinction between 'commercial' and 'non-commercial' use is therefore to agree with partners what is meant by 'commercial' and to pinpoint at what stage research upon or use of genetic resources becomes 'commercial'. This will depend upon the particular use of the material, the intentions of those using it and even the probability of a successful commercial result.

What is key is that all those involved agree that they are happy for the genetic resources to be used in a particular way and that any benefits that arise are shared fairly and equitably.

Defining Commercialisation

For the purposes of the CPG, commercialisation is defined as 'applying for, obtaining or transferring intellectual property rights or other tangible or intangible rights by sale or licence or in any other manner, commencement of product development, conducting market research, and seeking pre-market approval and/or the sale of any resulting product'. The implications of this definition are explored in Section 4.

Commercialisation could be defined in many different ways, using other milestones between initial exploration and research of genetic resources and the final appearance of a product on the market to define what amounts to 'commercial' activity. Another option would to define activities that the parties agree do not amount to 'commercialisation': taxonomic verification, germination tests on seeds etc.

Either way, a clear definition should be agreed which allows the provider and recipient of genetic resources to understand:
The precise research that the recipient may carry out on the resources;
Any research that the recipient may not carry out on the resources;
The stage at which the recipient must notify the provider of certain actions and discoveries.

Commercialisation of Pre- and Post- CBD Material

The CBD came into force on 29 December 1993. All material collected prior to this date is known as 'pre-CBD material'; all material collected since this date is 'post-CBD material'. By adopting the Principles, a Participating Institution undertakes to share benefits arising from the use of genetic resources acquired pre- CBD, as far as possible, in the same manner as for those acquired post- CBD. PIs will need to decide, according to their own capabilities, the extent to which it is 'possible' for them to treat pre-CBD material in the same way as post-CBD material.

Consider the example of collaborative projects for high-throughput screening of compounds for the discovery of products such as pharmaceuticals, crop protection products or even cosmetics. Screening agreements may involve supplying hundreds or even thousands of samples, often from many different

countries, but the probability of any one sample progressing to a successful commercial product is extremely small (maybe 1 in 10,000).

Due to stricter access laws, and the establishment of better tracking systems, PIs are likely to have a better idea of the identity of the provider of post-CBD material and any restrictions on its use. Therefore it may not be too difficult to identify whether the PI may need to return to the original provider to obtain any additional PIC .

However, for many organisations, the bulk of their collections are likely to be pre-CBD, obtained many years earlier without supporting documentation, or under permits whose terms are ambiguous as to whether commercialisation might be permitted. Some organisations may decide that it is not worth the costs and time involved in contacting all the countries of origin prior to supplying the samples to a company for screening, at a stage where the probability that any one sample will succeed is so low.

One solution may be to provide pre-CBD samples for screening under contracts that oblige the company screening the samples to share benefits with the country of origin in the event that a commercial product arises. Another may be to require the company to share benefits not only in the event of successful commercialisation, but also at the moment of access to the resources, and periodically during the research and development process.

Drafting a policy on commercialisation
By adopting the Principles, a PI undertakes to develop a policy on commercialisation which is transparent. It must also tackle the issue of plant sales (see Section 8).

Such a policy should cover:

- A clear and enforceable definition of commercialisation. PIs may wish to use the definition set out in the CPG for guidance;
- A statement setting out the circumstances and terms under which the genetic resources may be commercialised, either by the PI itself or by any recipient of genetic resources or derivatives from the PI;
- A description of whether the PI intends to make a distinction between the commercialisation of pre- and post-CBD material and if so, to explain this distinction;
- A description of how the PI envisages sharing benefits fairly and equitably and the mechanisms that it may put in place to facilitate this: e.g. the establishment of a benefit sharing trust fund.
- The policy could also address other issues relevant to commercialisation of genetic resources: for instance, intellectual property rights, the legal acquisition of and ownership of the material used and confidentiality and use of data;
- It may also be helpful for the PI to prepare a model written agreement on access to genetic resources for potential commercial use and associated benefit-sharing. This would enable potential partners to understand some of the issues that would need to be discussed during negotiations.

6.1 USE WHERE TERMS AND CONDITIONS ARE CLEAR

The CPG draws a distinction between circumstances in which the permitted uses of genetic resources are clear and those where they are not. Logically, this distinction should be drawn for any use of genetic resources, not only commercial use. However, the CPG addresses only commercial use, since there is greater concern about equity and benefit-sharing when the use of genetic resources may lead to commercialisation.

6.1.1 Participating Institutions will only use genetic resources for purposes consistent with the terms and conditions under which they were acquired. If a Participating Institution wishes to use such genetic resources for purposes other than those allowed by the terms and conditions under which the material was originally acquired (such as for commercial use when access was granted for non-commercial purposes), the Participating Institution will obtain approval from the Provider for such use and should specify in writing the terms and conditions of use, including fair and equitable benefit-sharing as set out in Section 9 below.

At the time of acquisition, a PI may agree certain terms and conditions of use with the provider of the resources. What if, after several years, a PI wishes to modify that list? What if, for example, a PI is approached by a commercial body to carry out some research on material originally acquired for more limited scientific research purposes.

In such circumstances, the PI will need to return to the original provider of the resources to obtain additional permission to use the resources in this new way and to negotiate additional terms. If the material is pre-CBD, then, depending upon the institutional policy developed by the PI, the PI may or may not need to seek to modify its original consent; alternatively, it may simply decide to share benefits arising from the use of genetic resources, as far as possible, in the same manner as if the resources had been acquired post- CBD. (See Commercialisation of Pre- and Post- CBD Material, above.)

6.2 USE WHERE TERMS AND CONDITIONS ARE UNCLEAR

6.2.1 A Participating Institution may wish to commercialise genetic resources (or their derivatives) for which the terms and conditions under which they were acquired are not clear. In this case:

(a) if the genetic resources were acquired after the entry into force of the CBD, each Participating Institution will obtain the informed consent of the Provider (or, if the Provider is not known, the country of origin), prior to commercialising the genetic resources, and should specify in writing the terms and conditions of use, including fair and equitable benefit-sharing as set out in Section 9 below.

What should a PI do in circumstances where it wishes to carry out research with commercial potential on certain genetic resources and the terms of the original acquisition are unclear?

If the resources were acquired post-CBD, then the CPG suggests that a PI should obtain the Prior Informed Consent of the provider or country of origin prior to starting this research. If the PI is unclear exactly when the material was collected, for example, if the material was obtained from ex situ conditions such as another botanical institute or purchased on a market stall and the precise date of collection is unknown, it is best to err on the side of caution. A PI should obtain PIC of the provider or country of origin prior to starting the research.

(b) if the genetic resources were acquired prior to the entry into force of the CBD, each Participating Institution will share benefits arising from their commercialisation according to Section 9, and will clarify, in the policy on commercialisation referred to in the Principles, whether, prior to commercialisation, they will obtain the informed consent of the Provider (or, if the Provider is not known, the country of origin).

What if the genetic resources were acquired pre- CBD and the terms of the original acquisition are unclear?

The botanic gardens and herbaria participating in the CPG project felt that the most practical response in such circumstance would be as follows: the PI would be under no obligation to seek Prior Informed Consent prior to starting the research. However, it should share any benefits that arise from the commercialisation with the provider or country of origin. If the provider or country of origin cannot be identified, it may be appropriate to place any monetary benefits in a Benefit Sharing Trust Fund to be used for educational or conservation projects: see Section 9, below.

SECTION 7 - CURATION

One of the keys to the success of the Principles must be how readily they can be implemented by Participating Institutions. Section 7 of the Common Policy Guidelines is designed to help a PI establish a system of collection management that will enable it to implement and fulfil the Principles. Such a system should ensure, in particular, that a PI's collections, and all associated information, are maintained and used consistently with the terms under which they were acquired and that any benefits are shared in a fair and equitable manner with the country of origin and appropriate stakeholders.

7.1 COLLECTION MANAGEMENT

7.1.1 Each Participating Institution acquiring genetic resources will make reasonable and sincere efforts to record and maintain data on their acquisition, including information on the Provider; country of origin; collector; and, if available, dates, accession numbers, taxon names, etc; prior informed consent and terms and conditions of use; and other relevant data associated with the acquisition of accessions in its collections in order to be able to implement the Principles.

7.1.2 Each Participating Institution will make reasonable and sincere efforts to record and maintain information concerning the use of genetic resources and their derivatives by that Participating Institution, and the benefits to that Participating Institution arising from such use.

7.1.3 Each Participating Institution will make reasonable and sincere efforts to record and maintain data on the supply of genetic resources and their derivatives, including information on the Recipient and the terms and conditions of access and benefit-sharing under which they were supplied. When providing genetic resources and their derivatives to a Recipient, each Participating Institution will also provide relevant data on their acquisition to the Recipient, as described in Section 7.1.1, particularly information on prior informed consent and conditions of use.

Sections 7.1.1-7.1.3 of the CPG outline various categories of information that a PI should record to ensure that it uses and supplies genetic resources on terms that are consistent with the original terms of acquisition.

These are broader than the Principles, which indicate only the key records and mechanisms that a PI should establish, namely those needed to:

- record the terms and conditions under which genetic resources are acquired;
- track their use in the PI and benefits arising from that use; and
- record supply to third parties, including the terms and conditions of supply.

The CPG suggests that a PI should make 'reasonable and sincere efforts' to record and maintain a wider range of data on the acquisition of genetic resources and on the use and supply of genetic resources and their derivatives. What amounts to 'reasonable and sincere efforts' will be measured against a particular institution's capacities and means. It will take into account issues such as the size of the institution and its collection, the information technology available, the number of staff, the amount of relevant training they have had, the financial resources available and any funding restrictions relevant to the particular PI.

7.1.4 In order to be able to fulfil its commitments in the Principles now and in the future, each Participating Institution will develop and implement appropriate mechanisms to track the acquisition of genetic resources, the different uses of genetic resources and their derivatives held in its collections, their supply to Recipients, and the benefits that arise from their use.

The goals described in sections 7.1.1-7.1.3 may be achieved using a variety or a combination of recording and tracking systems. These can range from hand-written records to bar-coding and databasing. A PI will need to determine which system is most appropriate for its size, collections and financial resources. For example, the easiest and most cost effective way to record any restrictions on the use of herbarium specimens is probably to stick a prominent label on a herbarium sheet which says 'Do not Loan' or similar appropriate language. Box 17 gives some examples of the human resources involved in certain relevant activities.

Box 17
Examples estimates of the human resources entailed in databasing

- It takes one person from 6 hours to 3 days to barcode 100 specimens.
- According to estimates from SABONET (South African Botanical Diversity Network), one data typist can computerise about 1000 specimens per month (SABONET, 1999).
- Databasing works most efficiently in institutions which have high levels of information technology support.
- Rates of databasing are higher where data entry clerks focus only on data entry. In smaller institutions, data entry clerks may also have to cover other institutional jobs.

Most PIs will have maintained systems of collection records for many years. In order to help a PI to determine whether its existing systems are satisfactory and, if not, what can be done to improve them, one of the first tasks that a PI might undertake when it endorses the Principles is an analysis of its collections and the preparation of a databasing strategy. It can then prioritise which information is needed to satisfy the Principles, the institution's corporate aim and its collaborative programmes.

There are a number of software packages that can help with recording and tracking. Different institutions will have different requirements from a collection management system. These will need to be thoroughly explored before an institution opts for a particular software package. See www.bgbm.fu-berlin.de/TDWG/Software.htm for a range of software options together with Box 18 below.

Box 18
Two examples of Collections Management Software

BG-BASE

BG-BASE is a personal computer-based database application which has been written to handle the information management needs of institutions with living and preserved collections of biological material. It is currently used at over 100 sites in 16 countries. It enables users to document, label and curate their collections so that they are accessible and of use for research, conservation and education. It is compatible with international data standards and thus aims to provide a standard design, ensuring compatibility, but is also flexible enough to meet the individual needs of particular institutions.

BG-BASE manages information in six categories:

- Collection management (living collections, herbaria, seed banks etc)
- Taxonomy/nomenclature (all levels from kingdom to sub-form, cultivar etc)
- Distribution (from global down to exact latitude/longitude)
- Bibliography (books, journals, unpublished references, images etc)
- Conservation (includes threats, conservation status, protected areas, laws and conventions)

- People management (addresses, institutional affiliations, membership, education programs, events tracking etc)

Within these categories, information is available at different levels of accessibility.

Users of BG-Base can link some or part of their collections in to a 'virtual collection' shared with other BG-BASE sites around the world. All collections can then be searched over the web.

BG-BASE is managed by the Royal Botanic Garden, Edinburgh (UK) and the Holden Arboretum (USA). For more information see the BG-BASE homepage at: http://www.rbge.org.uk/BG-BASE/

SysTax: Collection management software

SysTax is collection management software for botanic gardens and herbaria. It is used by some 35 institutions mainly in Germany, but also in seven other European countries (including Austria, Switzerland and Italy). The software is able to manage information for the documentation of collections (data on aquisition, taxonomy and geography) and includes applications to create labels for the material and to produce Indices seminae. SysTax can be used as a PC-database application as well as a web-based system. With the web-based system, users communicate directly with the central database at Ulm university, by adding or searching for data. Used without access to the web, users regularly transfer data to the central system by floppy discs. Data on the central database is accessible and searchable by the public over the Internet (http://www.biologie.uni-ulm.de/systax).

Standard/harmonised system of curation

One practical approach to reducing the administration and transaction costs of implementing the Principles may be to establish a system that would ensure that the vast majority of material leaving a collection, whether on loan or distributed as a gift to third parties, leaves on standard terms: for instance standard terms prohibiting commercialisation. Specific exceptions could be made for material acquired under unique terms and conditions and that may need to be supplied under unique terms and conditions: for instance particularly rare specimens: (see Annexes 1-8, which discuss different Material Acquisition and Supply Agreements).

Such an approach could help to avoid the need for complex data and tracking systems, reduce the volume of paperwork and yet ensure that benefit-sharing commitments are met. It could be a good starting point for smaller institutions with limited resources and for institutions with large, historical collections that would be extremely expensive and time consuming to database from scratch.

Box 19
Collection management options

- send out all material under standard conditions and only record unusual conditions
- barcode/record all samples sent out in batches
- barcode/record all samples sent out individually
- barcode/record new samples acquired, as well as those supplied
- barcode/record all acquisition and supply of specimens, and, in addition, start a programme to barcode specimens already maintained in the collection.

It may also be less labour intensive to deal with incoming and outgoing specimens on a group rather than an individual level. For example, instead of databasing accessions individually, it is possible to record incoming batches of material, using group descriptors. These can include the terms and conditions for the use of all the material in the batch.

Box 20
Commencing databasing

- **Where to start?**

The starting point in any databasing project is for the staff of the PI to ask themselves why they want the data, and what they intend to do with it, and, similarly, how their stakeholders would like to use it. Certain collections within an institution could be prioritised, for instance a particular genus, or specimens with ethnobotanical information. Alternatively, collections could initially be databased on the basis of user demand. This could involve the countries of origin being asked to prioritise specimens to be databased and funding visiting scientists from these countries to assist with the practical process.

- **Levels of access**

In addition to considering which specimens to database, PIs should consider the 'levels' of access appropriate for particular specimens. Publicly available databases should probably have different levels of access. For instance, when showing the location of material, fields could publicly show general locations, but detailed longitude and latitude readings could be made available only to selected users.

- **Database fields**

What is the minimum number of fields necessary? Core fields include the collector, the collection number, the species name, the country of origin, any restrictions on use, and the collection date. Fields can easily be added to record data such as transfer to third parties, collecting permits and benefit-sharing arrangements. The International Standard is useful for exchange of information between herbaria. In addition, shared formats facilitate collaborative databasing of collections.

Loans policy: Many PIs will loan a significant number of accessions from their collections. Material on loan may be subject to particular terms and conditions. A PI will need to implement a system that tracks both accessions that it has loaned out and loaned specimens that it receives.

For instance, material should be loaned as follows:

- for a set period of time;
- on conditions that tie in with the original terms of acquisition: for instance that it is not commercialised; and
- on terms that specify any additional restrictions on use and any specific curatorial obligations while on loan.
- Loan request letters, together with a list of the loaned material, should be archived to create a reference of exactly which material has been sent out, to whom, for how long and under what terms and conditions.
- There should be a method of officially extending authorised loan periods.
- There should be a system in place to send out automatic reminder letters and to ensure that the return of loans is demanded when this time is exceeded.
- There should be an alternative to sending original material in the case of a rare specimen or important type specimen, or where the lending institution does not consider that the borrower will be able to fulfil the conditions of the loan. This could include sending good quality photos (for instance cibachrome prints) instead.
- A member of staff should be authorised to make the final decisions on whether loan requests should be granted and the criteria on which this decision will be based should be established. A PI should not hesitate to make further enquiries if it is uncertain as to why a particular loan request has been made.

When accepting loans from other institutions, PIs should be aware that where loaned material is accepted, they owe a duty to the provider of that material, not only to keep to the terms and conditions of the loan, but also to use reasonable care and skill in the everyday curation of the material. This may mean restricting access to the material, or keeping loaned material in a physically separate area.

Policy on commercialisation: By endorsing the Principles, a PI undertakes to prepare a transparent policy on commercialisation (see Section 6 Use). To streamline internal tracking mechanisms, a PI may decide that particular categories of genetic resources, such as herbarium specimens, will not be used for commercial purposes and would thus be sent out under a standard agreement precluding commercialisation. Exceptions to such a general rule of non-commercialisation could be dealt with in separate agreements (see Annexes 1-3).

Access by visitors and non staff members to a collection: A PI should establish a system to address the issue of visitors and non-staff users of the collection, such as students and temporary researchers. This could include signing the PI's Code of Conduct or regulations together with a standard card or letter setting out any specific restrictions on use: for instance governing the removal of samples from the collection. A PI should keep a written record of all visitors and non staff members who access the collection, together with the stated purpose of their visit.

Benefit-sharing : Participating Institutions will need to establish and maintain a management system to ensure that benefits are shared fairly and equitably: see Section 9.

7.2 STAFF MANAGEMENT

7.2.1 Each Participating Institution will establish systems of staff management and individual responsibilities for the implementation of and compliance with the Principles.

Most PIs will already have systems in place to deal with the day-to-day running of the institution. On endorsing the Principles, a PI will therefore need to assess the extent to which implementation of and compliance with the Principles can tie in with existing management systems and the extent to which new systems will need to be set up to. In addition to developing an institutional policy, a PI may well need to address issues relating to the acquisition and supply of material such as the drafting of appropriate written agreements, prepare criteria for loans and gifts and establish mechanisms to monitor benefit-sharing activities.

Box 21
Staff Management: an example from Rio de Janeiro Botanic Garden

Rio de Janeiro Botanic Garden has created a staff team to study and implement its collections policy. The team concentrates on herbarium and living collections management, and benefit-sharing.

All requests for the supply of genetic resources from Rio Botanic Garden are analysed by this team, who have the authority to decide, on the basis of the institute's policy, whether or not material should be transferred, and if so, on what conditions, including the benefit-sharing provisions.

The group meets every 15 days, and extraordinary meetings are held for urgent requests.

It will also be important for a PI to decide who is authorised to make decisions on terms and conditions of access and benefit sharing, especially when staff are collecting from *in situ* conditions. Does a botanist collecting materials in the field have authority to negotiate a written agreement with a counterpart or a government authority? What if permits are only given out on arrival in country? This may be the first opportunity a staff member may have to determine whether the terms and conditions stated on the permit are acceptable and can be complied with by the PI.

Clear codes of conduct and guidelines for staff will help them to make informed decisions. A PI should ensure that a system of staff management has been established that clearly sets out which individuals have authority to make which decisions concerning the curation of specimens, particularly decisions upon the terms and conditions for acquisition and supply.

SECTION 8 - SUPPLY

8.1 SUPPLY OF GENETIC RESOURCES

8.1.1 Each Participating Institution may supply, whether by way of a gift, sale or loan, genetic resources or their derivatives to other Participating Institutions and third parties for conservation, research, public display, education and other purposes.

Botanical organisations act as an important 'clearing house' for genetic resources, supplying, whether by loan or gift, material to a wide range of recipients, including botanic gardens and herbaria, universities and companies. This global transfer of genetic resources is vital to facilitate taxonomic and other scientific research. However, such supply must clearly be on terms that respect the original terms and conditions of acquisition and the rights of the country of origin and other relevant stakeholders.

As part of the development of an institutional policy to implement the Principles, Participating Institutions (PI) may wish to develop clear staff guidelines to enable them to decide when material should be supplied, to whom, and on what terms: see Box 22, below.

Box 22
Example of Guidelines for Staff on the Supply of Genetic Resources

Step 1: Ensure that the request for plant material from the PI's collections contains the following information:
- For what purpose is the material required?
- Names of the plant species required.
- Are these species listed on the red data list? (Special considerations may be needed for material of rare and endangered species.)

Step 2: A copy of the request should be sent to the PI's 'clearing house' (name staff member responsible) to be added to the database

Step 3: If material is available in the collections it may be sent to the recipient with a copy of the PI's supply agreement. Under normal circumstances, it should be adequate to send the agreement with the material which states that acceptance of the material indicates acceptance of the terms (Agreement A). However, if the recipient is not a botanic institution and if you believe that the material could be used for commercial purposes at some stage, the second agreement which needs to be signed and returned before the material is supplied, should be used (Agreement B).

Step 4: Agreement B must be signed by a curator on behalf of the PI

Step 5: Copies of the agreement must be sent to the 'clearing house'.

Step 6: The following information should be recorded for the Institution's database:
- Recipient of material
- Agreement A or B
- Date that the material was sent
- Names and quantity of species supplied
- Accession numbers
- And other relevant data

(These were developed by the National Botanical Institute (NBI), South Africa, as draft guidelines for NBI staff regarding the supply of genetic resources to other organisations and individuals.)

8.1.2 At the time of supplying genetic resources or their derivatives, each Participating Institution will, consistent with its policy on commercialisation referred to in the Principles, clarify with the Recipient, whether the supply is for commercial or for non-commercial purposes.

It is vital that, prior to supply, a PI clarifies how the genetic resources supplied will be used. If it is for non-commercial use, then depending upon the original terms of acquisition, the parties may be able to enter into a simple non-commercial supply agreement: see Annex 2 for a model material supply agreement for non-commercial use.

If, however, the genetic resources may be used for commercial application, prior to the supply, the partners will need to agree on issues that may be quite complex: for instance, intellectual property rights, royalty payments, more detailed provisions on benefit-sharing and confidentiality. They may also need to return to the original providers of the resources and obtain specific consent to commercialise.

They will need to record all of this in a written contract that will be legally binding. This is very important since the issue of commercialisation of genetic resources should not be left to trust alone. A responsible botanic garden will need to make a judgement call prior to entering into such an agreement as to whether or not it wishes to work with and whether it can trust the Recipient – but ultimately, a PI will need to protect its position by entering into a legally binding written contract with the Recipient. Should the Recipient act in breach of that contract, then it may be open to the PI to issue legal proceedings for damages.

PIs should note that some terms of acquisition and some national access legislation may require a PI to enter into a legally binding contract protecting the position of both the PI and the original provider prior to supplying the resources to a third party, especially where the resources may be used for commercial application.

Some PIs will not have the capacity to negotiate complex commercialisation contracts. In such circumstances, they face two choices. Either, they could either ensure that all material is supplied under simple, one-page written supply agreements that prohibits a recipient from commercialising the material. Alternatively, a PI that receives expressions of commercial interest from potential recipients could put the potential recipient in direct contact with the country of origin, and withdraw from the negotations themselves.

Standard terms in commercialisation contracts
Agreements that provide for the commercial use of genetic resources tend to contain certain standard clauses including clauses dealing with issues such as legal acquisition of material and benefit sharing. This is particularly the case where a company is investing considerable sums of money in research and development on genetic resources and will wish to avoid the risk of legal challenges to its right to sell the end-product: for example, the development of a new pharmaceutical may cost some US$350m. A PI should obtain independent legal advice before entering into such an agreement.

Commercialisation contracts may contain clauses dealing with the following issues:

- Definitions;
- Objective Clause;
- Scope of work to be carried out under the Agreement;
- Representations and warranties concerning the legal acquisition of and ownership of the material used: Companies acquiring genetic resources now increasingly require the provider to guarantee that it is entitled to provide the genetic resources for this purpose;
- Representations and warranties regarding the quality and identity of the material used;
- Intellectual Property Rights;

- Confidentiality and use of data;
- Benefit Sharing: at what stage in the research and development process; shared with whom;
- Transfer to Third Parties;
- Duration of the Agreement;
- Termination Clause;
- Force Majeure Clause: a clause limiting liability of either party in circumstances beyond their control (such as Act of God, war, fire, flood, explosion, civil commotion, industrial disputes);
- Dispute Resolution and Choice of Law;
- Assignment or transfer of rights.

The Half-Way House

What about the situation where a commercially successful outcome cannot be guaranteed: for example, where many thousands of specimens will need to be screened in order to find an economically useful active compound?

In these circumstances, the parties may not wish to spend considerable time and effort negotiating a detailed commercialisation agreement up-front. For instance, it would probably be very difficult to define what may amount to fair and equitable benefit-sharing.

One option would be for the PI to supply genetic resources to the recipient under an agreement in which the recipient is entitled to carry out certain defined activities with commercial potential, but is not permitted to proceed with actual commercialisation until clauses on benefit-sharing and other commercial aspects have been negotiated.

This approach can reduce transaction costs, since a detailed agreement only needs to be negotiated if and when a commercial product is identified. However, it is not without certain limitations. The parties will need to be absolutely specific as to what research may or may not be carried out by the commercial recipient. This may not be easy and may leave loopholes that could be exploited by an unscrupulous recipient. The recipient company runs the risk that, if the parties cannot subsequently agree on the terms of the commercialisation agreement, even though it may already have conducted costly research and development, it may be unable to proceed with commercialisation.

It would appear that, at present, practice varies as to the extent to which terms of use and associated benefit-sharing are fixed at the time of access, or left for negotiation later when the final use emerges.

Plant Sales

One common form of commercialisation by PIs is the sale of plants to the public. Although most purchasers will simply enjoy growing the plants for ornamental purposes, some may use the genetic resources for breeding. This raises a number of issues, which are discussed below in Box 23.

Box 23
Plant Sales

Many botanic gardens rely heavily on plant sales to raise money to support their activities. Many state funded gardens, such as those in China, are expected to raise a proportion of their annual funding through selling plants. In addition, it is a long-standing tradition in many botanic gardens to sell or distribute plants and seeds free to members of the public or friends of the gardens. These plants and seeds may be from indigenous plants held in their collections, from foreign accessions, from surplus stock, or specifically bred for the purpose of plant sales.

The basic rationale behind the Principles and CPG is to ensure that genetic resources are acquired legally, used on terms consistent with their acquisition and that benefits are shared fairly and equitably. Accordingly, botanical institutions that adopt the Principles should sell genetic resources only if this is consistent with the original terms of acquisition and on terms that deal adequately with issues such as benefit sharing.

Before undertaking a plant sale, a Participating Institution ought to consider the following:

- **Do you have the right to sell the plant?** Was the plant (or its parent) originally acquired with restrictions on its subsequent use? What is the extent of these restrictions? Do they restrict distribution or sale? Do you have prior informed consent from the country of origin for this kind of activity?
- **What conditions should the plant be sold under?** How can you control the purchaser's subsequent use of the plant, for instance, preventing commercialisation or passing it on to a third party? Can you ask purchasers to sign a simple material supply agreement? Or would the cost of the paperwork involved defeat the object of the sale?
- **What benefits should you be sharing?** How can you ensure that benefits from the sale of plants return to country(ies) of origin/providers?

How could a PI communicate the original and any additional terms and conditions it imposes on the purchaser?

1. Each plant sold or distributed could be accompanied by a label setting out that the genetic resources of the plant cannot be commercialised, or cannot be commercialised before obtaining prior informed consent from the botanic institution supplier and country of origin of the plant. These terms could also be printed on to seed packets;
2. Members of the public entering the plant sale could be informed, by means of a clear notice at the entrance to the sale, or a statement in the sale catalogue, of the terms under which they are purchasing material during the sale. In addition, on collecting the plant(s), purchasers could be presented with a written receipt setting out the terms and conditions governing the sale. As with an auction, sales are conditional upon the purchaser accepting the terms and conditions set out in sale catalogues etc;
3. Prior to purchasing or being given a plant, a purchaser could sign a simple agreement clarifying the uses that may be made of the plant material, and stating that the sale is conditional upon no future commercialisation. If they refused to sign such a document, the sale would not take place, but a more detailed commercialisation agreement could be considered. This may be the best option if the sale is to nursery growers. Records should be kept of all those to whom sales are made, and what was sold.

Which option is best for a particular circumstance may also depend on the nature of the plants in questions - common bulk bedding plants would not be as likely to be commercialised as a small number of rare orchids. Some botanical institutions may choose to restrict their plant sales to stock that is native. Others may decide not to sell plants from their collections, but only commercial cultivars.

Benefit sharing from plant sales

Many plants at plant sales are sold for very small amounts. How can botanical institutions share benefits fairly and equitably without the transaction costs swamping the revenue from the sales that is to be shared? A sale will often involve plants from many countries of origin and sharing benefits with all of them would be expensive and time consuming. However, the CPG suggests that PIs should make 'reasonable efforts' to share benefits (see Section on Acquisition, page 23).

One option may be to set aside a proportion of the profits from the sale into a trust fund established to promote educational or conservation work.

8.1.3 When supplying genetic resources or their derivatives, each Participating Institution will honour any terms and conditions to which it committed when acquiring the genetic resources, such as any terms and conditions set out in written agreements.

In order to comply with this statement, a PI will need to ensure that it has adequate internal tracking and management systems so that staff from the PI wishing to access and use the genetic resources and derivatives could check the original terms of acquisition. Furthermore, should the PI wish to supply these resources to a third party, it should ensure that:

- the original terms of acquisition allow it to supply the genetic resources and derivatives to a third party; and
- the supply of the genetic resources and derivatives is on terms consistent with those under which it was originally acquired by the PI.

See also Section 7, Curation

8.1.4 To the extent possible, when supplying genetic resources or their derivatives, each Participating Institution will treat genetic resources acquired prior to the entry into force of the CBD and those acquired after its entry into force in the same manner.

The CBD came into force on 29 December 1993. All material collected prior to this date is known as 'pre-CBD material'; all material collected since this date is 'post-CBD material'. Material collected both pre- and post- CBD is likely to have been collected and transferred under certain terms and conditions, since collecting and export permits and other transfer agreements have been in use for many years. All material should be supplied to third parties on terms that are consistent with those under which the material was originally acquired.

See 'Commercialisation of pre- and post- CBD material', page 31.

Box 24
Supply of cultivars and hybrids

On what terms could Participating Institutions supply cultivars and hybrids which they have acquired to other organisations?

- **Refer back to Supplier:** refer any individual or organisation requesting a sample of such a cultivar or hybrid to the company or other organisation from which the Participating Institution obtained it.
- **Supply on terms consistent with acquisition:** supply such cultivars and hybrids to third parties, provided this is consistent with any terms and conditions under which the cultivars and hybrids were obtained. In the case of cultivars or hybrids created by PIs from materials in their collections, PIs would be entitled to supply the resulting cultivars or hybrids subject to the terms of acquisition-(see Section 5 Acquisition), just as with any other material.
- **Cultivars and hybrids subject to Plant Variety Rights:** In the case of cultivars protected in the country concerned by plant variety rights, a PI could pass materials to third parties free of charge (other than a service charge). The recipient cannot reproduce or sell reproductive material (such as seeds, cuttings and whole plants) of the cultivar in any country where the cultivar is protected by plant variety rights. Hybrids (and like varieties) cannot be exploited without permission from the holder of rights in the protected inbred line(s). The Breeder's Exemption allows protected material to be used for breeding purposes without the need to ask for prior permission from the holder of the Plant Variety Right, but, if the variety produced from the protected material is 'essentially derived' from it, a user in a country that has ratified the provisions of the 1991 UPOV Act will be required to negotiate compensation with the owner of the protected variety. The meaning of 'essentially derived' has not been clarified through judicial interpretation, but can be broadly understood to cover derivatives that express the essential characteristics of the protected variety, that is derivatives that are genetically very close to the protected variety.
- **Cultivars and hybrids subject to patents:** When a cultivar or hybrid is subject to a patent, a PI is not able to sell (#) patented material or use it for breeding purposes without the permission of the patent-holder. But can it be passed on for non-commercial, academic and scientific research?

(*) producing, conditioning, offering for sale, selling or other marketing, exporting, importing, stocking for above purposes of propagating material.
(#) make (by breeding or genetic engineering), import, stock for the purpose of offering for sale, offer for sale or sell the plant or its seed

Source: UPOV texts and personal communication wit Barry Greengrass (Feb 2001).

8.2 USE OF WRITTEN AGREEMENTS TO CLARIFY TERMS AND CONDITIONS OF SUPPLY

8.2.1 When supplying genetic resources or their derivatives, each Participating Institution recognises the need to supply genetic resources under written agreements, which obliges each Recipient:

a) to share benefits arising from its use of the genetic resources and their derivatives fairly and equitably as set out in Section 9.
b) not to commercialise the genetic resources or their derivatives without the explicit consent of the Participating Institution providing them; and
c) not to pass the genetic resources or their derivatives on to third parties without ensuring that the third parties enter into written agreements containing terms and conditions that are no less restrictive.

See also Annex 3: Model Written Supply Agreement.

As a matter of good practice and in order to aid curation, PIs should supply genetic resources under written agreements which clarify and record the rights and responsibilities of the PI and the recipient of the material. Such an agreement should address key issues such as benefit-sharing, the issue of commercialisation and whether the recipient is entitled to pass the materials to third parties.

A material supply agreement can take many forms: see for instance the model agreement at Annex 3.

An institution could also use different procedures to reflect the level of risk of potential commercialisation attached to the material being supplied (see Box 25).

Box 25
Different procedures concerning the signing of a Material Supply Agreement

Different procedures can be used to reflect the level of risk of commercialisation.

For instance:

1. Material such as woodslides or herbarium material for which there is little likelihood or possibility of commercialisation of genetic resources, could be accompanied by a supply agreement that is only signed by the recipient on receipt of the material.

2. Other, higher risk Material could be transferred under a supply agreement that is either signed by both parties on the spot, if collected in person, or signed by the recipient and returned to the supplier before the material is physically transferred.

SECTION 9 - BENEFIT-SHARING

9.1 COMMITMENT TO SHARE BENEFITS

By adopting the Principles, a Participating Institution undertakes to share *fairly and equitably with the country of origin and other Stakeholders, the benefits arising from the use of genetic resources and their derivatives including non-monetary, and, in the case of commercialisation, also monetary benefits.* As far as possible, this commitment will apply to genetic resources acquired both prior to and after the entry into force of the CBD.

The principle of 'fair and equitable benefit-sharing' is central to the spirit of the CBD and is intended to promote the fair exchange of genetic resources and associated knowledge in return for benefits such as information, technology and participation in research.

However, although 'benefit-sharing' is an objective of the CBD and aspects of it are referred to in several of the CBD's Articles (see Box 26), it is never defined. This raises many challenges for implementation and leaves considerable discretion to the governments which are Contracting Parties to decide in which circumstances, with whom, and to what extent they will share benefits.

As with other obligations in the CBD, there may be different interpretations as to what constitutes a fair and equitable sharing of benefits. Some stakeholders may wish to view the concept of "benefit-sharing" as something wider than benefits simply arising out of the "use" of genetic resources and as relating more to the benefits that arise out of a good partnership.

What is key, however, is that in seeking to define and to share benefits, whether of the collaboration or simply arising out of the use of the genetic resources, PIs should be guided by principle of equity, the overall aims of conservation and sustainable use of biodiversity and mutual agreement with their partners. In addition, national laws on access to genetic resources are increasingly indicating the kind of benefits that governments would expects PIs to agree with their collaborators.

Box 26
Benefit-Sharing in the CBD

- **Preamble:** the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components;
- **Article 1, Objectives:** the fair and equitable sharing of benefits arising out of the utilization of genetic resources;
- **Article 8(j):** respect, preserve, and maintain knowledge, innovations and practices of indigenous and local communities (...) promote their wider application with their holders approval and involvement and encourage the equitable sharing of the benefits arising from their utilisation.
- **Article 15(6):** full participation in scientific research of contracting parties who provided the genetic resources;
- **Article 15(7):** take measures with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources;
- **Article 16(3):** take measures so that countries which provide genetic resources are provided access to and transfer of technology which makes use of those resources;
- **Article 17:** facilitate exchange of information including results of technical, scientific and socio-economic research;
- **Article 18(4):** encourage and develop methods of cooperation for the development and use of technologies, including indigenous and traditional technologies, in pursuance of the objectives of the Convention;
- **Article 19(1):** take measures to provide for effective participation in biotechnological research activities by the providers of genetic resources for that research;
- **Article 19(2):** promote access to the providers of genetic resources to the results and benefits arising from biotechnologies based upon those genetic resources.

9.1.1 Each Participating Institution will make reasonable and sincere efforts to share the benefits arising from the use of genetic resources and their derivatives fairly and equitably with the country of origin and other Stakeholders, as appropriate.

PIs will need to consider several issues:

a) What do we mean by benefits?
b) What amounts to reasonable and sincere efforts to share benefits?
c) With whom should these benefits be shared?
d) What is 'fair and equitable' when applied to the sharing of benefits?
e) Mechanisms for sharing benefits.

What do we mean by benefits?
The CBD does not define what may or may not amount to suitable benefits. PIs will therefore need to be creative in finding ways to share benefits from their work. The CPG gives some examples of what may amount to suitable benefits. These are by way of illustration only since what amounts to a fair and equitable sharing of benefits will, of course, depend upon the nature of the collaboration (see 9.2.2 below). Many existing activities of PIs are widely acknowledged as good practice in benefit-sharing. These often include non-monetary benefits such as leaving duplicates in the partner country institution, the naming of material and the involvement of country of origin experts in research, both in the field and afterwards. Where benefits are monetary, this will often be in the form of royalties, which may not materialise until at least 10 or 20 years after the original access to the genetic resources. PIs could usefully prepare an audit of their existing benefit-sharing activities and use this to assess whether they may need to change their practice in order to comply with the Principles.

A few examples might be helpful to illustrate the kinds of issues PIs will need to consider. The answers to the questions posed in these examples will largely depend upon the particular circumstances of the case, particularly the terms and conditions under which the genetic resources were acquired, coupled with national legislation, where it exists, and best practice.

- **Example 1:** A botanical institution produces a lengthy monograph describing plants from many different countries. PIs will need to decide whether it fair and equitable to give a copy of this expensive book to a library in all the countries from which material was featured.
- **Example 2:** A botanical institution is screening many thousands of specimens looking for a particular active ingredient. PIs will need to consider whether the results of such a programme should be shared with each and every country from which specimens were obtained, or whether it should be broken down so that a country of origin is only given the results arising from its own material.
- **Example 3:** Having obtained permission, a botanist working in the field relies heavily on a local guide's knowledge of plant properties and locations. Material is taken back to the botanist's institution, and, on the basis of the local guide's indications, tested for specific properties and found to be active. How should the variety of benefits, monetary and non-monetary, be shared, with whom, and in what proportions? Should the institution receive a higher percentage of any commercial benefits to reflect its own financial outlay for research and development? How should the local community be rewarded for sharing in its own knowledge, derived over centuries of working with and conserving the material? Should some individuals, such as the particular guide or a local expert in medicinal plants, receive a greater share than the rest of his/her community?
- **Example 4:** If a botanist from Garden A collects herbarium specimens in Country X and sends some duplicate herbarium specimens to Garden B, with whom should Garden B share benefits arising from its use of these duplicates, Garden A, country X or both?

Box 27
Some examples of possible Benefit-sharing

Herbarium specimens: Prior to collecting specimens, a PI and its collaborating partner(s) may wish to agree the following issues:

- Who retains top copies and unicates;
- Who may receive duplicates of specimens made;
- Within what timescale should identifications by a PI be sent back to the collaborating partner(s);
- In what circumstances will publications be co-authored. Will the collaborating partner(s) be specifically mentioned? Will copies of any publications generated by the specimens be sent to the collaborating partner(s);

What amounts to reasonable and sincere efforts?
Whether a PI has made 'reasonable' and 'sincere' efforts will depend largely upon be what could be expected of a reasonably competent PI in similar circumstances: i.e. with similar staff numbers, similar numbers of acquisitions and similar facilities.

For example, a well-established botanic garden with a formal education programme may be able to offer partners the opportunity to participate in that programme at that institution, as part of an overall benefit-sharing package. However, it would not be reasonable to place such an expectation on a smaller botanic garden without educational facilities to offer. It may be more appropriate for such a garden to offer partners informal *in situ* training and education.

However, all PIs should put in place a system of collection management (see Section 7, Curation) that enables them to record the use made of material in their collections and the resulting sharing of benefits. They may also need to design an institutional approach to benefit-sharing to ensure a level of consistency and that they do not overstretch their capabilities and resources.

With whom should these benefits be shared?
Participating Institutions undertake to share benefits with the 'country of origin' of those resources, as well as all 'stakeholders as appropriate'. This could include a wide range of individuals or institutions with an interest in the genetic resources, including those from whose land the genetic resources were obtained, those who offered information on the use of genetic resources, and those who carried out certain research. In addition, PIs should bear in mind that national legislation may, increasingly, set out the range of stakeholders with whom benefits should be shared.

Country of Origin – hybrids and cultivars
The issue as to whom benefits should be shared between was considered very carefully by the Participants drawing up the Principles and the CPG. In particular, there was some debate as how benefits should be shared in circumstances where a plant is a hybrid or cultivar 'produced by selective breeding'.

According to Article 2 of the CBD, the 'country of origin' is the country where the plant has developed its distinctive properties – not necessarily the country where the plant had been originally acquired *in situ*. However, Participants did not feel that the strict interpretation of the CBD would produce a fair result. If a research institution in Germany bred a new variety from material passed to it by an American institution but originally collected from the wild in Thailand, Participants felt that benefits should be shared not just with the country where the plant had developed its distinctive properties (Germany, in this case) but also with Thailand.

Accordingly, the Principles and CPG were drafted to stress the role of the country of origin – but also allowing other appropriate stakeholders (for example, the intermediary institution in the USA which conducted original research on the plant) to share fairly and equitably in the distribution of any benefits.

In situ conditions

The definition of '*in situ* conditions' in the CBD created another challenge for the Participants. At some point in their evolutionary history, many plants have either moved or been moved across borders and are now technically '*in situ*' in other countries. If the goal of the Principles is for Participating Institutions to share benefits with the country where the plant was 'originally' *in situ*, how far back should a PI go to trace the plant's origins? Clearly, this is something individual gardens will need to decide on a case by case basis in line with best practice, national legislation, where it exists, and common sense.

Sharing benefits with indigenous and local communities

Working out how to share benefits with indigenous and local communities can be challenging. Such communities may not have a recognised negotiator or representative. They may not have legal personality to enter into community-based agreements, nor have bank accounts or other established mechanisms to channel monetary benefits. In some cases it may be appropriate to provide resources for projects agreed by the community, such as building a school or health clinic. There is now a significant literature, including case studies and practical guidelines, on benefit-sharing with local and indigenous people (see Bibliography).

What is 'fair and equitable' when applied to the sharing of benefits?

When deciding what amounts to 'fair and equitable', PIs will need to consider not only the subjective (what can be agreed with our partners that will be appropriate in the circumstances), but also the objective. (What would their peers consider reasonable in the circumstances? What have other PIs done in similar circumstances? Are they any case studies that can help us to reach a mutually acceptable conclusion?)

Mechanisms for sharing benefits

PIs may wish to consider the following:

Sharing information

Information can be shared in many ways, for example in publications, and through collaborative research. The case studies on ABS posted on the CBD Secretariat Website give several examples of the sharing of information as a means of benefit-sharing. See http://www.biodiv.org/socio-eco/benefit/case-studies.asp.

Technology transfer, joint research and capacity building

Technology transfer covers the exchange of know-how as well as the transfer of equipment. This, joint research and capacity-building can take place through a variety of means, including workshops, courses, staff exchanges, studentships and research projects, as well as more informal means. The case studies on ABS posted on the CBD Secretariat Website give several examples of these forms of benefit-sharing. See http://www.biodiv.org/socio-eco/benefit/case-studies.asp.

Trust funds

A Trust Fund can be established to receive and apportion monetary benefits. It may be appropriate where there is no known recipient, for instance where the material is pre-CBD and the country of origin is not known, or where there are a number of different stakeholders. The Trust Fund could be managed by a Board of Trustees made up of government, indigenous and local community and private sector representation If there is no clear recipient, or so many possible recipients that the transaction costs would outweigh the value of the benefits and thus make distribution pointless, the Board could agree to put the money towards more general education or conservation programmes.

9.1.2 To the extent possible, each Participating Institution will share the benefits arising from the use of materials acquired prior to and after the entry into force of the CBD in the same manner.

The project group agreed to include 'to the extent possible' for two reasons:

a) first, it may be considerably more difficult for a PI to track pre- CBD material through its collections, including how that material may be used and how and with whom benefits should be shared; and

b) second, there may be considerable practical difficulties in obtaining PIC for the use of pre-CBD material. In Beijing and Cartagena, the project group reached general agreement that, in some circumstances, there needed to be freedom to supply pre- CBD material without obtaining PIC from government for the use of pre-CBD material.

9.2 BENEFITS

9.2.1 The object of sharing benefits is to achieve fairness and equity and to create incentives and provide resources for the conservation of biological diversity and the sustainable use of its components.

As stated above, PIs will need to be creative in finding ways to share the benefits arising from their work with genetic resources. By stressing that the object of benefit-sharing is 'to create incentives and provide resources', the CPG emphasises the key elements that a PI should be considering when designing a benefit-sharing package with its partners.

9.2.2 Benefits which Participating Institutions will share, depending upon what is fair and equitable in the circumstances, including commitments made in written agreements, may include:

- ***taxonomic, biochemical, ecological, horticultural and other information and data, through research results, publications and educational materials;***
- ***access to collections and databases;***
- ***benefits in kind, such as augmentation of national collections in the country of origin and support of community development activities;***
- ***the transfer of technology such as hardware, software and know-how;***
- ***training in science, in situ and ex situ conservation and management, information technology and management and administration of access and benefit-sharing;***
- ***institutional development, strengthening and management;***
- ***joint research and development, through collaboration in training and research programmes, participation in product development, joint ventures and co-authorship of publications; and,***
- ***in the case of commercialisation, also monetary benefits such as royalties.***

The benefits listed above are by way of illustration and will not all be appropriate in all circumstances.

Benefit-sharing will need to be tailored to the individual circumstances so as to be fair and equitable for the PI and the other partners involved (see also 9.1.1. above).

SECTION 10 - IMPLEMENTATION

10.1 DEVELOP AN INSTITUTIONAL POLICY

10.1.1 Each Participating Institution will prepare and, as appropriate, communicate its own policy setting out how it will implement the Principles, using these Common Policy Guidelines for guidance.

One of the keys to the success of the Principles must be how readily they can be turned into a transparent institutional policy and implemented by Participating Institutions.

Prior to endorsing the Principles and becoming a PI, institutions will need to consider their strategy for the management of their collections, the implications for the institution of establishing internal policies and procedures to facilitate implementation and draft a realistic timetable for implementation. For example, there will need to be a budget for implementation. Staff time will need to be allocated for drafting appropriate documentation such as material supply agreements, staff guidelines, negotiating acquisition agreements with partners, and for establishing and running adequate tracking and collection management systems. Clearly, none of this can be done overnight and it is likely that most institutions will need to establish a rolling programme of implementation according to their institutional capabilities and the resources available. It is for this reason that there is no timetable for implementation: Participants recognised that each PI would deal with implementation in a different way.

Section 7 (Curation) outlines many of the practical and procedural steps that a PI will need to take to introduce the Principles into its daily working practices. Logically, the first step will be the preparation, adoption and communication of an institutional policy setting out how the PI will implement these Principles. Consultation with staff will be key to the success of this process and should encourage staff to follow the policy, once adopted.

A number of websites will be used as clearing houses to list the PIs endorsing the Principles and their institutional policies. Additionally, PIs are encouraged to disseminate their policies to the other PIs.

See also Section 2, Objective; and list of websites in Annex 10.

10.1.2 Participating Institutions may develop such policies individually or collectively, as groups or networks of institutions.

Institutions may wish to work alone in developing an appropriate policy or with other PIs, both nationally and internationally. For example, the CBD Implementation Unit of the Royal Botanic Gardens Kew will be working closely with members of Kew staff to implement the Principles effectively at Kew and would be happy to share experiences with any other institution: contact cbdunit@rbgkew.org.uk.

PIs may even like to form an informal support group to share experiences and allocate particular tasks and responsibility to different members of the group.

10.1.3 In order to reflect changes in international, national and other applicable law and acknowledged best practice, it may revise its own policy periodically.

Access and benefit-sharing is a fast-moving field. In 1996, just some 6 countries were working on access laws. By 2001, some 50 countries were doing so. Since the development of national access laws and international guidelines is still underway (for example, through the CBD Working Group on Access and

Benefit-Sharing), it is reasonable to assume that policies adopted today may need to be revised in the future to reflect these developments.

Furthermore, if international and national developments in law and policy on access and benefit-sharing mean that the Principles themselves need to be amended, the PIs may wish to work together in the future to do so.

10.2 BROADENING PARTICIPATION

10.2.1 The Participating Institutions endorsing the Principles are committed to working with governments and the broader botanical community, including individuals, organisations and groups dealing with genetic resources in order to develop a harmonised basis for access to genetic resources and benefit-sharing.

The ultimate objective of the Principles and CPG is to promote and develop a harmonised basis for access to genetic resources and benefit-sharing. PIs are thus committed both to disseminating the Principles and CPG and to participating in discussions on the development of international guidelines, for example, by the Working Group established under the CBD.

PIs may also wish to use their experience working with the Principles and the CPG to work closely with their governments to help ensure that national law and policy on access to genetic resources and benefit-sharing facilitates, rather than hinders, domestic and international collaborative scientific research. PIs can do this in a number of ways, from lobbying their governments to participating as delegates on international expert panels.

The CPG project was designed for and developed by botanical gardens and some herbaria. While any institution that wishes to endorse the Principles is free to do so, the CPG participants were reluctant to assume that the Principles and CPG would be appropriate for all kinds of *ex situ* collection or all kinds of institution collecting genetic resources. Other responses may be appropriate in other cases. Genetic resources are exchanged between different kinds of institution, including zoos, aquaria, museums, universities and culture collections. PIs are committed to working with other kinds of organisation in order to develop a harmonised basis for the equitable exchange of specimens among all these different kinds of institution.

INTRODUCTION TO WRITTEN AGREEMENTS

*'**Written agreement** means any form of written agreement between two or more organisations or individuals setting out the terms and conditions under which one party will transfer biological materials. What constitutes a written agreement can take many forms, ranging from an exchange of letters and the granting of a collecting permit based on a completed application, to a shipping notice or a detailed contract (sometimes known as a Material Transfer Agreement or Access and Benefit-sharing Agreement).'*

Why use a Written Agreement?
Botanic institutions engage in a large number of transactions with a wide range of actors from around the world. These transactions often involve the physical transfer of plant, fungal and/or microbial material from one party to another. For example, a busy herbarium may physically send and receive up to 100,000 specimens a year.

A written agreement setting out the terms and conditions under which biological material is transferred is an effective means of ensuring that, from the outset, both parties have a clear understanding recorded in writing of how the material may be used. This should, amongst other things, help a PI to curate the material appropriately.

The status of a Written Agreement.
A written agreement may or may not be legally enforceable. In Anglo-American law, the term 'contract' defines a certain class of agreements that are legally enforceable. To be legally enforceable, an agreement must consist of an exchange of bargained-for promises or actions in which one party promises to perform one or more actions in exchange for the other party's promise to perform or performance of one or more actions. It is vital that each party receives some benefit in return for being bound by the contract.

If an agreement is legally enforceable, then should one of the parties act in breach of that contract, the innocent party may be in a position to issue legal proceedings for damages for breach of contract: see box 28 below.

Box 28
Remedies for Breach of Contract

What could Institution A do if, in breach of the clear written terms of a Material Transfer Agreement, Institution B tried to sell the results of scientific research to a commercial company or if Institution B carelessly damaged valuable material loaned to it by Institution A?

The legal remedies available in such circumstances will depend upon the law chosen by the parties to govern the Agreement and the dispute resolution mechanism agreed by the parties.

If the parties were to agree that a Material Transfer Agreement was governed by English law and that any dispute was to be resolved by the English Courts, Institution A may have the following remedies available to it:

- It may seek a restraining order (an "injunction") preventing Institution B from selling the results to the commercial company and preventing either Institution B or the commercial company from filing any Intellectual Property Rights protecting that research;

- It may issue a claim for damages against Institution B on the basis that it failed to take reasonable care of the loaned specimen.

If the terms under which the material had been transferred between Institutions A and B had not been clarified in writing, it may have been considerably more difficult for Institution A to ensure that Institution B complied with the terms of transfer.

Model Documents

The group designed two Model Material Transfer Agreements to help Participating Institutions (PI) negotiate the transfer of biological material for non-commercial use in accordance with the Principles: a Written Acquisition Agreement and a Written Supply Agreement.

These draft contracts are intended are guides to enable PIs to enter into such negotiations with some knowledge of the issues and potential solutions. They are not universally applicable models but starting points for discussion to be modified to fit each case. They have been drafted on the assumption that at least one party to the contract will be a botanic garden.

In addition, several draft documents that may form the basis of a written agreement have been annexed to this Text. They are for illustrative purposes only and will need to be modified to fit each case. These include:

- A letter for use by a PI where there are regular exchanges of biological material;
- A letter for use by a PI when it has received unsolicited biological material;
- A letter from a PI to a partner explaining its commitment to the Principles and why the PI is now asking the partner to enter into a written supply agreement;
- A letter from a PI to a partner explaining its commitment to the Principles and why the PI is now asking the partner to enter into a written acquisition agreement;
- A statement explaining how material, once acquired, may be used. This document was drafted to illustrate the kind of information that a PI may need to provide in order to obtain Prior Informed Consent.

MODEL MATERIAL ACQUISITION AGREEMENT FOR NON-COMMERCIAL USE

When a botanic garden is acquiring material from *in situ* conditions, it would be extremely valuable to clarify in writing in advance of the acquisition, the terms and conditions of that acquisition with the relevant authorities and stakeholders. Is the recipient entitled to place any plants collected on public display? Is the recipient entitled to pass the material on to third parties for further scientific research? Is the recipient entitled to screen the material for potential commercial use? If so, on what terms and conditions?

Accordingly, the group prepared a model material acquisition agreement to guide PIs in the negotiation of contracts for the acquisition of biological material. The model is intended as an educational tool and, if no other model is available, can be used as a constructive 'starting point' for discussion, since it raises may of the issues that the parties may need to consider as well as suggesting some possible solutions. This model has been drafted as a legally binding contract in accordance with Anglo-American legal principles.

Prior Informed Consent
A key issue to the effectiveness of this model contract is the issue of obtaining Prior Informed Consent (PIC) for the collection and transfer of the material. The model has been prepared on the basis that one party will be a botanic garden, the other party will probably be an in-country collaborator such as a botanic garden, herbarium or university. It is unlikely that any of those institutions will have authority to grant PIC. Accordingly, the PI will need to ascertain who, in government, has this authority and ensure that a separate letter granting PIC is signed. A draft letter is set out at the end of the model contract. A copy of the Agreement should be annexed to this letter so that it is clear that the government body has been provided with a full explanation of the collaboration and of the uses that may be made of any material transferred. If a PI is collecting or acquiring plant material from a variety of different sources in different regions, PIs may need this letter to be signed by several different government authorities.

Annex 2: Model Material Acquisition Agreement for Non-Commercial Use

Note: This model agreement has been prepared for illustrative purposes in connection with the Botanical Institution Pilot Project on Access to Genetic Resources and Benefit-sharing. The language of this draft agreement is appropriate to certain circumstances and to English law only. Consequently, no person should rely on the language of this draft without first consulting his or her own legal adviser.

MODEL MATERIAL ACQUISITION AGREEMENT FOR NON-COMMERCIAL USE	COMMENT
MATERIAL ACQUISITION AGREEMENT BETWEEN	As stated above, this agreement is not intended to be a universally applicable model. Participating Institutions (PIs) may wish to develop agreements which are more appropriate to their own legal systems and to the particular circumstance of the transaction being negotiated. However, this agreement sets out clearly some of the issues, and possible solutions, that may need to be considered by negotiating parties. For example, some parties may not like the title "Material Acquisition Agreement" and may wish to call their agreement an "Access and Benefit-Sharing

	Agreement".
[PARTNER INSTITUTION] AND	**PARTNER INSTITUTION** The model has been prepared on the basis that one party will be a botanic garden, the other party will probably be an in-country collaborator (a botanic garden, herbaria, university etc). It is unlikely that any of those institutions will have authority to grant PIC. Accordingly, the PI will need to ascertain who, in government, has this authority and ensure that a separate letter granting PIC is signed. A draft letter is annexed to the model contract. In some cases, the authority granting access may also be the Partner Institution. In such circumstances, parties could modify this agreement to include a specific clause granting PIC.
[PARTICIPATING INSTITUTION]	**PARTICIPATING INSTITUTION** The parties should insert here the full name of the PI, or the governing body or representatives competent to enter in to such an agreement on its behalf: for example, The Board of Trustees of X Botanic Gardens.
An AGREEMENT made the [date] day of [month] 200 [year] between [Participating Institution("[PI]") and [Partner Institution] ("[Partner]").	**START DATE OF AGREEMENT** The parties should enter the date on which the Agreement begins. This will be the date of the second signature (see clause 5.1 below).
WHEREAS: *[PI] is a [institutional description], whose mission is [mission statement];*	**PREAMBLE** A preamble is intended to as an uncontroversial statement of fact setting out the overall background to the parties and to the collaboration. It is for introductory purposes only and is not legally binding.
In pursuit of this mission, [PI] exchanges Biological Material with other institutions worldwide;	**MISSION STATEMENT** At this point, the PI may wish to insert its mission statement.
In its work, [PI] and [Partner] intend to honour the letter and spirit of the 1992 Convention on Biological Diversity, the 1973 Convention on International Trade in Endangered Species of Wild Fauna and Flora (including the relevant implementing European Community Regulations), and other regional, national and subnational laws, regulations and policies concerning biodiversity and access to genetic resources;	This paragraph is intended to clarify the broader legal context for the agreement. Parties may wish to specify the "regional, national and sub-national laws and policies" referred to here.
[PI] and [Partner] may establish a joint collecting and conservation programme and may instigate	In this paragraph, the parties may wish to set out the overall detail of their collaborative activities. In addition, the parties may wish to annex a detailed project programme or proposal

collaborative research projects relating to the collection, study and conservation of plant biodiversity; and	to their agreement.
[Partner] is interested in providing [PI] with certain Biological Materials;	This paragraph could be modified to specifically refer to both *in-situ* and *ex-situ* situations: for example: *"[Partner] and [PI] wish to work together to collect, study and conserve certain Biological Materials and [Partner] is interested in providing [PI] with certain Biological Materials for study and/or conservation."*
NOW THEREFORE IT IS HEREBY AGREED AS FOLLOWS:	
1. In this Agreement the following expressions shall have the following meanings	**DEFINITIONS** Please refer to the Explanatory Text above for a detailed explanation of these definitions.
1.1 "Biological material" includes, but is not limited to, plants, plant parts or propagation material (such as seeds, cuttings, roots, bulbs, corms or leaves), fungi or other fungal material, and any other material of plant, animal, fungal, microbial or other origin and the genetic resources contained therein;	
1.2 "Commercialise" and "Commercialisation" means applying for, obtaining or transferring intellectual property rights or other tangible or intangible rights by sale or licence or in any other manner, commencement of product development, conducting market research, and seeking pre-market approval and/or the sale of any resulting product;	
1.3 "Genetic Resources" shall mean any biological material of plant, animal, microbial, fungal or other origin of actual or potential value containing functional units of heredity transferred under this agreement and its progeny and derivatives, including modified or unmodified extracts and purified compounds;	
1.4 "Material" shall mean the plant, animal, microbial or fungal	

biological material transferred from time to time under this Agreement including the genetic resources contained therein;	
1.5 "Third Party" shall mean any person other than [PI] and [Partner].	
OBJECTIVE	The Parties to the agreement may wish to include a clause stating the "objective" of the agreement. For example: *'The objective of this Agreement is the transfer of the Material from [Partner] to [PI] for scientific research and conservation.'*
2.1 In consideration of the undertaking by [PI] in clause 3.1, below, [Partner] will transfer to [PI] the Material listed in each "Notification of Material Transferred under the Material Acquisition Agreement between [Partner] and the [PI] (the "Notification of Transfer") to be itemised and agreed by the parties for each material transfer under this Agreement. A pro forma copy of the Notification of Transfer is attached at Annex 1.	**NOTIFICATION OF TRANSFER** On each occasion that Material is transferred between the parties, the parties undertake to complete a Notification of Transfer listing all the material transferred. The purpose of this Notification of Transfer is to enable the parties to easily record and identify the material that has been transferred and the terms and conditions of that transfer. It is intended to aid curation of the material.
2.2 The Material referred to in clause 2.1 will be transferred pursuant to the terms of this Agreement.	This clause confirms that the terms and conditions of this Agreement will apply to all material listed in a Notification of Transfer.
2.3 The signature of [Partner] on any Notification of Transfer will confirm that: ***2.3.1 [Partner] is satisfied that best efforts have been made by [PI] and/or by [Partner], as appropriate, to obtain all necessary permits, prior informed consents and licenses in connection with the acquisition by [PI] of the Material and*** ***2.3.2 [Partner] is authorised to acquire and supply the Material to [PI]***	**MATERIAL ACQUIRED LEGALLY** By signing a Notification of Transfer, the Partner confirms that it is satisfied that best efforts have been made to comply with all necessary permits, consents and licences; i.e. that the necessary collection, CITES and export permits have been acquired. When obtaining these permits etc, a PI must of course ensure that it has provided a full account of how the material will be used: see draft statement at Annex 6. By signing the Notification of Transfer, the Partner also confirms that is has the necessary authority to transfer the material to the PI. As stated above, the purpose of this Notification of Transfer is to aid curation of the material. By making a written record in this way, a PI should be confident that is has legal title to acquire and use the material as set out in this Agreement.
3.1 [PI] and [Partner] agree to	**BENEFIT SHARING**

work together to share fairly and equitably the benefits resulting from the use of any Genetic Resources including the results of processing, monitoring and research and development.	This clause is key to the validity of this Agreement in Anglo-American law. In return for the Partner transferring the material to the PI and confirming that it has been legally acquired and exported, PI undertakes to share with the Partner any benefits arising from the genetic resources transferred. PIs should ensure that they have the internal management systems in place to ensure compliance with this undertaking.
3.2 Mutually acceptable benefits may include the following: Provision of copies of any published research resulting from the Genetic Resources; Acknowledgement of [Partner] as the source of the Genetic Resources in any research publications;	**DETAIL OF BENEFIT-SHARING** For purposes of clarity and again in order to aid curation of the material transferred, parties may wish to set out in full the types of benefit that may result – both from the collaboration generally and, more specifically, from the use of the genetic resources: e.g. the provision by the PI of informal training in material handling, storage and research techniques as well as the provision of copies of published research resulting from the genetic resources.
4.1 [PI] will not Commercialise any Genetic Resources, without having obtained the written permission of [Partner] prior to such Commercialisation. Any such Commercialisation to which [Partner] agrees will be subject to a separate written agreement with [Partner] clearly specifying the terms and conditions of this use and consistent with [PI]'s policy on commercialisation, and the provisions on benefit-sharing in particular.	**NON-COMMERCIALISATION** Commercialisation is clearly an important point in any material acquisition negotiations and both parties should be clear as to their respective rights and obligations in this regard. This Model Agreement has been designed to cover the acquisition of material for non-commercial purposes. However, it does not shut out the possibility of an eventual commercialisation. If a PI wishes to commercialise material, it must negotiate a separate agreement ensuring *inter alia* that it obtains clear, written permission to commercialise. A PI may have to return to the landowners who originally gave permission to acquire the material for scientific research purposes and obtaining further permission to commercialise. By adopting the Principles, a PI undertakes to develop a policy on Commercialisation. Any further agreement to commercialise will clearly need to be consistent with this policy.

4.2 [PI] may supply any Genetic Resources, to a Third Party and will use its best efforts to ensure that such Third Party has entered into a written agreement with [PI] containing conditions no less restrictive than those contained in this Agreement, including the conditions on benefit-sharing, publication, Commercialisation and supply of Genetic Resources to a Third Party.	**TRANSFER TO THIRD PARTIES** It is standard practice for botanic institutions to send material to other institutions world-wide (Third Parties) for further scientific research, study and conservation. This clause has been drafted to ensure that this practice may continue, subject to the PI using its best efforts to ensure that the relevant Third Party enters into a material supply agreement with the PI on terms no less restrictive than those in this written acquisition agreement; i.e. on terms prohibiting commercialisation and providing for benefit sharing etc. PIs may wish to attach a copy of their standard material supply agreements to this Agreement as evidence of good curation and suitable internal mechanisms.
This Agreement shall come into effect on the date of the second signature. It shall extend for a term of [5] years after such date. It can be renewed for further periods thereafter through mutual agreement expressed in writing. The obligations and rights contained in Clauses 1, 2.2, 2.3, 3, 4 and 5 inclusive shall survive the expiration or other termination of this Agreement.	**DURATION** Under the Anglo-American legal systems, a legally binding agreement must be for a fixed period of time. It cannot, for example, continue in force "from year to year". Parties must therefore state the precise period of time during which the Agreement is valid. Furthermore, parties ought to decide on an appropriate renewal mechanism that leaves no room for dispute or ambiguity once the Agreement ends. Terms such as 'this agreement shall extend for a term of [5 years] and will be considered automatically renewed unless the parties otherwise agree', are unclear and should be avoided. Parties should also consider what will happen to their rights and obligations once an Agreement has come to an end. For example, if parties enter into an Agreement for 5 years, does this mean that in Year 6, a PI may commercialise any material transferred under the agreement? The second sentence of this clause is designed to avoid this situation. This means that obligations set out in the clauses mentioned (e.g. non-commercialisation; sharing of benefits etc) will continue to bind the parties even after the agreement has expired or terminated.
5.1 Notwithstanding clause 5.1 above, either party to this Agreement may give six (6) months written notice to the other party to terminate this Agreement.	**TERMINATION** Good practice dictates that the parties should include a term specifically permitting either party to terminate the agreement prior to the full contract term. This notice period should be realistic and reflect the length of the agreement and the activities that the parties have undertaken to carry out.
5.2 Neither party shall be liable to the other party for any delay or non-performance of its obligations under this Agreement arising from any cause beyond its reasonable control including, without limitation, any of the following: Act of God,	**FORCE MAJEURE** This clause is a standard contractual clause in most Anglo-American contracts. It is intended to clarify the parties' rights and obligations under the agreement in the event of a disaster occurring, which is outside the control of either party. It also sets out what is expected from both parties in the event of such occurrence.

governmental act, war, fire, flood, explosion, civil commotion or industrial disputes of a Third Party or impossibility of obtaining gas or electricity or materials. Subject to the affected party promptly notifying the other party in writing of the cause and the likely duration of the cause, the performance of the affected party's obligations, to the extent affected by the cause, shall be suspended during the period the cause persists.	Different countries with different legal systems might have their own forms and interpretations of such clauses.
5.3 Any dispute, difference or question between the parties arising under this Agreement shall be referred to an arbitrator to be agreed between the parties or, in default of agreement [insert appropriate arbitration provisions].	**DISPUTE SETTLEMENT** Given the potential complexities of the issues arising out of the transfer of genetic resources, parties entering into a material acquisition agreement would be well advised to agree upon a suitable dispute resolution mechanism. The parties may wish for a multi-tier mechanism: for example, in the event of a dispute arising, parties may agree firstly, to enter into good faith negotiation with one another; secondly and in the event of being unable to resolve the matter by good faith negotiation, the parties may agree to try to resolve a dispute by an agreed conciliation mechanism; and finally, and as a last resort, parties may agree to resolve a dispute by arbitration, whether by the arbitration laws of a particular country, or of a mutually agreed international system, such as the International Chamber of Commerce (ICC) in Paris or the World Intellectual Property Organisation (WIPO) in Geneva.
5.4 Any notice or other document to be served under this Agreement may be delivered or sent by prepaid air mail or by fax to the party to be served at the below address or at such other address as it may have notified to the other party in accordance with this clause. Any notice shall be marked for the attention of the person and at the address indicated below: ***Any notice or document shall be deemed to have been served (a) if delivered, at the time of delivery; or (b) if posted by air mail, at 10:00 a.m. on the fifth business day after it was put in the post; or (c) if sent by fax at the expiration of two hours after the time of despatch if despatched before 3:00 p.m. (local time of destination) or at 10:00 a.m. (local time) on the next business day after despatch in***	**SERVICE OF NOTICES OR DOCUMENTS** For purposes of legal clarity, the parties should agree on a mechanism for determining whether or not a notice or document has been properly served on the other party to the written acquisition agreement. This will depend on the most appropriate means in countries involved. Countries with slow or unreliable postage systems should be allowed a longer time period for delivery of a notice or document. Alternatively, parties may wish to agree that a notice or document can only be served by courier or registered mail, with service being deemed to be effective at the date and time of delivery.

any other case.	
5.6 The provisions of this Agreement together with Annex 1 constitute the entire Agreement between the parties relating to the subject matter and the parties do not make any representations or warranties except those contained in this Agreement and Annex 1. The Agreement shall not be considered extended, cancelled or amended in any respect unless done so in writing signed on behalf of the parties to this Agreement.	**ENTIRE AGREEMENT** The parties may wish to include a clause stating that they are only legally bound by what is actually written down in this acquisition agreement. If such a clause is included, the parties will not be legally bound by any oral exchanges or other documents that may have been exchanged prior to the signing of the agreement. The second sentence of this clause states that any alteration to this agreement will only be valid if it is set out in writing and agreed by both parties. The purpose of this clause is to help clarify at all times the precise terms and conditions under which material has been transferred.
5.7 This Agreement is specific to the parties and none of the rights or the obligations under this Agreement may be assigned or transferred without the prior written consent of the other party.	**NO ASSIGNMENT** The parties may wish to include a clause stating that the original named parties to the agreement cannot pass on or transfer their obligations under the Agreement unless they have the prior written agreement of the other party. As above, the purpose of this clause is legal certainty. If a PI enters into an agreement with a partner institution, for example, a national herbarium, it will not wish to find itself, without notice, subject to an agreement with a completely different institution, for example, a state university.
5.8 Nothing contained in this Agreement shall constitute a partnership in law between [PI] and [Partner] or constitute either of them the agent of the other.	**NOT A PARTNERSHIP** In the Anglo-American legal system, the word 'partnership' is a legal term of art and can be taken as meaning more than a general collaboration between contracting parties. This clause was drafted so that a legal partnership would <u>not</u> arise between the parties to the Agreement.
5.9 This Agreement is governed by and shall be construed in accordance with [insert appropriate nationality] law.	**CHOICE OF LAW** Given the potential complexities of the issues arising out of the transfer of genetic resources, parties entering into a material acquisition agreement would be well advised to agree upon the national legal system governing the Agreement. This legal system can then be used in the event that the parties subsequently disagree: for example, as to the meaning of a particular clause or whether a party is in breach in any way. Parties can only agree one choice of law; an Agreement cannot be subject to the different legal systems of both contracting parties. The parties do not have to choose their own legal system(s); indeed, in some cases, agreement may only be reached if the parties agree upon the legal system of a third, unrelated country.

	If the parties cannot agree upon an appropriate choice of law at the time that the contract is concluded, they should be aware that, in the event of a dispute, they may become entangled in lengthy and expensive legal proceedings in order to determine the proper choice of law of the written acquisition agreement.
5.10 This Agreement may be executed in any number of counterparts, all of which, taken together, shall constitute one and the same agreement.	**COUNTERPARTS** This is a useful clause to include in any Agreement between international counterparts, since parties on different sides of the world may all, quite validly, sign their own copies of an agreement, but not necessarily the very same copy. These separate copies are known as counterparts. An agreement may exist in any number of counterparts so long as all parties have signed at least one copy of an identical agreement. However, best practice demands that, for purposes of legal clarity, all parties to an agreement sign the same copy of that agreement.
AS WITNESSED BY THE DULY AUTHORISED REPRESENTATIVES OF THE PARTIES HERETO IN [TWO] IDENTICAL COPIES, BOTH IN ENGLISH AND BOTH BEING EQUALLY AUTHENTIC ***SIGNED BY:*** ***for and on behalf of [Partner]*** ***Name:*** ***Title:*** ***Date:*** ***SIGNED BY:*** ***for and on behalf of [PI]*** ***Name:*** ***Title:*** ***Date:***	**SIGNATURES** The agreement must be signed by the authorised representatives of the PI and the partner institution. The agreement does not have to be signed by the PI and the partner institution at exactly the same time. Nor do the PI and partner institution have to sign exactly the same copy of the agreement – so long as they are signing a document containing identical text: see commentary on clause 5.11 above. However, an agreement will not be legally binding upon the parties, unless and until both the PI and the partner institution have signed an identical copy of the agreement. As stated above, best practice demands that, for purposes of legal clarity, all parties to an agreement sign the same copy of that agreement and initial every page of the agreement that they have signed.

ANNEX 1 TO THE MODEL WRITTEN ACQUISITION AGREEMENT

Pro forma

NOTIFICATION OF TRANSFER

The following Material is transferred between [name and address] and [name and address] in accordance with the terms and conditions of the Material Acquisition Agreement between .... and ..... , dated .....200[1].

By signing this Notification of Transfer, ... hereby confirms that the Material has been collected and is being transferred to ..... in accordance with all applicable laws and regulations, permits, prior informed consents and/or licenses

DATE COLLECTED	SEED COLLECTION No.	FAMILY	GENUS or SPECIES	No. OF HERBARIUM DUPLICATES (IF ANY)

SIGNED BY: DATE:
For and on behalf of [name]

Name:
Title:

SIGNED BY: DATE:
For and on behalf of [name]

Name:
Title:

A copy of this document signed by ... will be forwarded to ..... with each consignment of seed and herbarium specimens. Upon receipt of the plant material, ... will countersign this copy and return it as acknowledgement of receipt under the terms of the Material Transfer Agreement.

draft/ LETTER GRANTING PRIOR INFORMED CONSENT FROM APPROPRIATE GOVERNMENT BODY [1]

TO WHOM IT MAY CONCERN:

As a duly authorised representative of the Ministry of [Agriculture], I hereby confirm, on behalf of the Government of [Country] that I have read and understood the Material Acquisition Agreement together with Annex 1 between ..... and ..... dated ..... 200 .....

The Government of [Country] has ratified the Convention on Biological Diversity (CBD). In accordance with Article 15 of the CBD, the Government of [Country] hereby gives its Prior Informed Consent to ..... to access and use the plant material in accordance with the terms and conditions of the said Material Acquisition Agreement.

SIGNED

NAME:

TITLE: (function in Ministry of Agriculture)

DATE:

[1] This letter should be printed on the headed notepaper of the Ministry and, when it has been signed, should accompany a signed copy of the Material Acquisition Agreement

MODEL MATERIAL SUPPLY AGREEMENT FOR NON-COMMERCIAL USE

Many botanical institutions supply genetic material to other scientific research institutions world-wide to enable further scientific research on particular specimens. Sometimes material can be supplied as a gift; often it is supplied on loan. For example, a busy herbarium may loan up to 20,000 herbarium specimens a year.

The Group drafted this Model Material Supply Agreement to help an *ex situ* collection to transfer biological material to another *ex situ* collection for non-commercial research. It is intended as an educational tool and can be used as a constructive 'starting point' for ensuring that the terms and conditions of the original acquisition, and any additional terms and conditions imposed by the supplier, are clearly set out and passed on to the new recipient. A Participating Institutions will need to ensure that it has an adequate tracking system in place to ensure that the terms of an original acquisition are indeed included in any subsequent material supply agreement.

This model has been drafted as a legally binding contract in accordance with Anglo-American legal practice. It will need to be modified by Participating Institutions to fit the circumstances of their particular transactions and their particular laws and regulations.

In order to comply with the Principles, the following key issues ought to be considered and clarified:

- *Commercialisation.* PIs will need to be specify the purposes for which the material supplied may be used. If it is for scientific use only, this ought to be clearly stated. If a recipient may explore certain potential commercial applications (trialing, screening etc) again, this should be clearly stated. Issues such as intellectual property rights, sharing of royalties and other monetary or non-monetary benefits and confidentiality will need to be agreed. A PI will also need to ensure that the use of the material in this way is consistent with the terms of acquisition;

- *Benefit Sharing:* PIs will need to agree how any benefits will be shared and with whom those benefits will be shared;

- *Transfer to Third Parties:* PIs will need to ensure that the material can only be transferred by the recipient to a Third Party under an agreement that is no less restrictive than this material supply agreement.

Annex 3: Model Material Supply Agreement for non-commercial use

***Note:** This model agreement has been prepared for illustrative purposes in connection with the Botanical Institution Pilot Project on Access to Genetic Resources and Benefit-sharing. The language of this draft agreement is appropriate to certain circumstances and to English law only. Consequently, no person should rely on the language of this draft without first consulting his or her own legal adviser.*

[PARTICIPATING INSTITUTION]

MODEL AGREEMENT FOR SUPPLY OF BIOLOGICAL MATERIAL FOR NON-COMMERCIAL USE

Upon receipt of this Agreement, signed by Recipient below, and because Recipient has agreed to comply with the terms and conditions set forth in this Agreement, [Participating Institution] ("[PI]") will supply to Recipient such of the Biological Material requested by Recipient as is, in [PI]'s sole judgement, reasonable and appropriate.

MODEL MATERIAL SUPPLY AGREEMENT	EXPLANATORY TEXT
Such Biological Material as is supplied to Recipient will be accompanied by a copy of this Agreement, on the reverse of which the Biological Material being supplied (the "Material") will be itemised.	A material supply agreement must contain a mechanism for identifying the material being supplied. For example; *[Participant] will supply to Recipient the biological material itemised on the reverse of this Agreement and on any attached printed continuation sheets (the "Material").* If material is being sent out in response to a request received by the institution, the supply agreement may specifically refer to the material itemised in the request. Furthermore, in some circumstances it could be useful to include in such an agreement, details of the date of collection and of the propagation materials used to develop the material being supplied.
[PI], when using its collections, intends to honour the letter and spirit of the Convention on Biological Diversity (CBD), the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and laws relating to access and benefit-sharing, including those relating to traditional knowledge	Parties to a supply agreement may wish to amend this statement to make it clear that both the PI and the Recipient intend to honour the letter and spirit of the CBD, CITES and access laws.
Accordingly, the supply of any and all Biological Material by [PI] to Recipient, including any Material to be supplied and listed under this Agreement will be subject to the following conditions:	

1. Subject to Clauses 2 and 4 below, Recipient may use the Material and any progeny or derivatives thereof (such as modified or unmodified extracts) for non-commercial purposes only.*	This model agreement is for the supply of material, its progeny or derivatives for non-commercial research purposes only. As stated above, if a PI wishes to supply material, its progeny or derivatives for research that may involve commercial applications, the parties will need to agree a supply agreement that expressly permits such research. Such an agreement may need to contain detailed terms, benefit-sharing, intellectual property rights and confidentiality, as appropriate.
2. Recipient will provide [PI] with a fair and equitable share of any benefits obtained by Recipient arising out of any utilisation by Recipient of the Material or its progeny or Derivatives, including benefits such as research results and copies of publications. In addition, Recipient shall acknowledge [PI] and, where determinable, the Country of Origin, in all research publications resulting from the use of the Material.	In accordance with the CBD, this model agreement obliges the recipient of the material to share any benefits obtained from its use fairly and equitably. Parties to a supply agreement may wish to set out in detail the type of benefits that may be shared.
3. Under this Agreement, Recipient may not Commercialise the Material or Derivatives thereof.*	As stated above, this model agreement was designed by the Group to aid the transfer of material for non-commercial research. By endorsing the Principles, a PI undertakes to develop a policy on Commercialisation. Any supply agreement will clearly need to be consistent with this policy.
4. If at any point in the future Recipient wishes to use the genetic resources or its derivatives for purposes other than those allowed by the terms and conditions under which the material was originally acquired (such as commercial use), the Recipient must obtain the written permission of [PI] and specify in writing the terms and conditions of use, including fair and equitable benefit sharing as set out in [PIs] policy.	Although this model agreement has been designed for the supply of material for non-commercial research purposes, the Group felt that it was important that the issue of commercialisation was not entirely shut out. Accordingly, this clause was drafted to clarify the position should, in the future, the Recipient of material wish to use the material or derivatives for other purposes, including commercialisation. By endorsing the Principles, a PI undertakes to develop a policy on Commercialisation. Any supply agreement for commercial use will clearly need to be consistent with this policy.
5. Recipient may not transfer the Material or Derivatives thereof to any party other than Recipient or [PI] without the prior informed consent in writing of [PI], and then only under a legally binding written agreement containing terms and conditions no less restrictive than those contained in	A PI should clarify whether or not the recipient can transfer the material to third parties and, if so, on what terms. The language and tone suggested in this clause differ slightly from the CPG. The CPG does not expressly require PIC from a PI nor oblige the Recipient to sign a

this Agreement unless otherwise agreed in writing by [PI].	legally binding agreement. However, the Group felt that the issue of further transfer was important and a PI may wish to consider whether it wants to be kept informed of all future supply of material by the recipient. This may be appropriate where the material concerned is particularly sensitive, for instance a threatened species.
6.[PI] makes no representation or warranty of any kind, either express or implied: *6.1 As to the identity, safety, merchantability or fitness for any particular purpose of the Material or its Derivatives or that* *6.2 The Material provided to Recipient under this Agreement is or will remain free from any further obligation to obtain prior informed consent from, to share benefits with or to comply with restrictions on use imposed by the country of origin of the Material or any other country or regional economic integration organisation.* *Recipient will indemnify [PI] from any and all liability arising out of the Material or Derivatives and their use.*	This clause is intended to clarify any legal issues that may arise from supplying material to other institutions.
7. This Agreement is governed by and shall be construed in accordance with [insert appropriate nationality] law.	**CHOICE OF LAW** Given the potential complexities of the issues arising out of the transfer of genetic resources, parties entering into a supply agreement would be well advised to agree upon the national legal system governing the Agreement. This legal system can then be used in the event that the parties subsequently disagree: for example, as to the meaning of a particular clause or whether a party is in breach in any way. Parties can only agree one choice of law; an Agreement cannot be subject to the different legal systems of both contracting parties. The parties do not have to choose their own legal system(s); indeed, in some cases, agreement may only be reached if the parties agree upon the legal system of a third, unrelated country.
† Biological material includes, but is not limited to, plants, plant parts or propagation material (such as seeds, cuttings, roots, bulbs, corms or leaves), fungi or other fungal material, and any other material of plant, animal, fungal, microbial or other origin and the genetic resources contained therein;	**DEFINITIONS** Please refer to the explanatory notes to the CPG for clarification of these definitions. This definition of genetic resources is adapted from the definitions of genetic materials and genetic resources set out in Article 2 of the CBD.

Genetic resources mean any material of plant, animal, fungal, microbial or other origin containing functional units of heredity of actual or potential value. **** Commercialisation means applying for, obtaining or transferring intellectual property rights or other tangible or intangible rights by sale or licence or in any other manner, commencement of product development, conducting market research, and seeking pre-market approval ;and/or the sale of any resulting product.*** ***‡ Country of origin of genetic resources means the country which possesses those genetic resources in in situ conditions;*** ***♦ Derivatives includes, but are not limited to any progeny, extracts and compounds obtained from genetic resources and analogues of those compounds***	
I understand that any Material supplied to me by [PI] pursuant to this Agreement will be subject to, and I agree to comply with, the conditions above. ***SIGNED BY:*** ***For and on behalf of [Insert name of recipient institution] ("Recipient")*** ***Name:*** ***Title:*** ***Date:*** ***Address of Recipient*** ***SIGNED BY:*** ***For and on behalf of [PI]*** ***Name:*** ***Title:*** ***Date:***	The written supply agreement must be signed by an authorised representative of the Recipient of the material. As stated above in Section 8 above, the PI can ask the Recipient to sign a written supply agreement at various stages of the transfer, depending upon the nature of the material being supplied.

ANNEX 4 – EXAMPLE OF DRAFT LETTER IN RESPONSE TO UNSOLICITED GIFTS OF GENETIC RESOURCES

A Participating Institution (PI) may receive unsolicited gifts of genetic resources from other *ex situ* institutions or individuals.

In line with the 'Common Policy Guidelines', prior to accessioning such material into its collection, a PI should use 'reasonable and sincere efforts' to ensure that the acquisition and supply are in accordance with applicable law and best practice and that the provider is legally entitled to supply the genetic resources to [PI].

Sample letter in response to unsolicited gift

Dear

I am extremely grateful to [*ex situ* donating institution] for wishing to donate certain [resources] into the collections of [PI].

[PI] is committed to implementing the letter and the spirit of the 1992 Convention on Biological Diversity (CBD). With this in mind, we would like to confirm that all plant material we acquire has been legally acquired in accordance with the laws of the country of origin, international laws such as the CBD, the Convention on International Trade in Endangered Species (CITES) and plant quarantine laws of [PIs country].

As a public demonstration of this commitment, [PI] has endorsed the 'Principles on Access to Genetic Resources and Benefit Sharing' and has prepared its own its own institutional policy to implement these Principles into its working practices. I attach a copy of the Principles and [PI's] policy for your information.

In accordance with this commitment, prior to receiving any genetic resources into its collections, [PI] must therefore ask all donors to confirm in writing:

- that the resources being donated have been acquired in accordance with the laws and regulations of [country of origin] and in particular that that all necessary collecting, export and import permits were obtained. Where possible, please set out the terms and conditions of the original acquisition and send copies of all relevant permits to [PI];
- that [*ex situ* donating institution] is entitled to donate the material to [PI]; and
- the terms and conditions under which the material may be used by [PI].

We would be grateful if you could give such written confirmation for the material you so kindly intend to donate.

We look forward to hearing from you.

Yours sincerely,

[Authorised representative of Participating Institution]

ANNEX 5 – EXAMPLE OF DRAFT LETTER FOR REGULAR DONATIONS OF HERBARIUM MATERIAL

Donation of Material to _____[Participating Institution]

Between _____ 2000 and _____2005, _____ [institution/individual] wishes to donate certain Herbarium specimens ("the Material") to be accessioned into the collections at _____ [PI]. Unless _____ [institution/individual] informs [PI], in advance and in writing, of any Material sent during this period which will not be covered by this statement, all Material will be donated in accordance with the terms and conditions set out below.

_____ [institution/individual] understands that [PI] will not Commercialise* any Material, its progeny or derivatives donated to [PI] unless [PI] has obtained the prior informed written consent of the country of origin of the Material and of any other appropriate stakeholders.

1. By signing this document, _____ [institution/individual] hereby confirms that:

- All Material donated to [PI] from *in situ* (field) conditions has been acquired in accordance with all relevant national and international laws and regulations, including, but not limited to, any access or permitting legislation and any import or export regulations;
- All Material donated to [PI] from _____ [institution/individual's] own *ex situ* collections has been acquired and is being supplied in accordance with all relevant national and international laws and regulations, including, but not limited to, any access or permitting legislation and any import or export regulations;
- _____ [institution/individual] is entitled to donate the Material to [PI].
- A copy of any terms and conditions under which the Material has been acquired and/or is being donated, and in particular any restrictions on the future use that may be made of the donated Material, will be sent with each consignment.

2. By signing this document _____[institution/individual] agrees that once the Material has been accessioned into the collections at [PI], [PI] may:

- Make it available to [PI] staff and authorised visitors for educational and non profit making scientific purposes;
- Sample it for Pollen, DNA, Anatomical Preparations and/or Chemicals for scientific research purposes;
- Send it on loan, or further distribute it, to other scientific institution(s) for further scientific research, on standard terms which prohibit commercialisation.

For and on behalf of: (Name and Address of donor Institution or Individual

Signature: (Signed by Authorised Representative of donor Institution or Individual)

Date:

*"Commercialise" and "Commercialisation" means applying for, obtaining or transferring intellectual property rights or other tangible or intangible rights by sale or licence or in any other manner, commencement of product development, conducting market research, and seeking pre-market approval and/or the sale of any resulting product.

ANNEX 6 - EXAMPLE OF DRAFT LETTER INTRODUCING THE PRINCIPLES AND PI'S INSTITUTIONAL POLICY TO A PARTNER INSTITUTION

Dear

As I am sure you are aware, botanical institutions are increasingly required to comply with the 1992 Convention on Biological Diversity (CBD) in order to support the conservation and sustainable use of biodiversity and the fair and equitable sharing of benefits.

In order to address these issues, a group of 28 botanical institutions from 21 countries together with Botanic Gardens Conservation International and the International Association of Botanic Gardens have been working together in a project co-ordinated by the CBD Unit of the Royal Botanic Gardens, Kew and funded by the UK Department for International Development.

The aim of the project was to develop an internationally harmonised approach on access to genetic resources and the sharing of benefits that implements the letter and spirit of the CBD.

In November 2000, in Cartagena, Colombia, the group agreed on a set of "Principles on Access to Genetic Resources and Benefit-Sharing for Participating Institutions" (Principles) and "Common Policy Guidelines" (CPG) to assist Participating Institutions implement the Principles and develop their own institutional policy. These documents cover the acquisition, supply, use (including commercialisation) of genetic resources, together with associated benefit-sharing, and are open for endorsement by any institution, not just those who participated in the project.

Further information on the Principles and CPG can be obtained from:
www.rbgkew.org.uk , www.rbg.ca/cbcn/cpg.index.html , www.geocities.com/baikalgarden/indexe.htm, www.geocities.com/baikalgarden/cbd/principles2000_e.htm or by contacting CBDUnit@rbgkew.org.uk

[PI] endorsed the Principles on [date] and has now developed an institutional policy [name of policy, e.g. 'Policy on Access to Genetic Resources and Benefit-Sharing') to implement these Principles into their daily working practices.

I attach a copy of the Principles and [PI's] policy for your information.

Please do not hesitate to contact me with any queries arising out either of these documents. [PI] would greatly value your comments to enable it to further develop its policy within the spirit of the CBD.

Signed:

Authorised Representative of [PI]

ANNEX 7 – EXAMPLE OF DRAFT LETTER TO PARTNER INTRODUCING A WRITTEN ACQUISITION AGREEMENT

Dear

As I am sure you are aware, botanical institutions are increasingly required to comply with the 1992 Convention on Biological Diversity (CBD) in order to support the conservation and sustainable use of biodiversity and the fair and equitable sharing of benefits.

In order to address these issues, a group of 28 botanical institutions from 21 countries developed a set of 'Principles on Access to Genetic Resources and Benefit-Sharing for Participating Institutions' (Principles) and 'Common Policy Guidelines' (CPG) to assist Participating Institutions implement the Principles and develop their own institutional policy. These documents cover the acquisition, supply, use (including commercialisation) of genetic resources, together with associated benefit-sharing, and are open for endorsement by any institution, not just those who participated in the project.

[PI] endorsed the Principles on [date] and has now developed an institutional policy [name of policy, e.g. 'Policy on Access to Genetic Resources and Benefit-Sharing'] to implement these Principles into its daily working practices. I attach a copy of the Principles and [PIs] policy for your information.

By endorsing the Principles and as part of its policy, [PI] undertook to acquire genetic resources using written agreements setting out the terms and conditions under which the resources can be acquired and used by [PI].

Accordingly, [PI] has prepared the enclosed attached 'draft access and benefit-sharing agreement' setting out clearly and transparently the terms and conditions of acquisition and subsequent use of genetic resources and ensuring that all resulting benefits are shared fairly and equitably between partner and [PI].

The attached 'draft access and benefit-sharing agreement' is shared with [Partner] in good faith. It is intended to be the first step in opening a constructive dialogue between [PI] and [Partner] and it is hoped that it will form the basis of a mutually acceptable long term collaboration.

[PI] very much looks forward to hearing from you with any comments on the draft agreement and to working together to reach mutually beneficial solutions.

Signed:

Authorised Representative of [PI]

Further information on the Principles and CPG can be obtained from:

www.rbgkew.org.uk or
www.rbg.ca/cbcn/cpg.index.html or
www.geocities.com/baikalgarden/indexe.htm or
www.geocities.com/baikalgarden/cbd/principles2000_e.htm

Or by contacting: CBDUnit@rbgkew.org.uk

ANNEX 8 – EXAMPLE OF DRAFT STATEMENT BY [PI] TO OBTAIN PRIOR INFORMED CONSENT (PIC) FROM APPROPRIATE GOVERNMENT AUTHORITY(IES) FOR ACCESS TO GENETIC RESOURCES

This document explains the uses that may be made of plant material collected for non-profit making scientific research, education and conservation by members of staff at [PI's name and address].

In compliance with the 1992 Convention on Biological Diversity and following the 'Principles on Access to Genetic Resources and Benefit-Sharing' that [PI] has endorsed, the aim of this document is to ensure that the authorities granting [PI] access to plant material have been fully informed of the acquisition and uses to which [PI] may put that material.

Should the supplier of the plant material wish to place any restrictions on these uses, such restrictions shall be expressly detailed in the licence or permit issued to [PI] granting access to the plant material.

If the supplier does not place any express restrictions on these uses in the licence or permit issued to [PI], then access to the plant material shall have been granted on the basis that [PI] may use the collected plant material as set out below.

All plant material will be exported by [PI] in accordance with local laws and regulations and will be imported by [PI] into [the country in which PI is based] in accordance with all necessary permits and authorisations.

Herbarium Specimens

All [PI] fieldwork is undertaken in collaboration with a local counterpart(s), usually a national or regional botanic garden, herbarium or university.

Acquisition.
Prior to collecting, in compliance with its own internal policies:

- [PI] will agree with its counterpart(s) the number of sets of herbarium specimens to be collected, the methods and place of collection and how the specimens will be distributed;
- [PI] and its counterpart(s) will each retain one set of specimens collected. Those specimens sent to [PI] will be accessioned into the collections at [PI] and stored at the Herbarium at [PI]. Additional duplicates may be distributed to other herbaria as mutually agreed by [PI] and its counterpart(s).

Uses:
- Herbarium specimens will be made available to [PI] staff and authorised visitors for scientific taxonomic research including sampling for pollen, DNA, anatomical preparations and/or chemicals.

Supply:
- Herbarium specimens may be sent on loan to other botanic and scientific research institutions for further research or for educational purposes provided that such institution or individual signs a written agreement with [PI], prohibiting, *inter alia*, commercialisation of the plant material supplied.

Benefit Sharing:
- [PI] will provide a copy of [PI] published research results to its counterpart(s);
- [PI] will acknowledge its counterpart(s) in any such publications.

Live Plant Material

Acquisition:

- Any live plant material, including seeds, collected by a member of the [PI] Herbarium will be shared between [PI] and its local counterpart(s);
- Live plant material, including seeds, transferred to [PI] will be accessioned into the collections at [PI].

Uses:

- It will be available to [PI] staff and authorised visitors for scientific taxonomic research including sampling for pollen, DNA, anatomical preparations and/or chemicals and for propagation.
- Any plants grown from such propagation may be put on public display in the gardens at [PI].

Supply:

- Live Plant Material may be supplied and, very occasionally loaned, to other botanic and scientific research institutions and to individual botanists and horticulturists for further research or for educational purposes provided that such institution or individual signs a written agreement with [PI], prohibiting, *inter alia*, commercialisation of the plant material supplied.

Benefit Sharing:

- [PI] will provide a copy of [PI] published research results to its counterpart(s);
- [PI] will acknowledge its counterpart(s) in any such publications.

Commercialisation

[This may need to be modified to be consistent with PI's policy on commercailisation]

[PI] will not commercialise any genetic resources collected or acquired by [PI] after 29 December 1993 (when the 1992 Convention on Biological Diversity came into force) unless [PI] has first obtained the prior informed consent of the appropriate authorities and relevant stakeholders in the country of origin of those resources and clearly specify in writing its terms and conditions.

This means that, unless and until [PI] has obtained that consent, [PI] will not use any research results derived from the genetic resources of plant material collected to file patent applications, obtain or transfer intellectual property rights or other tangible or intangible rights by sale or licence or in any other manner, commence product development, conduct market research and seek pre-market approval and/or the sale of any resulting product.

Furthermore, at all times and regardless of when the genetic resources were collected or acquired, [PI], according to its policy on commercialisation, will work together to share associated benefits fairly and equitably, whether monetary or non-monetary.

ANNEX 9 - PROJECT GROUP

Botanic gardens and herbaria which participated in the project (and their representatives):

- Aburi Botanic Gardens, Ghana (**George Owusu-Afriyie**)
- Australian National Botanic Garden, Sydney, Australia (**Helen Hewson**)
- Beijing Botanical Garden, China (**Jin Xiaobai**)
- Botanic Garden of Irkutsk State University, Russian Federation (**Victor Kuzevanov**)
- Botanischer Garten der Universität Bonn, Germany (**Frank Klingenstein, Marliese von den Driesch, Georg Rauer**)
- Botanischer Garten und Botanisches Museum Berlin-Dahlem, Germany (**Walter Berendsohn**)
- Freiburg BG, Switzerland (**Susan Bollinger**)
- Forest Research Institute, Malaysia (**Saw Leng Guan**)
- Herbarium of the University South Pacific, Fiji (**Marika Tuiwawa**)
- Jardín Botánico de La Paz, Bolivia (**Esther Valenzuela**)
- Institut Agronomique et Vétérinaire Hassan II, Morocco (**Mohamed Rejdali**)
- Jardín Botánico 'Arturo E. Ragonese', Castelar, del Instituto Nacional de Tecnología Agropecuaria, Buenos Aires, Argentina (**Ana María Molina**)
- Jardín Botánico del Instituto de Biología, UNAM, Mexico (**Robert Bye, Víctor Chávez**)
- Jardín Botánico de Bogotá, "José Celestino Mutis", Colombia (**María Consuelo Araujo**)
- Jardín Botánico del Quindío, Colombia (**Alberto Gómez Mejía**)
- Jardín Botánico de Puebla, Mexico (**Maricela Rodríguez**)
- Jardín Botánico "Guillermo Piñeres", Cartagena, Colombia (**Carlos Fonseca**)
- Jardim Botânico do Rio de Janeiro, Brazil (**Tania Sampaio**)
- Kirstenbosch National Botanical Garden, South Africa (**Maureen Wolfson**)
- Limbé Botanic Garden, Cameroon (**Joseph Besong, Peguy Tchouto**)
- Nanjing Botanic Garden, China (**He Shanan**)
- National Botanical Research Institute, India (**R. R. Rao**)
- National Herbarium, Ethiopia (**Sebsebe Demissew**)
- New York Botanical Garden, USA (**Michael Balick**)
- Missouri Botanical Garden, USA (**Jim Miller**)
- Royal Botanic Gardens Hamilton, Canada (**David Galbraith**)
- Royal Botanic Gardens, Kew, UK (**Alan Paton**)
- Sydney Botanical Garden, Australia (**Chris Ward**)

Observers:

- Botanic Gardens Conservation International (**Peter Wyse Jackson, Fiona Dennis, Julia Willison**)
- International Association of Botanic Gardens (**Esteban Hernández Bermejo**)

Chairman:

- Nigel Taylor, Royal Botanic Gardens, Kew

Project Coordinators:

- Kerry ten Kate, Royal Botanic Gardens, Kew
- Fernando Latorre Garcia, Royal Botanic Gardens, Kew
- China Williams, Royal Botanic Gardens, Kew
  Contact: cbdunit@rbgkew.org.uk

ANNEX 10 - WEBSITES ON THE PRINCIPLES AND CPG

Further information on the Principles and CPG can be obtained from:

www.rbgkew.org.uk
www.rbg.ca/cbcn/cpg.index.html
http://www.isu.ru/insts/botsad/cbd/principles2000_e.htm
www.geocities.com/baikalgarden/indexe.htm
www.geocities.com/baikalgarden/cbd/principles2000_e.htm

Or by contacting: CBDUnit@rbgkew.org.uk

The project group is extremely grateful to David Galbraith and to Victor Kuzevanov for their help in making the project documents available on their websites.

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J.E. Hernández Bermejo, (1996). *Information on ex situ collections maintained in botanic gardens (with special emphasis on plant genetic resources for food and agriculture*; Background study paper no. 5; Commission on Genetic Resources for Food and Agriculture,Extraordinary Sess. 3, Rome (Italy), 9-13 Dec 1996 / FAO, Rome (Italy).

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ONLINE RESOURCES

CONVENTION ON BIOLOGICAL DIVERSITY (CBD)

Home Page: www.biodiv.org

CBD Clearing House Mechanism: www.biodiv.org/chm/

Case studies on Sharing of Information, technology transfer, capacity building and joint research: http://www.biodiv.org/socio-eco/benefit/case-studies.asp

Note by the Executive Secretary (UNEP/CBD/WG8J/1/2) for the First Meeting of the Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(j) and Related Provisions of the CBD, held on 27-31 March 2000 in Seville, Spain: "Legal and other appropriate forms of protection for the knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity". Available online, with other papers for this meeting at: http://www.biodiv.org/indig/Wg8j1/index.html

Indigenous Peoples and the Law: http://www.kennett.co.nz/law/indigenous/index.html

The Working Group on Traditional Resource Rights at the Oxford Centre for the Environment, Ethics, and Society, available at: http://users.ox.ac.uk/~wgtrr/trrcent.htm

CONVENTION ON INTERNATIONAL TRADE IN ENDANGERED SPECIES OF WILD FAUNA AND FLORA (CITES)

CITES Home Page: **http://www.cites.org/CITES/eng/index.shtml**

'CITES News -Plants' - newsletter for the European Region:.
http://www.rbgkew.org.uk/herbarium/caps/cites/index.htm

European Commission: Wildlife Trade Regulation:
http://www.wcmc.org.uk:80/species/trade/eu/
or alternatively **http://www.europa.eu.int/comm/dg11/cites/home_en.htm**

IUCN: World Conservation Union: **http://www.iucn.org/**

IUCN Species Survival Commission: **http://www.iucn.org/themes/ssc/**

IUCN Medicinal Plants Specialist Group/German Federal Agency for Nature Conservation On-line Directory for Medicinal Plants Conservation: **http://www.dainet.de/genres/mpc-dir**

World Conservation Monitoring Centre: **http://www.wcmc.org.uk/programmes/**

TRAFFIC International: **http://www.traffic.org/**

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