

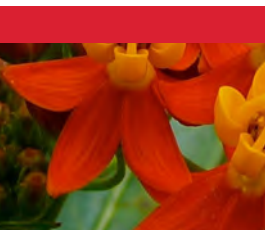


Agreement on Access and Benefit Sharing for Non-Commercial Research

Sector specific approach containing Model Clauses

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Introduction



This document contains a sample agreement on mutually agreed terms (MAT) for Access to Genetic Resources and Sharing of Benefits, for the use by providers and non-commercial academic researchers.

At the same time it provides a sample for the potential of model clauses within a sector specific approach; as comprised in Art. 15 of the Draft Protocol on ABS under the CBD.¹

The agreement aims at creating transparent, and legally secure relations that are appropriate to the needs and intentions of all parties involved. The suggested terms and clauses are intended to meet the needs of both the providers of the genetic resources and the researchers seeking access. The agreement proposes language to ensures fair and equitable sharing of benefits.

The agreement may be considered for use in various scenarios of access and benefit sharing, such as inventories of biodiversity; research in systematics, ecology and evolution; identification and isolation of active compounds; and genetic research.

Background

Since the publication of “Access and Benefit Sharing – Good practice for academic research on genetic

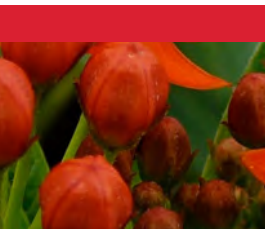
resources²” by the ABS team of the Swiss Academy of Sciences (2006), we have been frequently asked by researchers to develop standardized agreements that could be used to provide legal security. ABS authorities and clear national regulations may be unavailable in many countries where genetic resources are sought. The ABS agreement presented here aims to fill the gap where no national tools are available or in cases where agreements focus on commercial activities and are not applicable to non-commercial research. Its goal is to ease the negotiations of the MATs, to support transparency and enhance mutual trust, and to prevent unnecessary transaction costs in its negotiation and implementation.

Elaboration

The Swiss Academy of Science’s ABS team assessed existing agreements, material transfer agreements and other documents, analysed them for content and language and compiled a list of issues to be addressed. In addition, the team defined the research steps that are essential in view of access and benefit sharing and elaborated a matrix that meticulously analyses the research

¹ In the version of 16 July 2010 as negotiated by the Interregional Negotiating Group: UNEP/CBD/COP/10/5/Add.4, Annex

² Susette Biber-Klemm, Sylvia Martinez, Swiss Academy of Sciences (Ed.) 2009: Access and Benefit Sharing – Good practice for academic research on genetic resources. Bern, Switzerland. <http://abs.scnat.ch>



fields and steps from this perspective.³ A broad international network of providers and users from different fields of research reviewed the matrix and a first agreement draft. Feedback was incorporated into successive drafts that were repeatedly reviewed.

Our core goal was to use concise legal language while keeping the wording understandable to non-lawyers. Explanatory text was included to enhance the applicability of the agreement and to give background information.

Concepts

The Agreement is adapted to the specific situation of non-commercial research sponsored by public funding. Its basic premise is that the Mutually Agreed Terms, as stipulated in CBD Art 15, are a bilateral contract concluded between providers and users, resulting from their fair negotiations on the terms of access and benefit sharing.

Involved parties are encouraged to take account of each others specific needs and circumstances, reflecting on the type of envisaged research (e.g. ecological vs. phytopharmacological research) and the specifics of the research (e.g. difficulties in identifying taxa, sharing

of material). For the provider, this may include means to monitor the use of genetic resources.

We assumed the following basic scenario:

- The resources are accessed by a researcher under the lead and responsibility of a research institute.
- The research is non-commercial, aiming at providing publicly available results. The results have therefore to be published.
- Unexpected research results may trigger reflections towards their utilisation in a commercial context.
- Benefits are non-monetary as a rule. They usually accrue during the research process.
- Genetic resources might be transferred to third parties under a framework of customary cooperation by research institutes.

The analysis of research types and access situations carried out by the ABS-team led to the following conclusions:

1. One of the challenges in implementing the ABS system consists in controlling the flow of the acquired resources throughout the value chain, especially in the user country. At the centre of the problem lies the risk that the resources and related information accessed under the conditions for non-commercial intent enter the R&D sector without corresponding MATs for potential commercial developments.

³ See: Swiss Academy of Sciences (2010) ABS Program 2003–2010.



2. Non-commercial researchers depend largely on public funding. For continued financial support the publication of research results is a crucial step and has to happen in a timely manner. Scholarly standards for disclosure of information for scientific transparency and the exchange of material among peers may collide with the need of providers to control the use of genetic resources. In turn, too strict control measures could put research at stake.

3. *Different fields of research* with genetic resources imply *different degrees of probability* that the research results flow (intentionally or unintentionally) into the commercial value chain. It is, however, essential to realize that some fields of research show very low probability, for example the elaboration of biodiversity inventories or ecological studies. In such cases the providing country could require less control over the uses and instead request periodic reports on research progress to monitor the user's compliance with the MATs.

The Agreement takes account of various research activities by proposing options for the following conditions:

1. Different situations (e.g. access to genetic resources vs. access to related traditional knowledge; access to specified taxa vs. the need to identify the samples after collection);

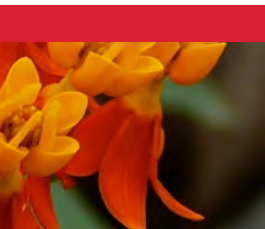
2. Different models of research cooperation; and diverse needs to monitor the implementation of the agreement;

3. Specific aspects of academic research, such as the need to publish results and the exchange of data, storage and accessibility of samples etc.

How to use the Agreement

The Agreement on Access to Genetic Resources and Sharing of Benefits (ABS) for Non-commercial Academic Research containing Model Clauses is based on the conviction that mutually agreed terms are a contract that needs to be negotiated and concluded between the parties, i.e. the providers and the users of genetic resources. The proposed Agreement provides a toolbox for composing a contract on mutually agreed terms tailored to accommodate the needs of the stakeholders. We recommend that both parties possess the *full text* of the Agreement in order to foster discussions on options and provide solutions to disagreements that might arise.

The Agreement consists of different types of clauses: 1) General clauses, like the preamble, or the definition of the purpose (article 4); 2) Clauses on substantive issues (articles 5 to 17); 3) Clauses on procedural issues. Most of the clauses on substantive issues offer a basic clause



(marked green in the sample agreement) and include options that can be added to the basic clause or used as a stand-alone solution. Other clauses offer only options to choose from as needed.

In drafting the Agreement, we intended to cover most issues that might arise in the relationship between providers and non-commercial public researchers. The basic clauses by themselves may form a full contract for simple non-commercial research situations. Not all cases will need all clauses; each agreement must be modelled according to the specific needs of the parties engaged in the negotiations. The Agreement is therefore made freely available as Word Document under a Creative Commons Licence that allows for changes in the document⁴.

Outlook

It is with great pleasure that the Swiss Academy of Sciences makes available to interested stakeholders this example of an ABS agreement with contractual clauses. It is a tool to actively support the implementation of ABS regulations and focuses on academic non-commercial research. The proposed Agreement still needs to prove its applicability to real ABS situations. Accordingly, it should be considered as a draft that needs to be adapted to the final version of the CBD ABS proto-

col and which will need improvement over time. Suggestions and feedback by both providers and users are most welcome.

At the Swiss Academy of Sciences we firmly believe that non-commercial public good research is essential to achieve the first two goals of the CBD, the conservation and sustainable use of biological diversity. Moreover it generates (non-monetary) benefits that contribute to education, advancement of science and technology transfer. The Swiss Academy of Sciences advocates research in a mutually trustful atmosphere and encourages scientists to conduct their research in accordance with existing international codes and standards.

⁴ <http://creativecommons.org/licences/by-nc/3.0>

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Comments

The Convention on Biological Diversity (CBD) in its Article 1 sets out the following objectives: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

Under Article 15 CBD access to genetic resources is to be facilitated for environmentally sound use. Access is based on the prior informed consent of the Party providing the resource. Providers and Users are to negotiate the mutually agreed terms defining the sharing of benefits.

Article 16 CBD recognizes that both access to and transfer of technology are essential elements for achieving the objectives of the Convention. It requires the Parties to provide and facilitate access to and transfer of technologies relevant for conservation and sustainable use of biological diversity as well as to use the technology in an environment friendly way.

The mentioned provisions, in our view, express the very essential principles of access and benefit sharing embraced by the CBD. Parties are however free and encouraged to regulate their relation in accordance with other principles and rules stipulated in the CBD

The Agreement

Preamble

The purpose of this Agreement is to set out the conditions for the use of genetic resources, any associated Traditional Knowledge (TK) and the sharing of resulting benefits between the parties concerned in accordance with the Convention on Biological Diversity (the "CBD"), particularly in respect with the principles established under its Articles 1, 8(j), 15, and the Bonn Guidelines.

The Agreement contains Mutually Agreed Terms (MAT) according to Article 15.7 CBD.

The Agreement is designed to promote non-commercial academic research, such as research in taxonomy, ecology, biochemistry and genetics, and to foster conservation and the environmentally sound and sustainable use of genetic resources.

Its objective is to provide a sound basis for cooperation, transparency, communication and trust between the parties to the Agreement, taking account of the concerns of both providers and users of genetic resources.

such as Article 7 (Identification and Monitoring), Article 12 (Research and Training), Article 17 (Exchange of Information), Article 18 (Technical and Scientific Cooperation) or Article 19 (Handling of Biotechnology and Distribution of its Benefits).



The Agreement has been drafted solely for the relevant institutions as the parties to the Agreement. The “Provider” is the national authority of the involved provider country in accordance with its national law. It is responsible for fulfilling the obligations under Article 10.

The Agreement could also be applied in negotiations with delegated entities such as federal governments. However, it is not apt to cover cases where, according to the national law of the provider, (additional, ancillary) agreements have to be concluded with private parties, such as a land owner.

The User can only be a research institution; an individual researcher may only act on behalf of it.

If the Provider is a holder of traditional knowledge (TK)⁵, a separate Agreement between researchers (as the User) and the holder of traditional knowledge (individual, community, legitimate representative of the community) needs to be concluded.

The present Agreement takes into account the concerns of the TK holders to the extent possible in nego-

⁵ The drafting of specific agreements and codes of conduct is planned.

1. Parties to the Agreement

The Agreement is entered into on [insert the date] by and between

[insert the name and details of the following:

- State and Institution (competent ABS national authority)
- The contact person responsible for the implementation of the Agreement on behalf of the institution]

together hereinafter referred to as the “Provider”.

and

[insert the name and details of

- The responsible research institution
- The representative of the research institution responsible for the implementation of the Agreement]



tiations between research institutes and governmental agencies.

The data of both the User and Provider serve as reference and contact point in the communication between the parties. From the perspective of the Provider, the relevant research institution shall be held as the responsible body during the term of the Agreement. On the side of the User, a relevant national agency or authority will be responsible for maintaining the Agreement.

Article 15 CBD states that access to the genetic resource shall be subject to prior informed consent of the Party providing access.

Article 2 provides for two different solutions.

Option 2.1. applies to cases where access to genetic resources is subject to a formal Prior Informed Consent (PIC) by the Provider.

Option 2.2 applies to cases where the Provider determined that PIC can be included in the MAT. The research project of the User should include information on resources to be access, planned utilization and prospective or intended benefits to be shared.

Represented by the authorized head or member of the research team; authorized researcher

[insert the name and details of researcher].

together hereinafter referred to as the “User”.

2. Prior Informed Consent

Option 2.1

The Agreement is based on the Prior Informed Consent (PIC) issued beforehand by the Provider to the User for the access to the genetic resources concerned. The PIC document is attached to this Agreement and is considered an integral part of the Agreement.

Option 2.2

The Provider hereby confirms that he/she has been informed on the research project by the User and consents to provide access to genetic resources in situ and/or ex situ necessary to carry out the research in accordance with the research project attached to this Agreement.



If access is requested for a research project that includes Traditional Knowledge (TK) associated to the genetic resources, the sharing of benefits in relation to TK is to be agreed upon in a separate, ancillary agreement with the holders of the TK and according to the national law of the providing country if such legislation exists.

This Article contains standard definitions of the terms used in the Agreement. The Parties are however free to replace or customize the terms in accordance with their needs and in particular in accordance with the planned research activities. They can also opt between narrow or broader definitions by excluding or including different options.

3. The Purpose of the Agreement

The purpose of this Agreement is to specify the terms for

1. Accessing genetic resources,
2. Their utilization in accordance with the PIC,
3. Their possible transfer to third parties, and
4. For sharing the benefits resulting from the utilization of genetic resources.

4. Terminology

In this Agreement the terms defined in Article 2 CBD shall have the same meaning, unless otherwise defined in this article.

4.1 Genetic Resources

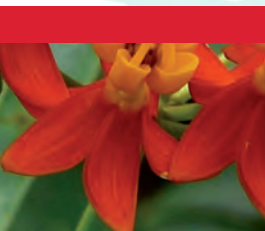
Genetic Resources means genetic material of actual or potential value.

Option 4.1.1

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

Option 4.1.2

The term “Genetic Material” includes living and dead resources.



The definition of commercialization was drafted to reflect acts and activities that simultaneously serve as indicators of commercialization.

In our view it is more practical to focus on activities for identifying the transfer of resources to commercial sectors than to rely on the intent of the user.

Option 4.1.3

The term “Genetic Material” includes derivatives as defined below.

4.2. Derivatives

Option 4.2.1

Derivatives means products based on Genetic Resources and generated through techniques such as expression, replication, characterization or digitalization

Option 4.2.2

Derivatives mean substances created from Genetic Resources that are substantially modified to have new properties.

4.3 Commercialization

Commercialization means the use of the Genetic Resource for the generation of any kind of actual or potential economic profit.

It means in particular any sale, lease, licensing of the Genetic Resource, and/or Products generated from its use through actions such as filing a patent application, obtaining intellectual property rights or other tangible or intangible rights.

It includes any transfer of the Genetic Resource to a for profit organization.



The Mutually Agreed Terms can be contained in one document, or in a main document and ancillary agreements with specific stakeholder groups.

4.4 Mutually Agreed Terms (MAT)

The Mutually Agreed Terms are an agreement negotiated between the Provider and the User of the Genetic Resources and/or holders of Traditional Knowledge associated to the Genetic Resources according to the national law of the country providing the resources. The MAT regulate conditions for the access to the Genetic Resources and to their associated Traditional Knowledge and the fair and equitable sharing of benefits that result from their use. They are adapted to the specific access situation.

4.5 Traditional Knowledge

Option 4.5.1

Traditional Knowledge is the accumulated knowledge that is vital for the conservation and sustainable use of biological resources and/or which is of socioeconomic value, and which has been developed over the years in indigenous/local communities.

Option 4.5.2

Traditional Knowledge means “information or individual or collective practices of an indigenous or local community associated with the genetic heritage having real or potential value”.



PIC may consist in a research permit.

Regarding the relation with Third Parties see Art. 8.

4.6 Prior Informed Consent (PIC)

Prior Informed Consent means the unilateral declaration of the Provider that he/she has been informed about the planned research and that he/she is willing to provide the required access to the Genetic Resource.

4.7 Product

Product means the result produced, obtained, extracted or derived from the Genetic Resource through research or research & development (R&D) activities, including data and information generated through analyses of the Genetic Resources.

4.8 Progeny

Progeny means unmodified offspring from the Genetic Resource

4.9 Third Party

Third Party means any person or institution other than the Provider, the User and any collaborator under their control or supervision. A Third Party is not bound to the terms and conditions of this Agreement unless otherwise agreed with the User.

4.10 Unauthorized Person

Unauthorized Person means any person that came into possession of the Genetic Resources without the authorization of the User.



Here, the Parties may list names of species or strains of the material to be accessed or any other attributes that may help to define the genetic resources.

The list may include identified and unidentified species. If there are unidentified species/strains in the submitted list, option 5.2 applies.

5. Genetic Resources to be accessed

The User shall have access to the following Genetic Resource(s):

[Insert list of the Genetic Resources to be accessed].

Option 5.1

Since the species/strains present at the collection site are not known to the User at the time of concluding this Agreement, a general account of species/strains most likely to be collected is given in Annex XX.

A list of the collected samples according to the researcher's field-notes is presented to the Provider within XX months after having gathered the samples.

Option 5.2

If the collected samples cannot be identified in the list of collected samples within the above prescribed period, their identification has to be shared with the User as soon as it is available.

6. Utilization

The Material may be utilized for non-commercial purposes including for academic research and collections, and for training, teaching and education.

The User must comply with the User's and Provider's national regulations and with relevant international law. The utilization of the Material or derived information for any type of Commercialization is prohibited.



It is important that the User binds Third Parties to the terms of this Agreement in order to avoid uncontrolled flow of genetic resources.

If institutions or persons are appointed for specified analytical and technical auxiliary work, the conditions of this Agreement must be included in the contract regulating the cooperation.

Option 6.1

The Genetic Material shall be used exclusively for the following purposes: *[insert allowed activities and/or uses]*.

7. Change in Utilization from Non-commercial to Commercial

The Commercialization of the Genetic Material and related information is prohibited.

Any change in utilization from non-commercial to commercial shall require a new Prior Informed Consent in writing issued by the Provider. In this case, the terms of such Commercialization shall be subject to a separate agreement (MAT) between the involved parties.

8. Transfer of Genetic Resources (and associated TK) to Third Parties

Transfer of the Genetic Resources for the purposes of academic research and collections, and for training, teaching and education, or any other non-commercial activities is allowed under the condition that the User ensures that the subsequent person or institution (Third Party) is informed about the provisions under this Agreement and undertakes to pass on the Genetic Resources under the same obligations to any further recipient.



Options 8.1–8.4 establish different levels of control. Parties should include those that reflect the appropriate level of control in accordance with their needs.

Option 8.4 is an extremely limiting measure. It is meant primarily in cases where the Material has associated TK. Given the current problem regarding the protection of TK, we assume that the Provider may have an interest to keep knowledge secret and therefore may want strict control on any further transfer of the Material and TK.

Option 8.1

The User delivers to the Provider annually a *list of the Third Parties* to whom the Genetic Resource was transferred to.

Option 8.2

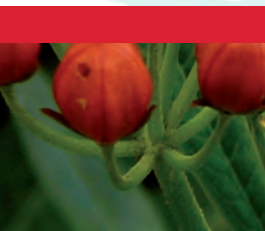
The User shall maintain retrievable records of any transfer of the Genetic Resources to Third Parties under the conditions corresponding to this Agreement.

Option 8.3

The User shall require the Third Party to sign an agreement containing identical obligations on Use and Transfer of the Genetic Resources (and associated TK) as set out in this Agreement.

Option 8.4

The Genetic Resources [and their associated TK] may be transferred to Third Parties only after having obtained the *written consent of the Provider* and in accordance with Mutually Agreed Terms between the Provider and the Third Party. Exempted is a temporary transfer of the Genetic Resource to taxonomic specialists for scientific identification.



Researchers may face the problem that the conditions or restrictions with respect to handling the Material are not clearly known or indicated (e.g. on the sample). Therefore even if they want to comply with restrictions they fail.

This provision aims at eliminating any liability of the User in cases where the special conditions/restrictions of use are not communicated properly. This includes not marking the sample itself or not providing reference to information e.g. in the internet.

Option 8.5

The User is entitled to deposit the Genetic Resources in collections that are accessible without restrictions for research purposes such as herbaria, museums and culture collections.

Option 8.6

If the Genetic Resources are transferred to an *ex situ collection of living Genetic Resources for educational purposes* (such as zoos, botanic gardens), this institution is – in addition to the obligations of this Agreement – obliged to take any appropriate precautions to prevent the Genetic Resource coming into the possession of any Unauthorized Person.

Option 8.7

If the use or storage of the Genetic Resource is subject to *special conditions or restrictions*, such conditions/restrictions have to be *clearly indicated on the label* or otherwise linked to the sample, when transferring the Genetic Resource to Third Parties, including the indication of where the information concerning the special conditions/restrictions can be found.



The list under Article 9 enumerates a minimal standard of benefits that in our view should always be shared if applicable.

Parties to the Agreement are encouraged to extend the list and add other benefits as well. For this purpose, we attach as an annex to this Agreement a list of non-monetary benefits as specified in the Bonn Guidelines. These benefits may be included in Article 9 of the Agreement. The Parties are free to go beyond the benefits encountered in the list and add others as well.

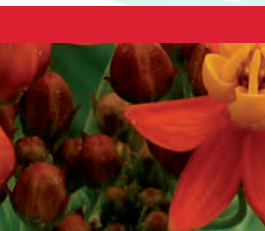
9. Benefit Sharing

The benefits arising from the access and use of the Genetic Resources shall be shared fairly and equitably by the User, in accordance with the principles established in the CBD. Basic benefits to be shared include:

1. The offer to the Provider to include local researchers in the research activities, if such interest exists.
2. In case of publications or oral presentation of the research results, full acknowledgement is to be given to the source of the Genetic Resource;
3. If TK associated to the Genetic Resources is involved, the research results published or presented orally will include full acknowledgement of the source of the Genetic Resources and the TK, if so required by the providers.
4. The Provider will receive a copy of all publications;
5. Research results will be communicated to involved stakeholders (e.g. communities, indigenous people) in an adequate manner and according to reasonable requirements of the Provider;
6. If applicable, share duplicate specimens with the repository in the Provider country in accordance with good scientific practice.

In addition, the User agrees to share the following benefits:

[Choose from the list of benefits appended to this Agreement; insert a detailed lists of benefits here or in an annex]



This is a technical contact point. It might be a different institution than defined in Article 1. The technical contact point will act on behalf of and as mandated by the institution in Article 1.

Different options regarding the Providers' right to obtain information on the state of research are defined in Article 12 (Reporting).

By performing part of the research in the Provider's country, researchers in the host country have the opportunity to be fully integrated in the research. However, we prefer to treat the provision as a "right of the Provider" rather than as a "benefit sharing" arrangement due to the fact that such right is highly dependent on the technical capacity of the Provider.

10. Rights and Obligations of the Provider

The Provider defined in Article 1 is the responsible contact point for the User for the entire duration of the present Agreement.

The Provider has the obligation to facilitate access to the Genetic Resources. This includes the facilitation of the acquisition of other permits required in accordance with the relevant national or regional regulations in the Provider country as well as export permits.

Option 10.1

The Provider designates the following institution *[insert the relevant institution]* as the responsible contact point for the User for the entire duration of the present Agreement.

Contact details of the technical contact point are provided in Annex [XX] to this Agreement.

The Provider has the right to receive information on the state of the research from the User as agreed upon (see Article 12 on Reporting).

Option 10.2

The Provider requests that the following analytical parts as set out in the project are performed in the providing country: *[insert a list of analyses to be performed in the Provider's country]*.

The Provider confirms that all necessary conditions (equipment, staff and consumables) for conducting the analyses are available;



If the Provider (in contrast to the User) intends to obtain a patent on the results, it is necessary to refrain from disclosing information (e.g. publishing research results in journals). It would impede the protection of the results by intellectual property rights due to the lack of novelty.

The reference to international law regulating TK includes for example: 1948 Universal Declaration of Human Rights, International Labour Organization ILO Convention 169, The Rio Declaration and Agenda 21, the Convention on Biological Diversity, etc. It is a right of the Provider to instruct the User how to exploit the material if it is associated with TK. Instructions may be included in this Agreement as its integral

The User confirms that he/she has the necessary resources (funding, time) for such an arrangement.

11. Rights and Obligations of the User

The User is entitled to administrative support and guidance to facilitate the acquisition of the necessary permits required by the Providing country.

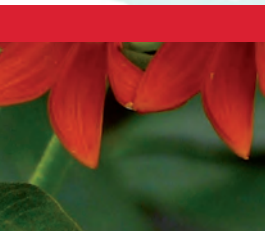
The User shall not use the Genetic Resource nor derivatives generated in the research for any commercial purposes, nor shall the User commercialize any Product derived from the Genetic Resource, unless with the written consent of the Provider.

The User is obliged to take all reasonable precautions to prevent the Genetic Resource coming into the possession of any Unauthorized Person.

The User is obliged to inform the Provider about any unforeseen research results that are of potential commercial interest, prior to any disclosure of this information to the public.

Option 11.1

If the research implies TK associated to the Genetic Resource, the User is obliged to respect any relevant international law and the national and regional regulations in the Provider's country, and has to proceed according to the instructions of the Provider. In any case the User is obliged to respect the customary law of the holders of the TK and has to apply ethical standards.



part either through an additional article stipulating the terms and conditions of use or annexed to the Agreement.

For ethical standards see: *International Society of Ethnobiology (2006). ISE Code of Ethics (with 2008 additions). Online:*

http://ise.arts.ubc.ca/global_coalition/ethics.php;

Elements of a Code of Ethical Conduct to Ensure Respect for the Cultural and Intellectual Heritage of Indigenous and Local Communities. Report of the Sixth Meeting of the Ad Hoc Open-ended inter-sessional Working Group on Article 8 (j) and related provisions of the Convention on Biological Diversity. UNEP/CBD/COP/10/2; 21 November 2009.

Such an ancillary contract will depend on the requirements of the relevant national law in the Provider country regarding the obligation to conclude contracts with sub-national entities (federal governmental bodies, TK holders, indigenous or local communities, private land owners)

This provision has the purpose to establish a long-term access to data generated by the User, which goes beyond the information that can be found in publications. It is up to the Provider to spell out the information of the vital interest for him/her. This provision should

Option 11.2

Corresponding to national law the User will conclude an ancillary contract with the holders of TK and/or the private land owners of the genetic resources.

The ancillary contract forms an integral part of this Agreement.

12. Data Sharing

The User agrees that the Provider has the right to access the following data resulting from the research:

- [insert type of data]



contain the precise description of the information/data required and the manner of the data transfer, such as time period, communication means, etc.

Parties to the Agreement should account for potential barriers that transfer of data may bring along and regulate it as detailed as possible. For example, if there is a language barrier between the Provider and the User, the Parties should define the official language to operate with, or to define the particular standard to be used, if there would be more options, and so on.

The Reporting obligation may depend on the particular nature of the research and the interest of the Provider. He/she may request different amounts of information in a varying periodicity.

Therefore, we offer different options that may meet the needs of the parties, depending of the complexity of data included and the time schedule.

However, Parties may tailor any of these options to make it more suitable to their convenience or they can stipulate a new provision that will entirely reflect their needs. They are free to specify in a more detailed manner the reasonable content and the structure of the Report as well as the time period within which the Report should be submitted.

The User shall facilitate access to the above defined data for the Provider.

The Provider agrees that for using the data in his own research, he needs the consent of the User.

Option 12.1

Given the cooperative approach to the research, the Provider and the User agree in a separate agreement on the use of the data, annexed to this Agreement [Annex XX] and forming its integral part.

13. Reporting

The User will deliver a written report in accordance with the Provider's instructions as to its structure, information included, etc, upon his/her request.

Option 13.1

The User shall submit an annual written report on the research accomplished.

Option 13.2

Upon request of the Provider, the User submits a written report on the research accomplished.



Article 15 on Publication treats in its option 15.3 the case where a Provider himself wants to apply for an intellectual property right.

Article 7 deals with the Change of Utilization from non-commercial to commercial.

Option 13.3

Upon request of the Provider, the User submits an annual written report on the research accomplished. The report shall include a list of Third Persons to whom the Genetic Material has been transferred.

Option 13.4

Since the *Provider* is a private citizen, upon his/her request, the report is translated into the local language by the User and adapted to a non-scientific audience.

14. Intellectual Property Rights

The User shall not claim any intellectual property rights over the Genetic Resource in the form received.

If the *User* wants to obtain intellectual property rights on research results such act shall be treated as change in utilization and thus shall be regulated under Article 7 of the present Agreement.

If the *Provider* wishes to obtain IPR on research results, such act shall be treated as change in utilization and shall be regulated under Article 7 of the present Agreement. In particular the ownership of the IPR and the distribution of the value derived from the IPR are to be negotiated.



15. Publications

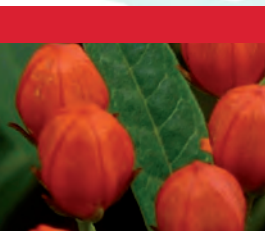
The User has the right to publish the results of the research related to the Genetic Resource according to Article 6 of the present Agreement, and according to good scientific practice. The origin of the Genetic Resource has to be acknowledged.

Option 15.1

The User has the right to publish the results of the research related to the Genetic Resource according to good scientific practice. The origin of the Genetic Resource has to be acknowledged, as well as the sources of TK associated with the Genetic Resource.

Option 15.2

The holder of TK associated to the Genetic Material has the right to request confidentiality of specific information *[describe the information subject to confidentiality]* such as for spiritual reasons; to prevent the depletion of the genetic resources; and/or to prevent unsafe/hazardous applications of the TK in the health sector.



This option takes account of the Provider's concerns that published results may reduce his/her opportunity to derive commercial value from his/her genetic resources. On the other side, it takes account of the User's interest that the Provider's decision to commercialize the material does not significantly impede or delay research.

Option 15.3

If the User, in the course of the research, discovers any unforeseen commercial potential of the Genetic Material, he/she is obliged to share such information with the Provider prior to any publication of such information. If the Provider intends to pursue a potential commercialization, this is subject to negotiations between the Provider and the User according to Article 7. The Provider agrees not to hold up the User's research work unless concerns are concrete and justified in terms of well-defined proprietary interest.

Option 15.4

If the User is prevented from publishing the results of the research due to the Provider's wish to obtain a patent over the research results, the Provider shall file the patent application within [XX] months. After the agreed period, if the Provider has failed to file a patent application, the User has the right to proceed with the publication of the research.

16. Handling of the Genetic Material after Termination of the Agreement

Upon completion of the project, Genetic Material will be stored or disposed of according to the utilization agreed under Article 6.



The purpose of the provision is to preserve certain rights and obligations that are independent of the duration or termination of the present Agreement. This, in general, means that even if the present Agreement is not in force the User is obliged to keep secret all the information defined as a trade secret by the Provider and not disseminate it to any Third Party after the present Agreement ceases to exist.

Option 16.1

If the Genetic Material has been placed in storage, or in public collections, upon expiration of the Agreement or its termination, the Genetic Material may be available for use only under the same conditions as contained in this Agreement.

17. Duration and Termination of the Agreement

The present Agreement shall end on *[insert the date]* and may be renewed upon the mutual agreement of the Parties.

Option 17.1

The present Agreement shall be deemed to be in force until the Genetic Material is returned to the satisfaction of the Provider upon completion of the Project. Regarding the Genetic Material related information, the present Agreement shall be subject to any associated rights, such as copyright or trade secrets.

Option 17.2

When a Party to the present Agreement wants to terminate the Agreement prior to the completion of the Project, the Party shall give written notice [XX] months in advance.



The Parties to the Agreement are free to establish competence of any court they agreed upon for potential disputes arising from the Agreement. They can also opt for arbitration or to include any independent third party. However, we believe that it is important to encourage them to try to negotiate any disputes before reverting to any court.

Parties may also include provisions on other matters of their importance and regulate issues such as Warranties, Force Majeure, Disclaimer.

The present Agreement may be terminated at any time by mutual agreement of the Parties.

The present Agreement may be terminated immediately, in case of its breach.

18. Settlement of Disputes

The Parties agree to make attempts in good faith to negotiate the resolution of any disputes that may arise under this Agreement. If the Parties are not able to resolve a dispute within a period of [XX] months, such dispute shall be finally settled by an arbiter to be mutually agreed between the Parties.

Option 18.1

If the Parties are not able to resolve any dispute within a period of [XX] months, such dispute shall be resolved before the [XXXX] Court law as the only competent body for resolving disputes arising under this Agreement and in accordance with [XXX].

[Insert applicable Law; Jurisdiction]

19. Other Provisions

Annex 1 Indicative list of non-monetary benefits (adapted from the CBD Bonn Guidelines)



- Sharing of research and development results;
- Collaboration, cooperation and contribution in scientific research and development programmes, particularly biotechnological research activities, where possible in the provider country;
- Performing certain analytical parts of the research in the providing country to the extent that adequate equipment is available and the User has the necessary resources (funding, time) for such arrangement.
- Participation in product development;
- Collaboration, cooperation and contribution in education and training;
- Admittance to ex situ facilities of genetic resources and to databases;
- Transfer to the provider of the genetic resources of knowledge and technology under fair and most favorable terms, including on concessional and preferential terms where agreed, in particular, knowledge and technology that make use of genetic resources, including biotechnology, or that are relevant to the conservation and sustainable utilization of biological diversity;
- Strengthening capacities for technology transfer to user developing country Parties and to Parties that are countries with economies in transition and technology development in the country of origin that provides genetic resources. Also to facilitate abilities of indigenous and local communities to conserve and sustainably use their genetic resources;
- Institutional capacity-building;
- Human and material resources to strengthen the capacities for the administration and enforcement of access regulations;
- Training related to genetic resources with the full participation of providing Parties, and where possible, in such Parties;
- Access to scientific information relevant to conservation and sustainable use of biological diversity, including biological inventories and taxonomic studies;
- Contributions to the local economy;
- Research directed towards priority needs, such as health and food security, taking into account domestic uses of genetic resources in provider countries;
- Institutional and professional relationships that can arise from an access and benefit-sharing agreement and subsequent collaborative activities;
- Food and livelihood security benefits;
- Social recognition;
- Joint ownership of relevant intellectual property rights.



Acknowledgment

This report was commissioned and sponsored by FOEN. We would like to thank its representatives and the representatives of other government agencies for their cooperation.

We received substantial input in the development of the Agreement from our national and international partners. They contributed Material Transfer Agreements, indicated additional sources and critically evaluated and commented former drafts.

Special thanks go to Gerald Achermann, Alexandre Antonelli, Sarah Aubertie, Reinhard Bachofen, Barbara Becker, Geoff Burton, Matthew JW Cock, Marco D'Alessandro, Kathryn Davis, Danielle Decrouez, Philippe Desmeth, Peter Duelli, Pierre Du Plessis, José Carlos Fernández Ugalde, Claude-Anne Gauthier, Martin Girsberger, Fabian Haas, Suzanne Harrock, Doris Herrmann, Karin Holm-Müller, John B Kleba, Jerzy Koopman, Christophe Lacroix, Robert Lamb, Isabel Lapeña, Anne Larigauderie, Xavier Le Roux, Victoria Lichtschein, Peter Linder, Pierre-André Loizeau, François Meienberg, Leo Meile, Benny Müller, Gabriel R Nemoga Soto, Laxman T Neupane, Reto Nyffeler, Perry Ong, Alfred Oteng-Yeboah, Ben Phillips, Adrian M Pohlit, Oli Krishna Prasad, Bala Ravi, Monica Ribadeneira Sarmiento, Joshua Rosenthal, Manuel Ruiz Muller, Christoph Scheidegger, Brigitte Schiesser, Bernhard Schmid, Corina A. Schuett, David Smith, Kaspar Sollberger, Michael Stahl, Suneetha Subramanian, Sabine Taeuber, Marcel Tanner, Carl-Gustaf Thornström, Pieter van Eeuwijk, Jean-Dominique Wahiche, Christine Walliser, Caroline Weckerle, China Williams, Maureen Wolfson, Jakob Zinsstag-Klopfenstein.



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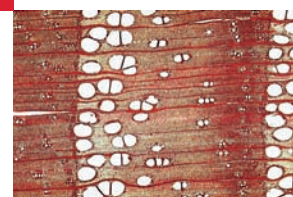
Federal Office for the Environment FOEN



The purpose of this ABS agreement for non-commercial research is to create transparent and legally secure relations in the negotiation of Mutually Agreed Terms under the CBD. The suggested terms and clauses are intended to meet the needs of both, the providers of genetic resources and the researchers seeking access and can be adapted to their respective needs.

The agreement proposes generally understandable language to ensure fair and equitable sharing of benefits.

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Access to Genetic Resources & Sharing of Benefits

ABS Program 2003 to 2010

with

- Recommendations
- Sample ABS Agreement

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Foreword

In 2003, after the adoption of the Bonn Guidelines on Access and Benefit-Sharing (ABS), the Federal Office for the Environment mandated the Swiss Academy of Sciences (SCNAT) to develop tools and an awareness-raising program to implement the Bonn Guidelines within the Swiss scientific community.

It is my great pleasure, in this International Year of Biological Diversity, to present the last report resulting from the collaboration between the Federal Office for the Environment and the Academy in implementing the Bonn Guidelines. As the international community moves towards finalizing the establishment of a regime on ABS, I am convinced that the results and lessons described in this report will be of great use to all who are engaged in achieving the objectives of the Convention on Biological Diversity (CBD).

The fair and equitable sharing of benefits arising out of the utilization of genetic resources is one of the three objectives of the Convention. It is also key for achieving the two other objectives: the conservation of biological diversity and the sustainable use of its components. While the technology to study and to make economic use of genetic resources is mainly available to users in industrialized countries, the rich ecosystems that provide these resources often are located in provider countries which lack means to protect their biological diversity. Thus, it is generally recognized that global

conservation of biological diversity and its sustainable use will only be possible if benefits from use of these genetic resources are shared in a fair and equitable way with those who have conserved the resources for centuries.

The scientific community certainly has played a crucial role in achieving the objectives of the Convention. Academic research is not only important for a better understanding of the biological diversity itself, but it provides the foundation for innovation and development. Thus the value of genetic resources can be expanded and their benefits shared between those who conserve biological diversity and provide the resources and those who use these resources. Indigenous peoples and local communities that live in harmony with biological diversity are particularly worth mentioning in this context, as their traditional knowledge often guides the scientific communities towards new discoveries.

I would like to thank SCNAT and, in particular, it's ABS-team and all those scientists and policy makers around the world that provided input into this project. The scientific community plays a leading role in implementing ABS in Switzerland and worldwide. It will continue to be an important position of leadership in the future.

Bruno Oberle
Director FOEN

Summary

At the Swiss Academy of Sciences we firmly believe that non-commercial public good research is essential to achieve the first two goals of the CBD, the conservation and sustainable use of biological diversity. Moreover it generates (non-monetary) benefits that contribute to education, advancement of science and technology transfer. The Swiss Academy of Sciences advocates research in a mutually trustful atmosphere and encourages scientists to conduct their research in accordance with existing international codes and standards.

On the background of this philosophy and after the adoption of the Bonn Guidelines in 2002, the Swiss Academy of Sciences launched a program on capacity-building and awareness-raising for the academic community in Switzerland. This program was funded, developed and carried out in partnership with the Swiss Federal Office for the Environment.

The program was based on an investigation into the ABS-situation and the state of information within the Swiss research community. The assessment revealed low or insufficient knowledge among researchers about the Convention on Biological Diversity and the obligations resulting from the ABS regime. Yet it also revealed problems of the researchers with complicated procedures when intending to access resources abroad.

In the course of the program several instruments were developed, such as an awareness raising and capacity-building strategy for Swiss academic researchers; a good practice manual for access and benefit sharing for non-commercial academic research; and a sample ABS agreement containing model clauses that is adapted to the interests and needs of both, providers and users of genetic resources.

The sample agreement is based on an investigation into the situation of providers and users with regard to the implementation of the system. It

revealed that scientists are concerned that ABS procedures could prevent their research, including research necessary for the conservation and sustainable use of biodiversity. Providers are concerned that simple procedures are a Trojan horse introducing easy access for commercial research.

The following research into the flow of genetic resources (and associated TK) through the non-commercial research and the research & development value chain analyzed how the often feared “change of intent” takes place. ABS-sensitive research steps were squared with types of academic research conduct. It revealed that there are considerable differences between fields of research in the handling of the accessed samples and in their – effective or potential – transfer to third parties. These differences open a range of probabilities of uncontrolled transfer. Accordingly, the criterion for granting simple access should not be whether the utilization of genetic resources may ever lead to a commercial product – in the sense of a yes or no – but the degree of probability of this happening. Simple access should be granted in cases with a small probability of commercialization.

As our ABS program and its products are in line with measures proposed in the draft protocol, the Swiss Academy of Sciences deemed it useful to share experiences and lessons learned. The report on the ABS-program 2003–2010 gives an overview of our activities. It describes the instruments and products created and provides information on our investigations. The essence of the resulting insights is laid down in recommendations for the negotiation of the ABS-protocol.

It is with great pleasure that the Swiss Academy of Sciences makes this information available to the interested ABS-community. Our wish is to contribute to fruitful cooperations between providers and users for their benefit and for the benefit of biological diversity.

Résumé

A l'Académie suisse des sciences naturelles (SCNAT), nous croyons fermement que la recherche d'intérêt public à but non commercial est essentielle pour atteindre les deux premiers buts de la Convention de la Diversité Biologique (CDB), soit la conservation et l'utilisation durable de la diversité biologique. De plus, elle génère des bénéfices (non-monétaires) qui contribuent à l'éducation, à l'avancement de la science et au transfert de technologies. L'Académie prône la recherche dans une atmosphère de confiance mutuelle et encourage les scientifiques à mener leur recherche en accord avec les codes et standards internationaux existants.

Se basant sur cette philosophie et après l'adoption des Lignes directrices de Bonn en 2002, la SCNAT a lancé un programme d'information et de prise de conscience adressé à la communauté académique suisse. Ce programme a été financé, développé et soutenu en partenariat avec l'Office fédéral de l'environnement.

Le programme est basé sur une étude de la situation ABS et de l'état des connaissances de la communauté de recherche suisse. L'évaluation a révélé que le niveau de connaissance des chercheuses et chercheurs sur la CDB et sur les obligations résultantes du régime ABS était bas ou insuffisant. Elle a également mis en évidence les problèmes des chercheuses et chercheurs liés à des procédures compliquées pour accéder aux ressources à l'étranger.

De nombreux instruments ont été développés dans le cadre de ce programme, par exemple, la mise en place d'une stratégie afin d'augmenter la prise de conscience et la formation des chercheuses et chercheurs académiques suisses, un guide des bonnes pratiques pour l'accès et le partage des avantages adressé à la recherche académique non-commerciale et finalement, une proposition d'accord ABS contenant des clauses modèles qui sont adaptées aux intérêts et aux besoins des fournisseurs et des utilisateurs de ressources génétiques. Cette proposition d'accord est basée sur une évaluation de la situation des fournisseurs et des utilisateurs considérant l'implémentation du système. Cette enquête a révélé que les scientifiques

pensaient que les procédures ABS pouvaient gêner leurs recherches, y compris dans les cas de recherches dans les domaines de la conservation et de l'utilisation durable de la biodiversité. Les fournisseurs pensent, quant à eux, que des procédures simples sont un cheval de Troie vers un accès facilité pour la recherche commerciale.

L'étude du flux des ressources génétiques (et des savoirs traditionnels associés) dans les recherches à but non-commercial et les processus de recherche et de développement a analysé à quelle fréquence les «changements d'intention» avaient vraiment lieu. Les étapes de la recherche sensibles au thème ABS ont été adaptées en fonction des différents types de recherche académique. Cela a mis en évidence des différences considérables entre les différents domaines de recherche et la manipulation des échantillons prélevés ainsi que leur transfert – effectif ou potentiel – à des parties tierces. Ces différences ouvrent une gamme de *probabilités* de transferts incontrôlés. En conséquence, le critère pour permettre – ou non – un simple accès ne devrait pas être basé sur le fait que l'utilisation des ressources génétiques pourrait déboucher sur un éventuel produit commercial, mais sur le *degré de probabilité* de déboucher sur une commercialisation. Un accès simple devrait être accordé dans les cas où la probabilité de commercialisation est faible.

Notre programme ABS et ses produits correspondent aux mesures proposées dans le brouillon du protocole ABS. L'Académie a estimé qu'il était utile de partager ses expériences et leçons apprises. Le rapport sur le programme ABS 2003–2010 offre une vue d'ensemble de nos activités, décrit les instruments et les produits créés et donne des informations sur nos enquêtes. Les principaux aperçus résultants sont présentés ci-dessous au travers de recommandations pour les négociations du protocole.

C'est donc avec grand plaisir que l'Académie suisse des sciences naturelles met ce rapport à disposition de la communauté intéressée par la problématique ABS. Notre vœu est de contribuer ainsi à des coopérations fructueuses entre les fournisseurs et les utilisateurs de ressources génétiques pour leur bien et celui de la diversité biologique.

Zusammenfassung

Die Schweizerische Akademie für Naturwissenschaften (SCNAT) ist überzeugt, dass die akademische Forschung wichtige Grundlagen für die Erhaltung der biologischen Vielfalt und die nachhaltige Nutzung ihrer Bestandteile schafft. Sie trägt so wesentliche Elemente zur Erreichung dieser beiden Ziele des Übereinkommens über die Biologische Vielfalt bei. Weitere Vorteile, insbesondere für die biodiversitätsreichen Geberländer, entstehen durch Zusammenarbeit mit Forschungsinstituten in den Partnerländern. Unterstützung von Forschung in den biodiversitätsreichen Ländern des Südens, Ausbildung und Förderung von jungen WissenschaftlerInnen und Technologietransfer gehören zur etablierten „good practice“ akademischer Forschung. Die SCNAT setzt sich für solche Zusammenarbeit in einer Atmosphäre gegenseitiger Anerkennung und gegenseitigen Vertrauens ein und ermutigt die Forschenden, in Übereinstimmung mit internationalen ethischen Codes und Standards zu handeln.

Auf der Basis dieser Philosophie hat die SCNAT nach der Verabschiedung der Bonner Richtlinien im Jahre 2002 ein Programm in Angriff genommen, um unter den Forschenden das Bewusstsein für die ABS-Vorgaben zu stärken und sie darin zu unterstützen, korrekt vorzugehen. Das Programm wurde weitgehend durch das Bundesamt für Umwelt finanziert und in konstruktiver Partnerschaft von Akademie und Bundesamt entwickelt und durchgeführt.

Das Programm baute auf einer Erhebung der ABS-relevanten Forschung und des Informationsstandes der Schweizer Forschenden auf. Es wurde klar, dass wenig Wissen über das Übereinkommen über die Biologische Vielfalt und die ABS Verpflichtungen vorhanden war. Es wurde aber auch klar, dass komplizierte Zugangsverfahren vielen ForscherInnen Probleme bereiten.

Im Laufe des Programms wurden verschiedene Instrumente entwickelt: eine Informationsstrategie, um der akademischen Forschergemeinde das ABS-System näher zu bringen; eine Informationsbroschüre mit Hintergrundinformationen und Schritt-für-Schritt-Anweisungen, die speziell auf verschiedene akademische Forschungsinhalte ausgerichtet sind; ein Muster-ABS-Vertrag, dessen optionale Klauseln es erlauben, die jeweils besonderen Interessen von Gebern und von Forschern zu berücksichtigen.

Basis für die Entwicklung des Mustervertrags ist eine Untersuchung der speziellen Situation von Gebern und Nutzern genetischer Ressourcen. Sie ergab einerseits, dass die Forschenden besorgt sind, dass die ABS-Verfahren in den Geberländern den Zugang für akademische Forschung erschweren oder gar

verhindern, und zwar auch für jene Forschung, die zum Ziel hat, Grundlagen für Erhaltung und nachhaltige Nutzung der biologischen Vielfalt zu erarbeiten. Andererseits befürchten die Geber, dass vereinfachte ABS-Verfahren für nicht-kommerzielle Forschung zu einem Trojanischen Pferd werden, das Forschungsvorhaben mit kommerziellen Zwecken zu einem einfachen Zugang und zur Umgehung des Benefit-Sharing verhilft.

Die anschliessende Untersuchung des Weges der genetischen Ressourcen durch die nicht-kommerzielle Forschung ging deshalb der Frage nach, wie und wo der Übergang von nicht-kommerzieller Forschung zu kommerziell orientierter Forschung und Entwicklung stattfindet. Die Untersuchung setzte ABS-relevante Forschungsschritte in Relation zu Typen akademischer Forschung. Die Befragungen und Analysen ergaben wesentliche Unterschiede zwischen den verschiedenen Forschungsfeldern, sowohl im Umgang mit den verwendeten Proben (zum Beispiel im Hinblick auf ihre Registrierung und Aufbewahrung), als auch in Bezug auf den – effektiven oder potenziellen – Transfer zu Dritten. In den Forschungsfeldern sind deshalb die Wahrscheinlichkeiten für einen unkontrollierten Übergang von Ressourcen unterschiedlich. Die Schlussfolgerung daraus ist, dass die Gewährung von einfachen Zugangsbedingungen nicht auf eine absolut sichere Nicht-Kommerzialisierung abstellen kann und sollte. Das Kriterium für die Gewährung eines einfachen Zugangs sollte vielmehr der Grad der Wahrscheinlichkeit sein, dass die Ressource in die kommerzielle Wertschöpfungskette übergeht. Einfacher Zugang könnte für Forschungsvorhaben mit einer geringen Wahrscheinlichkeit einer Kommerzialisierung gewährt werden.

Die Schweizerische Akademie der Naturwissenschaften (SCNAT) möchte die Erfahrungen teilen, die sie während der Durchführung des Programmes gesammelt hat. Der vorliegende Bericht gibt einen Überblick über unsere Tätigkeiten. Er beschreibt die entwickelten Instrumente und Produkte und präsentiert die Ergebnisse unserer Forschung. Die Essenz dieser Einsichten ist in den Empfehlungen für die Verhandlungen des ABS-Protokolls enthalten.

Die SCNAT freut sich, diese Informationen für die internationalen ABS- und Wissenschafts-Communities zugänglich zu machen. Unser Wunsch ist es, einen Beitrag zu leisten zu einer fruchtbaren Zusammenarbeit zwischen Gebern und Nutzern, zur Entstehung einer win-win Situation für alle Beteiligten – und zur Erhaltung der biologischen Vielfalt.

3 Introduction

3.1 Goal of the report

In compiling this report on Access and Benefit Sharing (ABS), the Swiss Academy of Sciences (SCNAT) draws on seven years of experience in raising awareness within academia about access to genetic resources and the fair and equitable sharing of benefits. Our goal is to share ideas and lessons learned from our experience and present the results of the program we have developed under the Convention on Biological Diversity (CBD).

Academic researchers are important players in the ABS system; a considerable part of access to genetic resources is carried out for non-commercial research for the public good. A case of biopiracy in 2000/2001 that involved a Swiss public research institution spurred the SCNAT to take action to address academic research using genetic resources, and the risks and problems it confronts.

We developed and implemented the program on ABS awareness raising and capacity building for academic researchers in partnership with the Federal Office for the Environment (FOEN),¹ after the adoption of the Bonn guidelines in 2002. Switzerland has always advocated voluntary implementation of the guidelines and has supported, both financially and in spirit, the ABS program.

This report gives an overview of the research carried out, the instruments elaborated, and critically assesses the outcomes. It describes the state of awareness within the academic community at the outset of the project, insights into the background of the situation and the measures taken. We describe a matrix of research activities according to the most critical ABS issues such as use, transfer to third parties, and storage. We also present the first ABS agreement of its kind for non-commercial public good research, which includes optional sample clauses.²

In working with the scientific community on concrete cases, SCNAT recognized the complexities that the implementation of the system can create for non-commercial academic researchers. They are often confronted with the same procedures as those intended for commercial users. Additionally, The unfamiliarity of researchers with administrative processes and contract negotiations led to difficulties in access. On the basis of these experi-

ences, the Academy's ABS team worked on the policy level and began to build an international network of scientists to develop instruments to facilitate non-commercial research.

3.2 The context

The primary purpose of the SCNAT program has been to promote compliance with the ABS principles by the research community. Awareness-raising and capacity building are essential to this end.

The ABS team developed a code of conduct³ and elaborated a strategy for awareness raising. To ease the negotiations of contracts on Mutually Agreed Terms, it developed model contract clauses tailored to the needs of both providers of genetic resources and non-commercial users seeking access. Such instruments are deemed important for ABS implementation and compliance and are mentioned in the Draft Protocol.⁴

3.3 Structure and organization of the program

3.3.1 The Swiss Academy of Sciences

The Swiss Academy of Sciences⁵ is an extensive network of more than 35,000 scientists from all natural science disciplines. It makes use of expert knowledge and promotes the dialogue between science and society. It has been committed to the development of sciences in Switzerland for nearly 200 years.

The Academy focuses on the core tasks of horizon scanning, ethical aspects of sciences, the extensive dialogue with society and policy makers, and the central task of promoting sciences as a cultural asset. Three cross-cutting interdisciplinary fora within the platform Science and Policy – the Swiss Biodiversity Forum, the Swiss Forum for Genetic Research and the Swiss Commission for Research Partnership with Developing Countries – allow for a differentiated and well-funded debate in matters concerning science, society and policy.

3.3.2 The national network

The ABS project has been conducted by a team associated with the Swiss Biodiversity Forum of the Swiss Academy of Sciences. The current team consists of two biologists and a lawyer.

Its *Steering Group* closely monitors the ABS team's activities and gives feedback regarding strategic

¹ We thank the Federal Office for the Environment for its financial support and the responsible officers for the good cooperation.

² See Annex 2 and <http://abs.scnat.ch>.

³ http://abs.scnat.ch/downloads/documents/ABS_GoodPractice_2009.pdf.

⁴ See: Report of the Second Part of the Ninth Meeting of the Ad Hoc Open-ended Working Group on Access and Benefit Sharing, UNEP/CBD/COP/10/5/Add.4, Annex, Articles 15, 16 and 17.

⁵ www.scnat.ch.

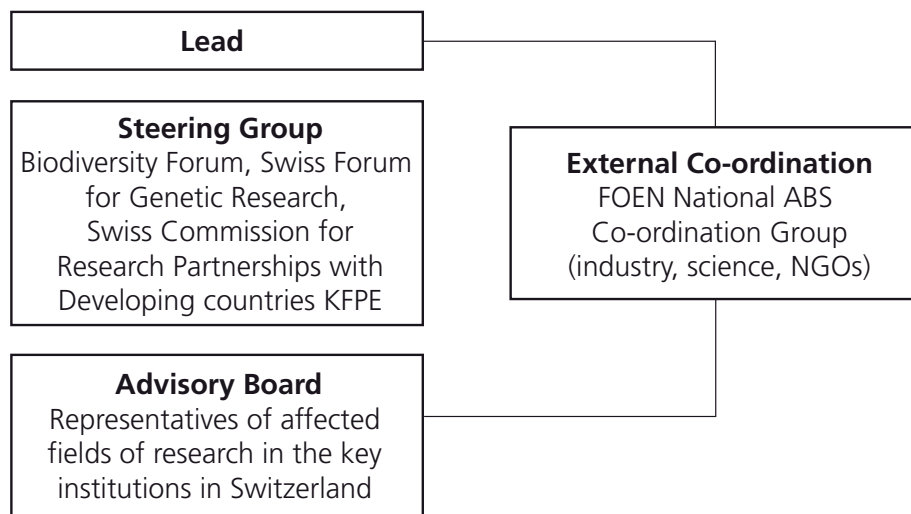


Figure 1: Organisational structure of the ABS project.

questions. It comprises representatives of the Swiss Biodiversity Forum, the Swiss Forum for Genetic Research and the Swiss Commission for Research Partnerships with Developing Countries.

The *Advisory Board* is composed of 22 members representing the fields of research that are affected by the ABS system,⁶ and the key research institutions in Switzerland. This includes experts from botanical gardens, zoos, and coordinators of North-South research. Additional stakeholders such as university technology transfer departments, NGO representatives and representatives from industry and from the federal administration complete the group.

The role of the advisory board is to act as the sounding-board for the program. Its members are well embedded in the Swiss research community and can act as multipliers of the ABS message.

The ABS team also participates in the *National ABS Coordination Group*, led by the Federal Office for the Environment that discusses and prepares the official Swiss position. The group includes all affected stakeholders (administration, industry, research, NGOs). The close collaboration and exchange of ideas and information with the FOEN is beneficial for both sides. It allows the ABS team to closely link its activities to the current status of the international ABS negotiations, and to provide input into them.

3.3.3 The international network

The ABS team sought the cooperation of international partners at an early stage in order to build European and global networks. The network consists of partners from countries providing and using genetic resources and includes university scientists and representatives of funding organizations as well as members of governmental agencies and NGOs.

The Academy provided an ideal environment for the ABS work. It allowed for an interdisciplinary approach and facilitated direct contact and cooperation with stakeholders of the Swiss research community.

The interdisciplinary composition of the ABS team, the established national and international networks and the structure and functioning of the Academy were essential for the evolution of the project and the development of its products.

The integration of different research communities allowed learning about the specific ABS aspects on all levels of biodiversity (ecosystems, species, genes) and in different fields of research. The cooperation with colleagues from providing countries provided insights into the dialectics of the ABS system.

⁶ Systematic botany, phytopharmacology, zoology, tropical medicine, biotechnology, food sciences, experimental biology, ethnopharmacology and agriculture.

4 Awareness raising and capacity building in academia

4.1 State of knowledge and experiences with ABS

In order to assess how much biodiversity research with genetic resources from other countries is conducted at Swiss universities, the authors undertook a national survey in September 2003. Main goals of the study were the identification of the fields of research at university level, and the assessment of the level of awareness and ABS experiences of scientists. For the survey, 175 research institutes in social, natural and technical sciences were identified as potential users of genetic resources and were contacted. Fifty-four institutes reported information on 87 research projects with genetic resources from abroad.

The majority of projects (79%) focused on the genetic resource itself, 17% dealt with the genetic resource in combination with associated traditional knowledge, 3% of the projects studied exclusively traditional knowledge. About a third of all projects (29%) were purely taxonomic studies.

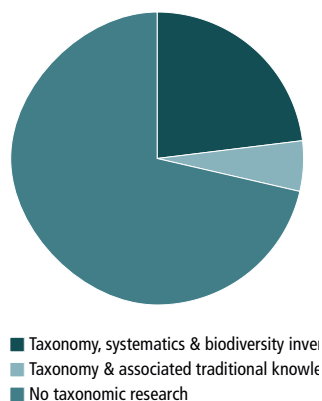


Figure 2: About one third of the reported non-commercial research generated taxonomic knowledge and biodiversity inventories.

In 44% of the cases, researchers experienced access problems. They reported that in many provider countries, access is hampered by defensive regulations, lack of regulations and complicated administrative procedures. Yet, in the view of the project leaders, most of the research provided results of interest for the provider countries themselves.

The assessment revealed low or insufficient knowledge among researchers about the Convention on Biological Diversity and the obligations resulting from the ABS regime.

4.2 Interviews with affected researchers

In order to learn more about the concrete situations in the field, we led semi-structured inter-

views on ABS procedures and non-commercial research with scientists who have worked in different countries.

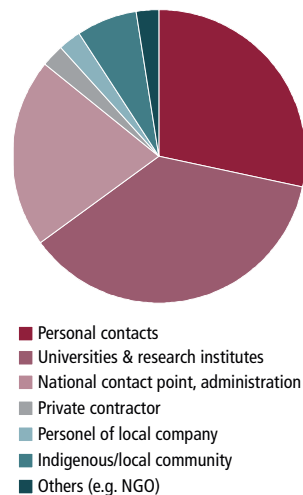


Figure 3: Genetic resources were predominantly accessed through personal contacts and partner institutes in providing countries.

We covered 10 research projects in the following areas: systematics and taxonomy, ethnobotany, botanical and zoological inventories, applied biology, plant pathology, social geography, and agro-sciences. The projects had been carried out in Africa (Zambia, Burkina Faso, Tanzania, Ghana, and South Africa); South America (Mexico, Paraguay and Peru); Asia (China) and Europe (Romania/Russia). The sampled material consisted of wild or cultivated plants, seeds, dead or living animals, DNA of fungi, galls, and smoke samples not containing genetic resources.

The main conclusions were the following:

- The negotiation partners were mostly the researchers themselves, often working with a scientist in a local research institution who procured certain permits. Only two projects contacted the official ABS authorities. One project was aborted because of the inability of finding an ABS Focal Point.
- Sixty-six percent of the projects had no official ABS contract. Most of the ABS agreements were concluded informally between the researchers in Switzerland and institutions in the host countries. However, the scientists obtained the usual research or collection permits.
- In each country, the researchers were able to obtain export permits when necessary. In some cases, the process took up to a year. In half of the surveyed countries, permits for access, collection and export were very expensive; in one

case this was a reason to cancel field research. In other cases, permits were free.

- The benefits shared were mostly non-monetary: training of graduate students, education, co-publications, collaborations, species identification, distribution maps, deposited samples in herbaria or museums. Monetary benefits consisted of hiring local field assistants or students.

4.3 Information strategy

The results of the survey and the interviews revealed a clear need to improve the level of information among scientists (awareness raising) and the need for negotiation support (capacity building). An information strategy was developed in cooperation with a communication specialist. This is an important instrument for coordinated implementation of the project on awareness raising.

Strategy elements include: (1) the definition of goals and priorities; (2) the identification of direct target groups (the researchers of the various research fields) as well as indirect target groups (authorities, funding agencies, media); (3) possible measures and tools (the creation of a website, workshops, participation in conferences, awards, etc.). The strategy determines the ideal mix of the measures to take and ways to communicate (conferences and seminars, publications, newsletters, media and personal contacts).

4.4 Awareness-raising tools

A range of tools, specifically tailored for non-commercial research, was created: a good practice manual, a website, conference posters, flyers and a coaching service. The most recent product is the sample agreement on ABS with model clauses for non-commercial research, which we include in this report.⁷

*Access and Benefit Sharing – Good practice for academic research on genetic resources*⁸ was published in 2006 for scientists in Switzerland. It has become a valuable tool for researchers around the globe and is now in its second edition in English, French and Spanish.⁹ It contains a brief introduction to the ABS system, analyses of case studies, a step-by-step overview of the requested procedures and checklists for elements of Prior Informed Consent (PIC) and Mutually Agreed Terms.

The website (<http://abs.scnat.ch>) provides information on ABS and academic research and keeps scientists up-to-date on the international ABS negotiations and publications that focus on non-commercial research.

The ABS awareness-raising campaign has included lectures and seminars integrated into university courses and poster presentations at scientific conferences. The ABS team reached out to both junior and senior scientists, stimulating discussions that were lively and provided valuable feedback and



⁷ Annex 2.

⁸ Available at http://abs.scnat.ch/downloads/documents/ABS_GoodPractice_2009.pdf

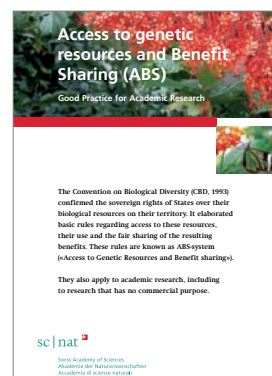
⁹ The translation was possible thanks to the financial support of the Swiss Agency for Development and Cooperation.

information. Special concerns of the program have been to address the issue of responsibility among scientists, and to emphasize that researchers can actively contribute to bridging the North-South divide through cooperative research, training, and the transfer of knowledge and technology.

4.5 Lessons learned

The survey at the outset revealed that ABS procedures were often perceived as pointless, burdensome, and requiring time-consuming paper work with authorities difficult to locate. A fundamental problem at the beginning of the information campaign was therefore how to deliver a message nobody was eager to hear. Since then, the situation has slightly changed: students are interested; project leaders are informed and want to comply. However, researchers still have difficulty finding the responsible agency in the countries providing genetic resources.

The ABS team continues to focus on a general strategy of awareness raising and on capacity-building for those most affected, i.e. researchers; project leaders and heads of institutes. Experience shows that besides this bottom-up approach, a top-down strategy is necessary to ensure compliance with the ABS system.



The take-away leaflet goes with the poster. It contains the basic information on services provided and contacts.



The website <http://abs.scnat.ch> provides information on Access and Benefit Sharing for academia.



Access to Genetic Resources and Benefit Sharing

How the Convention on Biological Diversity Affects Non-Commercial Academic Research

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Genetic Resources Belong to the State on Whose Territory They Are Located

The Convention on Biological Diversity (CBD, 1993) confirmed the sovereign rights of states over their biological resources on their territory. It was decided that access to biological resources containing functional units of heredity is based on Prior Informed Consent, Mutually Agreed Terms and the Fair and Equitable Sharing of Benefits.

The ABS rules also apply to academic research, including research that has no commercial purpose.

These rules are known as the ABS-system ("Access to Genetic Resources and Benefit Sharing").



How to Proceed

- 1. Get Prior Informed Consent – Stakeholders need to know about your intended research**
 A person or institution seeking access to genetic resources for research purposes in a foreign country needs to make a request for Prior Informed Consent (± a research permit). It is issued by the country providing the biological material.

 To this end, the scientist has to inform the competent national ABS authority of the planned research. Depending on national legislation, this may include informing other involved stakeholders such as local communities.
- 2. Mutually Agreed Terms – Research is possible if stakeholders agree**
 After access was granted (Prior Informed Consent), Mutually Agreed Terms (MAT) have to be negotiated. This is a contract between the competent authority of the providing country and the project leader. This contract defines the conditions of access to and the use of the genetic resources. In addition, the MAT incorporate an understanding of the benefits that arise from the utilization of the genetic resources and how to share them.
- 3. Benefit Sharing – It's a give-and-take**
 The benefits resulting from research must be shared in a fair and equitable way with the providing country. This also applies to academic research, since this type of research generates specific benefits which – although non-monetary as a rule – can nevertheless be of value to the providing country.

 Such benefits are - inter alia – access to research results, capacity building (training of Master students, PhD students and staff members), technology transfer (lab methods) and the establishment of academic networks and research cooperation.

A Tool for Researchers


„Access and Benefit Sharing – Good Practice for Academic Research“. This publication and website was prepared by the Swiss Academy of Sciences and contains practical information for academic research with non-commercial intent on the ABS system.

Visit and download the publication: <http://abs.scnat.ch>

Information and coaching

The Academy's ABS team offers (free of charge):

- Lectures at your institution
- Information and counseling on ABS specific matters
- Support in establishing contact with the authorities in providing countries;
- Support in contract drafting, negotiation and in conflict situations;
- Contacts to ABS-experienced researchers



Science's Responsibility

Researchers can actively contribute to overcoming the North-South divide through cooperative research, training, and the transfer of knowledge & technology to developing countries.

The Swiss Academy of Sciences advocates research in a mutually trustful atmosphere and encourages scientists to conduct their research in accordance with existing international codes and standards.





Conference poster.

5 Non-commercial academic research and the international ABS negotiations: The SCNAT contributions

5.1 Introduction

Interviews with researchers revealed the need to propose specific, simple access procedures for non-commercial research in the international ABS negotiations. Yet, the implementation of the ABS system for non-commercial academic research implies specific difficulties and concerns for *both users and providers*. In order to lead this debate in a constructive way, it is essential to better understand the underlying problems and proposed solutions. Cooperation with international partners is therefore fundamental and of great value in order to find solutions for implementing an ABS system that incorporates the needs of both providers and users of genetic resources. It is essential to exchange viewpoints and experiences, and to evaluate proposed tools.

Hence we established an international network representing providers and users alongside our project activities.¹⁰ The network encompasses stakeholders from academia, governmental agencies and NGOs from throughout Europe and abroad.

A multi-stakeholder process and an approach integrating providers and users of the resources is essential for initiatives aimed at creating instruments to implement the ABS system and to ease its procedures.

sustainable use of biodiversity, and/or is designed to serve the interests of the providers. Other benefits for providers, such as scientific cooperation, education and training of students, and technology transfer, occur in parallel to the research so, in comparison to commercial R&D, there is little time-lag between access and the generation of potential benefits. Controlling the sharing of benefits that result from non-commercial public funded research is therefore easier.

Academic research has neither the financial nor the organizational flexibility for lengthy negotiations; resources are relatively scarce, acquisition is highly competitive and based on publishing success. Scientists need easy access to the resources, legal security through an efficient access administration, transparency and predictability of procedures.

It is our conviction that non-commercial public good research is essential to achieve the conservation and sustainable use of biological diversity, the first two goals of the CBD. Moreover it generates non-monetary benefits and contributes to education, advancement of science and technology transfer.

If access to genetic resources is excessively burdened by complex ABS procedures, this type of research is at risk.

5.2 Analysis of problems when implementing the ABS system

5.2.1 The situation of non-commercial academic research¹¹

Users encounter specific difficulties in accessing genetic resources. Besides the lack of operational ABS systems in many countries, access procedures are geared primarily toward industrial product development. In industrial research and development (R&D) processes, benefits are usually realised only after a considerable time span. Therefore detailed contractual agreements and possibly upfront payments are the rule. These are conditions that academic research cannot afford. In contrast to industrial research, academic research takes place under different conditions, and with different goals. Much of academic research generates information important for the conservation and

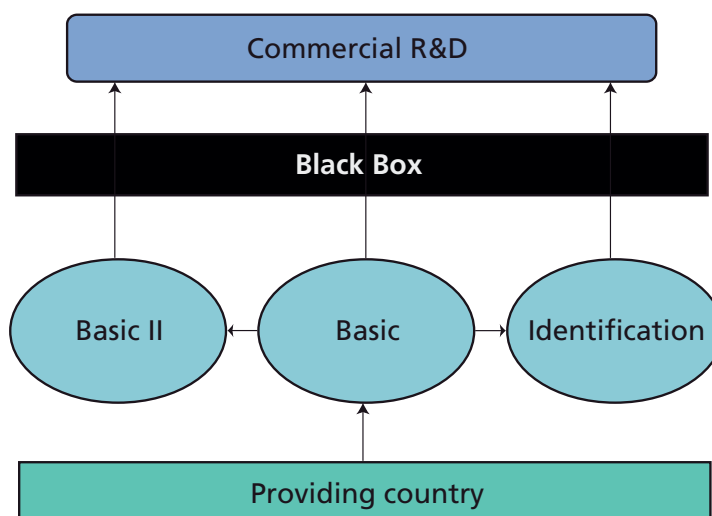
5.2.2 The situation of countries providing genetic resources

In the negotiations on the ABS Protocol, delegations of countries providing genetic resources made it clear that facilitated access systems for research would be acceptable only if measures are in place to ensure that these resources are not transferred to commercial use without consent of the providers. This concern is due to the difficulty of controlling resources once they have left the country. Whether the resources will be used in a non-commercial or commercial context depends on the intention of the researcher. Provider countries fear that resources accessed under a non-commercial label may flow into the commercial value chain and that they would lose the economic benefits of their resources. Administrative authorities, recognizing this possibility, and lacking knowledge on scientific methods and goals, may

¹⁰ For details see Annex I: Project activities.

¹¹ Martinez S I, Biber-Klemm S (2010) Scientists – take action for access to biodiversity. Current Opinion in Environmental Sustainability, 2:27–33.

Figure 4: The points of transfer of genetic resources from non-commercial research to commercial R&D.



evaluate scientific research proposals submitted for ABS access requirements more rigorously than others. They fear that if their access permits are too simplified or lax, they could be charged with allowing biopiracy.¹² This mistrust and fear of abuse fosters the trend toward tight contract conditions and increased control of resources.

Providers are concerned that simple procedures are a Trojan horse introducing easy access for commercial research.

Respect, transparency, cooperation, and establishment of mutual trust are essential elements in ABS relations.

5.2.3 Movements of genetic resources through the research and value chain

We investigated pathways of resource transfer from non-commercial research institutions to commercial R&D entities in order to define the risks and possible points of control. These pivotal points had only been clarified in a very rudimentary way. The points of transfer from non-commercial to commercial R&D appeared as a black box (Fig. 4).

We asked: Where and how does the transfer of genetic resources from non-commercial research to R&D for commercial development take place? Where are the transfer points between non-commercial and commercial utilization of the resources and what are their characteristics? What control points could be set up?

5.2.4 Theoretical Background: The value and innovation chain of genetic resources

In bioprospecting, the genetic resources and information generated by them move through a value chain.

Figure 5 (p. 17) illustrates the flow of information and uses of genetic resources along the value and innovation chains. On the bottom line of the figure are indigenous local communities with their traditional knowledge of medicinal uses and cultivation methods, and sovereign states with genetic resources that are collected by researchers (Knowledge Production Site 1). The knowledge and information collected is transformed by researchers ('Intermediaries') in the next higher level, for example through scientific analysis and publication (Knowledge Production Site 2). Value is added to the resource as this information becomes available to other stakeholders (e.g. research and development, commercial users) in an expanded geographic area (from local to global, from a grassroots approach to a highly technological approach). If the process of adding knowledge continues, for instance by using chemical analyses, the information increases. This can lead to the production of commercial products (Knowledge Production Site 3).¹³

Accordingly, academic non-commercial research is an important stakeholder with a dual role in the access to genetic resources: First, it acts as an access point to genetic resources (biological material) and related traditional knowledge. Second, scientists play a pivotal role as intermediaries between the various stakeholders involved in the

¹² Chapter 5.3.1. on ABS-relevant steps of research provides background information that helps to overcome this problem.

¹³ Based on: Brahy N, Louafi S (2007) The role of the research sector in ABS governance. IDDRI Idées pour le débat 9:1–19.

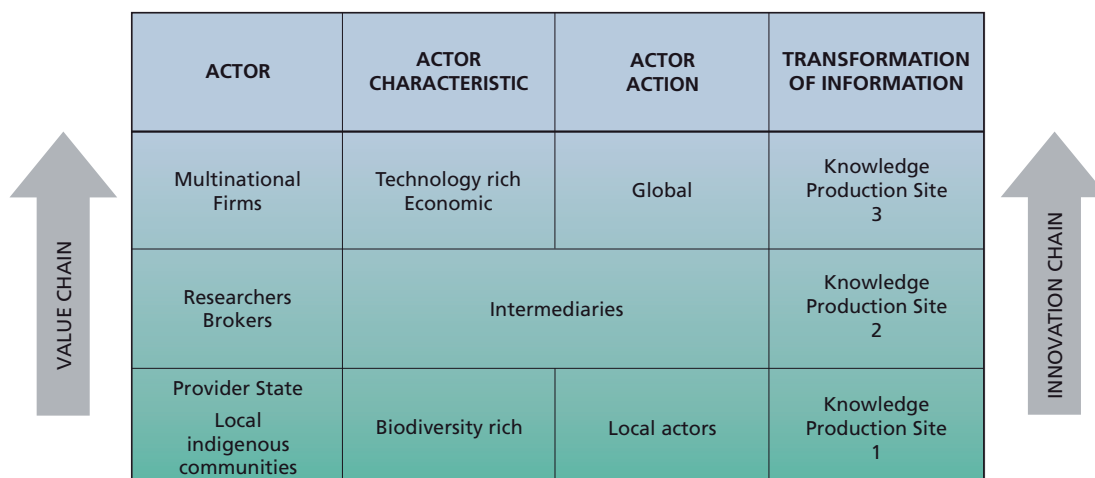


Figure 5: The innovation and value chain.

process. By doing research – from data collection through data analysis and publication of the results – they generate and transform information, transmit it along the value chain and make it available to other scientists and interested stakeholders.

This connection between the generation of knowledge and its subsequent use might be difficult to detect because there may be a substantial time-lag between the publication of results of research and its commercial utilization. As a rule, there is a geographical disconnect between the place of collection and the place of processing; there is also a legal disconnect between the place where the resource originates and the place where further studies are carried out.

5.2.5 Pathways: how genetic resources move from non-commercial to commercial use

In order to assess how resources and research results might be transferred from non-commercial research to commercial R&D, it is necessary to gather information on the stage of research where changes of intent and uses may occur.

In two workshops with relevant stakeholder groups we identified possible gateways between non-commercial and commercial utilization of genetic resources, possible control scenarios, and elements facilitating control in a bilateral context. Interviews with researchers from different fields and institutions further clarified the potential transfer points.

There are considerable differences between fields of research in the handling of the accessed samples and in their – effective or potential – transfer to third parties. Movement of ex-situ collections of dead and of living material (herbaria,

botanical collections) are tightly controlled; scientific custom and practice and formal material transfer agreements define the permitted utilization of samples by third persons. However, the fate of samples that are not stored in a collection after use is less clear. There seem to be no general rules for what happens to a sample after use, how it is to be stored and how potential conditions on its use can be communicated to subsequent users.

There are also differences due to the type of resources (living or dead resources) and to the type of research activity.

These differences between the fields of research in the handling of genetic resources open a range of probabilities of uncontrolled transfer of resources to third parties. Simple access procedures could be made available for cases with a low probability of uncontrolled transfer to commercial R&D. Control measures could be tailored according to the given scenarios. Avoiding excessive transaction costs is in all cases essential.

5.3 Results

5.3.1 The Matrix on research steps in the ABS context

The analysis of sensitive ABS issues led to the distinction between different types of research (see table pp. 18/19), for example, inventories (with characterization and evaluation) and work on functionality of the resources (or their propagation or modification). We also distinguished between research carried out on different types of resources (dead or

Analysis of research steps concerning genetic resources in the ABS context

Types of research with genetic resources ABS relevant research steps	A	B
	Inventories (characterization & evaluation)	
Type of accessed resources	Preserved genetic resources (dead material)	Living genetic resources
Overall goal of research activity	Inventories of biodiversity; knowledge increase in systematics, ecology and evolution	
Use made of resources	Collection, identification, classification; phenotype and functional characterization; measuring; basic molecular analyses (e.g. DNA sequencing, microsatellites) ¹⁶	
Storage of samples	Researchers store samples in own lab Storage for scientific and/or educational use in public collections (museums, herbaria)	Researchers store samples in own lab Storage for scientific and/or educational use in public collections (zoos, botanic gardens, seed banks, culture collections)
Transfer of genetic resources to third parties (including exchange with peers)	Scientific cooperation with peers For identification purposes; loans for scientific work Sharing of duplicate specimens with other collections	
Products of research ¹⁸	Publications, determination keys, presentations and reports Distribution maps Collections for scientific or educational purposes (museums, herbaria) Organismic and molecular data in private or public data bases	Publications, determination keys, presentations and reports Distribution maps Collections for scientific or educational purposes (e.g. botanical, zoological garden, culture collections) Organismic and molecular data in private or public data bases
Potential for further use of research results towards commercial product development ¹⁹	Published results can be further developed into commercial products	
Benefits of research (P = for providing country; S = for scientists)	Basic knowledge of the living world (P&S) Biodiversity assessment, monitoring; information for biodiversity conservation & management (P&S) Scientific cooperation with peers (S) Education and outreach material (P&S) Capacity building (P) University rankings (S) Academic career benefits (S)	Basic knowledge of the living world (P&S) Biodiversity assessment, monitoring; information for biodiversity conservation & management (P&S) In-situ and ex-situ biodiversity conservation (P) Scientific cooperation with peers (S) Education and outreach material (P&S) Capacity building (P) University rankings (S) Academic career benefits (S)

Important note: The table focuses on research activities carried out in academic institutions and does not address further research steps needed to develop commercial products.

14 The manipulation and propagation of organisms or parts thereof require more stringent MTA clauses for controlling and is thus considered a distinct classification in this matrix.

15 Animal breeding is, at present, less relevant in the ABS context; targeted transfer of genes is not yet widely applicable in animal breeding. In conventional breeding, the rights to the genetic information of the progeny are generally included in the transfer of the property.

16 Basic molecular analyses are considered common methods in systematics and studies in ecology and evolution.

17 The ex-situ preservation of microbial strains and fungi requires intermittent isolation, purification and propagation.

18 Products of research with non-commercial intent are usually in the public domain and thus accessible to the general public.

19 Assuming that the research is carried out according to ABS regulations (this includes PIC, MAT and the use of MTAs).

C	D	
Functionality, Propagation¹⁴ & Modification		[Research & Development; Commercialization]
Preserved or living genetic resources	Preserved or living genetic resources	
Identification, isolation, and characterization of active compounds Genomics and proteomics	Improvement of products in agriculture, forestry, horticulture and aquaculture; ¹⁵ development of pharmaceuticals Biological engineering	
Isolation of active compounds; characterization, purification; synthesis; multiplication of organisms or parts thereof (unaltered); traditional biotechnological processes Based on collection, identification; classification; basic molecular analysis	Isolation and insertion of target genes; molecular cloning and transformation of genes, (structures and characteristics); multiplication of cells and/or organisms Based on collection, identification; classification; basic molecular analysis	
Researchers store samples in own lab or in stock centre Culture collections ¹⁷		
Scientific cooperation with peers Stock centers, culture collections		
Publications, presentations and reports Purified samples; chemical formulas, isolated and identified genes Elaboration of new methods and technologies Organismic and molecular data in private or public data bases	Publications, presentations and reports Isolated and identified genes, genetically modified cells or organisms Elaboration of new methods and technologies Organismic and molecular data in private or public data bases	
Published results (e.g. chemical formulae) can be further developed into commercial products Unauthorized use after access to stock centre or stored samples		
Basic knowledge of the living world (P&S) Scientific and technological advancements (P&S) Patents (P and/or S) Scientific cooperation with peers (S) Capacity building (P) University rankings (S) Academic career benefits (S)		

living material). The analysis is based on the definition of ABS-relevant research steps, including the use made of the resources, their storage, and their transfer to third parties, as well as the products of research. These categories served as building blocks (rows and columns) for a matrix that was subsequently completed layer by layer.

An international network of peers evaluated the matrix.

This meticulous analysis is helpful for the negotiation of ABS contracts because it indicates the potential of research to generate commercial profit. Hence it facilitates the adaptation of contracts to the type of research, enabling trust-building measures such as contact points or obligatory reporting. This allows the provider to follow the course of the research.

5.3.2 The ABS-relevant elements of research

Type of resource accessed

Use of the material may depend upon whether the resource is living or dead. Living resources, or resources that can propagate, offer more utilization possibilities than dead material.

Overall goal of research activity

The main differentiation was between inventories²⁰ and the study of functionality, propagation and modification of genetic resources.

Use made of resources

According to the research envisaged, genetic resources are used in different ways. Collecting material often marks the beginning of the scientific activity. Standard techniques used for the identification and classification of taxa are morphological and basic molecular analyses. Column C reflects more complex analyses, i.e. isolation of active compounds, their characterization, purification and synthesis. This column may also include the propagation of organisms and multiplication of their parts, as well as traditional biotechnological processes.

In column D, the uses become even more complex and the need of providing countries for control increases correspondingly. In this section, research activities include isolating and inserting target genes, molecular cloning and the transformation of genes, as well as the multiplication of cells and/or whole organisms.

Storage of samples

In academia, storage of samples is important. Preserved samples guarantee the credibility of published research results. They enable peer scientists to reproduce and validate the obtained results. In most cases, storage is geared towards scientific and/or educational uses. Some samples may be deposited in museums, botanical gardens, zoos or herbaria; others may be stored in stock centers or culture collections. The ex-situ preservation (Column C) of microbial strains and fungi requires constant isolation, purification and propagation. If the material is not properly stored and managed, it could lead to uncontrolled use by unauthorized third parties. Molecular information about genetic resources is deposited in specialized databases.²¹ Several specialized stock centers and culture collections host a variety of resources, including algae, microorganisms, fungi, *Bacillus*, *E. Coli*, *Arabidopsis*, *Drosophila*, etc.

Transfer of genetic resources to third parties (including peers)

A key issue is the control of the transfer of genetic resources to third parties, especially where there may be flow of material from non-commercial into commercial use. For non-commercial academic research, however, the exchange of material has a long tradition, particularly if the work is carried out within a scientific collaboration. In fact, taxonomy is a transboundary discipline by nature; no country hosts a full set of experts able to identify all groups of organisms found on its own national territory.

Products of research

Non-commercial research is dedicated to the increase of knowledge; its main products are publications in journals and books. It is important to note that all products of non-commercial research are placed in the public domain and are thus accessible to the general public. All research sectors produce organismic and molecular data.

Research inventories produce species determination keys, distribution maps and collections for scientific and educational purposes.

The products of research on functionality, multiplication and modification of genetic resources include purified samples, chemical formulas, isolated and identified genes. Genetically modified

²⁰ Biodiversity inventories generate basic biological knowledge essential for research. This includes the identifying and naming of species, understanding the relationships among living things, as well as their ecology and evolution.

²¹ Such as the European Nucleotide Archive, World Wide Protein Data Bank, SwissProt, BarCode of Life Data Systems.

cells or organisms also are produced, generating new methods and technologies.

Potential for use of research results for commercial product development

Many research results have potential to be used for the development of commercial products. From our analysis, the probability of information and genetic resources being misappropriated without honoring ABS agreements is much smaller in the case of research for inventories (Columns A and B) than in research on functionality (Columns C and D). Yet researchers, repositories and stock centers have a special role of responsibility in safeguarding and lawfully passing on material to third parties.

Benefits of research

The analysis of the benefits of research show that both researchers and providers can gain from research. If appropriately communicated, research promotes the increase of knowledge; publications of results act as catalysts and promote academic careers and education.

Conclusion

The distinction between non-commercial and commercial research is a graduated one. It increases from column A to D, as the need by provider countries to control the use of genetic resources in research increases (from characterization and evaluation of biodiversity to research on the functionality, propagation and modification of genetic resources).

The criterion for granting simple access should not be whether the utilization of genetic resources may ever lead to a commercial product, but the *probability* of this happening. Simple access should be granted in cases with a small probability of commercialization.

5.3.3 The Sample Agreement on Access and Benefit Sharing

Since the publication of “Access and Benefit Sharing – Good practice for academic research on genetic resources”,²² the ABS team has frequently been asked by researchers to develop standardized agreements that could be used to provide legal security.

Based on our conclusions that simple access procedures for non-commercial research are possible, we therefore developed a sample ABS agreement that contains model clauses. It aims to fill the gap where no national tools are available or in cases where agreements focus on commercial activities and are not applicable to non-commercial research.

The ABS Agreement for non-commercial research is based on the premise that the Mutually Agreed Terms (MAT), as stipulated in Art 15. CBD, are a bilateral contract concluded between providers and users. The ensuing agreement is the result of their *negotiations* on the terms of access and benefit sharing. Therefore, we considered it of primary importance to acknowledge the needs of both providers and users of the resources.

In drafting the sample agreement, we analysed different types of research, resources and providers. The conclusions can be summarized as follows:²³

- One of the challenges for the providers consists in controlling the flow of the resources throughout the value chain, especially in the user country. Of greatest concern is the risk that the resources and related information accessed under the conditions for non-commercial research could enter the R&D sector without MATs for potential commercial developments.
- *Fields of research* that use genetic resources have various *degrees of probability* that the research results may flow, intentionally or unintentionally, into the commercial value chain. Some fields of research show a very low probability, e.g. biodiversity inventories or ecological studies. In such cases, the provider could require less control over the uses.
- Legal and regulatory situations in provider countries may differ, from a complete lack of regulations on ABS to elaborate agreements.

If the relationship and cooperation between providers and users is to be successful, the parties need to take account of the following: specifics of the type of research planned (e.g. taxonomy vs. phytopharmacological research); the physical requirements of the research (e.g. impossibility of on-the-spot identification of taxa to be accessed in the case of inventorisation); and provider-specific needs (factual and/or political).

22 Biber-Klemm S, Martinez S I, Swiss Academy of Sciences (ed.) (2009) Access and Benefit Sharing – Good practice for academic research on genetic resources. Bern, Switzerland. <http://abs.scnat.ch>

23 For more details see the introduction to the ABS Agreement in Annex 2.

Method

These insights determined our working method. We set up an international partner network, consisting of researchers, research institutions, ex-situ collections, governmental agencies and NGOs of both provider and user countries. We collected samples of Material Transfer Agreements and ABS contracts and analysed their contents, the solutions they offer to problems we had identified, and language.

We repeatedly sent drafts of the Agreement to the partner network to be critically assessed,²⁴ and finally arrived at the present version.

The Agreement is made available (at <http://abs.scnat.ch>) as a Word Document under a Creative Commons License that allows for changes in the document.

Result

The aim of the Agreement for non-commercial research is to ease negotiations, support transparency, enhance mutual trust, and prevent unnecessary transaction costs in negotiations and the implementation of the MAT. To this end, it provides a toolbox for composing a contract on mutually agreed terms tailored to accommodate the various needs of the stakeholders.²⁵

The Agreement is meant to cover the most relevant issues that arise in the relationship between providers and non-commercial researchers. We recommend that both parties possess the *full text* of the Agreement in order to foster discussions on options and provide solutions to disagreements that might arise.

The idea is that the parties to the agreement choose the clauses most appropriate to their situation and to their needs and intentions, and so create their tailor-made MAT.

The Agreement is considered a work in progress. We hope it will be used widely and welcome information and feedback.

²⁴ We thank all our network partners for their contributions.

²⁵ See the ABS Agreement in Annex 2.

6 Recommendations for the negotiations of the ABS protocol

Based on findings of the ABS program, the Swiss Academy of Sciences strongly recommends the insertion of a clause into the International ABS Protocol of the Convention for Biological Diversity to:

Encourage Contracting Parties to create conditions to facilitate and promote public, non-commercial research on biological diversity through

- 1) Obliging the Contracting Parties to provide for easy access with simple procedures to genetic resources for public non-commercial research on biological diversity;
- 2) Stimulating initiatives by the Contracting Parties to create supportive instruments such as framework contracts and certification schemes;
- 3) Implementing adequate and practical measures by the Contracting Parties to control the sharing of benefits resulting from non-commercial public research.

The arguments backing these recommendations can be summarized as follows:

- Research provides the basic knowledge for conservation and sustainable use of biological diversity and innovation based on genetic resources. Without research, there will be neither monetary nor non-monetary benefits.
- Public non-commercial research typically aims at providing *public goods*; it supplies knowledge and information that is necessary for the conservation and sustainable use of biodiversity. It is indispensable to the CBD's goal to conserve biological diversity.
- Research by public institutes should not be hampered by complicated access procedures or those that are not adapted to their specific needs.
- *Fundamental and ABS-relevant differences* exist between research performed by public and private institutions:
Academic researchers generally work in a highly competitive environment, on a tight schedule and with restricted economic resources. They need to produce results within a given time frame and with the means allocated or the success of the research project may be compromised.
Patterns and cultures of public and private research differ. Public research is transparent

by its nature, creating benefits that are predictable and directly linked to on-going research. Non-commercial public research as a rule leads to *non-monetary benefits*. These benefits accrue *during the execution of the research*. Accordingly, they are shared in parallel to – or integrated into – the research. This means that the time gap between research and the possible generation of benefits that is typical for commercial research does not exist. Consequently, the sharing of benefits can more easily be controlled by providers.

- It is important to recognize the provider-specific concerns regarding the control of the use of the genetic resources especially once they have left the country, and the difficulties in monitoring the benefits resulting from research. Stricter access procedures for non-commercial academic research, however, will not solve these problems.
- It is a major concern of academia that an overly restrictive ABS system for non-commercial public research will be counter-productive. We believe that such a system based on fear of abuse and mistrust will lead to the abandonment of non-commercial public good research in many providing countries. This would negatively affect the generation of urgently needed knowledge for the conservation and sustainable use of biological diversity. It would also diminish the opportunities to share benefits in the fields of education and technology transfer.

We suggest the following measures to address *concerns of provider countries*:

- Voluntary schemes to foster confidence, transparency and cooperative approaches (e.g. certification of user institutions,²⁶ or framework contracts between research institutes and governments in providing countries);²⁷
- Arrangements for compensation in cases where commercial benefits result from resources/information originally accessed for non-commercial academic research and that were deposited in the public domain (such as *ex-situ* resources in genebanks and microbial collections; publication of traditional knowledge), taking account of solutions in other interna-

26 Compare: Glowka (2001) *Towards a certification system for bioprospecting activities*. Study commissioned by the State Secretariat for Economic Affairs, Swiss State Secretariat for Economic Affairs.

27 Presentation of G. Nemoga Soto, held at the Swiss-Colombian side-event on models of contracts for non-commercial research at ABS WG 9.1 in Cali, Colombia and Nemogá Soto G (ed) (2010) *Propuesta de ajuste al régimen de acceso a recursos genéticos y productos derivados y a la decisión andina 391 de 1996*. Universidad Nacional de Colombia, Bogotá, Colombia: 275 pp.

tional instruments, such as the International Treaty for Plant Genetic Resources for Food and Agriculture. Collections and free access to collections for scientific and educational work are essential for the progress of science and must be safeguarded.

- Creation of simple access procedures for non-commercial academic research, to be balanced by adequate and practical control measures by users that are adapted to the situation in the user country, and efficient without creating additional administrative costs and efforts.

We advocate the use of model ABS contracts developed for non-commercial research purposes, especially in those situations where no national legislation is yet in place. This could expedite the ABS requirements for non-commercial research.

We advocate long-lasting partnerships between research institutes and providers to create transparency and confidence, in order to increase trust between providers and users of genetic resources.

7 Closing remarks

The basic principles of Access and Benefit Sharing (ABS) appear simple. However, many issues require careful evaluation, especially at the level of biodiversity. Geological changes, climate changes and human behavior all influence the evolution of biodiversity. Thus know-how and collaboration between different disciplines are mandatory to evaluate their impact.

As consequences of geological changes, water supplies and composition of the soil will be modified and possibly influence the genetic and the survival of distinct species. Such phenomena call for careful studies.

Not only biologists, but also specialists from other disciplines must work together to provide solid, scientifically-based information needed for the framework of ABS. First-rate scientific quality as well as objectivity are required. Evaluations

should not be biased by commercial considerations. The Federal Office for the Environment (FOEN) knew that the Swiss Academy of Sciences (SCNAT) meets rigorous criteria which contribute to the development of tools in order to implement the Bonn Guidelines within the Swiss scientific community. The SCNAT is grateful for this opportunity to fulfill this fundamental task through participation in a fruitful collaboration.

The required expertise for ABS should come from interactions among scientists of the various countries involved. It is thus our hope that authorities will fully recognize the need to increase support of collaborative scientific projects with developing countries.

Denis Monard
President SCNAT

Annex 1

SCNAT ABS project activities regarding non-commercial research (in chronological order)

2010

Susette Biber-Klemm participates at the resumed WG-ABS 9.2 in Montreal as a science representative (10–16 Jul 2010)
The ABS team holds a lecture at the Universidad Nacional en Bogotá, Colombia (25 Mar 2010), upon invitation by prof. Gabriel R. Nemogá.

Organization of and participation in an event during WG ABS-9 meeting in Cali, Colombia on ABS contracts for non-commercial academic research – two complementary models (23 Mar 2010).

Scientists – take action for access to biodiversity. Publication by Sylvia I Martinez and Susette Biber-Klemm. Current Opinion in Environmental Sustainability 2010, 2:27–33. doi:10.1016/j.cosust.2010.03.004 (Mar 2010).

Susette Biber-Klemm participates as a representative of public research in the CBD meeting of the Friends of the Co-Chairs of the Ad Hoc Open-ended Working Group on Access and Benefit-sharing, in Montreal, Canada, 26–29 Jan 2010.

Evaluation of the Draft ABS Agreement for non-commercial academic research with optional clauses (Feb 2010).

Evaluation of the Matrix on Research with Genetic Resources (Jan 2010).

Continuous lecture activities at Swiss universities and research institutes on ABS und academic research. Awareness raising among researchers. (Jan–Dec)

Presentation of ABS posters at several conferences in Switzerland and abroad (Awareness Raising Campaign).

2009

Launching of the Model Clauses project aimed at creating a minimal set of clauses specifically designed for the need of academic non-commercial research.

Continuous lecture activities at Swiss universities and research institutes on ABS und academic research (Jan–Dec).

Presentation of ABS posters at several conferences in Switzerland and abroad (Awareness Raising Campaign).

Concept and organization of a round table discussion on ABS and its impact and opportunities for academic non-commercial research, held during the DIVERSITAS Open Science Conference in Cape Town, 15 Oct 2009.

National survey to evaluate the usefulness of the publication: Good Practice for Academic Research (Jan 2009). The general feedback is positive, researchers perceive the Good Practice Manual as a useful tool to integrate ABS issues into the elaboration of research proposals.

Second workshop of the Interface project on commercial and non-commercial research held at the Swiss Academy of Sciences, Bern, 17 Mar 2009.

Second, lightly revised edition of the ABS Good Practice Manual appears in Jan 2009.

2008

Publication of Good Practice brochure in Spanish and French, (available online at <http://abs.scnat.ch>):

- Acceso y Participación en los Beneficios – Guía de buenas prácticas para la investigación académica con recursos genéticos
- Accès et partage – guide des bonnes pratiques pour la recherche universitaire sur les ressources génétiques.

The SCNAT ABS Good Practice Manual is mentioned in the official CBD documents as a contribution of academia: <http://www.cbd.int/doc/meetings/abs/abswg-07/official/abswg-07-02-en.pdf>.

The SCNAT ABS Good Practice Manual is listed on the CBD website under existing instruments, guidelines and codes of conduct and tools addressing ABS: <http://www.cbd.int/abs/instruments/>.

Participation in and co-organization of a workshop on Access and Benefit Sharing for Non-commercial Biodiversity Research. Held at the zoological research museum Alexander König, Bonn, Germany (17–19 Nov 2008).

Organization of and participation in a very well-attended CBD event during COP9 regarding non-commercial academic research. Title: Access and Benefit Sharing – Challenges and Solutions for Academic Research. 19 May 2008.

Talk and poster presentation at the PreCOP research conference: Biodiversity Research – Safeguarding the Future, Bonn, Germany (14 May 2008).

Invited round-table panelist (S. Martinez) at CBD SBSTTA-13 in Rome, Italy, regarding ABS, Taxonomic Research and und Benefit Sharing. Organized by the CBD Global Taxonomy Initiative Coordination Mechanism (Dr. Christoph Häuser, Dr. Junko Shimura). 20 Feb 2008.

Frequent invitations to lecture at Swiss universities and research institutes regarding ABS und academic research.

Presentation of ABS posters at several conferences in Switzerland (Information campaign, dissemination of knowledge).

Publication of articles in many journals to promote the ABS Good Practice manual.

COST (European Cooperation in Science and Technology) project submitted to coordinate an ABS project.

First workshop of the Interface-project regarding non-commercial and commercial research held in Bern at the Swiss Academy of Sciences.

Submission of the GenEquiFair research proposal to the 7th EU European Research Framework Program (May 2008). The proposal was rejected due to a formal budget shortcoming.

Co-organization of a workshop on non-commercial research and ABS with the German Forschungsgemeinschaft (DFG Research Community), Germany's largest research funding organisation. Formation of the GenEquiFair network (15 May 2008).

Sylvia Martínez participates in the sixth Working Group Meeting on ABS in Geneva, Switzerland. This group is negotiating the International Regime on ABS (21–25 Jan 2008).

2007

Launching and promotion of an ABS consulting service for researchers in Switzerland.

Ingrid Kissling-Naef, secretary general, leaves the Swiss Academy of Sciences SCNAT and the ABS team in Jul 2007. Anne Jacob joins the SCNAT ABS team.

Publication of several articles in journals to promote the SCNAT ABS Good Practice publication on academic research.

Many lectures held at Swiss universities and research institutes regarding ABS und academic research in order to disseminate knowledge among scientists.

Presentation of the SCNAT ABS Good Practice publication at a workshop of the French Institut du développement durable et du droit international (IDDRI) in Paris.

2006

Publishing of "Access and Benefit Sharing – Good practice for academic research on genetic resources".

Launch of <http://abs.scnat.ch> website, supported by a national and international media campaign. The elaborated ABS tools are also applicable for researchers working in other countries (15 Jun 2009).

Several articles in professional journals announce the SCNAT ABS publication.

Presentation of the ABS project of the Swiss Academy of Sciences and the ABS Good Practice publication at an event during the fourth meeting of the CBD Working Group on ABS in Granada, Spain.

Presentation on the "International Certificate of Origin and Academic Research: Experiences, Reflections, Statements". European Regional Meeting on an Internationally Recognized Certificate of Origin/Source/Legal Provenance, Isle of Vilm, Germany, 25 Oct 2006. (German Federal Agency for Nature Conservation).

Publication on ABS in the journal *Medicus Mundi* by Susette Biber-Klemm.

2005

Elaboration of an ABS manual for scientists: Access and Benefit Sharing – Good practice for academic research on genetic resources.

International Workshop held at the Centre de Recherches Scientifiques in Abidjan, Côte d'Ivoire, to discuss the draft of the Good Practice Manual with researchers in Africa (22–25 Aug 2005).

Consultation of the draft for the ABS project Advisory and Steering Group.

Presentation at the workshop "Implementing the Bonn Guidelines by Specific User Groups" published in: "Access and Benefit-Sharing of Genetic Resources – Ways and means for facilitating biodiversity research and conservation while safeguarding ABS provisions". Report of an international workshop in Bonn, Germany, Germany, 8–10 November 2005. German Federal Agency for Nature Conservation, BfN-Skripten 163, 2005.

Elaboration of Recommendation of the Swiss Academy of Science on behalf of Access and Benefit Sharing of Genetic Resources (ABS), Dec 2005.

2004

Presentation of the Swiss ABS project at the meeting of the German "Arbeitskreis Biodiversitätsforschung: Ressourcenzugang und gerechter Vorteilsausgleich" of the Deutsche Forschungsgemeinschaft DFG in Göttingen, Germany (2 Jul 2004).

Survey of Swiss universities and research institutions on the state of knowledge and existing experiences on ABS among researchers in Switzerland. Compilation of past and present biodiversity research projects affected by ABS.

Workshop to evaluate the first draft of the ABS project at the conference of the International Association for the Study of the Commons in Oaxaca, Mexico (9–13 Aug 2004).

2003

The Swiss Academy of Sciences accepts the first mandate of the Federal Office for the Environment (Dr. François Pythoud) to develop an instrument to implement the Bonn Guidelines among academia in Switzerland. Team members are Ingrid Kissling (secretary general, Swiss Academy of Sciences SCNAT), Susette Biber (University of Basel), and Sylvia Martínez (Swiss Biodiversity Forum, SCNAT).

Annex 2: Agreement on Access and Benefit Sharing for Non-Commercial Research

Sector specific approach containing Model Clauses



Introduction

This document contains a sample agreement on mutually agreed terms (MAT) for Access to Genetic Resources and Sharing of Benefits, for the use by providers and non-commercial academic researchers.

At the same time it provides a sample for the potential of model clauses within a sector specific approach; as comprised in Art. 15 of the Draft Protocol on ABS under the CBD.¹

The agreement aims at creating transparent, and legally secure relations that are appropriate to the needs and intentions of all parties involved. The suggested terms and clauses are intended to meet the needs of both the providers of the genetic resources and the researchers seeking access. The agreement proposes language to ensure fair and equitable sharing of benefits.

The agreement may be considered for use in various scenarios of access and benefit sharing, such as inventories of biodiversity; research in systematics, ecology and evolution; identification and isolation of active compounds; and genetic research.

Background

Since the publication of “Access and Benefit Sharing – Good practice for academic research on genetic resources²” by the ABS team of the Swiss Academy of Sciences (2006), we have been frequently asked by researchers to develop standardized agreements that could be used to provide legal security. ABS authorities and clear national regulations may be unavailable in many countries where genetic resources are sought. The ABS agreement presented here aims to fill the gap where no national tools are available or in cases where agreements focus on commercial activities and are not applicable to non-commercial research. Its goal is to ease the negotiations of the MATs, to support transparency and enhance mutual trust, and to prevent unnecessary transaction costs in its negotiation and implementation.

Elaboration

The Swiss Academy of Science's ABS team assessed existing agreements, material transfer agreements and other documents, analysed them for content and language and compiled a list of issues to be addressed.

¹ In the version of 16 July 2010 as negotiated by the Interregional Negotiating Group: UNEP/CBD/COP/10/5/Add.4, Annex

² Susette Biber-Klemm, Sylvia Martinez, Swiss Academy of Sciences (ed) (2009) Access and Benefit Sharing – Good practice for academic research on genetic resources. Bern, Switzerland. <http://abs.scnat.ch>

In addition, the team defined the research steps that are essential in view of access and benefit sharing and elaborated a matrix that meticulously analyses the research fields and steps from this perspective.³ A broad international network of providers and users from different fields of research reviewed the matrix and a first agreement draft. Feedback was incorporated into successive drafts that were repeatedly reviewed.

Our core goal was to use concise legal language while keeping the wording understandable to non-lawyers. Explanatory text was included to enhance the applicability of the agreement and to give background information.

Concepts

The Agreement is adapted to the specific situation of non-commercial research sponsored by public funding. Its basic premise is that the Mutually Agreed Terms, as stipulated in CBD Art 15, are a bilateral contract concluded between providers and users, resulting from their fair negotiations on the terms of access and benefit sharing.

Involved parties are encouraged to take account of each other's specific needs and circumstances, reflecting on the type of envisaged research (e.g. ecological vs. phytopharmacological research) and the specifics of the research (e.g. difficulties in identifying taxa, sharing of material). For the provider, this may include means to monitor the use of genetic resources.

We assumed the following basic scenario:

- The resources are accessed by a researcher under the lead and responsibility of a research institute.
- The research is non-commercial, aiming at providing publicly available results. The results have therefore to be published.
- Unexpected research results may trigger reflections towards their utilisation in a commercial context.
- Benefits are non-monetary as a rule. They usually accrue during the research process.
- Genetic resources might be transferred to third parties under a framework of customary cooperation by research institutes.

The analysis of research types and access situations carried out by the ABS-team led to the following conclusions:

1. One of the challenges in implementing the ABS system consists in controlling the flow of the acquired resources throughout the value chain, especially in the user country. At the centre of the problem lies

³ See supra 5.3.1

the risk that the resources and related information accessed under the conditions for non-commercial intent enter the R&D sector without corresponding MATs for potential commercial developments.

2. Non-commercial researchers depend largely on public funding. For continued financial support the publication of research results is a crucial step and has to happen in a timely manner. Scholarly standards for disclosure of information for scientific transparency and the exchange of material among peers may collide with the need of providers to control the use of genetic resources. In turn, too strict control measures could put research at stake.

3. *Different fields of research* with genetic resources imply *different degrees of probability* that the research results flow (intentionally or unintentionally) into the commercial value chain. It is, however, essential to realize that some fields of research show very low probability, for example the elaboration of biodiversity inventories or ecological studies. In such cases the providing country could require less control over the uses and instead request periodic reports on research progress to monitor the user's compliance with the MATs.

The Agreement takes account of various research activities by proposing options for the following conditions:

1. Different situations (e.g. access to genetic resources vs. access to related traditional knowledge; access to specified taxa vs. the need to identify the samples after collection);
2. Different models of research cooperation; and diverse needs to monitor the implementation of the agreement;
3. Specific aspects of academic research, such as the need to publish results and the exchange of data, storage and accessibility of samples etc.

How to use the Agreement

The Agreement on Access to Genetic Resources and Sharing of Benefits (ABS) for Non-commercial Academic Research containing Model Clauses is based on the conviction that mutually agreed terms are a contract that needs to be negotiated and concluded between the parties, i.e. the providers and the users of genetic resources. The proposed Agreement provides a toolbox for composing a contract on mutually agreed terms tailored to accommodate the needs of the stakeholders. We recommend that both parties possess the *full text* of the Agreement in order to foster discussions on options and provide solutions to disagreements that might arise.

The Agreement consists of different types of clauses: 1) general clauses, like the preamble or the definition of the purpose (article 4); 2) clauses on substantive issues (articles 5 to 17); and 3) clauses on procedural issues. Most of the clauses offer a basic clause (marked blue in the sample agreement) and include options that can be added to the basic clause or used as a stand-alone solution. Other clauses offer only options to choose from as needed.

In drafting the agreement, we intended to cover most issues that might arise in the relationship between providers and non-commercial public researchers. The basic clauses by themselves may form a full contract for simple non-commercial research situations. Not all cases will need all clauses; each agreement must be modelled according to the specific needs of the parties engaged in the negotiations. The Agreement is therefore made freely available under a Creative Commons Licence that allows for changes in the document⁴.

Outlook

It is with great pleasure that the Swiss Academy of Sciences makes available to interested stakeholders this example of an ABS agreement with model clauses. It is a tool to actively support the implementation of ABS regulations and focuses on academic non-commercial research. The proposed Agreement still needs to prove its applicability to real ABS situations. Accordingly, it should be considered as a draft that needs to be adapted to the final version of the CBD ABS protocol and which will need improvement over time. Suggestions and feedback by both providers and users are most welcome.⁵

⁴ <http://creativecommons.org/licenses/by-nc/3.0>; <http://abs.scnat.ch>

⁵ abs@scnat.ch

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Comments

The Convention on Biological Diversity (CBD) in its Article 1 sets out the following objectives: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding.

Under Article 15 CBD access to genetic resources is to be facilitated for environmentally sound use. Access is based on the prior informed consent of the Party providing the resource. Providers and Users are to negotiate the mutually agreed terms defining the sharing of benefits.

Article 16 CBD recognizes that both access to and transfer of technology are essential elements for achieving the objectives of the Convention. It requires the Parties to provide and facilitate access to and transfer of technologies relevant for conservation and sustainable use of biological diversity as well as to use the technology in an environment friendly way.

The mentioned provisions, in our view, express the very essential principles of access and benefit sharing embraced by the CBD. Parties are however free and encouraged to regulate their relation in accordance with other principles and rules stipulated in the CBD such as Article 7 (Identification and Monitoring), Article 12 (Research and Training), Article 17 (Exchange of Information), Article 18 (Technical and Scientific Cooperation) or Article 19 (Handling of Biotechnology and Distribution of its Benefits).

The Agreement has been drafted solely for the relevant institutions as the parties to the Agreement. The “Provider” is the national authority of the involved provider country in accordance with its national law. It is responsible for fulfilling the obligations under Article 10.

The Agreement could also be applied in negotiations with delegated entities such as federal governments. However, it is not apt to cover cases where, according to the national law of the provider, (additional, ancillary) agreements have to be concluded with private parties, such as a land owner.

The User can only be a research institution; an individual researcher may only act on behalf of it.

If the Provider is a holder of traditional knowledge (TK)⁷, a separate Agreement between researchers (as the User) and the holder of traditional knowledge (indi-

⁷ The drafting of specific agreements and codes of conduct is planned.

The Agreement

Preamble

The purpose of this Agreement is to set out the conditions for the use of genetic resources, any associated Traditional Knowledge (TK) and the sharing of resulting benefits between the parties concerned in accordance with the Convention on Biological Diversity (CBD), particularly in respect with the principles established under its Articles 1, 8(j), 15, and the Bonn Guidelines.

The Agreement contains Mutually Agreed Terms (MAT) according to Article 15.7 CBD.

The Agreement is designed to promote non-commercial academic research, such as research in taxonomy, ecology, biochemistry and genetics, and to foster conservation and the environmentally sound and sustainable use of genetic resources.

Its objective is to provide a sound basis for cooperation, transparency, communication and trust between the parties to the Agreement, taking account of the concerns of both providers and users of genetic resources.

1. Parties to the Agreement

The Agreement is entered into on [insert the date] by and between

[insert the name and details of the following:

- State and Institution (relevant competent national authority)
- The contact person responsible for the implementation of the Agreement on behalf of the institution]

together hereinafter referred to as the “Provider”.

and

[insert the name and details of

vidual, community, legitimate representative of the community) needs to be concluded.
The present Agreement takes into account the concerns of the TK holders to the extent possible in negotiations between research institutes and governmental agencies.
The data of both the User and Provider serve as reference and contact point in the communication between the parties. From the perspective of the Provider, the relevant research institution shall be held as the responsible body during the term of the Agreement. On the side of the User, a relevant national agency or authority will be responsible for maintaining the Agreement.

Article 15 CBD states that access to the genetic resource shall be subject to prior informed consent of the Party providing access.
Article 2 provides for two different solutions.

Option 2.1. applies to cases where access to genetic resources is subject to a formal Prior Informed Consent (PIC) by the Provider.

Option 2.2 applies to cases where the Provider determined that PIC can be included in the MAT.
The research project of the User should include information on resources to be access, planned utilization and prospective or intended benefits to be shared.

If access is requested for a research project that includes Traditional Knowledge (TK) associated to the genetic resources, the sharing of benefits in relation to TK is to be agreed upon in a separate, ancillary agreement with the holders of the TK and according to the national law of the providing country if such legislation exists.

This article contains standard definitions of the terms used in the Agreement. The Parties are however free to replace or customize the terms in accordance with their needs and in particular in accordance with the planned research activities. They can also opt between narrow or broader definitions by excluding or including different options.

- The responsible research institution
- The representative of the research institution responsible for the implementation of the Agreement]

Represented by the authorized head or member of the research team; authorized researcher

[insert the name and details of researcher].

together hereinafter referred to as the "User".

2. Prior Informed Consent

Option 2.1

The Agreement is based on the Prior Informed Consent (PIC) issued beforehand by the Provider to the User for the access to the genetic resources concerned. The PIC document is attached to this Agreement and is considered an integral part of the Agreement.

Option 2.2

The Provider hereby confirms that he/she has been informed on the research project by the User and consents to provide access to genetic resources in situ and/or ex situ necessary to carry out the research in accordance with the research project attached to this Agreement.

3. The Purpose of the Agreement

The purpose of this Agreement is to specify the terms for

1. Accessing genetic resources,
2. Their utilization in accordance with the PIC,
3. Their possible transfer to third parties, and
4. For sharing the benefits resulting from the utilization of genetic resources.

4. Terminology

In this Agreement the terms defined in Article 2 CBD shall have the same meaning, unless otherwise defined in this article.

4.1 Genetic Resources

Genetic Resources means genetic material of actual or potential value.

The definition of commercialization was drafted to reflect acts and activities that simultaneously serve as indicators of commercialization.

In our view it is more practical to focus on activities for identifying the transfer of resources to commercial sectors than to rely on the intent of the user.

The Mutually Agreed Terms can be contained in one document, or in a main document and ancillary agreements with specific stakeholder groups.

Option 4.1.1

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

Option 4.1.2

The term "Genetic Material" includes living and dead resources.

Option 4.1.3

The term "Genetic Material" includes derivatives as defined below.

4.2. Derivatives

Option 4.2.1

Derivatives means products based on Genetic Resources and generated through techniques such as expression, replication, characterization or digitalization

Option 4.2.2

Derivatives mean substances created from Genetic Resources that are substantially modified to have new properties.

4.3 Commercialization

Commercialization means the use of the Genetic Resource for the generation of any kind of actual or potential economic profit.

It means in particular any sale, lease, licensing of the Genetic Resource, and/or Products generated from its use through actions such as filing a patent application, obtaining intellectual property rights or other tangible or intangible rights.

It includes any transfer of the Genetic Resource to a for profit organization.

4.4 Mutually Agreed Terms (MAT)

The Mutually Agreed Terms are an agreement negotiated between the Provider and the User of the Genetic Resources and/or holders of Traditional Knowledge associated to the Genetic Resources according to the national law of the country providing the resources. The MAT regulate conditions for the access to the Genetic Resources and to their associated Traditional Knowledge and the fair and equitable sharing of benefits that result from their use. They are adapted to the specific access situation.

4.5 Traditional Knowledge

Option 4.5.1

Traditional Knowledge is the accumulated knowledge that is vital for the conservation and sustainable use of biological resources and/or which is of socioeconomic value, and which has been developed over the years in indigenous/local communities.

	<p>Option 4.5.2</p> <p>Traditional Knowledge means “information or individual or collective practices of an indigenous or local community associated with the genetic heritage having real or potential value”.</p>
PIC may consist in a research permit.	<p>4.6 Prior Informed Consent (PIC)</p> <p>Prior Informed Consent means the unilateral declaration of the Provider that he/she has been informed about the planned research and that he/she is willing to provide the required access to the Genetic Resource.</p>
	<p>4.7 Product</p> <p>Product means the result produced, obtained, extracted or derived from the Genetic Resource through research or research & development (R&D) activities, including data and information generated through analyses of the Genetic Resources.</p>
	<p>4.8 Progeny</p> <p>Progeny means unmodified offspring from the Genetic Resource</p>
Regarding the relation with Third Parties see Art. 8.	<p>4.9 Third Party</p> <p>Third Party means any person or institution other than the Provider, the User and any collaborator under their control or supervision. A Third Party is not bound to the terms and conditions of this Agreement unless otherwise agreed with the User.</p>
	<p>4.10 Unauthorized Person</p> <p>Unauthorized Person means any person that came into possession of the Genetic Resources without the authorization of the User.</p>
Here, the Parties may list names of species or strains of the material to be accessed or any other attributes that may help to define the genetic resources.	<p>5. Genetic Resources to be accessed</p> <p>The User shall have access to the following Genetic Resource(s): <i>[Insert list of the Genetic Resources to be accessed].</i></p>
The list may include identified and unidentified species. If there are unidentified species/strains in the submitted list, option 5.2 applies.	<p>Option 5.1</p> <p>Since the species/strains present at the collection site are not known to the User at the time of concluding this Agreement, a general account of species/strains most likely to be collected is given in Annex [XX]. A list of the collected samples according to the researcher's field-notes is presented to the Provider within [XX] months after having gathered the samples.</p>
	<p>Option 5.2</p> <p>If the collected samples cannot be identified in the list of collected samples within the above prescribed period, their identification has to be shared with the User as soon as it is available.</p>

It is important that the User binds Third Parties to the terms of this Agreement in order to avoid uncontrolled flow of genetic resources.
If institutions or persons are appointed for specified analytical and technical auxiliary work, the conditions of this Agreement must be included in the contract regulating the cooperation.

Options 8.1–8.4 establish different levels of control. Parties should include those that reflect the appropriate level of control in accordance with their needs.

Option 8.4 is an extremely limiting measure. It is meant primarily in cases where the Material has associated TK. Given the current problem regarding the protection of TK, we assume that the Provider may have an interest to

6. Utilization

The Material may be utilized for non-commercial purposes including for academic research and collections, and for training, teaching and education.

The User must comply with the User's and Provider's national regulations and with relevant international law. The utilization of the Material or derived information for any type of Commercialization is prohibited.

Option 6.1

The Genetic Material shall be used exclusively for the following purposes: *[insert allowed activities and/or uses]*.

7. Change in Utilization from Non-Commercial to Commercial

The Commercialization of the Genetic Material and related information is prohibited.

Any change in utilization from non-commercial to commercial shall require a new Prior Informed Consent in writing issued by the Provider. In this case, the terms of such Commercialization shall be subject to a separate agreement (MAT) between the involved parties.

8. Transfer of Genetic Resources (and Associated TK) to Third Parties

Transfer of the Genetic Resources for the purposes of academic research and collections, and for training, teaching and education, or any other non-commercial activities is allowed under the condition that the User ensures that the subsequent person or institution (Third Party) is informed about the provisions under this Agreement and undertakes to pass on the Genetic Resources under the same obligations to any further recipient.

Option 8.1

The User delivers to the Provider annually a *list of the Third Parties* to whom the Genetic Resource was transferred to.

Option 8.2

The User shall maintain retrievable records of any transfer of the Genetic Resources to Third Parties under the conditions corresponding to this Agreement.

Option 8.3

The User shall require the Third Party to sign an agreement containing identical obligations on Use and Transfer of the Genetic Resources (and associated TK) as set out in this Agreement.

Option 8.4

The Genetic Resources (and their associated TK) may be transferred to Third Parties only after having obtained the *written consent of the Provider* and in accordance

keep knowledge secret and therefore may want strict control on any further transfer of the Material and TK.

with Mutually Agreed Terms between the Provider and the Third Party. Exempted is a temporary transfer of the Genetic Resource to taxonomic specialists for scientific identification.

Option 8.5

The User is entitled to deposit the Genetic Resources in collections that are accessible without restrictions for research purposes such as herbaria, museums and culture collections.

Option 8.6

If the Genetic Resources are transferred to an *ex situ collection of living Genetic Resources for educational purposes* (such as zoos, botanic gardens), this institution is – in addition to the obligations of this Agreement – obliged to take any appropriate precautions to prevent the Genetic Resource coming into the possession of any Unauthorized Person.

Option 8.7

If the use or storage of the Genetic Resource is subject to *special conditions or restrictions*, such conditions/ restrictions have to be *clearly indicated on the label* or otherwise linked to the sample, when transferring the Genetic Resource to Third Parties, including the indication of where the information concerning the special conditions/restrictions can be found.

Researchers may face the problem that the conditions or restrictions with respect to handling the Material are not clearly known or indicated (e.g. on the sample). Therefore even if they want to comply with restrictions they fail.
This provision aims at eliminating any liability of the User in cases where the special conditions/restrictions of use are not communicated properly. This includes not marking the sample itself or not providing reference to information e.g. in the internet.

The list under Article 9 enumerates a minimal standard of benefits that in our view should always be shared if applicable.
Parties to the Agreement are encouraged to extend the list and add other benefits as well. For this purpose, we attach as an annex to this Agreement a list of non-monetary benefits as specified in the Bonn Guidelines. These benefits may be included in Article 9 of the Agreement. The Parties are free to go beyond the benefits encountered in the list and add others as well.

9. Benefit Sharing

The benefits arising from the access and use of the Genetic Resources shall be shared fairly and equitably by the User, in accordance with the principles established in the CBD. Basic benefits to be shared include:

1. The offer to the Provider to include local researchers in the research activities, if such interest exists.
2. In case of publications or oral presentation of the research results, full acknowledgement is to be given to the source of the Genetic Resource;
3. If TK associated to the Genetic Resources is involved, the research results published or presented orally will include full acknowledgement of the source of the Genetic Resources and the TK, if so required by the providers.
4. The Provider will receive a copy of all publications;
5. Research results will be communicated to involved stakeholders (e.g. communities, indigenous people) in an adequate manner and according to reasonable requirements of the Provider;
6. If applicable, share duplicate specimens with the

repository in the Provider country in accordance with good scientific practice.

In addition, the User agrees to share the following benefits:

[Choose from the list of benefits appended to this Agreement; insert a detailed lists of benefits here or in an annex]

10. Rights and Obligations of the Provider

The Provider defined in Article 1 is the responsible contact point for the User for the entire duration of the present Agreement.

The Provider has the obligation to facilitate access to the Genetic Resources. This includes the facilitation of the acquisition of other permits required in accordance with the relevant national or regional regulations in the Provider country as well as export permits.

Option 10.1

The Provider designates the following institution *[insert the relevant institution]* as the responsible contact point for the User for the entire duration of the present Agreement.

Contact details of the technical contact point are provided in annex *[XX]* to this Agreement.

The Provider has the right to receive information on the state of the research from the User as agreed upon (see Article 12 on Reporting).

Option 10.2

The Provider requests that the following analytical parts as set out in the project are performed in the providing country: *[insert a list of analyses to be performed in the Provider's country]*.

The Provider confirms that all necessary conditions (equipment, staff and consumables) for conducting the analyses are available;

The User confirms that he/she has the necessary resources (funding, time) for such an arrangement.

11. Rights and Obligations of the User

The User is entitled to administrative support and guidance to facilitate the acquisition of the necessary permits required by the Providing country.

The User shall not use the Genetic Resource nor derivatives generated in the research for any commercial purposes, nor shall the User commercialize any Product derived from the Genetic Resource, unless with the written consent of the Provider.

The User is obliged to take all reasonable precautions to prevent the Genetic Resource coming into the possession of any Unauthorized Person.

The User is obliged to inform the Provider about any unforeseen research results that are of potential com-

This is a technical contact point. It might be a different institution than defined in Article 1. The technical contact point will act on behalf of and as mandated by the institution in Article 1.

Different options regarding the Providers' right to obtain information on the state of research are defined in Article 12 (Reporting).

By performing part of the research in the Provider's country, researchers in the host country have the opportunity to be fully integrated in the research. However, we prefer to treat the provision as a "right of the Provider" rather than as a "benefit sharing" arrangement due to the fact that such right is highly dependent on the technical capacity of the Provider.

If the Provider (in contrast to the User) intends to obtain a patent on the results, it is necessary to refrain from disclosing information (e.g. publishing research results in journals). It would impede the protection of the results by intellectual property rights due to the lack of novelty.

mercial interest, prior to any disclosure of this information to the public.

The reference to international law regulating TK includes for example: 1948 Universal Declaration of Human Rights, International Labour Organization ILO Convention 169, The Rio Declaration and Agenda 21, the Convention on Biological Diversity, etc. It is a right of the Provider to instruct the User how to exploit the material if it is associated with TK. Instructions may be included in this Agreement as its integral part either through an additional article stipulating the terms and conditions of use or annexed to the Agreement.

For ethical standards see: International Society of Ethnobiology (2006). ISE Code of Ethics (with 2008 additions). Online: http://ise.arts.ubc.ca/global_coalition/ethics.php; Elements of a Code of Ethical Conduct to Ensure Respect for the Cultural and Intellectual Heritage of Indigenous and Local Communities. Report of the Sixth Meeting of the Ad Hoc Open-ended inter-sessional Working Group on Article 8 (j) and related provisions of the Convention on Biological Diversity. UNEP/CBD/COP/10/2; 21 November 2009.

Such an ancillary contract will depend on the requirements of the relevant national law in the Provider country regarding the obligation to conclude contracts with sub-national entities (federal governmental bodies, TK holders, indigenous or local communities, private land owners) .

This provision has the purpose to establish a long-term access to data generated by the User, which goes beyond the information that can be found in publications. It is up to the Provider to spell out the information of the vital interest for him/her. This provision should contain the precise description of the information/data required and the manner of the data transfer, such as time period, communication means, etc. Parties to the Agreement should account for potential barriers that transfer of data may bring along and regulate it as detailed as possible. For example, if there is a language barrier between the Provider and the User, the Parties should define the official language to operate with, or to define the particular standard to be used, if there would be more options, and so on.

The Reporting obligation may depend on the particular nature of the research and the interest of the Provider.

Option 11.1

If the research implies TK associated to the Genetic Resource, the User is obliged to respect any relevant international law and the national and regional regulations in the Provider's country, and has to proceed according to the instructions of the Provider. In any case the User is obliged to respect the customary law of the holders of the TK and has to apply ethical standards.

Option 11.2

Corresponding to national law the User will conclude an ancillary contract with the holders of TK and/or the private land owners of the genetic resources. The ancillary contract forms an integral part of this Agreement.

12. Data Sharing

The User agrees that the Provider has the right to access the following data resulting from the research:

▪ *[insert here type of data]*

The User shall facilitate access to the above defined data for the Provider.

The Provider agrees that for using the data in his own research, he/she needs the consent of the User.

Option 12.1

Given the cooperative approach to the research, the Provider and the User agree in a separate agreement on

He/she may request different amounts of information in a varying periodicity.

Therefore, we offer different options that may meet the needs of the parties, depending of the complexity of data included and the time schedule.

However, Parties may tailor any of these options to make it more suitable to their convenience or they can stipulate a new provision that will entirely reflect their needs. They are free to specify in a more detailed manner the reasonable content and the structure of the Report as well as the time period within which the Report should be submitted.

Article 15 on Publication treats in its option 15.3 the case where a Provider himself wants to apply for an intellectual property right.

Article 7 deals with the Change of Utilization from non-commercial to commercial.

the use of the data, annexed to this Agreement [Annex XX] and forming its integral part.

13. Reporting

The User will deliver a written report in accordance with the Provider's instructions as to its structure, information included, etc, upon his/her request.

Option 13.1

The User shall submit an annual written report on the research accomplished.

Option 13.2

Upon request of the Provider, the User submits a written report on the research accomplished.

Option 13.3

Upon request of the Provider, the User submits an annual written report on the research accomplished. The report shall include a list of Third Persons to whom the Genetic Material has been transferred.

Option 13.4

Since the *Provider* is a private citizen, upon his/her request, the report is translated into the local language by the User and adapted to a non-scientific audience.

14. Intellectual Property Rights

The User shall not claim any intellectual property rights over the Genetic Resource in the form received.

If the User wants to obtain intellectual property rights on research results such act shall be treated as change in utilization and thus shall be regulated under Article 7 of the present Agreement.

If the *Provider* wishes to obtain IPR on research results, such act shall be treated as change in utilization and shall be regulated under Article 7 of the present Agreement. In particular the ownership of the IPR and the distribution of the value derived from the IPR are to be negotiated.

15. Publications

The User has the right to publish the results of the research related to the Genetic Resource according to Article 6 of the present Agreement, and according to good scientific practice. The origin of the Genetic Resource has to be acknowledged.

Option 15.1

The User has the right to publish the results of the research related to the Genetic Resource according to good scientific practice. The origin of the Genetic Resource has to be acknowledged, as well as the sources of TK associated with the Genetic Resource.

This option takes account of the Provider's concerns that published results may reduce his/her opportunity to derive commercial value from his/her genetic resources.

On the other side, it takes account of the User's interest that the Provider's decision to commercialize the material does not significantly impede or delay research.

The purpose of the provision is to preserve certain rights and obligations that are independent of the duration or termination of the present Agreement. This, in general, means that even if the present Agreement is not in force the User is obliged to keep secret all the information defined as a trade secret by the Provider and

Option 15.2

The holder of TK associated to the Genetic Material has the right to request confidentiality of specific information [describe the information subject to confidentiality] such as for spiritual reasons; to prevent the depletion of the genetic resources; and/or to prevent unsafe/hazardous applications of the TK in the health sector.

Option 15.3

If the User, in the course of the research, discovers any unforeseen commercial potential of the Genetic Material, he/she is obliged to share such information with the Provider prior to any publication of such information.

If the Provider intends to pursue a potential commercialization, this is subject to negotiations between the Provider and the User according to Article 7. The Provider agrees not to hold up the User's research work unless concerns are concrete and justified in terms of well-defined proprietary interest.

Option 15.4

If the User is prevented from publishing the results of the research due to the Provider's wish to obtain a patent over the research results, the Provider shall file the patent application within [XX] months. After the agreed period, if the Provider has failed to file a patent application, the User has the right to proceed with the publication of the research.

16. Handling of the Genetic Material after Termination of the Agreement

Upon completion of the project, Genetic Material will be stored or disposed of according to the utilization agreed under Article 6.

Option 16.1

If the Genetic Material has been placed in storage, or in public collections, upon expiration of the Agreement or its termination, the Genetic Material may be available for use only under the same conditions as contained in this Agreement.

17. Duration and Termination of the Agreement

The present Agreement shall end on [insert the date] and may be renewed upon mutual agreement of the Parties.

Option 17.1

The present Agreement shall be deemed to be in force until the Genetic Material is returned to the satisfaction of the Provider upon the completion of the Project. Regarding the Genetic Material related information, the present Agreement shall be subject to any associ-

not disseminate it to any Third Party after the present Agreement ceases to exist.

ated rights, such as copyright or trade secrets.

Option 17.2

When a Party to the present Agreement wants to terminate the Agreement prior to the completion of the Project, the Party shall give written notice [XX] months in advance.

The present Agreement may be terminated at any time by mutual agreement of the Parties.

The present Agreement may be terminated immediately, in case of its breach.

The Parties to the Agreement are free to establish competence of any court they agreed upon for potential disputes arising from the Agreement. They can also opt for arbitration or to include any independent third party. However, we believe that it is important to encourage them to try to negotiate any disputes before reverting to any court.

18. Settlement of Disputes

The Parties agree to make attempts in good faith to negotiate the resolution of any disputes that may arise under this Agreement. If the Parties are not able to resolve a dispute within a period of [XX] months, such dispute shall be finally settled by an arbiter to be mutually agreed between the Parties.

Option 18.1

If the Parties are not able to resolve any dispute within a period of [XX] months, such dispute shall be resolved before the [XX] Court as the only competent body for resolving disputes arising under this Agreement and in accordance with [XX].

[Insert applicable law; jurisdiction]

Parties may also include provisions on other matters of their importance and regulate issues such as Warranties, Forcee Majeure, Disclaimer.

19. Other Provisions

Indicative list of non-monetary benefits (adapted from the CBD Bonn Guidelines)

- Sharing of research and development results;
- Collaboration, cooperation and contribution in scientific research and development programmes, particularly biotechnological research activities, where possible in the provider country;
- Performing certain analytical parts of the research in the providing country to the extent that adequate equipment is available and the User has the necessary resources (funding, time) for such arrangement.
- Participation in product development;
- Collaboration, cooperation and contribution in education and training;
- Admittance to ex situ facilities of genetic resources and to databases;
- Transfer to the provider of the genetic resources of knowledge and technology under fair and most favorable terms, including on concessional and preferential terms where agreed, in particular, knowledge and technology that make use of genetic resources, including biotechnology, or that are relevant to the conservation and sustainable utilization of biological diversity;
- Strengthening capacities for technology transfer to user developing country Parties and to Parties that are countries with economies in transition and technology development in the country of origin that provides genetic resources. Also to facilitate abilities of indigenous and local communities to conserve and sustainably use their genetic resources;
- Institutional capacity-building;
- Human and material resources to strengthen the capacities for the administration and enforcement of access regulations;
- Training related to genetic resources with the full participation of providing Parties, and where possible, in such Parties;
- Access to scientific information relevant to conservation and sustainable use of biological diversity, including biological inventories and taxonomic studies;
- Contributions to the local economy;
- Research directed towards priority needs, such as health and food security, taking into account domestic uses of genetic resources in provider countries;
- Institutional and professional relationships that can arise from an access and benefit-sharing agreement and subsequent collaborative activities;
- Food and livelihood security benefits;
- Social recognition;
- Joint ownership of relevant intellectual property rights.

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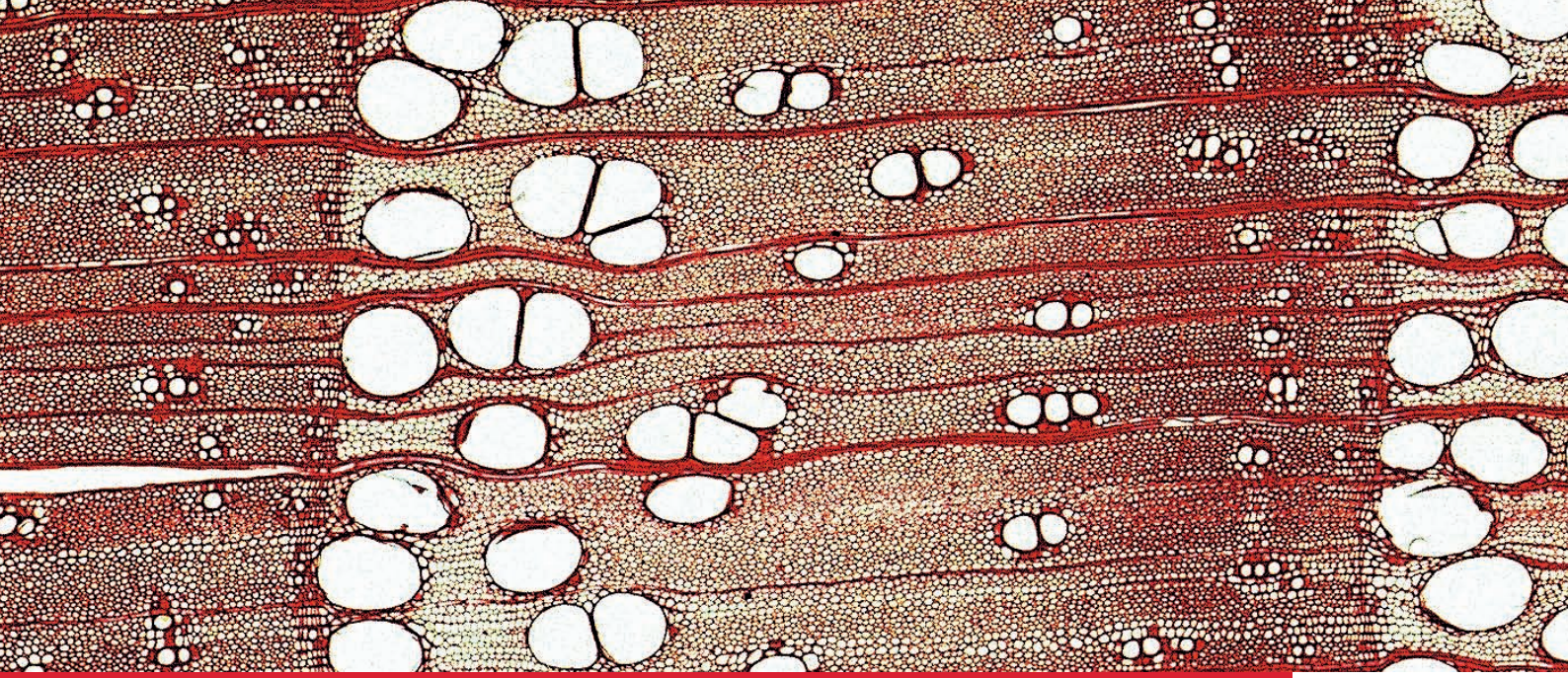
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Swiss Academy of Sciences
Akademie der Naturwissenschaften
Accademia di scienze naturali
Académie des sciences naturelles



The purpose of this manual is to inform the academic community about the system governing access to genetic resources and the sharing of the benefits arising from their use as established by the Convention on Biological Diversity. It explains the steps that must be taken when accessing biological resources for research purposes.

Access and Benefit Sharing

Good practice for academic
research on genetic resources



Contents

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Foreword



The three objectives of the Convention on Biological Diversity (CBD) are: the conservation of biological diversity, the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources. These three objectives are strongly interrelated. They target jointly the conservation of genetic resources, the economic activities that rely on them and the welfare of the human populations living in areas that are rich in biological resources.

The survival and livelihoods of all human societies – especially the poorest – are closely dependent on biological diversity. Obvious examples here include the food and agriculture sectors, which need the wild relatives of crops to ensure the regeneration of their genetic pools, industry, which needs biological material for the development of new products, the health sector, which needs biological material for the development of new medicines, water, which is harnessed, filtered and regenerated by natural ecosystems, and even tourism, for which wild-life and unspoiled natural landscapes represent an important asset.

Most of the richest ecosystems host human populations which have lived in harmony with nature for centuries. These populations are now among the poorest in the world and depend entirely on the natural resources that surround them. If we want to conserve our natural capital and have access to genetic resources, we must recognize the contribution of native peoples and developing countries in maintaining these resources and share with them the benefits arising from their exploitation.

In order to ensure that industries and scientific communities that access genetic resources share the benefits arising from research and development with the populations that maintain and use them, the Convention on Biological Diversity stipulates that agreements governing the access to these resources and the sharing of the benefits arising from them be established between the parties involved. To facilitate the implementation of this principle, the Conference of the Parties to



*It is important that
the scientific community
takes the lead in applying
the principles
of justice and equity
enshrined in the
Convention on Biological
Diversity*

the Convention on Biological Diversity adopted the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising out of their Utilization in 2002.

The purpose of this manual is to provide a tool that will assist the scientific community in implementing the CBD and the Bonn Guidelines. It is important that the scientific community takes the lead in applying the principles of justice and equity enshrined in the Convention on Biological Diversity.

Thus, I am very grateful to the Swiss Academy of Sciences (SCNAT) for developing this tool and I wish every success to those who use it for the benefit of biodiversity, scientific and economic development and the welfare of native peoples.

Dr Philippe Roch
Former director of the Swiss Federal Office for the Environment
(FOEN)

Introduction



The situation is actually quite clear: According to the Convention on Biological Diversity (CBD), biological resources belong to the states on whose territory they are found. In this they are no different to mineral resources or oil. And yet, in recent years cases have arisen, in which the ownership of biological or genetic resources was not respected. Resources were exported, developed and commercialized without the consent of the countries that provided them, and without enabling them to partake in the resulting benefits.

In order to prevent this “biopiracy” and create a climate of mutual trust, which is essential for research in the long term, the community of states undertook to regulate the handling of genetic resources in the Convention on Biological Diversity. This convention is a binding international agreement. Its implementation is not only a moral obligation for the Contracting Parties – which include Switzerland – but also a legal one. The goal of the Convention on Biological Diversity is to conserve biological diversity and to promote its sustainable use in conjunction with the fair and equitable sharing of benefits arising from this use.

Responsibility for this is given to the states, on whose territory the biological material is found. However, all states have a responsibility to cooperate to this end. For the industrialized countries this means supporting the biodiversity-rich, but often economically poor countries in this endeavour. The keywords in this context are technology transfer and cooperative research. The CBD contains rules that clarify the rights and responsibilities of all parties involved. One of these rules introduces the system governing access to genetic resources and the sharing of the benefits arising from their use.

This manual aims to inform the academic community about the system governing the access to genetic resources and the sharing of benefits arising from their use, as established by the Convention on Biological Diversity, and to explain the steps that must be taken when accessing genetic resources for research purposes. It was developed in the context of an iterative and participative process, and various drafts



*The manual is based
on the Bonn Guidelines.
It offers basic
information and concrete
instructions for action*

were evaluated at different stages by members of the Swiss academic community as well as scientists from developing countries.

The manual is based on the Bonn Guidelines, a voluntary supplement to the CBD. It offers basic information and concrete instructions for action. However, as each case involving access to genetic resources is different, the suggested steps for Access and Benefit-sharing may have to be adapted to each specific research situation. All researchers should note that the failure to comply with the Bonn Guidelines may have negative repercussions on their research.

We believe that, in many cases, the elements required by the Access and Benefit-sharing system can be integrated into the existing formalities that must be fulfilled when carrying out research in foreign countries. And while some of the processes may initially seem unfamiliar and involve an additional burden for research projects, we believe that the principles of the Convention on Biological Diversity are fair and correct and have positive effects on a number of areas including research. Thus, we hope to have provided a helping hand by compiling this manual.

Ingrid Kissling,
Former Secretary General of the Swiss Academy of Sciences

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Universities of Basel and Bern, Consultant in Law and Ethics

Basics

A short introduction to the rules governing access to genetic resources and the cases in which these rules apply.



1. What's it all about?



*The objective:
cooperation between
the providers and users
of genetic resources*

The Convention on Biological Diversity (CBD) resulted from the United Nations Conference on Environment and Development in Rio de Janeiro, Brazil, in 1992. To date, it has been ratified by over 180 states, including Switzerland, which thereby undertook to both protect biodiversity in their own territories and to support suitable measures for the protection and sustainable use of biodiversity throughout the world.

The CBD introduced a system for the regulation of collection of genetic resources and other types of access. This system is known as the Access and Benefit-sharing (ABS) system. What is involved here is the joint regulation of access to genetic resources and the sharing of benefits arising from their use by the researchers or companies from user countries and the representatives of the states, in which the genetic resources have been accessed.

The Access and Benefit-sharing system is applicable similarly to the traditional knowledge (TK) of indigenous and local communities associated to genetic resources. In such cases, indigenous and local communities are to be involved in the process.

The CBD is an international convention. Thus, its provisions are binding on its contracting parties, and several states have already integrated these principles into their national legislation. The Conference of the Parties to the Convention adopted the Bonn Guidelines (BGL) to facilitate the implementation of the ABS system. These concrete recommendations are voluntary and intended to guide both the providers and users of genetic resources in the application of the Access and Benefit-sharing system.

2. Objectives

*Twin responsibilities
of providers and users:
providing access
to genetic resources
– sharing the benefits
resulting from their use*

One of the main features of the Convention on Biological Diversity (CBD) is that it combines the aim of maintaining and conserving biological diversity with economic objectives. Accordingly, one of its goals is the equitable sharing of the benefits arising from the utilization of genetic resources while at the same time providing for appropriate access to these resources. These objectives and the rules of the CBD apply to bioprospecting in both commercial contexts and academic research. However, the focus in this manual is on the issues regarding academic research.

The objectives of the Bonn Guidelines in relation to academic research are:

- to promote awareness of the implementation of relevant provisions of the CBD;
- to provide parties of the CBD and stakeholders with a transparent framework to facilitate access to genetic resources and ensure the fair and equitable sharing of benefits;
- to provide information about the practices and approaches to be adopted by users and providers in the context of access and benefit sharing;
- to promote capacity building and the transfer of appropriate technology to providing parties.

3. What's new for academic research?

*Prior Informed Consent?
Mutually Agreed Terms?
What exactly is involved
here?*

The Convention on Biological Diversity (CBD) formalizes elements already contained to a significant extent in existing research permits and professional codes of ethics. However, the following elements, which are not found in standard research permits, licenses, export permits, etc., are new:

Prior Informed Consent (CBD Art. 15.5, BGL 24–40)

Prior Informed Consent (PIC) is an established and well-defined term in law and medicine. It means that before being exposed to a risk, in particular a risk of bodily harm, a person is entitled to be fully informed of that risk in advance so as to make an informed decision about whether to undergo the treatment in question. Hitherto, at international level, this principle was mainly applied in the context of the export of chemicals.

Prior Informed Consent is now also prescribed by the Convention on Biological Diversity for the utilization and research of (= access to) genetic resources: **The competent national authority of the providing country must be informed of the planned research as part of the application process.** The researcher seeking access needs to provide all relevant information regarding the intended research. She or he must ensure that the government or other responsible authority obtain this information. The informed consent of the competent agency is a necessary prerequisite for access to biological resources. Under national legislation it may also be necessary to include stakeholders involved on various intermediary levels in the Prior Informed Consent process.



*Does academic research
generate benefits?*

Mutually Agreed Terms (CBD Art. 15.4, BGL 41–44)

Mutually Agreed Terms (MAT) are usually laid down in a **contract established between the users and providers of genetic resources.** The MAT define the conditions regarding access to genetic resources and grant permission for their use. The MAT typically incorporate elements of the Prior Informed Consent and, crucially, an understanding regarding the sharing of the benefits arising from the utilization of the genetic resources. The elements to be agreed on in the MAT depend on the complexity of the proposed research.

Benefit Sharing (CBD Art. 15.7, BGL 45–50)

According to the CBD, **the providing country must be included in the benefits resulting from the research to be carried out.** The principle of fair and equitable sharing of benefits also applies to academic research, as this type of research gives rise to specific benefits which, although non-monetary as a rule, can nevertheless be of value to the providing country. The benefits to be shared may include *inter alia* results, capacity building, technology transfer and the establishment of permanent academic networks and cooperation. Thus, science and research can actively contribute to overcoming the North-South divide through the transfer of urgently needed knowledge and technology. The criterion of fairness and equitability refers to the specific quality of both the negotiation process and the actual benefit sharing itself.

Useful tip

- The checklists on pp. 43–49 contain detailed descriptions of the elements involved in Prior Informed Consent, Mutually Agreed Terms and Benefit Sharing.

4. When do these rules apply?

What are “genetic resources”?

Before describing how the ABS system is implemented, it is important to explain the meaning of the terms “genetic resources” and “access”.

Genetic resources

Genetic resources are defined by the Convention on Biological Diversity as genetic material, i.e. material containing functional units of heredity that is of actual or potential value (CBD Art. 2). The value of the genetic resources need not be commercial (i.e. monetary), but may be scientific or academic in nature. As the CBD definition also includes the potential value of such resources, almost all genetic material falls under the provisions of the ABS system. Furthermore, the valuable information need not be exclusively genetic, for example, it may also be associated, with the biochemical information contained in the material.

The ABS system covers all types of genetic resources, be they wild or domesticated; of animal, plant, microbial or other origin; situated on or in private or public land or waters. It applies to research on resources that are both located and collected *in situ* or procured from *ex situ* facilities or from academic partners. Excluded from the scope of application of the CBD are human genetic resources.

Access

The term “access” has not yet been officially defined. Thus, its meaning depends on its interpretation by the providing countries and their practices. Therefore, access may involve various activities, for example: entering a location where genetic resources are found; simple surveying activities; the acquisition of genetic resources for general purposes



What is “access”?

or their study/examination for scientific and/or commercial purposes.

Accordingly, the ABS system applies to research carried out for either purely scientific or commercial ends, for which organisms or parts thereof (the “genetic resources”) and/or related traditional knowledge are obtained (“accessed”) from a country that is party to the Convention on Biological Diversity and – in case of traditional knowledge – its local and indigenous communities.

Specific cases

If research incorporates **traditional knowledge (TK)** of local and/or indigenous communities associated with the genetic resources being studied, the rules of the ABS system apply. The knowledge holders must be integrated into the ABS process (see case study 5). As such cases are usually very complex, the focus in this manual is on access to genetic resources. For further information on research involving TK, refer to chapter Contacts and Support on p. 56.

Access to “**Plant Genetic Resources for Food and Agriculture (PGRFA)**” is based on the provisions of the International Treaty on Plant Genetic Resources for Food and Agriculture (IT). Crops listed in its Annex I are subject to a specific access system, the “Multilateral System of Access and Benefit Sharing”, established by that treaty. A specific standard Material Transfer Agreement (MTA) is to be used for the exchange of Annex-I crops.

The exchange of samples between **botanic gardens** that are members of the International Plant Exchange Network (IPEN) is subject to IPEN’s own Code of Conduct in addition to the provisions of the CBD and the BGL (see Sources, p. 56).

5. Who is involved?



188 of the 191 member states of the United Nations are parties to the CBD

The Convention on Biological Diversity is applicable in all states that are party to the convention (see Sources p. 56). The convention defines the obligations and responsibilities of both the users and providers. All academic research involving work on or with genetic resources from a country that is party to the Convention on Biological Diversity must take the Access and Benefit Sharing system into account.

If genetic resources (acquired after the entry into force of the Convention on Biological Diversity in 1993) are procured from a partner institution, or if such genetic resources are transferred to a partner institution, it must be ensured that the PIC and MAT of the original holder of the material allows the transfer and that any other conditions governing Access and Benefit Sharing are fulfilled.

6. Why are these rules important for academic research?



According to the CBD, the components of biological diversity “belong to” and “are owned by” the providing countries in the same way as, for example, mineral resources. Accordingly, the providing countries have the right to decide who may use their resources and in what way, and to partake in the benefits resulting from this use. In the past, cases in which this right was disregarded or abused (sometimes referred to as “biopiracy”) became public. This has created distrust, resulting in the adoption of restrictive national regulations and obstacles to access.

In order to improve this situation, it is essential that trust be established and that providing countries experience how research can give rise to mutual benefits for both the providers and users of genetic resources. By conducting research in a climate of transparency and integrity, scientists lay the foundations for cooperative research that will benefit all parties involved.

Mutual trust and benefit are essential for the success of your research

Case studies

Examples of research projects involving different types of access to biological resources and suggestions on how the Access and Benefit Sharing system can be implemented in practice.



This chapter presents case studies involving various types of research and access situations. The cases are divided into four categories based on their complexity in terms of the Access and Benefit Sharing (ABS) system.* Suggestions are given on how the contractual requirements can best be resolved in the interests of all involved parties.

The four categories are:

1. No ABS situation: The research does not involve any access situation or genetic resources. Thus no ABS contract is necessary. However, other research permits may be required (see case 4).
2. Simple ABS situation: The research involves the collection and transfer (including export) of samples for an inventory. A Standardized Material Transfer Agreement (SMTA) is sufficient (see cases 1 and 2).
3. ABS situation: The export of samples is required for further analysis and study in a laboratory abroad. No further exploitation is planned. A simple ABS contract is sufficient (see cases 2, 3 and 4).
4. Complex ABS situation: The proposed research involves various steps, including possible research for commercial purposes, or the use of traditional knowledge. A full ABS contract is required (see case 5).

* Please note that this categorization of access situations is not included in the CBD or the BGL. The corresponding types of contracts are proposed here for reasons of simplicity; they have not been adopted by the Contracting Parties of the CBD and have thus no official standing. Decisive is the national law of the providing country.

Be aware that each access situation has its own specific characteristics. Therefore, it is essential to carefully check the specific requirements with the relevant authorities of the providing countries. Your institution's technology transfer unit or legal department may offer assistance in the drafting of contracts.

1. Agriculture: Examination of local mycorrhizal fungi for the improvement of yam growth



Yam is the second most important tuber crop in West Africa. Annual demand is constantly increasing, however annual production per hectare has declined considerably. This is mainly due to the prevalence of pests and disease. Arbuscular mycorrhizal fungi (AMF) have been shown to act as antagonists to such pests (e.g. nematodes) and diseases. They also increase the efficiency of soil nutrients and water use, particularly in suboptimal soil conditions, and thus help to increase crop yield.

As a novel approach to the improvement of yam seed material in terms of protection against pathogens, the proposed project will assess the occurrence and diversity of AMF in Togo and Benin. The screening of AMF isolated for their potential to improve yam growth and suppress nematodes on yam will be carried out in collaboration with the International Institute of Tropical Agriculture in Benin.

Assumptions

The research will be carried out jointly by Swiss researchers and the International Institute of Tropical Agriculture (IITA) in Benin. No transfer of collected AMF samples to third parties, but export and screening in the Swiss research institute.

Option 1: The collection of samples is carried out by the IITA.

Option 2: The collection of samples is carried out by the Swiss research institute.

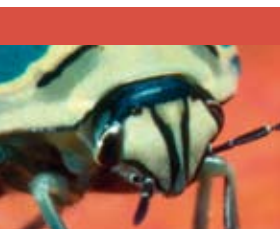
*Material Transfer
Agreement or simple ABS
contract*

Analysis

Access	Option 1: Access by Swiss scientists to samples at the IITA (<i>ex situ</i> access). Option 2: Collection of arbuscular mycorrhizal fungi (AMF) by Swiss researchers in Togo and Benin (<i>in situ</i> access).
Parties	Providers: States of Togo and Benin as original providers. Users: Option 1: Step 1: IITA as contracting party with Togo and Benin; Step 2: Swiss research institute as contracting party with IITA. Option 2: Swiss research institute as contracting party with Togo and Benin.
Prior Informed Consent	Methods and objectives of the research; transfer of samples; whether commercialization of results is planned or not.
Contracts	Option 1: Step 1: Agreement between IITA and Togo and Benin as original providers; Step 2: MTA between IITA (provider) and Swiss research institute. It is essential to ensure that the transfer of the material to the Swiss research institute is covered by the agreement between the states of Togo and Benin (Step 1) and the IITA. Option 2: Simple access contract between the Swiss research institute and Togo and Benin; the cooperation with the IITA should be stated.
Benefits to be shared	Transfer of results to IITA, national institutes, and responsible agencies; involvement of national researchers from Togo and Benin in the research; training of PhD students; access to research data; internships for researchers from Togo and Benin; co-publication of findings.
Contract Elements	Parties to the contract; partners involved; objectives of the research; geographical area; type of specimens; intended use of specimens (transfer of samples for analysis only; no commercialization; transfer to third parties allowed/not allowed); details of benefit sharing.
Note	If the collection of yam plants is required for the implementation of the research, the regulations of the International Treaty on Plant Genetic Resources for Food and Agriculture are applicable (see Appendix, p. 57). When carrying out research on private land, inform farmers and/or landowners about your research and ask for an authorization for the collection of samples.

2. Ecology:

Experiment on treespecies diversity in a tropical forest



Logged Dipterocarp forests are being replanted with three levels of treespecies diversity for the purpose of investigating how forest diversity affects wood production, carbon storage and other ecosystem processes in tropical regions. The replanting is being carried out using monocultures, low-diversity mixtures similar to commercial reforestation areas and using a full mix of species reflecting the natural diversity of the primary forest.

The aim of the project is to compare community and ecosystem processes in the low and high species-diversity plots. The focus of the analysis is on diversity and wood production (carbon sequestration), biogeochemical and hydrological variables, molecular analysis, levels of biodiversity and the activity of associated groups of organisms. The field research is being carried out at an established research station in Malaysia.

Assumptions

The forest is state-owned, as is the field station. Export of samples to Switzerland for further analysis.

Option 1: “Access” is understood as the collection and export of samples.

Option 2: “Access” is understood as including all of the field studies carried out in the forests (see note below).

*Material Transfer
Agreement or simple ABS
contract*

Analysis

Access	Access may consist in (see also note below): <ul style="list-style-type: none"> • Access to location where resources are found; • measurement of forest growth; • collection of samples; • export of samples to Switzerland.
Parties	Provider: State of Malaysia (i.e., responsible agency). User: Swiss research institute.
Prior Informed Consent	Option 1: Export of samples. Option 2: Entire research design.
Contracts	The type of contract depends on the definition of access in the national legislation of the providing country: Option 1: MTA or simple access contract governing the collection and export of samples. Option 2: Simple access contract incorporating the entire research design.
Benefits to be shared	Cooperation with research station in Malaysia; technology transfer, training of PhD students; provision of duplicate samples to providing country, co-publication of findings; further research cooperation.
Contract Elements	Option 1: Parties to the contract; objectives of the research; geographical area; type of specimens; export of specimens; use made of specimens; details of benefit sharing. Option 2: Including detailed research plan (access to location, measurements etc.).
Note	The term “Access” has not yet been defined in the CBD, therefore the scope of the term depends on national legislation of the providing country and practice. In this case, the question arises as to whether the field study itself is understood as “access” in the sense of the CBD or only the collection and export of samples. The contract must be drafted accordingly.

3. Botany:
Inventory of flora and vegetation in a tropical region



The project will conduct inventories of the flora and vegetation in an area of the tropics whose botany has not previously been studied in detail. The objective is to prioritize areas for conservation and to reach a better understanding of the area's phytogeography. The work will include the following steps: *in-situ* collection of wild plant material; preparation of dried herbarium specimens; identification of plants using reference herbaria; and the sending of collected plant material to specialists in different countries for the purpose of identification. It is expected that several new species will be discovered.

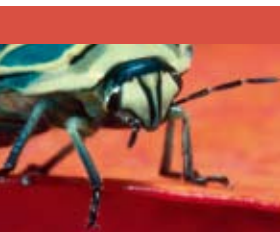
This species-level work will yield a floristic inventory of the analysed region. Surveys of vegetation will be conducted in the field and will include analysis of satellite images. Vegetation maps will be drawn using Geographic Information System (GIS) technology. A distribution analysis of target taxa will also be carried out. In accordance with general practice, it was agreed to deposit identified duplicate samples in a herbarium of the country in which the plant collection is carried out.

Simple ABS contract and subsequent MTA

Assumptions
Option 1: The research area is located on the territory of one country.
Option 2: The research area is located on the territory of two or more countries.

Analysis	
Access	Collection of plants. Sending of dried plants to specialists in different countries for taxonomic identification.
Parties	Provider: Country or countries where resources are located. User: Swiss research institute.
Prior Informed Consent	Research area; research steps (collection, inventory); transmission of samples to specialists; approved use of samples (e.g., no commercialization).
Contracts	Simple ABS contract between provider country or countries and Swiss research institute. If several countries are involved, the contracts must be concluded with the responsible agencies in each country.
Benefits to be shared	Training of PhD students; provision of duplicate herbarium specimens; vegetation maps; floristic inventory; cooperation with local research institutes; co-publication of findings.
Contract Elements	Parties to the contract(s); research objectives; geographical area; export of specimens; specification of specimen use (identification by third parties; no commercialization; transfer to other parties allowed/not allowed); details of benefit sharing.
Note	According to the BGL, taxonomic research that complies with the Global Taxonomy Initiative should be facilitated (for details, see p. 53).

4. Medicine: Evolution and epidemiology of tuberculosis



Tuberculosis (TB) causes many deaths annually and is rapidly increasing in sub-Saharan African countries. The aim of this project is to identify population-based clinical and molecular determinants of tuberculosis epidemiology and ascertain new evidence of the evolutionary pathway of TB in humans and livestock. The project aims to establish a molecular characterization and clustering of TB strains in relation to prevalence, animal-human transmission, and resistance to antibiotics. Repeated observational field studies will be conducted in close collaboration with the national tuberculosis programmes of Chad. Tuberculosis patients will be offered treatment within the framework of national tuberculosis programmes. Livestock carcasses will be collected in abattoir surveys for the cultivation of *Mycobacterium tuberculosis* complex. Region-deletion Polymerase Chain Reaction (PCR) and sequencing of Single-nucleotide Polymorphism (SNP) of genes responsible for antibiotic resistance of all isolated TB strains will provide specific information on the evolutionary pathways of TB at the interface between humans and livestock and between West and East Africa.

No ABS situation or MTA/
simple ABS contract

Assumption
Option 1: The samples will be analyzed in Chad.
Option 2: Samples will be exported to Switzerland for analysis.

	Analysis
Access	Access consists in the collection of sputum and granuloma containing <i>Mycobacterium tuberculosis</i> for cultivation in Chad; strains are exported to Switzerland for molecular characterization.
Parties	Providers: Chadian government agencies. User: Swiss research institute.
Prior Informed Consent	<i>Mycobacterium tuberculosis</i> accessed as genetic resource; research method and objectives; export of samples.
Contracts	Option 1: No ABS contract, if all research is exclusively carried out in Chad. Option 2: Simple ABS contract.
Benefits to be shared	Option 2: Training of PhD students, technology transfer and capacity building of local researchers; cooperation with national tuberculosis programmes; support in the transfer of results to TB programmes; co-publication of findings.
Contract Elements	Parties to the contract; research objectives; export; type of samples and objective (analysis); details of benefit sharing.
Note	The genetic resource accessed is the <i>Mycobacterium tuberculosis</i> and not the sputum and granuloma, which in itself is a human genetic resource and as such not subject to the CBD. It may be necessary to explain to local participants that the research in question is basic research, and will not lead directly to a product with commercial potential. In reality, this case is an example of cooperative research in the sense of North-South partnership: the analysis of samples in Switzerland merely constitutes the provision of a service as long as the necessary infrastructure is not available in Chad. The further research on its results will be effectuated in Chad, in cooperation with the local research team.

5. Ethnobotany: Ecological impact of repeated harvesting of wild plants



The focus of this project is the mutual influence of biological and cultural diversity in a biodiversity hotspot in Asia. Five different ethnic groups in a remote mountain region will be examined as part of a comparative ethnobotanical survey. The researchers will investigate the differences in plant use. Plant resource management of cultivated and of wild collected species among the ethnic communities will also be studied. The main question to be addressed is whether plant use is influenced by the accessibility of certain species or by the traditional culture of an ethnic group. The ecological impact of repeated harvesting of wild plants on different habitats will be analyzed. Field work will involve the assessment of plant diversity around the villages, local plant use, different plant categories and the impact of repeated plant harvesting. The work will include *in-situ* collection of wild plant material and identification of plants using reference herbaria. Modern inventory techniques relating to plant diversity will be applied. Current statistical software tools will be used for the analysis of the semi-structured interviews and participatory observation data.

Assumption
Samples will be exported to Switzerland.

	Analysis
Access	<p>This project involves different access situations:</p> <ol style="list-style-type: none"> 1) Access to wild plants; 2) Access to cultivated plants; 3) Access to the use made of the plants (knowledge, innovations and practices (TK) relating to plant use).
Parties	<ol style="list-style-type: none"> 1) Access to wild plants, export of samples: <ul style="list-style-type: none"> Provider: Responsible state agencies as contracting party; User: Swiss research institute. 2) Granting of access to cultivated plants, authorization of export of samples: <ul style="list-style-type: none"> Provider: Responsible state agencies, and individual owner of plants and/or community; User: Swiss research institute. 3) Granting of access to knowledge relating to traditional plant use: <ul style="list-style-type: none"> Providers: Individuals interviewed and observed and/or community, according to applicable national and local laws, regulations and customs; User: Swiss research institute.
Prior Informed Consent	Objective and method of research; publication of results; consent of individuals and communities for accessing and the later publication of traditional knowledge (i.e. for placing traditional knowledge in the public domain).
Contracts	<p>With government agency for the collection and export of wild and cultivated plants.</p> <p>With the community and/or individuals and possibly government agency for research on cultivation, i.e. knowledge, innovation and practices.</p>
Benefits to be shared	Training of PhD or post-doctoral students; provision of duplicate herbarium samples for national/regional collection; adapted presentation and documentation of results to local community; communication of results between communities; feedback to communities regarding the sustainability of harvesting practices.
Contract Elements	<p>Contract with state agencies: parties to the contract; specification of resources (wild, domesticated, TK); export; type of samples and TK, permitted use; details of benefit sharing at government level.</p> <p>Contract with local communities: parties to the contract; objectives and methods of research and specification of samples (domesticated plants, TK); permitted use of samples and TK; details of benefit sharing with local communities.</p>

see next page →

Note

This study involves the use of local people's the traditional knowledge, therefore they must be involved in the negotiations concerning their knowledge and must agree to its use. Benefit sharing must be discussed and assessed with the communities and individuals involved during the preparatory phase. It must also be established whether ethnic communities agree to the publication of all findings. The procedure described in case 2 should be followed if dried plant material is passed on to taxonomic specialists.

How to proceed

A synoptical table indicates the main steps necessary for the implementation of a research project in accordance with the Access and Benefit-sharing system.

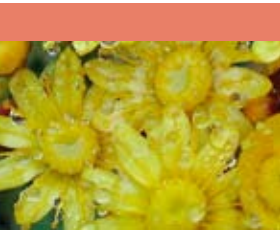


1. Research steps and ABS requirements

			Basic Steps
Planning			<ol style="list-style-type: none"> 1. Check whether your research is subject to Access- and Benefit-sharing requirements (see case studies in Chapter II). 2. Define schedule and budget for preparatory phase. 3. Define schedule and budget for benefit sharing.
Preparation			<ol style="list-style-type: none"> 4. Contact the national ABS Focal Point (see sources p. 56). 5. If there is no national focal point, inquire with FOEN for the identification of an entry point and the competent authority. 6. Apply for PIC: submit the necessary information (see PIC elements p. 44) to the identified entry points and stakeholders. 7. Negotiate and agree on contract of Mutually Agreed Terms (see MAT elements p. 46 and 47).
Basic Research*			<ol style="list-style-type: none"> 8. Before starting work acquire PIC and agree on MAT, including benefit sharing. 9. Adhere to agreed research plan; if this is not possible, renegotiate PIC and MAT. <p>*This applies to both resources acquired <i>in-situ</i> and from an intermediary institution.</p>
Results & Benefits			
R&D			<ol style="list-style-type: none"> 10. Further research steps must be covered by PIC and MAT. 11. If not, obtain new PIC from the provider of the resource. 12. If you transfer resources to a third party, ensure that this is covered by PIC and that the conditions of the initial MAT will be respected.
Commercialization			<ol style="list-style-type: none"> 13. Ensure that R&D with view to the commercialization of research results is covered by PIC and included in the MAT. 14. If the findings lead to essential changes in the project, obtain new consent (PIC and MAT). 15. If you transfer rights or processed research material to another institution, ensure that this transfer is covered by the PIC and that the specified conditions are met (MAT). 16. Share any economic and/or academic benefits resulting from the valorization of the research findings.



To Do	Useful Tips
<ul style="list-style-type: none"> • Check whether cooperative research is possible (for details on cooperative research, see Sources: Swiss Commission for Research Partnerships with Developing Countries p. 57). 	<p>If there is more than one option regarding the location of the study area, choose a country in which you have already established contact with the authorities or university institutes and/or a country that provides organized infrastructure for access procedures for academic research.</p>
<ul style="list-style-type: none"> • Check whether you need to submit other types of application. • Check whether local institutions need to be informed. • The cost of the application process must be born by the applicant. 	<ul style="list-style-type: none"> • Apply for access as early as possible. • The process may be time-consuming; ask about or negotiate deadlines for procedural steps.
<ul style="list-style-type: none"> • Respect local and national laws and regulations. • Respect the customs, traditions, values and customary practices of indigenous and local communities. • Respect the principles of conservation and sustainable use of biological resources. • Where possible, seek cooperation with institutions and researchers from the providing country. 	<ul style="list-style-type: none"> • Document the application for PIC and all decisions regarding the granting of access to genetic resources and the MAT in written form. • Keep all data documenting the PIC and MAT processes.
<p>Share the results with stakeholders of the providing country (see Benefits arising from academic research p. 48 and 49), e.g.:</p> <ul style="list-style-type: none"> • respond to requests for information from local people; • make documentation of the research findings available to the providing country; • provide your research partners with access to the research findings. 	
<ul style="list-style-type: none"> • Seek research and development cooperation with the providing country. • Respect any restrictions or limitations on the use of the genetic resources defined by the provider(s). 	
<ul style="list-style-type: none"> • Respect any restrictions or limitations defined by the providers. • Promote participation in the product development. • If possible, develop products in the providing country. • Carefully check the question of intellectual property rights with your technology transfer unit or legal services department. 	<ul style="list-style-type: none"> • For ABS negotiations, cooperate with your institution's technology transfer unit or legal service department. • See also ABS-Management Tool, p. 57.



Useful tips

- ▶ The implementation of the Access and Benefit-sharing system (ABS) is still in a state of flux, both at national and international level. Thus, the relevant authorities may not be clearly designated in all cases or the established procedures transparent and smooth. If you can choose where to carry out your research, examine the relevant experience of other researchers and institutes.
- ▶ The ABS procedure is regulated by the national law of the providing countries (not necessarily in specific ABS legislation). This includes the definition of the competent national authorities agency and of the other stakeholders to be involved (15.1 CBD; 28-32 BGL).
- ▶ If relevant national legislation does not yet exist, access permits may be issued on a case by case basis, based on general principles of law and/or similar proceedings and rules.
- ▶ The ABS procedure may be combined with other licenses, permits (research, collection, export, CITES permits, etc). However, this will probably not yet apply in most cases and countries.
- ▶ Standardized Material Transfer Agreements (MAT) and benefit sharing agreements for similar resources and similar uses may already exist (taxonomy, collection, research, commercialization; BGL 42 b, e).
- ▶ The Bonn Guidelines (BGL) recommend public participation at local level with regard to all government decisions concerning issues involving resources and permits that affect the public (BGL 18). This may lead to:
 - the need for different stakeholders on different levels to grant their PIC;
 - the ABS procedure becoming more complex and time-consuming.



The Bonn Guidelines (BGL) define responsibilities for both the users and providers of genetic resources. They aim to establish a transparent application process and achieve a balanced and successful outcome for all parties involved. However, if the providing country has chosen other procedures based on its own legislation, these procedures prevail.

Users (BGL 16 b)

For details see Checklists p. 43–49.

In general

Users must seek the PIC of the competent authorities before accessing the resources. Users must only access resources in accordance with the agreed terms (PIC, MAT) and adhere to the agreed conditions.

Regarding indigenous and local communities (BGL 16 b ii)

Respect the customs, traditions, values and customary practices of indigenous and local communities. Respond to requests for information from indigenous and local communities and present the information in a suitably adapted form.

Regarding further research and the transmission of results or genetic resources to third parties (BGL 16 b v, viii and 34)

If you plan to use the genetic resources for purposes other than those agreed in the original PIC and MAT, you will have to apply for new contracts. Do not start new research until permission has been granted.



When supplying genetic resources to third parties, ensure that the PIC/MAT agreements are honoured. Supply all relevant contractual data (PIC/MAT) to the third party and document the transfer.

Benefit sharing (BGL 16 b vii and ix)

Carry out as much research as possible in the providing country in cooperation with its institutes and researchers. Ensure that the benefits are shared in a fair and equitable way, as agreed upon in the MAT.

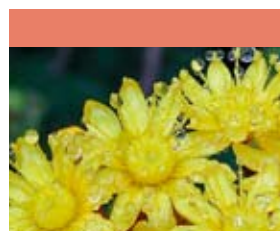
Taxonomic research (BGL 11 I)

Make all information on specimens deposited in providing country collections available to the providing country authorities.

Providers

In general

Providers that are party to the Convention on Biodiversity undertake to facilitate access to biological resources (CBD Art. 15.1, BGL 26 b). They also undertake to ensure that access to genetic resources is granted only for environmentally sound uses and that all stakeholders will take the environmental consequences of the access activities into account (CBD Art. 15.2; BGL 16 a). They designate a national focal point and the competent national authority for access and benefit sharing and make such information available through the CBD's clearing-house mechanism (BGL 13 and 14) (see Sources p. 56).



Legislation and procedures, (BGL 16 a i and iv, and 33)

Providing countries should adapt their policies, legislation and administrative procedures to the requirements of access to genetic resources. Procedures must be clear, objective and transparent. Providing countries undertake to take decisions on access within a reasonable period of time.

Competent national authorities (BGL 14 and 29)

If a clearly designated national authority that is competent to engage in ABS negotiations exists, it may also be responsible for granting access and for advising researchers on all of the stages and requirements of the ABS process. If no such authority exists, it may be necessary to obtain PIC from different agencies and levels of government.

Stakeholder participation; in particular the participation of indigenous and local communities (BGL 16 and 31)

Providing countries ensure that information about decisions regarding access to genetic resources (GR) is made available to the relevant stakeholders, in particular to indigenous and local communities. They support capacity-building for the participation of indigenous and local communities in the negotiations. In granting PIC, the competent authorities respect the established legal rights of indigenous and local communities associated with the GR to be accessed; their PIC must also be obtained.

Taxonomic research (BGL 11 I, 16 b [viii], 34)

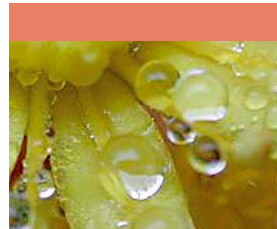
Taxonomic research (as specified in the Global Taxonomy Initiative) must not to be hindered. Providers shall facilitate the acquisition of material for systematic use. This may include establishing special terms and conditions under

Mutually Agreed Terms, including special terms for the transfer of samples to third parties. This is always subject to the condition that the objectives of the research and the transfer are strictly non-commercial and purely taxonomic or systematic.

Useful tips

By taking the following precautions you can enhance the certainty of your legal position as user of genetic resources:

- ▶ Document all negotiations;
- ▶ Maintain all relevant data, in particular documentary evidence concerning the PIC and information concerning the origin and the use of genetic resources.



1. The procedures for obtaining access permits are very complicated. The government agency even wants public notification and participation, and the right to appeal the final decision. Is all this really necessary?

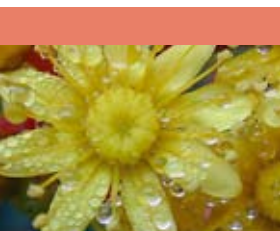
If this procedure is required by the national legislation, it has to be applied. If you are planning a complex project involving, for example, different government levels, communities and/or a geographically extensive area, the applicable procedure may ultimately simplify matters. It mobilizes potential opposition before the research begins and makes it possible to take decisions on potential objections in an impartial way. If the procedures for access are too burdensome, you may have to look for other countries to carry out your research.

2. Do the PIC and MAT cover all the necessary permits?

This may only apply in exceptional cases. Thus, it is essential that you do not take this for granted and ensure that you have all other necessary permits (e.g. research, collection, export, and CITES permits).

3. There is no focal point, no designated competent national authority in the country in which I would like to carry out research. What should I do?

Up to now, only a minority of the CBD member states have designated the competent national authorities (see “National Implementation” on p. 56, Sources). Try to find out whether colleagues from your scientific community have already carried out research in this country. If you are unable to obtain any information in this way, contact the Swiss ABS Focal Point (see Contacts/Support p. 58). Consider



carrying out the research in another country that has the necessary ABS structures.

4. Local people may be interested in/opposed to my research, but the competent national authority sees no need to inform them. What should I do?

Try to contact the local communities anyway. Contact the community leaders and discuss with them how best to inform the community about the proposed research (e.g. by being invited to a community assembly) in a way that is understandable to them, i.e. if possible in their own language and using suitable means (some may not be able to read).

5. Local NGOs are campaigning against our research. According to them the locals are selling their biological patrimony. What should I do?

If you encounter NGOs in the region in which you intend to do your research that actively advocate to local and indigenous people that they conserve their “biological patrimony”, contact them before you start your research and inform them of your plans. Transparency is essential throughout the entire research process. It is essential to provide reassurance on the following points: 1) the nature of the objectives of your research (e.g. non-commercial); 2) the fact that the implementation of the project will fully respect local customs and privacy; 3) the fact that no information about the communities will be published without their consent; 4) the willingness of the project organizers and researchers to provide information about the research to the local community; 5) the advantages the research will bring to the local community/country.

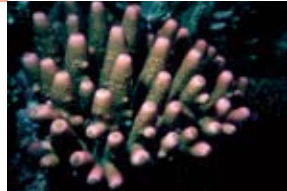


6. Local people are refusing to grant access to the material I require for my research. What should I do?

Check whether they were involved in the PIC/MAT procedure. If not and if they have the right to be involved, this step of the procedure must be repeated. If this is not the case, try to inform them yourself (see question 4 on p. 40). If they insist on their refusal, this must be respected. In any case, if you are working on privately owned land and the local people or private landowners need not be included in the ABS procedure in accordance with the national legislation, it is still wise (and polite) to approach the owners officially before embarking on the research.

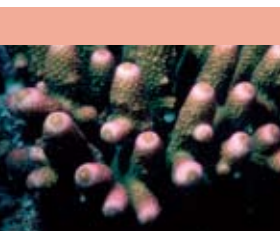
Checklists

These checklists are intended as an aid in the preparation of a research project that is compliant with the Access and Benefit Sharing system.



These checklists contain elements of Prior Informed Consents and Mutually Agreed Terms, and the possible benefits to be shared. They are as comprehensive and as complete as possible, thus not all of the elements mentioned here need to be included in your negotiations and contracts. They should be adapted to your specific research in cooperation with the resource providers.

1. Prior Informed Consent (PIC)



It is recommended that stakeholders who are entitled to give their Prior Informed Consent to your project/access be informed about the following elements (BGL 36):

Basic information

- Legal entity and affiliation of the applicant and/or collector; contact person if the applicant is an institute
- Project organization, possibly budget
- Treatment of confidential information

Basic research

- Type and quantity of genetic resources, to which access is sought
- Starting date and duration of the research
- Geographic area in which Geographic prospecting will take place
- Evaluation of how the access activity may impact on conservation and the sustainable use of biodiversity
- Purpose of the collection, research, and expected results; accurate information regarding intended use (e.g. taxonomy, collection, research, commercialization)

Research and development

- Identification of where the research and development will take place
- Information on how the research and development will be carried out
- Identification of local bodies for collaboration in research and development
- Possible third-party involvement



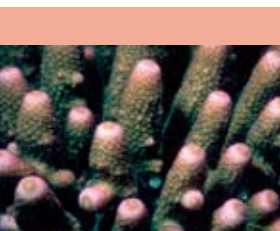
Benefits

- Nature of benefits that could arise from obtaining access to the resource, including benefits of products arising from the commercial and other utilization of the genetic resource
- Indication of benefit-sharing arrangements
- Stakeholder information/communication scheme

Useful tips

- ▶ Obtain PIC from:
 - the competent national authorities;
 - the relevant stakeholders, such as indigenous and local communities, as appropriate to the circumstances and subject to domestic law.
- ▶ The BGL recommend public participation at local level with regard to all government decisions regarding resource and permit matters that affect the public.
- ▶ PIC may have to be obtained from different levels of government.
- ▶ For *ex situ* resources, PIC should be obtained from the national authority and the body governing the *ex situ* collection.
- ▶ If later you make fundamental changes to your research plan, you must apply for new PIC.
- ▶ If you obtain the resources from an intermediary, ensure that the PIC of the original holder of the material covers your planned research intent.

2. Mutually Agreed Terms (MAT)



Introductory provisions

- Reference to the Convention on Biological Diversity (CBD) and the BGL in the preamble
- Legal status of the provider and user of genetic resources
- Mandate and/or general objectives of provider and, where appropriate, user of genetic resources

Access and Benefit-sharing provisions

- Description of genetic resources covered by the material transfer agreements, including accompanying information
- Permitted uses, bearing in mind the potential uses of the genetic resources and their products under the Material Transfer Agreement (e.g. research, breeding, commercialization)
- Statement that any change of use would require new Prior Informed Consent and Material Transfer Agreement
- Indication of whether intellectual property rights may be sought and if so under what conditions
- Terms of benefit-sharing arrangements, including commitment to share monetary and non-monetary benefits
- No warranties given by provider regarding the identity and/or quality of the provided material
- Indication of whether the genetic resources and/or accompanying information may be transferred to third parties and if so the conditions that should apply
- Definitions
- Obligation to minimize environmental impact of collection activities

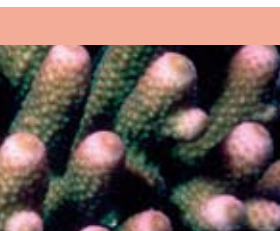
Legal provisions

- Obligation to comply with the Material Transfer Agreement
- Duration of agreement
- Notice required to terminate the agreement
- Fact that the obligations in certain clauses survive the termination of the agreement
- Independent enforceability of individual clauses in the agreement
- Events limiting the liability of either party (such as *force majeure*, fire, flooding, etc.)
- Arrangements for the settlement of disputes
- Assignment or transfer of rights
- Assignment, transfer or exclusion of the right to claim any property rights, including intellectual property rights, to the genetic resources obtained through the Material Transfer Agreement
- Choice of jurisdiction
- Confidentiality clause
- Guarantee

Useful tips

- ▶ Enquire about standardized agreements, facilitated conditions for basic non-commercial academic research, standard material transfer and benefit-sharing agreements with the responsible agency (BGL 42).
- ▶ For details regarding the negotiation, conclusion and content of the agreements, contact your institute's technology transfer unit.

3. Benefits arising from academic research



Sharing of academic benefits

- Provide access to scientific data resulting from the research, including the necessary infrastructure
- Provide access to *ex situ* facilities
- Integrate partners into the reviewing process
- Co-publish research findings with research partners
- Support the academic careers of research partners
- Maintain institutional and professional relationships

Capacity building, scientific cooperation, participation, technology transfer

- Train local researchers in the field and in the laboratory
- Share samples
- Secure finance for maintenance of collections
- Provide research infrastructure (e.g. laboratory equipment)
- Provide communication infrastructure
- Integrate local researchers in scientific and practical work
- Integrate local assistants in practical work
- Implement research on a cooperative basis: cooperative project design; cooperative project implementation (see Sources: Guidelines for Research in Partnership with Developing Countries p. 57)

Increased availability of information and knowledge

- Provide ongoing information about research, progress and expected results



- Inform all involved stakeholders about results in a form that is adapted to the target audience
- Maintain contact with (local) representatives of administration, government agencies and research institutes

Application, R&D, commercialization of results

- Develop research directed at the practical needs and problems of the providing country
- Promote participation in product development
- Establish joint ownership of relevant intellectual property rights based on the level of contribution
- Share economic benefits

Useful tips

- ▶ Benefits should be aimed at the conservation and the sustainable use of biological diversity (BGL 48).
- ▶ Benefits should be shared fairly and equitably between all those who have contributed to the resource management and scientific and/or commercial process (BGL 48).
- ▶ Differences exist in benefit-sharing options between basic research, applied research and R&D for commercial uses.
- ▶ It may be necessary to explain carefully that academic research does not lead to economic benefits in most cases.
- ▶ A large part of the sharing of benefits may have to be carried out during the research itself.
- ▶ There are benefits, that can only be shared once research in itself has been accomplished.

Appendix

1. Glossary

Access	The term “access to genetic resources” is not defined in the CBD and the BGL and therefore varies according to national legislation and practices. Access may consist of various activities, such as: <ul style="list-style-type: none"> entering a location/place where genetic resources are found; surveying activities; obtaining/acquiring genetic resources; the use of genetic resources; the study or systematic investigation of genetic resources for scientific and/or commercial purposes.
Benefit	Economic or academic advantages arising from research on/utilization of genetic resources.
Biological Resources	Biological resources include genetic resources, organisms or parts thereof, populations, or any other biotic component of ecosystems with actual or potential use or value for humanity (CBD Art. 2).
Biopiracy	Utilization and/or appropriation of genetic resources that is not based on the necessary access permits or does not fulfil the agreed conditions and is, therefore, illicit.
Bonn Guidelines (BGL)	Guidelines adopted by Decision VI/24 of the Conference of the Parties to the CBD. The aim of the Bonn Guidelines is to clarify regulations on ABS contained in the CBD. The BGL are an interpretative instrument and not binding in themselves.
Competent Authorities	(Government) agencies or institutions designated by national legislation as competent to negotiate with users of genetic resources and to grant access to them (PIC and MAT). Different levels and types of agencies may be involved in the procedures for granting PIC.
Genetic Material	Genetic material refers to any material of plant, animal, microbial or other origin containing functional units of heredity (CBD Art. 2).

Genetic Resources (GR)	Genetic resources are genetic material, i.e. any material of plant, animal, microbial or other origin containing functional units of heredity that is of actual or potential value (CBD Art. 2). The value need not be commercial (i.e. monetary), but may be scientific or academic in nature. The valuable information must not be genetic; it may also consist, for example, in the biochemical information contained in the material. Since “value”, and specifically the potential value, has not yet been defined, virtually all biological resources may fall under this definition.
Global Taxonomy Initiative (GTI)	The GTI has been established by the Conference of the Parties of the CBD to address the lack of taxonomic information and expertise available in many parts of the world, and thereby to improve decision-making in conservation, sustainable use and equitable sharing of the benefits derived from genetic resources. The GTI is specifically intended to support implementation of the work programmes of the Convention.
International Regime	The Conference of the Parties to the Convention on Biological Diversity (CBD) decided in 2004 to create an International Regime on access to genetic resources and the sharing of benefits arising out of their utilization. Negotiations started in 2005 and are meant to end in 2010.
Mutually Agreed Terms (MAT)	Also termed, as e.g., “ABS contracts”, “access permits”, “ABS agreements”: various types of authorization, defining the conditions for access and benefit sharing, by means of which users obtain access to/permission to use genetic resources in order to collect, study and utilize them commercially.
National Focal Point	Each party should designate a national focal point for ABS that informs applicants for access to genetic resources on procedures necessary for acquiring prior informed consent and mutually agreed terms, and on competent national authorities, relevant indigenous and local communities and relevant stakeholders (BGL 13; see Sources p. 56).
Party to the CBD	States having ratified or accessed to the Convention on Biological Diversity.

2. Abbreviations

Prior Informed Consent (PIC)	Prior Informed Consent is the consent of the relevant competent national authority/authorities in the provider country granted for the research and utilization of genetic resources. The consent of relevant stakeholders, such as indigenous and local communities, should also be obtained, as required by individual situations and subject to domestic law.
Procedure	Administrative and/or legal steps necessary to obtain an official decision on a specific issue.
Providers / Providing Countries	All Contracting Parties to the CBD that provide access to resources situated in their country to users.
Stakeholders	All institutions, agencies, organizations, communities and individuals that may be involved in the ABS procedure in accordance with national law or based on case by case decisions: i.e. government agencies, regional and local governments and representatives of indigenous and local communities, local organizations.
Standardized Material Transfer Agreement (SMTA)	Standardized contract or binding legal agreement between the owner of genetic material and the recipient of the material.
Traditional Knowledge (TK)	TK has not been defined in the CBD and the BGL. The CBD speaks of “knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and the sustainable use of biological diversity” (Art. 8j). The concept of TK is not limited to ancient wisdom, but also includes innovative knowledge acquired on the basis of traditional methods.
Users	In the academic context, all researchers who access genetic resources (cf. above) and/or make use of genetic resources.
Value	The (actual or potential) value of genetic resources has not yet been generally defined; thus virtually all possible uses may be applicable. The implementation depends on national legislation and practice.

ABS	Access and Benefit Sharing
AMF	Arbuscular mycorrhizal fungi
Art.	Article
BGL	Bonn Guidelines
CBD	Convention on Biological Diversity
CHM	Clearing House Mechanism
CGIAR	Consultative Group on International Agricultural Research
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
FOEN	Swiss Federal Office for the Environment
GR	Genetic Resources
IITA	International Institute of Tropical Agriculture
IPEN	International Plant Exchange Network
IT PGRFA	International Treaty on Plant Genetic Resources for Food and Agriculture
KFPE	Swiss Commission for Research Partnerships with Developing Countries
MAT	Mutually Agreed Terms
PGRFA	Plant Genetic Resources for Food and Agriculture
PIC	Prior Informed Consent
R&D	Research and Development
SMTA	Standardized Material Transfer Agreement
TK	Traditional Knowledge

3. Sources

Swiss Federal Office for the Environment (FOEN)	ABS website: http://www.bafu.admin.ch/biotechnologie/01773/03695/index.html?lang=en
Swiss Academy of Sciences (SCNAT)	http://abs.scnat.ch
Convention on Biological Diversity (CBD)	General website: http://www.cbd.int Text of the Convention: http://www.cbd.int/convention/convention.shtml ABS National Focal Points: http://www.cbd.int/information/NFP.shtml Access to Genetic Resource, general website: http://www.cbd.int/abs Parties to the Convention: http://www.cbd.int/information/parties.shtml Clearing House Mechanism: http://www.cbd.int/chm Overview over Stage of National Implementation: http://www.canmexworkshop.com/documents/papers/I.1.1.pdf
Bonn Guidelines (BGL)	General website: http://www.cbd.int/abs/bonn.shtml

Botanic Gardens	International Plant Exchange Network (IPEN), general website: http://www.bgci.org/resources/ipen Royal Botanic Gardens Kew, The CBD for Botanists: http://www.kew.org/data/cbdbotanists.html
Swiss Commission for Research Partnerships with Developing Countries (KFPE)	General Website: http://www.kfpe.ch Guidelines for Research in Partnership with Developing Countries, 11 Principles: http://www.kfpe.ch/key_activities/publications/guidelines/guidelines_e.php
International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)	General website: http://www.planttreaty.org
World Intellectual Property Organization (WIPO)	Searchable database of biodiversity-related Access and Benefit-sharing Agreements: http://www.wipo.int/tk/en/databases/contracts/index.html
MOSAICC	Micro-Organisms Sustainable Use and Access Regulation International Code of Conduct: http://www.bccm.belspo.be/projects/mosaicc/
Swiss State Secretariat for Economic Affairs (seco)	ABS-Management Tool. Best Practice Standard and Handbook for Implementing Genetic Resource Access and Benefit-sharing Activities. Focus on commercial research: http://www.iisd.org/

4. Contacts and Support

Swiss Focal Point for ABS

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Swiss Academy of Sciences

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Universities and Universities of Applied Sciences

Technology Transfer Units, Legal Service Departments

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The compilation of the manual was preceded by a survey of members of the Swiss academic community on their experiences with research on genetic resources accessed in other countries. The case studies were selected from this information pool and edited in cooperation with the involved researchers. The final version of the manual was subject to a broad evaluation process within academic and science policy circles. We are grateful to all contributors for their comments and suggestions which helped us to clarify the implications of the ABS system for academic research and, hence also, to enhance the ease of the use of this manual.



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