Laying the Foundation
Final Project Report

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The Centre for International Sustainable Development Law (CISDL) is an independent legal research centre that has a strong collaborative relationship with the McGill University Faculty of Law. Its mission is to promote sustainable societies and the protection of ecosystems by advancing the understanding, development and implementation of international sustainable development law. CISDL works in cooperation with the Université de Montreal Faculty of Law, and the Oxford University Faculty of Law. It has guidance from the three Montreal-based multilateral environmental accords (the NAFTA Commission for Environmental Cooperation, the UNEP Biodiversity Convention, and the Montreal Protocol multilateral fund), and is currently involved in two international research projects related to sustainable biodiversity law. CISDL is developing materials and capacity building support for the development of regulatory frameworks for the regional and domestic implementation of the new Cartagena Protocol on Biosafety. CISDL is also developing an international research project on the benefits of an international regime on access to genetic resources and benefit sharing for local communities, in collaboration with partners in developing countries. The preparatory phase of this project ‘Laying the Foundations’ was supported by the IDRC in 2004.

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1. Synthesis

It has only been relatively recently that the Parties to the Convention on Biological Diversity (CBD) have begun to consider the third objective of the Convention on access to genetic resources and benefit-sharing (ABS). The most recent step was the agreement at the seventh Conference of the Parties (COP) to the CBD in February 2004 to launch of negotiations for an international regime on ABS and the actual commencement of these negotiations at the fourth meeting of the Ad Hoc Open-Working Group on ABS in Bangkok in February 2005. CISDL’s work on access and benefit-sharing includes a scoping study conducted for IDRC, which identifies research priorities on this topic. Included among the priorities are questions about the monitoring and enforcement of ABS contracts and capacity-building in developing countries, particularly for new experts. These issues were also raised in decision VII/19 from COP-7.

CISDL has undertaken preliminary research with three partner organizations – the Southern Environmental and Agricultural Policy Research Institute in Kenya, Gene Campaign in India, and the Sociedad Peruana Derecho Ambiental in Peru. A researcher from each organization has conducted initial research on the monitoring and enforcement of ABS contracts in his or her country and local communities. The research was conducted with the help of a junior researcher in each organization, who traveled to Montreal for a three-week capacity-building and networking workshop. The project culminated with a meeting of the project partners in Bangkok to share initial results and plan for a larger and longer term project that builds on this foundation.

Objectives:

- **Field research objective:** This involved initiating inquiries, by local research partners in developing countries, into how access and benefit-sharing contracts, and particularly their elements on monitoring and enforcement, are functioning in practice.
- **International negotiations objective:** The inquiries on local level experiences were used to inform the work of the Ad Hoc Open-Ended Working Group on ABS, the group that has been mandated to negotiate the international regime.
- **Capacity-building objective:** The project aimed to establish a mentor relationship between each project partner and a small group of junior researchers in order to create additional expertise in developing countries in the area of access to genetic resources and benefit-sharing.

2. Research Problem

When world leaders signed the Convention on Biological Diversity in 1992, they agreed to its third objective:

- 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 (Art. 1).
It has been over ten years since the Convention entered into force, and much work remains to be done towards this objective.

During COP-7 in Kuala Lumpur, the Centre for International Sustainable Development Law, in conjunction with IDRC, hosted a brainstorming workshop on future research questions on ABS. The workshop also provided a platform for dialogue as part of a scoping study on the local and global aspects of access to genetic resources and benefit-sharing that CISDL conducted on behalf of IDRC.

Participants in the Malaysia workshop included leading experts in the field of ABS and the result was a lengthy list of research questions covering ABS topics from the local to the international level. Amongst the research priorities that were identified were questions about monitoring and enforcement of ABS contracts, including issues of access to justice, as well as the need for ABS capacity-building in developing countries, particularly for new experts. These are two of the likely challenges in the negotiating process for an international regime on ABS and the two issues the project partners focused on for this initial project, which seeks to lay the foundations for deeper research and in-country case studies on these issues.

(a) Monitoring & Enforcement of Access Agreements

One of the problems faced by countries entering into ABS agreements is the difficulty of monitoring the implementation of these contracts and enforcing their terms. When, for example, an organization has agreed to share the benefits of any findings from its research, but then leaves the country with the biological samples, it becomes very difficult for the country providing these resources to determine what happens to them. This component of the project worked to determine the initial extent of the monitoring and enforcement problem in the countries of the partner organizations.

(b) ABS Mentoring & Capacity-Building

A second obstacle faced by developing countries in the negotiations for an international regime on ABS is the limited number of experts from developing countries in this field. Both ABS negotiations and ABS research typically involve a few well-known names and faces. There is a need to begin work on a new generation of ABS experts who can learn from the experiences of the current leaders and also invigorate the field with new thinking and new ideas.

This component of the project created a mentor relationship between each partner organization and a junior researcher they recruited. The junior researcher from each partner also came to Montreal, to meet and learn from the other project participants, and to begin to form their own ABS contacts.
3. Research Findings

Each of the project partners prepared a report of their research findings as part of the ‘Laying the Foundation’ project. The results are summarized here with the full text of the reports included in Annex I.

Access and Benefit-Sharing in Costa Rica: Lessons Learned for the Monitoring and Tracking of Genetic Resources in Access Contracts

By Jorge Cabrera Medaglia, CISDL, Costa Rica

In his paper, Prof. Cabrera identifies and discusses the relevant access laws and policies in Costa Rica, namely the Law of Biodiversity, No. 7788 of 30 April 1998 (LB) and the “General Access Procedure” from 2003 that functions as a bylaw of the LB. He includes a flow chart illustrating the application procedure for an access permit in Costa Rica. The discussion also outlines the provisions that promote the conservation of biodiversity, its sustainable use and the fair sharing of benefits derived from biodiversity, which is the general goal of the LB. Prof. Cabrera also highlights some challenges in the implementation of the LB. These include definitions of the scope of access and the conceptualization of what is meant by accessing and using genetic and biochemical resources; the different interests permeating the issue of access and how and why this area should be regulated; the need for highly skilled interdisciplinary teams to implement the law and negotiate agreements and contracts; overly optimistic conceptions of benefits that would flow from bioprospecting; and whether the proper role of the state in this area is to regulate and support ABS or exercise absolute control.

In the next section, Prof. Cabrera analyses the Costa Rican experience with ABS. This includes an overview of the National Biodiversity Institute (INBio), which has conducted most of the bioprospecting in the country, as well as descriptions of different ABS contracts and agreements with industry, academia, and other sectors. He discusses the types of benefits that have been obtained by Costa Rica and INBio. These include monetary benefits, technology transfer, training, negotiation experience, and support for conservation. Prof. Cabrera also reviews the lessons learned from the negotiating process of INBio. The lessons are:

• The needs for a clear institutional policy for the criteria demanded in prospecting contract negotiations;
• The existence of national scientific capabilities that can add value to biodiversity elements;
• Knowledge of the operational norms of the business sector;
• Internal capacity for negotiations;
• Innovation and creativity capabilities for obtaining benefits;
• Understanding a variety of key subjects including intellectual property rights, third party transfers, and confidentiality clauses;
• A proactive focus according to institutional policies;
• An understanding of national and local needs in terms of technology, training and joint research; and
• Macro-policies and legal, institutional and political support.
Finally, Prof. Cabrera discusses the control and monitoring mechanisms developed by INBio. These include a database for accession and internal transfers and practices for external transfers for bioprospecting or for biodiversity inventories. In conclusion, Prof. Cabrera finds that it is possible “to label even individual insects given sufficient resources.” The barcode system used by INBio for external transfers could potentially be linked to a certificate of origin number. Nonetheless, ABS legislation will also be difficult to enforce due to the nature of genetic resources. Costa Rica has a variety of monitoring mechanisms in place including periodic reporting as mandated in the access permit, auditing of the records or reporting system of a recipient organization by INBio, and access to laboratory notes on INBio material by INBio.

*Suman Sahai, Gene Campaign, India*

In her paper, Dr. Sahai summarizes four research results from the ‘Laying the Foundation’ project:

1. The drafting of a paper entitled *ABS from Indigenous and Local Community’s Perspective*. The paper seeks to examine the incongruence between indigenous and local community’s worldviews and the existing ABS mechanism. It puts forward the view that in order to ensure equitable benefit-sharing, ABS must be inclusive of their worldview and take account of their perceptions. (Please see the supplement for a copy of the paper.)

2. Analysis of 20 major declarations of indigenous people has been made in order to substantiate the paper and approach the issue from indigenous people’s perspective.

3. Field research by the junior researcher among an indigenous community, the Gond tribe of Mendhalekha village in Central India who are informed and aware of their rights pertaining to the forest over which they have community ownership. The purpose of the field research was to inquire as to the perceptions of the community on ABS.

4. The initiation of case studies in four villages that have compiled People’s Biodiversity Registers in collaboration with the Centre for Ecological Sciences of the Indian Institute of Science, Bangalore, so as to gauge the manner in which documentation plays a role in the development of an ABS regime where indigenous knowledge is protected.

Dr. Sahai also identifies two ABS contracts that will be studied in more detail during the planned follow-on project. These are the Kani model, which pre-dates the CBD, and the more recent Mala-National Innovation Foundation (NIF) model. The Kani model was developed by Dr. P. Pushpangadan and was the first ABS agreement to recognize and reward the knowledge of an indigenous community (the Kani tribe.) The Kani model now benefits over 16,000 Kani people. Because it was developed prior to the CBD, the Kani model suffers certain shortcomings and has been subject to criticism. The Mala-NIF model concerns indigenous knowledge from the village of Mala documented by the Indian Institute of Science. The Institute had an agreement with the NIF for the latter to serve as a repository. A Memorandum of Agreement was signed between the community of Mala and NIF to determine the commercialization of the indigenous knowledge.
Laying the Foundations – SEAPRI First Report

By Kent Nnadozie, SEAPRI, Kenya

Mr. Nnadozie focused his research on ABS in Kenya but also conducted some work in Ghana. He identifies the legal and policy context for ABS in Kenya at the international and national levels. He finds that awareness of focal points for different international agreements is slim to none although awareness of the agreements themselves appears to be higher. In terms of participation in the development of national positions and actual negotiations, there is limited evidence of consultations. Finally, implementation of the variety of ABS-related international agreements is largely done by different national institutions in isolation from one another.

Nationally, there appears to be limited knowledge of Kenya’s existing laws and policies on ABS among policy-makers, scientists in the field, and the general public. Lack of awareness precludes any meaningful level of political commitment. Ad hoc ABS policies are being implemented by some Kenyan institutions and the National Environment Management Authority has statutory authority to regulate ABS but has not yet shown the intention to take up this mandate in the face of limited resources and capacity as well as an extremely broad mandate. The majority of stakeholders do not appear to be engaged in the process of the formulation of ABS policy and legislation although there are some management-level stakeholders who have some awareness of and influence over the process. Levels of capacity and influence among this group varies.

In Ghana, Mr. Nnadozie engaged in discussions with representatives from the Council for Scientific and Industrial Research (CSIR) and the Faculty of Law and the Department of Botany at the University of Ghana. Prof. Oten-Yeboah, Deputy Director General of CSIR, indicated that there is insufficient coordination in Ghana among different departments, ministries and institutions on the issue of genetic resources. Professors Nii Ashie Kotey, Dean of the Faculty of Law, and George Sarpong, Head of the Environmental Law Department, pointed to a lack of locally-generated literature on genetic resources and a lack of awareness of intellectual property issues in other faculties. Professor Enu-kwesi, Dean of the Department of Botany, related his experiences with bioprospecting agreements, particularly one with his department, the Missouri Botanical Gardens, and the U.S. National Cancer Institute.

Mr. Nnadozie identifies and discusses two ABS examples from Kenya for further research – the agreement among Diversa Corporation, Kenya Wildlife Service, and the International Centre of Insect Physiology and Ecology, and the activities of Genencor International Inc. where discussions are ongoing after access took place and a new product was developed as a result of the access. These agreements are the focus for the next steps of the research in the planned follow-on project. The subsequent analysis will include more in-depth study of the negotiation process, the parties to the negotiations, local community participation, terms and conditions
of the contracts, the relative resources and sophistication of the actors, infringement and enforcement, and follow-up and monitoring.

Finally, Mr. Nnadozie’s research identified five preliminary findings or conclusions from the project. These include some general principles on ABS agreements; the difficult question of local communities and how to involve and compensate them; the need for further public education and awareness; the need to build the ABS knowledge base; and a lack of capacity in the relevant institutions.

Isabel Lapena, SPDA, Peru

Ms. Lapena outlines the overall context for ABS in Peru and the Andean region in general. The area has been at the forefront of developing ABS law and policy but implementation has proceeded at a slow pace. The main Peruvian authority for ABS, the National Natural Resources Institute, has not made public very much information concerning the number or location of ABS agreements. Nonetheless, there are some well-known examples of ABS agreements in Peru including the International Cooperative Biodiversity Group Program and the International Potato Centre – ANDES cooperation project. Further evaluation and analysis is still required on these agreements. The addition of junior researchers facilitates work on ABS research and should help to introduce new ideas as well as enthusiastic and well-trained individuals to national, regional and international discussions.

Ms. Lapena presents four results from the ‘Laying the Foundation’ project:
1. The participation of SPDA’s junior research, Pamela Ferro, in the three-week ABS capacity-building workshop in Montreal led to a number of other opportunities for Ms. Ferro. These include plans to focus her thesis as part of her law degree on the subject of ABS and traditional knowledge, acting as a research assistant on a GEF-UNDP funded project to develop a National Public Traditional Knowledge Register for Amazonian communities, helping to prepare the regional capacity building course based on the IPGRI-ISNAR Module on Policy and Law of Relevance for the Management of Plant Genetic Resources for Food and Agriculture, and participating in an IP clinic at Washington University.
2. SPDA, with the involvement Ms. Ferro, is preparing a model contract on ABS traditional knowledge in the Huancavelica area. The work includes reviewing model agreements, assessing prior informed consent provisions, and assessing the best approach to a consultation process in the area.
3. Ms. Ferro has prepared a partnership paper on ABS and liability entitled “A Pending Gap in ABS Legal Frameworks and Agreements: The Liability Issue” (see attached supplement.)
4. SPDA, with the involvement of Ms. Ferro, has interviewed key officials at public institutions that have jurisdiction over ABS. The interviews have contributed to a compilation and analysis of Material Transfer Agreements and to understanding the gaps and problems authorities face in implementing Decision 391 in the Andean countries.
In her report, Ms. Lapena also identifies two ABS agreements that will be studied in more detail in the planned follow-on project. The first is the “Agreement on the repatriation, restoration and monitoring of agro-biodiversity of native potatoes and associated community knowledge system” that was signed in December 2004 between the Association of Communities in the Potato Park (represented by the Association for Nature and Sustainable Development), and the International Potato Centre in Lima. This agreement is unique as it recognizes not only indigenous contributions to agricultural biodiversity but also serves as a legal base to understand and promote conservation of genetic resources and associated knowledge. Specific areas for further study related to this agreement include how its intellectual property provisions relate to international agreements and particularly the FAO International Treaty on Plant Genetic Resources for Food and Agriculture; the rights of small farmers over the repatriated material; and legal character of the material transferred.

The second agreement also involves the International Potato Centre, this time in its collection activities in eight communities in the Huancavelica region of the Andes. The Centre is collecting plant genetic resources for food and agriculture and traditional knowledge with the goal of cataloguing local crops and TK. The project implies a need to obtain prior informed consent and to comply with national ABS rules. The agreement is interesting in that it focuses on bioprospecting for food and agricultural purposes rather than more typical pharmaceutical objectives.

4. Report on Fulfillment of Objectives

(a) Field Research Objective

Each of the project partners developed their own work plan for their activities under this objective of the project. Pursuant to this plan, they undertook in-country research to identify relevant access agreements for further study. As illustrated by the summary of the research findings in the previous section and the complete reports from the partners in Annex I, the project partners were successful in undertaking preliminary inquiries into ABS agreements in their countries and identifying specific contracts for more detailed inquiry during the planned follow-on project.

(b) International Negotiations Objective

CISDL coordinated a successful side event on the ‘Laying the Foundation’ project during the third meeting of the Ad Hoc Open-Ended Working Group (WG) on ABS in Bangkok in February 2005. The event highlighted the themes from the partnership papers prepared by the junior researchers as part of the project and included discussion and analysis by Jorge Cabrera and Kent Nnadozie, lead researchers from two of the project partners. Please see Annex III for a report of the event.

(c) Capacity-Building Objective
The project was successful in creating a mentor relationship between each project partner and a junior researcher. The junior researchers spent three weeks in Montreal during October-November 2004 for a capacity-building and networking workshop on ABS. The feedback concerning the workshop from both the lead researchers and junior researchers was very positive. During the workshop, the junior researchers initiated work on partnership papers, which they completed with guidance from their mentor upon their return home. Please see Annex II for a report on the junior researchers’ workshop and the supplement for copies of the junior researchers’ partnership papers.

5. Report on Project Design and Implementation

The ‘Laying the Foundation’ project ran from August 2004 until February 2005. Over the course of that time, the partners conducted in-country research, a workshop for junior researchers’ was held, and a side event during the ABS WG-3 meeting was held.

In-country research
The in-country research by the project partners was ongoing throughout the 7 months of the project. The lead researcher from each partner developed a work plan outlining their planned activities during the project. Because the research activities were partner-driven, each of the lead researchers approached the work in a slightly different manner. The research methods used included surveys and analysis of national, regional and international law and policy on ABS; interviews with officials from government, research centres and educational institutions; field work consulting with local communities; and preliminary inquiries into existing ABS agreements for further study in follow-on work.

Junior researchers’ capacity-building
Each project partner recruited a junior researcher to aid in the project research and participate in the Montreal workshop. The junior researchers began working with their respective mentor at different points during the project, depending on the recruitment schedule of the organization. Organization for the junior researchers’ capacity-building and networking workshop began in September 2004 and the workshop itself was held from October 18th to November 5th, 2005. All four of the junior researchers participated in the workshop, which included presentations from experts in the field, roundtable discussions, public presentations, field trips, and research time. (See Annex II for the complete agenda from the workshop.)

Upon returning home, the junior researchers continued to work with their mentor and finished preparing their partnership papers. All the papers were received by February 2005 and editing work continues. Two of the junior researchers have continued their involvement with their organization, while two are continuing their studies.

Meeting of partners
Originally, a meeting of the project partners was planned to take place in San José, Costa Rica in January 2005. Due to higher than anticipated costs, however, the
meeting venue was moved to Bangkok to coincide with the ABS WG-3 meeting in February and the presence of several of the project partners at this meeting. (Plans to hold the next research meeting in Costa Rica are now included in the proposal for the second phase of the project.) In Bangkok, representatives from three of the four project partners were able to discuss the project outcomes, review plans for future work, and present ideas from the project during a side event. Unfortunately, a representative from Gene Campaign was unable to attend the Working Group meeting due to conflicting travel arrangements.

6. Report on Project Outputs & Dissemination

The ‘Laying the Foundation’ project produced a variety of different outputs and work on their dissemination is ongoing. The outputs are as follows:

(a) Information sharing and dissemination

The junior researchers’ workshop resulted in the creation of four partnership papers authored by the junior researchers themselves (see the supplement). Editorial work on the papers continues in preparation for their publication as journal articles or in a book on ABS.

The ideas in the partnership papers were disseminated through a side event during ABS WG-3 in February 2005. The side event included documentation outlining the ‘Laying the Foundation’ project as a whole as well as the abstracts of the papers, a presentation of the key concepts in the papers and discussion by two of the lead researchers as well as questions and discussion with the audience. A report of the side event has been prepared and is attached as Annex III. The report is being disseminated through the CISDL website.

This final report is also an output of the project as it summarizes the project results. The report will be disseminated through the CISDL website, sent to key ABS contacts, and also included in the CBD’s database of ABS capacity-building projects.

(b) Knowledge creation

The agenda for the junior researchers’ workshop serves as an emerging module on ABS. The agenda for the workshop (see Annex II) covered the key concepts of the issue and the junior researchers were provided with a binder of materials containing copies of relevant treaties and documents pertaining to ABS as well as current scholarship in the field. CISDL and the project partners plan to build upon the initial work that went into the workshop in order to develop a permanent ABS seminar for Southern researchers.

(c) Training

The junior researchers’ mentor relationship with their partner organization and their involvement with their partner’s ABS research activities helped to increase
their competence, knowledge and experience in the field of ABS. The junior researchers worked with and learned from some of the leading experts in this area.

The junior researchers’ capacity-building and networking workshop was not designed as a training workshop, *per se*, but it definitely strengthened the ABS knowledge base of the junior researchers and introduced them to an international array of people working in this area.

**7. Report on Capacity-Building**

The ‘Laying the Foundation’ project had a significant institutional and individual capacity-building impact. Each of the project partners had the opportunity to engage a junior researcher to participate in their ABS work. This increased the capacity of the organization to undertake research and also built the skills of the junior researcher. The mentoring of junior researchers also strengthened each of the project partners by increasing the availability of knowledgeable individuals who can participate in research projects in the future. Furthermore, at least one of the project partners consciously recruited a female junior researcher as a way to increase the number of women in the field.

The project was also important for the capacity-building of CISDL as a research institution as it served as an important experience in project management and administration for the organization and the personnel concerned. This has helped to ‘lay the foundations’ for the next phase of research and partnership – a proposal for a joint project of four years to significantly develop international research on pressing ABS issues.

**8. Report on Project Management**

CISDL served as the overall project administrator, with Kathryn Garforth, CISDL Research Fellow, acting as the project coordinator. The administration of the project included disbursing funds to the project partners, organizing and coordinating the junior researchers’ workshop, coordinating the meeting of the project partners in Bangkok, and preparing the project reports. This was Ms. Garforth’s first experience as a project coordinator and was thus a very valuable learning experience for her. The administration of the project proceeded quite smoothly and the experience gained will better enable CISDL to manage similar projects in the future.

Each of the project partners undertook to organize and manage their own component of the research under the project. They prepared work plans outlining their projected activities and final reports describing the results achieved. This preliminary research has produced some very interesting outcomes (see Appendix I) and the project partners are looking forward to being able to pursue their lines of inquiry in more depth.
IDRC was very supportive throughout the project. IDRC staff from the Sustainable Use of Biodiversity (SUB) Programme provided information and helped to make arrangements for the trip to Ottawa that was part of the junior researchers’ workshop. Individuals from the SUB Programme also met with the junior researchers while the latter were attending roundtable discussions at IDRC’s Ottawa office. IDRC staff have also been very helpful in providing information on the organization’s project administration requirements.

9. Report on Project Impacts

Three impacts can be identified from the ‘Laying the Foundation’ project. The first is the impact of the research conducted by the project partners. The research was preliminary in nature and thus was not intended to produce great breakthroughs in the field of ABS. Instead, the impact of the research is in identifying specific new areas of inquiry for further in-depth research that could, in turn, generate significant impacts on ABS thinking.

The second impact is in the development of human resources skilled in the area of ABS, i.e. the junior researchers. One of the objectives of the junior researchers component of the project was to begin to address the dearth of skilled individuals working on ABS in developing countries. By increasing the number of knowledgeable Southern researchers, the project has increased the ABS decision-making and development capacity in the countries of the four project partners. In addition, by building their knowledge of ABS, the project has contributed to the career development of the junior researchers themselves.

The third impact stems from the work of the junior researchers on their partnership papers. CISDL continues to work on preparing the papers for publication, which will undoubtedly contribute to the career development of the junior researchers. Furthermore, the ideas in the partnership papers have already begun to be disseminated and CISDL has already received requests from government officials for copies of the papers, which should also impact decision-making.

10. Overall Project Assessment

Overall, the ‘Laying the Foundation’ project has been a success. With a relatively small budget, the project has succeeded in identifying specific research questions and key contacts for subsequent work, increased the capacity of several junior researchers from developing countries as well as their mentor organizations to undertake ABS research, and built a new partnership among the four partner organizations. The willingness and interest of the project partners to continue their collaboration in a future ABS project is indicative of the positive outcomes from the project. Similarly, the positive feedback received from both the project partners and the junior researchers concerning the capacity-building component of the project has affirmed the need for this sort of capacity-building. CISDL has already
received expressions of interest from a variety of other organizations who would like to be able to send junior researchers to a future workshop.

11. Recommendations

As with any project, ‘Laying the Foundation’ was a learning experience for all involved. There are two recommendations that stem from this learning. First of all, there is only so much knowledge and information on ABS that can be imparted to the junior researchers through the mechanism of a workshop. A great deal is learnt simply by being present at the relevant meetings, following the negotiations, carrying out the research on the ground, publishing their views, and learning about the different players. Budgets for future junior researchers capacity-building should include funds for at least some of the researchers to participate in an international meeting relevant to ABS – be it a meeting of the CBD’s Ad Hoc Open-Working Group on ABS, a Conference of the Parties to the CBD, a meeting of the WIPO Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore, or another pertinent forum. More junior researchers, particularly from indigenous groups and traditional communities in Canada and developing countries, might also benefit from an expanded aspect of this component of the project.

Secondly, as illustrated by the project results, the outcomes from ‘Laying the Foundation’ are only the beginning. The work that has been initiated by the project partners here needs to continue. Further research will allow in-depth understanding of specific ABS contracts and will generate valuable knowledge for both national implementation of ABS rules and international negotiations on ABS. All the project partners look forward to continuing their work in this area.
Annex I  Reports from Project Partners

ACCESS AND BENEFIT SHARING IN COSTA RICA: LESSONS LEARNED FOR THE MONITORING AND TRACKING OF GENETIC RESOURCES IN ACCESS CONTRACTS

Jorge Cabrera Medaglia

Preliminary research findings

I. IDENTIFICATION OF RELEVANT ACCESS LAWS AND POLICIES

- The Legal and policy framework has been identified as follows:

The legislation that regulates access to genetic material, biochemical resources and traditional knowledge is the Law of Biodiversity, No. 7788 of 30 April 1998 (LB1). In relation to access policies, there is a National Biodiversity Strategy that contemplates a set of actions to be taken in the area of access to genetic resources.

Presently, there is also a “General Access Procedure” (GAP) that functions as a bylaw of the LB. This was approved by the Minister of Environment and Energy and the President through an executive decree (December 15 2003). The GAP was proposed by the National Commission for the Management of Biodiversity (NACOMB) in conformity with Article 62 of the above mentioned Law.

The LB sets up the basis for access permits and contracts. The law contains clear definitions on crucial topics such as access to biochemical and genetic elements, bioprospecting, PIC, innovation, and access permits (Article 7). Likewise, by declaring them in the public domain, it has clarified the genetic and biochemical resources property regime (Article 6) by stating that these resources belong to the State, which is the manager of these resources. Also, two types of properties were distinguished: that of the biological or organic resource and that of the genetic and biochemical resource.

1 A series of topics were considered for the formulation of the dispositions relative to access, distribution of benefits and protection of traditional knowledge. These included basic definitions, scope, the procedure for prior informed consent (PIC), mutually agreed terms, competent authority, distribution of benefits, and sanctions. Some relevant topics such as the need to distinguish between access with agricultural or pharmaceutical purposes, or between research with commercial or academic purposes, and the need of prompt and special mechanisms for ex situ collections were scarcely considered. These areas constitute some of the deficiencies of the legislation that must be corrected with an appropriate regulation.

2 The Strategy proposes thirteen strategic elements. The last one is called “Establishment of the mechanisms needed to facilitate access to genetic resources of biodiversity and the fair and equitable sharing of the benefits derived from them.” It establishes the technical, normative, and organizational frame to guarantee the fair and equitable access to the elements of biodiversity, along with a set of strategies and concrete actions.
According to Article 117, the law has been fully in force since its publication in April 1998. However, an action to declare this law unconstitutional was brought by the Attorney General’s Office. This claim was admitted for study by the Constitutional Chamber (Unconstitutionality Action Number 98-006524-007-CO-M, admitted by October 1998 Resolution). According to Articles 81 and 82 of the Law of the Constitutional Jurisdiction No. 7135, the suit does not suspend the execution of the LB. However, from the political point of view it has definitely delayed NACOMB’s implementation. The Ministry of the Environment and Energy considered these legal competencies unconstitutional; thus the Ministry requested the Attorney General to submit a constitutional challenge. Fundamentally, the following powers have been questioned:

- NACOMB’s legal authority to formulate national policies and to coordinate them (clauses 1, 2,3,4, and 5 of Article 14) and its authority to exhaust the administrative route in case of challenges presented against the resolutions of the Technical Office (TO) of the Commission (clause 6 of Article 14). In both cases this would run counter to the exclusive power of the Executive Branch in these areas.
- Independent management of public funds (as provided by Articles 19 and 20 of the Law), running counter to Articles 121, 176, and 180 of the Constitution.

As indicated, the constitutional challenge, although not preventing the implementation of the regulations, has had the effect of slowing down many of the necessary decisions to make the law operational. For example, the NACOMB was not put into effect until January 2000, almost two years later than initially foreseen by the law. Likewise, there is a legitimate concern that if the action succeeds, NACOMB’s role could turn out to be that of a simple adviser and not a public policy maker. To date, the action has not been resolved by the Constitutional Chamber.

**Scope of the Law, Exceptions and Specific Treatment for Some Sectors**

The Legislation is applied “...on the elements of the biodiversity under the State’s sovereignty, as well as on the processes and the activities carried out under its jurisdiction or control, independently of whether the effects of the actions are manifested inside or outside the national jurisdiction.” This Law will regulate specifically the use, management, associated knowledge, distribution of benefits and costs derived from the utilization of the elements of the biodiversity (Article 3). In the same way, Article 6 (public domain) establishes that “... the biochemical and genetic properties of the elements of the wild or domesticated biodiversity are of public domain. The State will authorize the exploration, research, bioprospecting, use and utilization of the elements of biodiversity that constitute goods of public domain, as well as the utilization of all genetic and biochemical resources, by means of the procedure of access established in Chapter V of this Law.” Also, in conformity with articles 62 and 69, every research program or bioprospecting on genetic material carried out in Costa Rican territory requires an access permit, unless covered by one of the exceptions foreseen by the law.
The exceptions of the Law (Article 4), refer fundamentally to access to human genetic resources and the exchange of genetic and biochemical resources that are part of traditional practices of indigenous peoples and local communities and that have a non-commercial purpose. In addition, public universities were exempted from control for a term of one year (until 7 May 1999) in order for them to establish their own controls and regulations for non-commercial projects that require access. Apart from this, all the remaining sectors (pharmaceutical, agriculture, biotechnology, ornamental, and medicinal herbs) are subject to the law and must follow its access procedures. The GAP regulates access for commercial and non-commercial bioprospecting (including teaching), occasional economic utilization, constant use of genetic and biochemical resources, and traditional knowledge. The Law indicates that a concession will be required in case of access to genetic resources for commercial use, without defining steps or requirements.

The law is applied equally to genetic agricultural resources. The legislation foresees specifically that in the case of duly registered ex situ collections, the regulation of the law will set the authorization procedure for access permits (Article 69). It would include any type of collection. The above-mentioned procedure was supposed to be determined by means of the already cited GAP. However, the Regulations do not have rules on this point. On the contrary, the GAP establishes a moratorium on the access to genetic resources found in ex situ collections, unless the specific normative is approved. The GAP allocates 6 months for the drafting of these regulations; this period was later extending for one more year. These regulations are especially complex due to the institutional structures that keep genetic resources in ex situ conditions. Furthermore, other applicable dispositions to ex situ collections can be found in different regulations, without direct relation to access, but in relation to conservation and maintenance. There is no official record of the ex situ collections in the country.

As mentioned, the Law applies to all the elements of biodiversity found under the sovereignty of the State (Article 3) and to all basic research and commercial bioprospecting projects conducted in Costa Rican land (Article 69). In this respect, access regulations are applied to genetic resources in public or private land, terrestrial or marine environments, ex situ or in situ collection and indigenous territories. Nevertheless, there are some omissions relative to resources in marine areas. Hence, other legal rules can be applicable to obtain access to these biological resources. Specifically, the Costa Rican Institute of Fishing and Aquaculture (IFA) is the entity entrusted with granting fishing licenses, including research permits, but excluding permits for resources found in marine regions of wild protected areas (Law of Creation of IFA no. 7384 of 29 March 1994 article 5 and Attorney General’s Opinion C-215-95 of 22 September 1995). In this case, access permits by the TO are also required. Regarding access to indigenous land there are other applicable laws, besides the LB, such as the Convention on Indigenous Peoples of the International Labor Organization (ILO 169 Convention)

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3 A consult is currently working on the development of the Draft Regulations for ex situ collections.

4 For example, the decree of creation of the National Commission of Plant Genetic Resources, No. 18661-MAG of 9 September 1988 and the Law of Seeds No. 6289 of 4 December 1978 and its bylaw.
and the rules of the *sui generis* system of intellectual community rights that are being developed through a consultation process that has not ended.

**Institutional arrangements**

The LB creates a self-governed NACOMB (Article 14) as a separate legal entity, but belonging to the Ministry of Environment and Energy (MEE). NACOMB’s duties include: To formulate the policies and responsibilities established in chapters IV and V (Access to genetic and biochemical elements and protection of associated knowledge) and VI of the LB. Furthermore, it has to coordinate these policies with the relevant institutions. Additionally, it has to formulate and coordinate the policy for access to elements of biodiversity and associated knowledge, ensuring a suitable transference of technology, as well as the sharing of benefits, which are general procedures under Title V of the Law.

This entity has been formed by governmental bodies such as the MEE which presides over it, the Ministry of Foreign Trade, the Ministry of Health, Ministry of Agriculture, IFA, National Commission of University Presidents; Indigenous organization, Farmers organization, National Union of Chambers, the Costa Rican Federation for the Conservation of the Environment (FECON) and the Director of NASYCA (Article 15). NGOs are represented by FECON.

It can also revoke the TO’s resolutions regarding access matters (Article 14). In conformity with Article 62, the NACOMB must propose policies on access to genetic and biochemical resources of *ex situ* and *in situ* biodiversity. It will also act as an obligatory consultant in procedures related to the protection of intellectual property rights on biodiversity.

**In addition, the Commission will execute its agreements and resolutions and will design its internal procedures by means of the TO’s Executive Director (article 16). Up to now the TO has 5 full time civil servants.**

The TO will grant or deny access requests (Article 17, clause a); coordinate access issues with conservation areas, the private sector, indigenous peoples, and rural communities (Article 17, paragraph b); organize and keep an updated record of access requests and *ex situ* collections, as well as a record of the individuals and legal entities that devote themselves to genetic manipulation (paragraph c); and compile and update regulations relative to the fulfillment of its agreements and directives (paragraph d).

The Commission activities have been regulated by means of MEE’s decree No. 29680, published in The Gazette of 7 August 2001 and its modifications. Its members are designated for a two-year period. The Commission’s responsibilities include the granting of access permits and the implementation of monitoring and evaluation procedures. To date, evaluation and monitoring procedures have not been implemented.
Evaluation of Commercial and Non-commercial Bioprospecting Initiatives

According to Article 71 (characteristics and conditions of access permits), the access requirements will be determined differently depending on whether the research has or does not have a commercial purpose. In the latter case, the non-commercial purpose will have to be verified. Nevertheless, the GAP does not contemplate different requirements for bioprospecting projects with commercial and non-commercial purposes in spite of the fact that Article 9 (permits for basic research) establishes that if a project has commercial purposes, the interested party will have to fulfill additional requirements. In general, there is no clarity on the form this distinction would take.

Access procedures

The LB regulates the basic requirements for access, including the PIC, transfer of technology, equitable sharing of benefits, the protection of associated knowledge, and the definition of the ways in which the above mentioned activities will contribute to the conservation of species and ecosystems. It also mandates the designation of a legal representative in the country, when the person or organization requesting access is domiciled abroad (Article 63). The procedure to follow is clearly outlined in Article 64. It includes proof of the PIC of the owner of the property where the activity will be developed, whether it is an indigenous community, a private owner or public entity. Other interesting provisions incorporate the right of cultural objection (Article 66), the registry of access applications and the protection of confidential information, except in the case of biosafety concerns (Article 67).

The LB also regulates in detail commercial and non-commercial bioprospecting permits (Article 69). These are valid for three years and can be renewed. They are given to specific persons or entities and are therefore not transferable. The permits are limited to the genetic and biochemical elements expressly authorized for specific areas or territories (Article 70). The permits will contain a certificate of origin, permission or prohibition to extract samples, periodic reporting obligation, monitoring and control, conditions relative to resulting property, and any another applicable condition deemed relevant by the TO (Article 71).

The access request requirements are name and identification of the interested party, name and identification of the responsible researcher, exact location of the place, and the elements of biodiversity that will be the subject of the investigation, indicating the owner and manager or holder of the premises. The applicant will also have to submit a descriptive chronology of activities, aims, and purposes as well as place for legal notifications. The application must be accompanied by the PIC (Article 72) and a record of individuals or legal entities who are to conduct the bioprospecting (Article 73). The TO must also authorize those agreements contemplating access to genetic and biochemical elements (Article 74) signed between individuals, natives, or foreigners, or between them and the institutions registered for such purposes. There is also a possibility to establish framework agreements with universities and other duly authorized centers (Article 74). It is established that up to 10% of the research budget and 50% of royalties will have to
go to the conservation area, the private owner, or indigenous community (Article 76). In cases in which the TO authorizes the continuing use of genetic material or of biochemical extracts for commercial purposes, applicants are required to obtain a separate concession from the interested party (Article 75). There are no further guidelines in the LB about the process, requirements, and length of time needed to obtain this concession (Figure 1).
1. **ACCESS PERMITS** Articles 6, 7.1, 7.27, and 62
   - Basic research (Article 69)
   - Bioprospecting (Article 69)
   - Economic use: constant and occasional (concessions) (Article 75)

2. **Framework Agreements** (Article 74)

3. **Contracts with third parties**
   Prior authorization required for the Technical Office
   (Articles 69, 70, 71, 72, and 74)

4. **APPLICANTS**
   - Individuals and legal entities (Article 7.27)
   - Research centers (Article 70)

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**FIRST STAGE**

**REGISTRY OF APPLICANTS**

**SECOND STAGE**

APPLICATION (Art. 64) AND TECHNICAL GUIDE WHICH INCLUDE:

- PRIOR INFORMED CONSENT (Articles 7 and 9)
- AND MUTUALLY AGREED TERMS (Articles 63 and 65)

**THIRD STAGE**

**REGIONAL COUNCIL OF CONSERVATION AREAS**

**INDIGENOUS AUTHORITY**

**LOCAL COMMUNITY AUTHORITY**

**LAND OWNER**

**EX SITU COLLECTIONS** (Articles 69 and 74)

**FOURTH STAGE: MONITORING**

**Figure 1.** Access procedure.

Silvia Rodríguez, Representante de CONARE, 2002
First, in conformity with access procedure norms, interested parties must register with the TO using a specific form (Article 12). Later, the PIC must be negotiated in conformity with a guide which stipulates the minimal points for discussion (Article 19) between the applicant and owner of the conservation area or indigenous land, resources or, *ex situ* collections. This would include not only individuals, but other government entities such as municipal governments, the IFA, etc.

The PIC is supposed to contain mutually agreed upon terms that represent the fair and equitable distribution of benefits. Once obtained, this agreement must be endorsed by the TO. Even though the legislation is not clear, it is assumed that the PIC will be formalized in a private contract. The TO limits itself to endorsing the contract rather than negotiating it.

The TO’s approval authorizes three fundamental aspects: the PIC’s fulfillment of the requirements established in the Technical Guide, the number of samples to be taken and the time frame for the reports to be presented (Article 13).

A request form and a completed Technical Guide (Article 9) must be submitted to the TO. In both cases there are requirements and documents that must be presented jointly. Additionally, the documents established in GAP’s Article 9 must be attached. Additional requirements are established for those who request permits for basic research or bioprospecting (Art 9.4) and for those who need access permits for occasional or continuing economic utilization (Article 9.5).

The law (Article 76) requires a determination of the administrative fee. The GAP also refers to this payment (Article 17 on administrative rates). After the TO extends a certificate of origin (Article 19 of GAP), it proceeds to publish the requests and final resolutions on its website within eight calendar days (Article 15).

GAP’s Article 14 establishes the following “Criteria for the evaluation or approval of the request” based on the public environmental interest criteria embodied in the law (Article 11.3):

- Development options for future generations;
- Food safety and sovereignty;
- Conservation of ecosystems;
- Protection of human health;
- Improvement of citizens’ quality of life;
- Gender issues; and
- Intellectual property rights not affecting key agricultural products and processes for the nourishment and health of the country’s inhabitants. This criterion also includes protection for the resources of local communities and indigenous populations.

Also, GAP’s Article 24 allows the imposition of total or partial restrictions on access to the resources to ensure their conservation and sustainable use. These restrictions are issued by the TO in the resolution approving access. In this way, it can prohibit access, set limits, and regulate the methods of collection, in application of the precautionary principle mentioned in LB’s Article 11.2. To establish complete or partial restrictions some of the elements that will be considered are:
The danger of extinction of the species, subspecies, races and varieties.
Reasons of scarcity and endemic conditions.
Vulnerability or fragility conditions in the structure or function of the ecosystems.
Adverse effects on human health, the species, and the ecosystems or on essential elements of the autonomy or cultural identity of peoples and communities.
Strategic genetic resources or geographical areas qualified as such; and
The prohibition of access for military purposes or for denaturalization of the resources.

Once access is authorized, the monitoring and control phase begins (Article 20 of the GAP) at the expense of the TO and in coordination with the authorized representatives of the place where access to the resources is taking place. Applicants will have to follow applicable sanitary and phytosanitary rules for the exportation of the materials.

Finally an environmental impact assessment (EIA) can be requested by the TO based on some general provisions of the LB related to EIA, but not specific to bioprospecting activities (Article 92). The evaluation is the responsibility of the National Technical Secretariat (a body of MEE). To date no EIA has been requested of the National Biodiversity Institute (INBio) or any other bioprospector.

Article 16 allows the NACOMB to name ad hoc expert committees in complex cases.

In any case, the current scheme would leave the negotiation of contracts (by means of the PIC), in the hands of the conservation areas and eventually of other public authorities, insofar as they are the owners of the lands or of the biological resources.

**Characteristics of the Access Requirements**

The procedures for access are not completely clear, especially under the GAP. On the other hand, the requirements are established in Articles 63 and 72 of the LB, as well as in the GAP’s Articles 7 to 22. Only the TO and eventually the NACOMB shall grant access permits. A separate PIC should be obtained from other entities such as conservation areas, indigenous territories or public authorities who are owners of lands or in the case of marine resources other authorities such as the IFA.

In this respect, access to flora and fauna found on private lands would eventually need other authorizations from state entities like the MEE, particularly in cases of species in danger of extinction or with reduced populations. Access would be granted in conformity with the technical and scientific arrangements stated by National System of Conservation Areas (NASYCA). Thus, even if the flora were in private lands (e.g. orchids), the NASYCA would give the permits for the manipulation of the resource (Wildlife Conservation Law, No. 7317 Articles 14, 18 and 25 and its regulation No. 26435, Article 20.). In such a case it is not clear whether there should be a double authorization: from the TO for the genetic resource and from the NASYCA for the biological one, as well as the landlord’s consent regarding private property. In cases where collections are made in conservation areas, the PIC and the respective agreement are enough to obtain the access permit. The main difficulties arise when there is a question of privately owned wild, threatened flora.
Provisions that Promote the Conservation of Biodiversity, its Sustainable Use and the Fair Sharing of Benefits Derived from Biodiversity

The LB was designed to implement the CBD in Costa Rica. The LB established that, without prejudice to the fulfillment of regulations relative to the trade of endangered species of flora and fauna, the application of sanitary and phytosanitary measures and technical procedures and biosafety, the provisions on access to genetic resources will constitute neither a concealed restriction nor an obstacle to trade (Article 68 general rule of interpretation). There are also similarities between LB and other laws such as the Law of Wildlife Conservation, the Law of the IFA, the Law of Phytosanitary Protection No. 7664 and its regulation No. 26921-MAG, and the Convention on International Trade of Endangered Species, Law No. 5605 of 22 October 1974.

The general goal of the LB is to promote the conservation and sustainable use of biodiversity and to ensure the fair and equitable sharing of benefits derived from it (Article 1). The entire LB responds to this goal as put forth by the CBD. For example, it establishes the environmental function of the land (Article 8), general principles of the law (Article 9), objectives (Article 10), criteria for applying the law (Article 11); NASYCA's administrative structure (including the administration of the national wild protected areas, Articles 22 to 43), the guarantee of environmental safety (biosafety and exotic organisms, Articles 44 to 48), the conservation and the sustainable use of the ecosystems and species (Articles 49 to 61), the regulations on access to genetic resources (Articles 62 to 76), intellectual property rights (Articles 77 to 85), education and public awareness and research and transfer of technology (Articles 86 to 91), environmental impact assessment (Articles 92 to 97), incentives (Articles 98 to 104) and procedures and sanctions (Articles 105 to 113). All of these elements are in accordance with the three objectives of the CBD.

Specifically relating to access, Article 63 also mentions the transfer of technology and equitable sharing of benefits, the protection of associated knowledge, and the definition of the ways in which the project's activities will contribute to the conservation of species and ecosystems. Other regulations mentioned in Article 76 also contain parameters for sharing of benefits. All monetary and non-monetary benefits to be distributed are not listed but a generic rule is set forth with some specific indications regarding royalties, operation budget (Article 76) and technology transfer (Articles 63 and 76).

It must be pointed out that there are no binding requirements that benefits must go towards the conservation of the resources. It is perfectly possible that a private owner, public institution, or indigenous territory could grant the PIC without allocating benefits towards conservation since the legal authority of the TO is limited to endorsement. In these circumstances, it is valid to ask whether the TO would have the legal authority to revoke a previous consent because of a lack of benefits towards conservation derived from the access (Article 63). As one might expect, in those cases in which a conservation area grants the permits, it is assumed that the benefit will go in its entirety towards biodiversity conservation.

Relationship to other Laws

In theory it is possible to foresee some reforms to other national laws as a result of new access regulations, such as:
Reforms to the Patent Law may be made to include the presentation of the certificate of origin in cases where an invention using genetic resources or traditional knowledge is being patented. Some similar regulations may be necessary in the Plant Breeders’ Rights draft that is currently being discussed in the Legislative Assembly. Eventually, the LB’s dispositions on patentability exclusions (Article 78) might be integrated with the Law of Patents (see below).

Some laws that govern access to biological resources, such as the Law of Wildlife Conservation or the Law of the IFA, might be reformed to establish the necessary coordination between the access permit to genetic resources and the access permit to biological resources (wild flora and fauna are in some cases, marine resources), with the intention of simplifying the steps and respective procedures to obtain access.

The laws relative to customs control (General Customs Law No. 7557 of 8 November 1995) and the export of sanitary or phytosanitary material (Phytosanitary Protection Law), could be reformed to include a clause like the one stated by Decision 391 (Common Regime on Access to Genetic Resources of the Andean Community of Nations), which expressly mentions that the authorization to export biological material does not imply the authorization for the use of the genetic component (Fourth Complementary Disposition). There could be a need to reform the Phytosanitary Protection Law as it deals with other topics such as biosafety.

**Identification and Analysis of the Difficulties and Successes in the Implementation of the LB.**

In spite of the fact that the LB was adopted in 1998, it has been only recently implemented due to the action of unconstitutionality filed against it.

As for the main difficulties in the practical application of the Law we can mention:

- The scope of access and the conceptualization of what is meant by accessing and using genetic and biochemical resources, as opposed to using organic or natural resources that do not involve access and are therefore not regulated by the applicable legislation on the matter. The specific sphere of access, especially as regards access to medicinal plants, nutraceuticals, taxonomic research, etc. is still giving cause for concern in various sectors. Likewise, some requirements for the granting of a percentage of basic research budgets may constitute a major obstacle for students or centers with scarce resources. Other topics such as the definition of occasional vs. constant access, the scope of the exceptions granted to public Universities, what “non-profit” stands for, etc. are all conceptual barriers to the adequate functioning of the access system.

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5 The author is grateful to Ms. Marta Liliana Jiménez, CONAGEBIO Executive Director, for her comments and observations. A further difficulty is the action of unconstitutionality presented against several articles of the Law.
- The various interests permeating the issue of access and the opinions—often contradictory—about how and what for this topic should be regulated. Researchers and users are demanding clear, expedite and transparent rules that promote and encourage research into biodiversity, whereas other social groups are trying to restrict and control prospecting activities and the use of genetic resources for commercial purposes. To reconcile different interests is not always a straightforward affair, especially when there are contrasting stands: some regard bioprospecting as a synonym of bio-piracy, others perceive it as the immediate solution to the challenge posed by the conservation of biodiversity.

- The widely participative process that led to the writing of the law of Biodiversity affected, to some extent, its technical aspects, especially as regards some juridically complex matters associated with administrative law and the jurisdiction of public authorities. Nowadays, after an unhurried process of reflection about the contents of the law, voids and contradictions have become evident, many of which should require changes in the legislation that must be approved by the Legislative Assembly.

- Some critical aspects call for a more meticulous study. For instance, the access to the collections *ex situ*, the link between access and the conservation of biodiversity, the role of the State (through CONABIO) in the negotiation/approval of access applications, sample exportation, how to establish efficient monitoring and control mechanisms, the content and the implications of framework agreements, etc. The reasonable, proportioned regulation of the collections *ex situ*—keeping in mind that such resources where acquired under permits obtained in conformity with other legal frameworks—is a critical challenge in terms of laying down policies and regulations.

- In order to implement the law, it is critical to count on institutional know-how and experience in key matters regarding the negotiation of agreements and contracts, the determination of what exactly is “fair and equitable”, the knowledge of the markets and the existing parameters so as to be able to distribute benefits among the various sectors (pharmaceutical, agricultural, personal care, etc.). A major priority is to organize highly skilled, interdisciplinary teams.

- The uncertainty about prospection: the myth of bioprospecting (“the green gold-mine”) and the expected return values. The word ‘prospecting’ comes from, and has long been used in, exploration in the field of mining and oil. At the beginning of the 90’s Thomas Eisner was credited with the coinage, or at least with the popularization, of the term ‘bioprospection’. The two types of prospecting or search entail different levels of risk, and therefore benefit sharing will be heavily conditioned by the form in which these activities are carried out. Although there are several studies that discuss the potential benefits, bioprospectors never know exactly what they will find in the rich tropical forests. Biodiversity richness does not necessarily translate into marketable products such as new drugs, seeds, etc., and those who predicted that prospecting would have become a green gold-mine have now sized down their observations. From this viewpoint, bioprospecting becomes a further element within a wider strategy for conservation and sustainable use of biodiversity, rather than the solution to the immediate need for conservation.
The role of the State and procedures: absolute control or regulation and support. Historical inequities have probably led to perceiving the need for strict control to avoid the so-called bio-piracy. The regulation mechanisms in some countries, e.g. the Philippines, have shown that, in spite of the proponents' good intentions, this kind of approach results into disregard of CBD objectives and national laws. In this sense, some of the regulations promulgated so far have focused on controlling access rather than promoting it. It should be borne in mind that without access there can be no benefit sharing. These type of laws are generating high transaction expenses and a lot of red tape, and will entail the absence of access applications in the long run. As long as the idea persists that access is a form of colonialism rather a mechanism that fosters team initiative and advantages for all the participants, the possibility of generating reasonable experiences will be limited. This is why, along with the necessary legal warranties, flexible and transparent regulation mechanisms are a must.
Box 1 Difficulties and challenges of implementing legal frameworks in Costa Rica

Difficulties and challenges of implementing Legal Frameworks, the case of Costa Rica:

Costa Rica enacted in 1998 the Biodiversity Law. The Law regulates the access to genetic and biochemical resources and the sharing of the benefits arising out of their utilization. This Chart summarizes the main difficulties and challenges that Costa Rica has faced in the process of developing the Biodiversity Law.

Uncertainty and value

- Bio-prospecting is very uncertain; the word bioprospecting has been derived from prospecting for oil and minerals, but bioprospecting, or prospecting for biological or genetic resources and even of indigenous knowledge, is quite different, because it presents even greater risks; only a few products have reached the clinical or even pre-clinical stage, even though a lot of samples have been collected from all over the world since the mid-1980s.
- When determining the value of genetic resources, it should furthermore be born in mind that the significance of one sample in the overall chain of efforts and costs to develop a new product or a new drug is very limited. Unless a country can add value to these resources, for instance by scientific research, their value, and therefore the benefit that can be obtained has the potential to increase.
- Technology has had a paradoxical impact on the value of biological resources. On one hand, new technologies increase the potential commercial use, and therefore the economical value, of biological resources, while the cost of screening these materials and/or isolating active ingredients is decreasing. On the other hand, technological developments have reduced the amount of material needed for research purposes, and may thereby have facilitated illegal collection and use. So while, in general, the economic value of genetic resources is increasing, the commercial value of any particular extract or sample is not.

Rights and ownership

Property rights and ownership: the CBD does not address the question of ownership;
it only establishes (Article 3) that states are sovereign over their genetic and biological resources. But sovereignty, national patrimony and ownership are different concepts; therefore, it is important to clearly define ownership in the national law. In fact some of the most common problems arising when negotiating benefit-sharing agreements are related to the lack of clarity on ownership. In Costa Rica, the Law divides the property rights of biodiversity into genetic and bio-chemical properties and the biological resources per se: the biochemical and genetic properties belong to the State, therefore are under the administration of the Ministry of the Environment and Energy, while, biological resources are the property of the land owner, a situation that causes confusion and debates around definitions and intention of use.

**Over-regulation**

Another notorious pitfall is over-regulation:

- The complexity of access regulations creates problems; if nobody can comply with the regulations, most likely they will be not enforced. High transaction costs and bureaucratic procedures contribute to a lack of enforcement.
- Access legislation may negatively affect basic research; it may have negative impact on local universities and research institutions, as basic research is important for conservation purposes and for sustaining biodiversity.

**Defeating the purpose?**

The ultimate goal of access and benefit sharing should be clear. If the main aim is to make money, it is bound to fail. In case the objective is to create national capacity, a value added industry, or the conservation of natural biological resources, then it is necessary to make the right connections, and develop coherent policies on access, biodiversity conservation and sustainable use. These policies should include access to knowledge and traditional use of medical products. Considerations on different treatments or regulations according to the initial nature or purpose of research: non-commercial versus research intended for commercial development, has produced discussions on whether or not to consider all kinds of intended research with a potential for sending sooner or later, products to the market place.

II. ACCESS CONTRACTS AND EXPERIENCE IDENTIFIED

Most of the bioprospecting in the country has been carried out by the National Biodiversity Institute (INBio). INBio was created in 1989 as a non-governmental, non-profit association for private founding members and it has been declared in the public good. Its mission is to promote a new awareness of the value of biodiversity, and thereby achieve its conservation and use it to improve the quality of life. In 1991, INBio developed the concept and practice of "bioprospecting" as one of the answers to the need of using, in a sustainable way, Costa Rican biodiversity to benefit society. This concept continues gaining acceptance in government, scientific, academic and managerial circles, and it refers to the systematic search of new sources of chemical compounds, genes, proteins, microorganisms and other products that possess a current economic value or potential and can be found in our natural biological wealth. The use of the biodiversity presents opportunities and challenges to promote and to organize the infrastructure investments and human resources that add value and contribute to its conservation.

INBio has a formal Agreement with the Ministry of the Environment and Energy, which allows carrying out specific activities of the national inventory and of use of the biodiversity in the government's protected areas. INBio develops biodiversity prospecting actively in the protected wild areas of the country under that agreement, with the participation of the national and international academic and private sector. Research is carried out in collaboration with investigation centers, universities and national and international private companies, by means of investigation agreements that include key elements, such as:

- Access: limited in time and quantity
- Equity and compensation: Research budget, Benefit sharing (royalties and milestone, etc.), Technology Transfer, Training
- Non-destructive activities
- Up front payment for conservation

The agreements specify that 10% of the research budgets and 50% of the future royalties are shared to the Ministry of the Environment and Energy (MEE) to be reinvested in conservation. The research budget supports the scientific infrastructure in the country, as well as activities of added value aimed to conservation and sustainable use of the biodiversity. Up to now no royalties have been paid or any product has reached the market but there are some products under development, especially related to ornamental and herbal areas.

Next, a brief summary of the most outstanding investigation agreements is presented.

Research Collaboration Agreements with the industry:

INBio-Merck Agreement: Search of sustainable uses of the Costa Rican biodiversity.

It was the first agreement signed with a commercial company (October of 1991) for the search of sustainable uses of the Costa Rican biodiversity with potential for the
pharmaceutical industry and veterinary science. It was renewed in 1994, 1996 and 1998; in similar terms. This agreement comprised the study of a limited number of extracts of plants, insects and environmental samples for the elaboration of extracts to determine its potential use. The agreement has allowed INBio to have access to technology and training.

**Chemical prospecting in a Costa Rican Conservation Area:**

This project began in 1993 and it finished in September of 1999. It is one of the five International Groups of Cooperation in Biodiversity (ICBG’s) of the world financed by the National Institutions of Health (NIH) of United States. It was located in the Guanacaste Conservation Area and was carried out in collaboration with the University of Costa Rica, the University of Cornell and Bristol Myers Squibb. Its objectives were the incorporation of the tropical insects in the processes of search of new pharmaceutical products and to increase the capacity of the human resource in the fields of the ecology, the taxonomy and the ecochemistry.

**INBio-Givaudan Roure Agreement: Fragrances and aromas**

As a result of the constant search of new options, in 1995 INBio began in association with the company Givaudan-Roure a phase of exploration of potential fragrances and aromas from our biodiversity. The aromas and the fragrances were taken directly of the air of the forest that is in contact with fragrant objects. The objective was to determine the feasibility of new products from volatile compounds of the Costa Rican biodiversity and the technology transfer in this area. A royalty rate was established. This agreement concluded its activities in Costa Rica by the middle of 1998.

**INBio-BTG-Ecos La Pacífica Agreement**

In the agricultural area, INBio seeks to integrate the result of the bioprospecting activity with the economic development of the country. This process began with the signature of the INBio-British Technology Group (BTG) Agreement in 1992, that allowed INBio to begin the investigation, characterization and production of a product with nematicidal activity (DMDP) coming from a tree of the Costa Rican dry tropical forest. Parallely, investigations have been developed jointly with the corporation Ecos La Pacífica, aiming to determine the growing conditions of the species and the production of the DMDP, as well as the effectiveness of this nematicide in tropical crops. The greenhouse and field trials for began in 1999 and they continue being carried out to date with very satisfactory results. BTG has paid a small amount of money to both INBio and Ecos due to the licensing of a patent related to the DMDP use.

**INBio-Diversa Agreement: Search for enzymes from extremophilic organisms with application on Chemical Industry.**

For the exploration of new enzymes in aquatic or terrestrial microorganisms of the Costa Rican biodiversity under extreme conditions, INBio signed a research agreement with the DIVERSA biotechnical industry in 1995 and renewed it in 1998 and in 2002. It involves the gathering of bacteria in different Conservation Areas of our country that will be
studied for the identification and the isolation of new useful enzymes in the industry. The agreement also guarantees the training of Costa Rican scientists in collection methods, isolation and molecular biology, specifically in cloning and characterization of genes associated to enzymes.

**INBio-INDENA S.P.A. Agreement: Search for compounds with antimicrobial and antiviral activity.**

With the objective of obtaining compounds with antimicrobial potential to be used as active ingredients in cosmetics, INBio and the phytopharmaceutical company INDENA, with headquarters in Milan, Italy, signed a collaboration agreement in 1996, with a second phase that started in 2000. The contract was renewed in 2004. Extracts selected of plants are evaluated in bioassays to determine their antimicrobial activity. The final process is carried out in INDENA.

**INBio-Phytera Inc. Agreement**

Traditionally drugs have been developed starting from extracts of leaves, roots, bark and other parts of the plants. Today, with the advances in the biotechnology, they can be derived cultivations of cells starting from extremely small samples and to induce the production of a diversity of chemical substances in these cultivations, higher than when the original plant is used. In 1998 INBio signed an Agreement with this company, which was executed until the year 2000.

**INBio-Eli Lilly Agreement: Search of new compounds**

This project started in 1999 and it concluded in the year 2000. It was carried out with the pharmaceutical company Eli Lilly and Co. and its objective was the search of botanical compounds with pharmaceutical application. As a result of the successful collaboration Ely Lily donated to INBio modern technology for the preparation of fractions (the Bioexplore). This technology transfer allows INBio to provide fraction services and to improve its research and development capabilities for adding value to the biological diversity.

**INBio-Akkadix Corporation Agreement: Search for compounds with nematicidal activity.**

This project was carried out with the company Akkadix Corporation and was carried out from 1999 to 2001. Its main objective was the search of alternatives for the control of nematodes.

**Agreements with the Academia**

There are also, agreements of academic investigation with national and international universities. These agreements vary considerably in their focus but all they are guided toward the solution of problems and the search of knowledge and products.

**INBio-University of Strathclyde Agreement**
This agreement allows the access to new technologies and methodologies, as well as the interaction, through the University of Strathclyde, with the Japanese private sector. INBio provides a limited number of extracts of plants to also be evaluated during a time limited by several industries of that country. This agreement was developed from 1997 to 2000.

**INBio-University of Massachussets Agreement: Search for potential insecticides**

Through collaboration with the University of Massachusetts in U.S.A. thanks to the support of the National Institutes of Health (NIH), we carried out a research looking for compounds with insecticidal activity.

This investigation began in October of 1995 and it concluded in 1998. Its objective was the realization of enzymatic bioassays of extracts coming from plants, insects, bryophytes and mollusks.

**INBio-University of Guelph Agreement: Development of New Technologies for Medicines based on Plants, an International Interdisciplinary initiative**

This agreement is carried out with the University of Guelph. It was signed in the year 2000 and it will extend until the year 2003. Their main objective is the search of new pharmaceutical products through technical such as cultivation of tissues from plants.

**INBio-Harvard Medical School Agreement (ICGB Grant)**

This agreement began in October 2004. The primary aim of the research is to investigate, identify and eventually develop potential medical agents derived from microorganisms. If any is identified both parties will seek for a potential commercial partner.

**Other Agreements**

**Validation of promissory plants**

This project was financed by CR-USA Foundation. It contemplated 3 sub-projects that allowed to obtain information to improve the quality of life of the Costa Rican. In collaboration with the CIDPA (Center for Research and Diagnosis in Parasitologia of the University of Costa Rica) two plants were studied to isolate active components against malaria. This investigation allowed to give continuity to the most excellent results in the ICBG project.

Also, in collaboration with the UME (Unit of Electronic Microscopy), LEBI (Laboratory of Biological Assays) and the National Children’s Hospital, those plants were validated traditionally for the gastritis treatment by their activity anti-helicobacter pylori. Finally some species were validated by their alkaloid content to explore their economic feasibility.

**The Chagas Project**

INBio jointly with EARTH, the National University of Costa Rica and other Latin American institutions of Brazil, Mexico, Chile, Argentina, Uruguay and the NASA of United States,
are part of "The ChagaSpace Project", an investigation proposal that would help to look for solution to one of the most serious problems in public health of Latin America: the Chagas disease or American Trypanosomiasis. INBio carried out some search activities on plants with inhibitory activity of the disease in 1997. In the year 2001 the United States of America Congress approved a fund dedicated to finance this project again, which has allowed to restart the bioassays.

**INBio-IDB Agreement: Program from Support of the Development of the Use of the Biodiversity by Small Enterprises**

In February of 1999, INBio signed and agreement with the Interamerican Development Bank with the purpose of formalizing the terms of the grant of a non reimbursable technical cooperation, to support the development of the use of the biodiversity by small companies. This agreement has ended.

6 projects have been approved, as follows:

1. Agrobiot S.A.: Propagation of Costa Rican tropical plants to be commercialized as eco-educational souvenirs; Laboratorios Lisan S.A.: Pharmaceutical products based on medicinal plants: at least 5 natural products to be developed in 2005. First royalty payment was made in December 2004.
2. La Gavilana: Development of a model of eco-friendly practices for vanilla production: a biopesticide was identified allowing the organic production of the vainilla.
4. Bougainvillea S.A.: Research for development and production of a Biocide from Quassia amara wood;
5. Follajes Ticos S.A.: Ornamental plants native from the forest and with possibilities to be successfully commercialized: Several new species are under domestication.

**Benefits obtained by the country and the Institute**

These and other contract relationships have provided benefits of the following type:

- Monetary benefits through direct payments.
- Payment for supplied samples.
- Covering research budgets.
- Transfer of important technology which has enabled the development of the infrastructure at the Institute (biotechnology lab, etc.), which can be used for the investigation and generation of their own products.
- Training of the scientists and experts in state-of-the-art technology.
- Negotiation experience and knowledge of the market and the probabilities of searching for intellectual uses for biodiversity resources.
- Supporting of conservation through payments made to the Ministry of the Environment for the strengthening of the National System of Conservation Areas.
- Transfer of equipment to other institutions, such as to the University of Costa Rica.
- Future royalties and milestone payments to be shared 50:50 with the Ministry of the Environment.
• Establishment of national capabilities for assessing value of biodiversity resources.

The significance of the contract approach must not be underestimated. There is thus an element of contractual agreement involved. In fact, studies carried out to date on benefit sharing for the use of the knowledge, the different joint initiatives such as the Cooperative Biodiversity Groups, etc, all are based on contractual arrangements.

The four following table summarizes the main collaborative agreements, benefits and research results.

Table 1. Most significant Research Collaborative Agreements with Industry and Academia

Period 1991-2002

<table>
<thead>
<tr>
<th>Industry or Academic partner</th>
<th>Natural resources accessed or main goal</th>
<th>Application fields</th>
<th>Research activities in Costa Rica</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cornell University</td>
<td>INBio’s capacity building</td>
<td>Chemical Prospecting</td>
<td>1990-1992</td>
</tr>
<tr>
<td>British Technology Group</td>
<td>DMDP, compound with nematocidal activity*</td>
<td>Agriculture</td>
<td>1992-present</td>
</tr>
<tr>
<td>ECOS</td>
<td>Lonchocarpus felipei, source of DMDP*</td>
<td>Agriculture</td>
<td>1993-present</td>
</tr>
<tr>
<td>Cornell University and NIH</td>
<td>Insects</td>
<td>Human health</td>
<td>1993-1999</td>
</tr>
<tr>
<td>Bristol Myers &amp; Squibb</td>
<td>Insects</td>
<td>Human health</td>
<td>1994-1998</td>
</tr>
<tr>
<td>Givaudan Roure</td>
<td>Plants</td>
<td>Fragrances and essences</td>
<td>1995-1998</td>
</tr>
<tr>
<td>University of Massachusetts</td>
<td>Plants and insects</td>
<td>Insecticidal components</td>
<td>1995-1998</td>
</tr>
<tr>
<td>Diversa</td>
<td>DNA from Bacteria</td>
<td>Enzymes of industrial applications</td>
<td>1995-present</td>
</tr>
<tr>
<td>INDENA SPA</td>
<td>Plants*</td>
<td>Human health</td>
<td>1996-present</td>
</tr>
<tr>
<td>Strathclyde University</td>
<td>Plants</td>
<td>Human health</td>
<td>1997-2000</td>
</tr>
<tr>
<td>Eli Lilly</td>
<td>Plants</td>
<td>Human health and agriculture</td>
<td>1999-2000</td>
</tr>
<tr>
<td>Akkadix Corporation</td>
<td>Bacteria</td>
<td>Nematocidal proteins</td>
<td>1999-2001</td>
</tr>
<tr>
<td>Follajes Ticos</td>
<td>Plants</td>
<td>Ornamental applications</td>
<td>2000-present</td>
</tr>
<tr>
<td>La Gavilana S.A.</td>
<td>Trichoderma spp *</td>
<td>Ecological control of pathogens of Vanilla</td>
<td>2000-present</td>
</tr>
<tr>
<td>Laboratorios Lisan</td>
<td>None*</td>
<td>Production of Vanilla</td>
<td>2000-present</td>
</tr>
<tr>
<td>Organization</td>
<td>Species/Activities</td>
<td>Application</td>
<td>Year</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>-------------------------------------</td>
<td>------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Bouganvillea S.A.</td>
<td>None*</td>
<td>Production of standardized</td>
<td>2000-present</td>
</tr>
<tr>
<td></td>
<td></td>
<td>biopesticide</td>
<td></td>
</tr>
<tr>
<td>Agrobiot S.A.</td>
<td>Plants*</td>
<td>Ornamental applications</td>
<td>2000-present</td>
</tr>
<tr>
<td>Guelph University</td>
<td>Plants*</td>
<td>Agriculture and</td>
<td>2000-present</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Conservation purposes</td>
<td></td>
</tr>
<tr>
<td>Florida Ice &amp; Farm</td>
<td>None*</td>
<td>Technical and scientific</td>
<td>2001-present</td>
</tr>
<tr>
<td></td>
<td></td>
<td>support</td>
<td></td>
</tr>
<tr>
<td>ChagasSpaceProgram</td>
<td>Plants, fungi*</td>
<td>Chagas disease</td>
<td>2001-present</td>
</tr>
<tr>
<td>SACRO</td>
<td>Plants*</td>
<td>Ornamental applications</td>
<td>2002-</td>
</tr>
</tbody>
</table>

* These agreements involve a significant component of technical and scientific support from INBio. Source, Tamayo et al., forthcoming 2003.

**Table 2.** Monetary and Non Monetary Benefits of Bioprospecting.

**Monetary Benefits**
- 100% of research budgets
- Technology transfer and infrastructure
- Up front payments for Conservation
- Significant contribution for GCA and Universities
- Milestone and royalty payments to be shared with MINAE

**Non Monetary Benefits**
- Trained human resources
- Empowerment of human resources
- Negotiations expertise developed
- Market Information
- Improvement of local legislation on conservation issues
**Table 3.** Outputs generated since 1992 as a result of RCA with INBio. Source, Tamayo et al., 2003

<table>
<thead>
<tr>
<th>Project</th>
<th>Initiated</th>
<th>Output*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Merck &amp; Co.</td>
<td>1992</td>
<td>27 patents</td>
</tr>
<tr>
<td>BTG/ECOS</td>
<td>1992</td>
<td>DMDP on its way to commercialisation</td>
</tr>
<tr>
<td>NCI</td>
<td>1999</td>
<td>Secondary screening for anti-cancer compounds</td>
</tr>
<tr>
<td>Givaudan Roure</td>
<td>1995</td>
<td>None yet</td>
</tr>
<tr>
<td>INDENA</td>
<td>1996</td>
<td>2 compounds with significant anti-bacterial activity</td>
</tr>
<tr>
<td>Diversa</td>
<td>1998</td>
<td>2 potential products at initial stages / Publication underway</td>
</tr>
<tr>
<td>Phytera Inc.</td>
<td>1998</td>
<td>None yet</td>
</tr>
<tr>
<td>Eli Lilly &amp; Co.</td>
<td>1999</td>
<td>None yet</td>
</tr>
<tr>
<td>Akkadix</td>
<td>1999</td>
<td>52 bacterial strains with nematocidal activity</td>
</tr>
<tr>
<td>CR-USA</td>
<td>1999</td>
<td>1 compound with significant antimalarial activity</td>
</tr>
<tr>
<td>LISAN</td>
<td>2000</td>
<td>2 phytopharmaceuticals in the process</td>
</tr>
<tr>
<td>Caraito</td>
<td>2000</td>
<td>None yet</td>
</tr>
<tr>
<td>Follajes ticos</td>
<td>2000</td>
<td>None yet</td>
</tr>
<tr>
<td>Bougainvill ea</td>
<td>2001</td>
<td>None yet</td>
</tr>
<tr>
<td>La Gavilana</td>
<td>2001</td>
<td>None yet</td>
</tr>
<tr>
<td>Agrobio</td>
<td>2001</td>
<td>None yet</td>
</tr>
<tr>
<td>SACRO</td>
<td>2002</td>
<td>None yet</td>
</tr>
</tbody>
</table>

Table 4. Contributions by the INBio derived from the bioprospecting agreements that the Institute has signed.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Ministry of Environment and Energy (MINAE) by 10%</td>
<td>110,040</td>
<td>43,400</td>
<td>66,670</td>
<td>51,092</td>
<td>95,196</td>
<td>24,160</td>
<td>38,793</td>
<td>82,797</td>
<td>512,148</td>
</tr>
<tr>
<td>Conservation Areas (Development of Bioprospecting Research)</td>
<td>86102</td>
<td>203,135</td>
<td>153,555</td>
<td>192,035</td>
<td>126,243</td>
<td>29,579</td>
<td>0</td>
<td>0</td>
<td>790,649</td>
</tr>
<tr>
<td>Costa Rican Public Universities</td>
<td>460,409</td>
<td>126,006</td>
<td>46,962</td>
<td>31,265</td>
<td>34,694</td>
<td>14,186</td>
<td>7,123</td>
<td>4,083</td>
<td>724,728</td>
</tr>
<tr>
<td>Other groups in INBio</td>
<td>228,161</td>
<td>92,830</td>
<td>118,292</td>
<td>172,591</td>
<td>129,008</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>740,882</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>884,712</strong></td>
<td><strong>465,371</strong></td>
<td><strong>385,479</strong></td>
<td><strong>446,983</strong></td>
<td><strong>385,141</strong></td>
<td><strong>67,925</strong></td>
<td><strong>45,916</strong></td>
<td><strong>86,880</strong></td>
<td><strong>2,768,407</strong></td>
</tr>
</tbody>
</table>

*Estimated amounts since 1991*
Lessons learned from the negotiating process of INBio

The most important inferences that can be summarized from the above are as follows:

A. **There must be a clear institutional policy** for the criteria demanded in prospecting contract negotiations. In INBio's case, they are transfer of technology, royalties, limited quantity and time access, limited exclusiveness, not causing a negative impact on the biodiversity, and direct payment for conservation. For INBio this policy has led to the stipulation of minimum requirements for initiating negotiations, and these requirements have resulted in the rejection of some requests; for example, very low royalties; lack of will to grant training, etc. The institutional policy provides greater transparency and certainty for future negotiations.

B. **Existence of a national scientific capabilities**, and consequently, the possibilities of adding value to biodiversity elements, increase the negotiating strengths and benefit sharing which are to be stipulated in contract agreements. As we previously mentioned, the need to grant an aggregated value to material, extracts, etc., is crucial if one wishes to be more that just a simple genetic resource provider. In this sense, the development of important human, technical and infrastructure capacities, through laboratories, equipment, etc., together with the institution's prestige, have permitted better negotiation conditions.

C. **Knowledge of operational norms** as well as of changes and transformations taking place in the business sector, and of the scientific and technological progresses that underlie these transformations helps in defining access and benefit sharing mechanisms. It is essential to possess knowledge of how different markets operate and of the access and the benefit sharing practices that already exist in these markets. Since they vary from sector to sector for example the economic dynamics of the markets in the nutraceuticals, ornamental plants, crop protection, cosmetics, pharmaceuticals are complex and different.6. This knowledge is needed to correctly negotiate royalties and other payment terms. How can we otherwise know if a percentage is low or high? It is crucial to be informed on the operational aspects of these markets. For example, when INBio began negotiating new compensation forms, such as advance payments or payments on reaching predefined milestones (example with Eli Lilly and Akkaddix), it was of vital importance to know the approximate amounts the industry was likely to pay in order to negotiate appropriately. Otherwise, one can be requesting terms, which are either completely off the market, or accepting some which are not adequate.

D. **Internal capacity for negotiations**, which includes adequate legal and counseling skills relating to the main commercial and environmental law aspects. Possibly, one of the key facts understood by the Institute is to know that negotiations involve a scientific aspect (of crucial importance to define key areas of interest such as a product, etc.), a commercial aspect, a negotiation aspect, and

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6 See Ten Kate and Laird, 1999, in relation to this topic
the respective legal aspects. These latter comprise not only the national trade law, but also the international environment law, conflict resolution, and intellectual property. For these reasons, the creation of interdisciplinary teams is crucial (Sittenfeld and Lovejoy, 1998). At the same time the need for such a team is one of the most important criticisms to the contractual mechanisms. The absence of this interdisciplinary team is equivalent to keeping one of the parties at a disadvantage particularly if we consider that pharmaceutical companies possess enormous legal and negotiation capabilities.

**E. Innovation and creativity capabilities** for obtaining compensations. An ample spectrum of potential benefits exists. In the past, interesting benefit sharing formulas, other than the traditional ones, were developed through the appropriate use of negotiations, and include for example fees for visiting gene banks having collected material, etc. The contractual path fortunately permits parties to adapt themselves to the situation in each concrete case, and from there proceed to stipulate new clauses and dispositions.

**F. Understanding in key subjects such as:** rights on intellectual property; importance of warranties on legality; clauses on ways to estimate benefits (net, gross, etc.); requirements and restrictions on third party transference of the material (including subsidiaries, etc.), and the obligations of such parties; precision of the key definitions provided they condition and outline other important obligations (products, extracts, material, chemical entity, etc.); precision of the property and ownership (IPR and others) of the research results, and joint relationships, etc.; confidentiality clauses in the agreements and how to balance the same in relation to the need for transparency in the terms of the agreement; termination of the obligations and the definition of the survivor of some obligations and rights (e.g. royalty, confidentiality, etc); conflict resolutions.

In the negotiated agreements, the complexity of the same has been made clear, and this is related to sub-clause D. For example, what outcomes give rise to benefit sharing, such as royalties, will depend on the nature of the definitions, such as product, extract, entity, etc. A more comprehensive definition gives rise to a better position. Likewise, delimiting the areas or sectors where the samples can be used, the net sales, and what is possible to exclude from them, are only examples of some aspects that must be specified, etc. Likewise, the procedures and rights in the case of joint and individual inventions are of interest (preference and acquisition rights, etc.), as well as the conditions for the transfer of material to third parties (under the same terms as the main agreement, need of consent or information, transference to third parties so that certain services can be performed, etc.).

**G. Proactive focus according to institutional policies.** There is no need to remain inactive while waiting for companies to knock on the door seeking negotiation. An active approach on negotiations according even to the institution’s own outlined policy that permits an understanding of national and local requirements, has resulted in important benefits. The existence of a Business Development Office at INBio, with a highly qualified expert staff; attending
seminars and activities with the industry; the distribution or sharing of information and material, and direct contacts, all enable an answer to be given, to a larger or smaller extent, to institutional challenges. The current policy is based on the idea that it is not enough to wait to be contacted, or be available at the behest of the company but to have and maintain one's own approach.

H. Understanding of national and local needs in terms of technology, training, and joint research. There is need for striking international strategic alliances. Even when an institution or community could possess adequate resources to face a concrete demand, knowing the national situation and the strategic needs will permit them to reach better agreements and fulfill a mission which transcends the mere satisfaction of the institution's interests. It will permit the prospecting to work in benefit of society as a whole and demonstrate that it is possible to improve the life quality of the same.

I. Macro policies and legal, institutional and political support. It has been pointed out that confronted with prospecting, the so called macro policies have to exist, (Sittenfeld and Lovejoy, 1998), that is to say, that clear rules on aspects related to what has been called the bioprospecting framework, which imply biodiversity inventories, information systems, business development, and access to technology, have to exist. One of the causes of the Costa Rican success is due, not only to the existence of institutions that have experience in negotiation, but also to the set of policies and actions that revolve around the same, such as a current biodiversity inventory which has been rated as successful and which enables us to know what we possess as the first step in the quest for making intelligent uses of this resource; the existence of a National Conservation Area System that assures the availability of resources; the possibility of future supplies and provisions; mechanisms that contribute to the conservation of the biodiversity, as part of the contractual systems, etc. At the same time, the possibility of possessing adequate instruments for the management of information, systems of land and property ownership, etc., contribute, jointly with the existing scientific capacity, to the creation of a favorable environment for bioprospecting and make possible the negotiation and attraction of joint enterprises.

To this must be added other elements, such as the existence of trustworthy partners, one of the most relevant aspects in joint undertakings (see Sittenfeld and Lovejoy, 1998).

Control, and monitoring mechanisms developed by the Institute in the access contracts

- Accession and internal transfers

Material is collected in the field under permit system with separate permits for export and domestic use. A standard agreement applies to taxonomic research while unique legal agreements are developed for bioprospecting research.
Specimens are often only identified to Family or Genus level in the field and so many specimens from a collection trip may have the same textual description on the label. This can be a collecting number, the name of the collector, the date and information about the location. As specimens are sorted in the laboratory, each receives a unique barcode which is physically attached to the specimen e.g. pinned to an insect or fixed to a vial of fungi.

All the information subsequently generated on a specimen is registered in a database with reference to the barcode number. Basic information includes collection data (where, when, methods etc), taxonomy, biology, history and SIG. All transactions are recorded including the loans and transfers of material and details of the researcher, objectives of the project, dates and list of materials.

The database (ATTA) is a relational database based on Oracle with a Powerbuilder interface. Separate databases store publicly available information on specimens and restricted information which includes documentation such as the MTAs.

**External transfers for bioprospecting.**

All material leaving INBio's Bioprospecting Unit is labelled with a barcode and identification number. INBio uses legal and contractual mechanisms for the tracking of the Genetic Resources as follows:

1. Access is limited in time and quantity. Any transfer to a third party of sample is made using a material transfer agreement (MTA) or under a collaborative research agreement (with companies, research institutions, etc). INBio agrees to transfer the materials specified in detail in the annex of the MTA or the contract.

2. The recipient may transfer the material only with prior written authorization. The terms and conditions of the original MTA shall apply equally to these third parties. A letter with the following wording is usually required to accompany all transfers:

   “This material has been received under a Material Transfer Agreement which includes terms and conditions for use by Third Parties”.

3. The Recipient shall assign a unique identification number to each of the materials obtained and to the resulting materials from the research that will ensure traceability.

4. Usually the recipient is obligated by the contract to maintain complete and accurate internal written records and reporting systems so as to keep track of all the materials and any research and/or development activities.

5. The recipient has the duty to allow INBio upon request to audit and/or inspect such records and reporting systems from time to time and to make such changes in such reporting system as INBio may reasonably request to ensure the accurate tracking of all materials.
6. INBio may have access to the lab notes on INBio material.

7. The recipient shall submit periodical reports to INBio on materials, stage of the research, IPR, research results, etc.

8. The monitoring of uses is provided by the Bioprospecting Unit. There is no Department or special personnel dedicated to the monitoring of contracts, it is done by the current scientific and technical personnel of in charge of other Bioprospecting tasks.

**External transfers for biodiversity inventory**

In the case of inventory, in general, all the types of samples located in the INBio’s collection can be transferred to a third party, using a MTA and only for basic non-commercial research. This is mostly taxonomic research which does not involve access to reproducible genetic resources. Transfers are made only to qualified collaborators. Each specimen has a bar code written in the sample form or MTA and monitoring is done through 1) reports from the recipient and 2) a requirement for the recipient to cite the barcode number of any specimens used in publications.

**Conclusions: practical aspects of tracking genetic resources**

The database and barcode system effectively enable tracking however the purpose of the system is not primarily for tracking, it is to associate information with the material to facilitate biodiversity research. Hence, the costs associated with tracking are difficult to separate from the wider research information management system. Researchers at INBio do not routinely record publications citing INBio specimen numbers.

No cost estimate is available for compiling or analysing reports from recipients on material used in taxonomic or bioprospecting research projects.

INBio’s practices for labelling biological material and tracking uses of the material within and outside Costa Rica show that it is feasible to label even individual insects given sufficient resources. INBio also databases agreements relating to collection and use of specimens including MTAs. The unique barcode number allocated to each specimen leaving Costa Rica could potentially be linked to a certificate of origin number at minimal expense and with little technical modification to existing systems in INBio.

**III. ACCESS PERMITS AND MONITORING POWERS OF THE TO**

To be completed and developed.

So far the following access permits have been granted under the GAP:

1. One Commercial permit for bioprospecting to INBio;
2. Two Non commercial permits for scientific research to INBio;

3. One Non commercial permit for scientific research, for the identification of effects of the habitat changes in the zamia population, granted to a student;

4. One Commercial permit for the isolation of secondary bioactive metabolites in the marine resources under the jurisdiction of IFA.

**Analysis of monitoring issues of the permits**

Two of the most relevant aspects on ABS that present larger difficulties, are related with the monitoring of access and benefit sharing conditions and the existing legal remedies against the non-compliance with the contract or permit. ABS legislation will always be difficult to enforce, due to the nature of genetic resources, particularly their wide availability and the ease dissemination or replication (Barber et al. 2002).

In general, most of the legislations lack of adequate monitoring systems. Monitoring and evaluation of the agreements is in most cases weak or absent (University of Columbia, 1999). Possibly this is one of the main difficulties of the ABS regimes. To this, the difficulties derived from the characteristic of genetic resources as information, are added. This characteristic has brought to evidence the inconvenience of applying the traditional monitoring instruments. Probably, as the Expert Panel on ABS recommended (see First Report of the Expert Panel on ABS, par 88. ), monitoring could be more effective with the participation of an institution or local counterpart. This system has been considered by diverse countries (Bhutan, Bolivia, etc). Regardless its utility it must be acknowledged that research and development on their most advanced phases will be normally carried on outside the borders of the country of origin. For this reason, additional mechanisms to warrant the tracking of the materials, for example, identification systems must be explored. In the same way, mechanisms to oblige the users to present periodical reports, including reports on the applications for patents, together with the possibility of making audits to verify the compliance, are some of the indicated solutions. In general, countries do not have systems that allow them to practice audits to verify the compliance with the clauses stipulated on the contract itself.

In the other hand, most of the countries seem to have given a particular emphasis to negotiations on access and benefit sharing and, in a lesser extent, have worked on establishing appropriate monitoring systems for the compliance with the mutually agreed terms.

Additionally, other of the difficulties pointed out are the obstacles to effectively exercise legal remedies when contractual or legal violations occur, especially when it happens with companies located on other jurisdictions.

**Monitoring of the terms and conditions under which access was granted.**
In Costa Rica, from the institutional perspective there is a duty (for the TO of the CONAGEBIO) to enforce and inspect with the support of the representatives of the place where access will take place.

CONAGEBIO shall rely on a supporting Technical Office for, amongst other functions, the transaction, approval, refusal, and supervision of the applications for access to the elements or biochemical and genetic resources of biodiversity as well as the associated traditional knowledge in the terms of the present regulation (article 5 of the Regulations).

“The Technical Office, in coordination with the authorized representatives of the site where the access to the elements or biochemical and genetic resources takes place, and in accordance with the established agreements and contracts in each phase of these rules, shall perform the pertinent tasks of verification and control.

To this effect, the officials shall be able to do inspections in the property or place where the access is materialized, at any moment that the respective permit remains valid or once the activities contemplated in the permit have been concluded. The officials shall raise acts of their control visits. The Technical Office shall also attend any complaints and investigate the possible violation of the terms of the prior informed consent or the terms of the access permit.

Non-compliance with the agreements and commitments shall give rise to the permit’s cancellation as stipulated in article 27 of the present rules“ (article 20 of the GAP, “verification and control”).

The certificate of origin is also a form of monitoring the use of genetic resources (see article 80 of the Biodiversity Law and 19 of the Regulations).

In addition, the control and monitoring is carried out by the use of reports. For that reason in the approval resolution it shall be established, among other conditions, the following (article 13 of the Regulations): “the obligation of the interested party to present reports and of their periodicity”.

According to article 24 of the Regulations restrictions of the access permits of any kind, for basic research, bioprospecting or commercial use, shall be granted to the natural person or legal entity that requests it or on whose name it is requested, these are personal, nontransferable and are limited materially to the authorized elements or biochemical and genetic resources expressly indicated therein and may only be used within the areas or territory expressly indicated in them and under the terms that the resolution issued by the Technical Office dictates.

Finally, the contract (to obtain PIC) may establish rights to verify compliance, including audits.

**In summary the following are the main monitoring mechanisms is place in Costa Rica**
- Periodically reporting as mandated in the access permits (resolutions).

- The resolution granting access expressly indicates that the monitoring phase is open. There are no more details about how this monitoring phase will operate.

- There is no specific unit or procedure in the TO for monitoring. The TO lacks the expertise, human and technical resources for an appropriate tracking of the use and transfer of the genetic resources.

- The TO does not provide specific guidance to the PIC provider for monitoring.

- Monitoring in the PIC contract is carried out through reporting.

- TO has indicated its willingness to increase monitoring activities, especially with not well know applicants.

- Monitoring mechanisms like those used by INBio, as appropriate, have not been developed.
Gene Campaign

In India, till date, very few models of ABS Contracts are available as revealed from the foundational research. Of these, two have been identified and selected - the well-known, prior CBD Kani Model and the recent Mala- NIF Model which would be studied and analyzed by the Junior Researcher in the second phase of the project. These two fulfil the criteria of an ABS Contract, namely, Prior Informed Consent of the members of the community, right of the communities over their knowledge and resource, ability to decide and dictate transaction by communities, improvement in standard of living through transaction, livelihood opportunities, community developmental activities, perception of fairness and equitability by communities and voluntary involvement in the transaction.

The Access and Benefit Sharing Model evolved by Dr. P. Pushpangadan, now Director, National Botanical Research Institute, Lucknow, India is the first of its kind in the world to recognize and reward the knowledge of an indigenous community, the Kani tribe for sharing their knowledge of the energy giving properties of a wild plant locally known as Arogyapachcha meaning evergreen health (Trichopus zeylanicus). On the basis of this knowledge and subsequent scientific research, a scientifically verified and standardized herbal formulation Jeevani was developed. The Model now benefits over 16,000 Kani people. The benefits resulting from commercialization were transferred to a Trust the proceeds of which go towards the development of the community. Being the first of its kind and developed prior to the CBD, this Model suffers from certain shortcomings and has come in for criticism from a number of quarters.

The second model on which the Junior Researcher will work on is the Mala- NIF Model. In this instance, the Indian Institute of Science, Bangalore, India had documented Indigenous Knowledge pertaining to medicinal plants in a village called Mala in Karnataka. An agreement was reached with eight members of the community, who were the knowledge holders, to disclose their knowledge to the Institute. The Indian Institute of Science had tied up with an organization based in Ahmedabad, India the National Innovation Foundation, which was to act as a repository institution. A Memorandum of Agreement (MoA) was signed between the community of Mala and the National Innovation Foundation, which was to determine the commercialization of the IKA MOA is different from the PIC, while the former provides only consent, in the later people also incorporate conditions as to how they would like their knowledge to be used.

In the second phase of the research, the Researcher will try to arrive at a critical evaluation of these two Models in the context of the present day international scenario in ABS.

The final results of Phase 1 of Laying The Foundations may be summed up as follows:

1. A draft paper has been prepared entitled ABS from Indigenous and Local Community’s Perspective. This paper seeks to examine the incongruence between indigenous and local community’s worldview and the existing ABS
mechanism. It seeks to put forward the view that in order to ensure equitable benefit sharing the mechanism has be inclusive of their worldview and take account of their perceptions.

2. To substantiate this paper and look at the issue from indigenous people’s perspective, an analysis has been attempted of the 20 major declarations of the Indigenous Peoples.

3. The Junior Researcher had visited and conducted field study among an indigenous community, the Gond tribe of Mendhalekha village in Central India who are informed and aware of their rights pertaining to forest over which they have community ownership so as to have their perceptions regarding ABS.

4. Case studies have been initiated in four villages which have compiled People's Biodiversity Registers in collaboration with Centre for Ecological Sciences of the Indian Institute of Science, Bangalore so as to be able to gauge the manner in which documentation plays a role in the development of an ABS regime where IK is protected.
Laying the Foundations – SEAPRI First Report

A. INTRODUCTION/BACKGROUND

Perhaps very few subjects have, in recent times, generated as much debate and controversy with an ever rising profile as have genetic resources issues, in particular the access and benefit sharing (ABS) aspects. This is especially so with respect to the interface with IPRs and sustainable development as well as the numerous components in practically all fields of human activity – culture, health, food and agriculture, or trade and economic development.

The regulation of access to genetic resources, however, and associated benefit sharing, presents one of the most complex areas of policy development in the field of natural resources management to have emerged in the last twenty years. The complexity operates on numerous levels: including legal, political, sectoral and cultural factors that, while having some distinct elements, are inextricably intertwined. This situation has, therefore, made it imperative that, while it is necessary to take advantage of the opportunities and avoid the pitfalls of an international ABS system, capacity for legal and policy research is most essential to understanding the conceptual issues and emerging trends, and ultimately inform the legal and policy development and implementation processes within the countries.

This report forms part of the larger process and ongoing efforts to seek ways to improve policy analysis capacity in order to assist in promoting coherence in the ongoing negotiations at the CBD, in particular the International Regime(s) on ABS. The aim of the report is to highlight some of the preliminary findings in the first phase of the project as well as indicate the general directions of the second phase and, in particular, identify specific ABS contracts on which further study is required or will be carried out. This report examines, in a broad and summary manner, the current situation in Kenya, in respect of laws and policy instruments are available to address ABS issues including some of the specific challenges facing the key stakeholders.7

Scope and Methodology
At the onset, the intention was to adopt a multi-country approach involving research in Ghana, Kenya and Nigeria. However, both budgetary and logistic constraints made this impossible. As a result, the main activities carried out in this phase of the project were restricted to Kenya, although some exploratory, albeit opportunistic, survey/contacts were made in Ghana. There is also an attempt to identify, in the context of the project parameters, the relevant national actors, including intergovernmental, public, research and academic institutions, and private and civil society organizations. In the course of the background study for this report, numerous papers and publications were studied, and the investigations

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carried out included visits to and discussions with certain relevant institutions and officials in Kenya (and Ghana). These included the Kenya Wildlife Service (KWS), National Museum of Kenya (NMK), the International Centre of Insect Physiology and Ecology (ICIPE), the University of Nairobi, the International Plant Genetic Resources Institute, etc. And in Ghana, the Ministries of Justice, Environment and Science, the Council for Scientific and Industrial Research, University of Ghana Legon, etc. were visited and several officials and individuals interviewed.

Although a fair amount of literature have been written on Kenya ABS law and policy, very little have been done with respect to examining individual or specific ABS contracts and how they relate to the broader context of the ongoing processes and debates at both the national and international levels. This has invariably led to the omission of valuable practical experiences in bioprospecting activities in the formulation of policies and legal frameworks, and in framing the related international debates and negotiations. Most of the ground work of the first phase, while looking at these broader issues, sought to identify specific candidate contracts/transactions that would serve as cases in the context of the objectives of the overall project.

2. LEGAL/POLICY CONTEXT
As stated, existing laws and policies in Kenya are well recorded. However, because of the relevance to the project, specific aspects merit further study and comments, in particular the level of awareness of laws and policies and related issues as well as their implementation and impact.

2.1 INTERNATIONAL AGREEMENTS

a) Awareness
Several international agreements are relevant to access and benefit sharing and that they affect and influence, either directly or indirectly, processes under the Convention on Biological Diversity (CBD). These include the International Treaty on Plant Genetic Resources for Food and Agriculture; the World Trade Organisation’s Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPs); the Treaties and processes of the World Intellectual Property Organisation (WIPO); etc. In Kenya, engagement in the development and implementation of the respective international agreements is frequently coordinated by the national focal points for each agreement. These focal points reside in different Ministries or departments and the ability to identify them was thus taken as an entry point for the question of awareness of relevant international agreements. From the initial scoping exercise, knowledge of these focal points in Kenya is limited to non-existent. In the information gathered for this study, the only exceptions to this were small numbers of senior staff from particular institutions and experts that had engaged in specific practical activities that brought them into contact with focal points and that were not directly related to policy issues. However, there appear to be greater awareness of the agreements themselves although not necessarily the provisions or substance nor the inter-relationships between the respective agreements.
b) Participation in national position development and actual negotiations

In seeking to develop national positions and policies the relative awareness of institutions and individuals regarding each others’ policy interests and objectives can play an influential role in encouraging consensus. However, there is limited evidence of consultation in the development of national negotiating positions and this was largely limited to the senior staff of public institutions with some minor and sporadic involvement of other stakeholders. The level of consultation regarding the implementation of international agreements, including the preparation of legislation and regulations, appears to be similarly low.

c) Implementation

By and large, the participation of many developing countries in the various international negotiations related to genetic resources has been somewhat fragmented and largely uncoordinated. This is no different in Kenya. Delegations to relevant negotiations are often composed only of officials from the focal points – Ministries or departments – even when the issues are cross-sectoral or multi-disciplinary. While this situation leads to a loss of policy coherence, it can significantly weaken a country’s position in the different fora. In same vein, the corresponding instruments are often implemented in isolation by different the national institutions.

2.2 NATIONAL LAWS AND INSTITUTIONAL CONTEXT

a) Awareness of existence of laws

While there are several laws and policies touching upon genetic resources, the limited amount of evidence that it was possible to collect for this study suggests that there is a limited level of knowledge of them as well as awareness of the needs of the relevant sectors among policy-makers. It is also clear that there is virtually no awareness of issues in access to genetic resources among the general public. But even then, there is also evidence of the lack of awareness among those actually in the field, especially the scientists, about the legal and policy issues related to genetic resources.

This lack of awareness at all levels in turn effectively precludes any meaningful level of political commitment. The main evidence supporting this conclusion on political commitment is Kenya’s experiences with the development of access to genetic resources regulations. In the late 1990s, two initiatives seeking to develop access to genetic resources regulations were started. One, led by the National Museums of Kenya, focused on plant genetic resources, although it was recommended that it be broadened to consider genetic resources more generally, and collapsed when the funding, and immediate need, for the exercise ended. This process produced draft regulations although they were never promulgated. The other, led by the National Council for Science and Technology (NCST), also collapsed, partly due to lack of progress and partly due to the development of the Environment Management and Coordination Act (2000). This Act mandates the National Environment Management Authority (NEMA) to regulate access to genetic resources but NEMA has a very broad mandate and limited capacity to implement
it. The previous failures and the current absence of action clearly demonstrate a lack of political will to address the question of access to genetic resources.

b) Implementation
Although genetic resources policies are a fundamental element in the most developing countries’ development strategies, Kenya has, to date, largely failed to make much progress in this field. After the two abortive attempts to regulate access to genetic resources in the late 1990s, largely resulting from a lack of capacity and resources in the NCST and the National Museums of Kenya, lead agencies and other institutions have either implemented their own *ad hoc* policies or are seeking to develop the capacity to do so. As of the introduction of the Environment Management and Coordination Act in 2000 the NEMA has had a statutory mandate to regulate access to genetic resources but it has yet to show that it intends to take up this mandate in the face of limited resources and capacity and an extremely broad mandate.

c) Coordination and coherence
The context for the lack of progress and increased fragmentation in policy development has been one of increasing concern over the general subject of genetic resources due to isolated cases of alleged illegal access to genetic resources in the pharmaceutical and industrial sectors. The problem, as indicated, is that the majority of stakeholders do not appear to be engaged in policy and legislative formulation in any meaningful manner even though there is some evidence of a relatively small elite among management level stakeholders that has some awareness and influence over the policy and legislative process and probably plays at least some role as an intermediary between ground level stakeholders, such as breeders, and policy-makers. However, the levels of capacity and influence among even this group vary significantly.

3. GHANA
The Team Leader had the opportunity of being in Accra, Ghana for a meeting and used the occasion to meet with several officials in some key institutions and explored possibilities for collaboration and research.

3.1 Council for Scientific and Industrial Research (CSIR)
The first meeting was with Professor Alfred Oteng-Yeboah, who is the Deputy Director General of CSIR and also the immediate past chairman of the Subsidiary Body for Scientific, Technical and Technological Advice (SBSTTA) of the CBD. He is also the Chairman of the Biodiversity Committee of Ghana. CSIR’s main mandates include:
- to pursue the implementation of government policies on scientific research and development;
- to encourage co-ordinated employment of scientific research for the management, utilization and conservation of the natural resources of Ghana in the interest of development;
- to encourage scientific and industrial research of importance for development of agriculture, health, medicine, environment, technology and other service
sectors and to this end to encourage close linkages with the productive sectors of the economy:

- to encourage and promote the commercialization of research results;
- to undertake or collaborate in the collation, publication and dissemination of the results of research and other useful technical information.

The Council has 13 research institutes under it covering different sectors such as Agricultural, Forestry and Fisheries, Industry, Natural and Social Sciences, Environment and Health. One of the most critical institutes for the purposes of genetic resources is the Plant Genetic Resources Centre (PGRC) at Bunso. PGRC is the institution that has the principal mandate and provides leadership and coordination in respect of plant genetic resources (PGR). It is also charged with the collection, study and maintenance of plant genetic resources by both in situ methods in farmers’ fields and elsewhere, and ex situ methods through gene banks. The Centre also carries out characterization, evaluation, conservation, distribution and documentation of plant genetic resources. The resources conserved or developed under its mandate are sometimes distributed to local researchers in various institutions in the country for their research projects as well as to foreign researchers and local farmers who request for them. The Director of the PGRC is a member of the national Biodiversity Committee.

Professor Oteng-Yeboah, indicated that although there were several initiatives either being carried out or under consideration in Ghana, there has not been sufficient coordination between different institutions and ministries. One of the major challenges has been the lack of clear statutory mandate, with different departments/ministries having different and sometimes overlapping mandates on different aspects or categories of genetic resources. He also observed that many of the relevant bodies have paid little attention to genetic resources issues and have not been as dynamic as they should with respect to coordination and bringing together the different actors and stakeholders in the different sectors. He expressed interest in collaborating in the project and would give as much institutional support as may be necessary to the initiative whenever such support is required.

3.2 University of Ghana

At the University, the Team leader met with Professor Nii Ashie Kotey, Dean of Faculty of Law and George Sarpong, Head of Environmental Law Department. They also expressed interest in collaborating in the project and to assist in identifying appropriate candidates that could participate in future research, training and capacity building programmes. The major challenges which the faculty faces in addition to the low staff strength include inadequate infrastructure and paucity of published materials. There are virtually no locally generated textbooks or literature on genetic resources issues as most of the books and reference materials used for teaching are foreign. It is also only the faculty of law that teaches intellectual property rights issues at the University although efforts are being made to sensitise other faculties especially in the sciences of the relevance as well as the emerging issues in IP and their implication for their work and activities in genetic resources. It was gathered that research and development activities, including collaborative agreements with foreign parties involving exchange of materials and knowledge have been going on for years in some of the science departments.
without any consideration of the implications. Altogether, there is little information available to them and this lack of awareness is major drawback for research and development. This situation is also similar to the findings from the discussions with the faculty at the University of Nairobi.

A subsequent meeting was held with the Dean of the Department of Botany, Professor Enu-kwesi. He shared his experiences with respect to bioprospecting agreements his department had been involved in, one of which was with the Missouri Botanical Gardens and the United States National Cancer Institute. He also expressed his willingness to cooperate in the further study of this contract under which over 4,000 specimens were collected and transferred.

4. **CAPACITY BUILDING AND TRAINING COMPONENT**

In regard to the capacity building component of the project, several candidates were considered and Ms Lillian Cherotich was selected to attend the training workshop in Montreal. This was done in collaboration with the Faculty of Law of the University of Nairobi. Ms Cherotich also authored a research paper in accordance with the terms of the project. According to her, she “gained useful insights on ABS through interaction with various people involved in ABS in Canada. The participants were equipped with essential background knowledge on ABS and skills, which will enable them complete the work they had begun in their respective countries.” She indicated that the training had brought home to her the complex issues involved in bioprospecting and equitable sharing of the benefits derived from the sustainable use of genetic resources among all the stakeholders. It also helped to broaden her view of what is happening in the international scene as regards issues pertaining to biodiversity, biotechnology, and law.

As indicated, one of the substantive outcomes of this component of this phase of the project is the research paper written by the junior researcher, titled “The Discovery of Eden: Paradise or Problem for Indigenous Peoples and Local Communities and Access to Genetic Resources.” The paper is already being reviewed for publication by the overall project coordination for publication.

5. **BIOPROSPECTING CONTRACTS IDENTIFIED FOR FURTHER RESEARCH**

Long before the Convention on Biological Diversity (CBD) came into effect, biotrade and bioprospecting activities for research and commercial purposes had been going on in Kenya in a largely informal regime. These activities took place under a more or less open access system with little consideration of the intellectual property or benefit sharing aspects. However, activities related to access to genetic resources in Kenya are being pursued by a broad range of actors, including individuals and researchers, government and public institutions, and international corporations and organisations. As a result of the largely unregulated state of affairs and the informal nature of the relevant activities, getting specific information and details of these activities is generally difficult. However, there are some
specific examples of ABS arrangements that are formalised and with the consent or involvement of relevant competent authorities in the country.

5.1 Diversa Corporation  
The activities of Diversa Corp., which is primarily involved in the hunt for industrially useful enzymes, is a good example of formally structured activity involving in-country partners. The Kenyan-based partners are the Kenya Wildlife Service (KWS) and the International Centre of Insect Physiology and Ecology (ICIPE), who operate jointly under a framework agreement establishing their partnership for commercially oriented access to genetic resources projects. The third party agreement with Diversa allows for the collection of a fixed number of samples, such as soil, water etc., in areas under the jurisdiction of KWS over a period of years. Under this third party agreement the company retains intellectual property rights over any products that it develops, provided that ICIPE and KWS have the option of a royalty free license for local adaptation in Kenya where this is feasible. As the in-country partners KWS and ICIPE receive a number of fixed and variable benefits. The fixed benefits consist of financial resources, infrastructure assistance and training relating to the project's activities, although KWS and ICIPE view these as having the potential to contribute to broader scientific capacity building efforts. The variable benefits are those that depend upon successful product development on the part of Diversa and consist of milestone and royalty payments. Informally, Diversa has also suggested that it might consider providing matching funds for biodiversity conservation activities relating to its fields of interest. The legal basis of the ICIPE-KWS partnership, and thus in turn the third party agreement with Diversa, is KWS' statutory mandate to regulate research in protected areas, discussed in a later section of this case study. At least one other multinational corporation is operating in Kenya under an arrangement similar to that of Diversa and it seems possible that there is further room for the expansion of such activities.

In an effort to resolve these uncertainties in the particularly sensitive field of commercially oriented access to genetic resources ICIPE has, as mentioned earlier, reached a framework agreement with KWS to undertake commercially oriented access to genetic resources as a full partnership between the two institutions. The activities undertaken this agreement have thus far primarily involved ICIPE and KWS as one side of the agreement and foreign corporations as the other. Activities under the Agreement are limited to areas under KWS jurisdiction, although ICIPE has agreed to forego any other commercially oriented access to genetic resources based activities in Kenya. There are no specific terms and conditions for access or benefit sharing provided for in this agreement beyond an acceptance that, as full partners, KWS and ICIPE will share equally in any benefits that may be derived from their activities and that the institutions will apply these in pursuance of their respective mandates. Actual terms and conditions for access and benefit sharing in relation to partnerships developed pursuant to the agreement are agreed on a case-by-case basis. The framework appears to have been successful thus far, despite some early concerns about the terms and conditions that might be reached with third parties. However, the partnership is still relatively new and no products have yet been launched by any of the third parties accessing genetic resources.
The tangible realisation of benefit sharing in the event of commercialisation may prove to be the ultimate test of the partnership’s strength.

5.2 Genencor International Inc
A recent example of directly conducted corporate activity in Kenya is that of Genencor International Inc. In 2002 the company announced the development of a new product, an enzyme, which causes a faded look in denim. The denim industry has previously used a process of washing new denim with pumice stones to produce the faded look. The enzyme speeds up this process while also creating fewer problems with incidental wearing in the fabric. The commercial value of this enzyme is not yet clear but the scale of the denim industry suggests that it could run into the tens, if not hundreds, of millions of US dollars. Genencor acknowledges that the enzyme was discovered by one of its scientists in a Kenyan saline lake but little detail is available on the legal basis of Genencor’s activities. Given that all of Kenya’s saline lakes fall within the boundaries of protected areas, the permission required for the conducting of any scientific research is given by the Kenya Wildlife Service (KWS). The KWS research application process is a generic one applying to any research activity in protected areas and thus has no specific terms and conditions or guidelines relating to access to genetic resources and associated benefit sharing. At the time of writing there are no mutually agreed terms, prior informed consent or benefit sharing measures in place regarding Genencor’s discovery and commercialisation, although discussions are currently underway ex post facto.

Although no prior agreement was entered into before the collection and/or commercialisation of the genetic resources or their derivatives, this case presents an interesting variation. This is so because the parties are currently in discussions and it is expected that an agreement will be reached in due course. It will, therefore, be interesting to know how far the provisions and concepts under the CBD, as well as current developments in other fora, are able to influence the final outcome especially what terms the final agreement will contain. The experience will also be instructive for future agreements, as well as beneficial in the process of framing new laws and policies.

6. PRELIMINARY FINDINGS/CONCLUSIONS

6.1 General Principles
The scoping exercise in addition to the initial examination of existing contracts/transactions that have been selected for further analyses reveal, among others, that:

- In more structured agreements where there is a reasonable level of parity, in terms of negotiating capacity and awareness, between parties seem to work well. This fact further highlights/underpins the need for more capacity building in this regards, at both the institutional and the national levels.

- It is extremely important to identify the costs of participating in the bioprospecting agreement as early and accurately as possible, for the
protection of both parties. Understanding the real costs is the only way to negotiate a fair and reasonable terms.

- It is important to develop a close, positive working relationship with the other party. Not only will the agreement function better with a greater level of trust and mutual interest, but unanticipated problems or opportunities and benefits may also arise. For instance, beneficial information sharing can occur that was well outside the scope of the agreement, and if the parties are on good terms, will also be able occasionally to “help each other out.”
- There is need to recognize that no agreement is perfect especially in bioprospecting where there is not yet enough experience in the world for anyone to make this claim; everyone is still learning and finding their way in this field.
- Taking no action at all will result in absolutely no benefit. As there are no simple solutions or answers to the emerging problems and many questions, countries and other stakeholders can only learn by doing.

6.2 Local Community Issues:
The question of local communities and how to involve and compensate them is one of the most difficult issues in bioprospecting arrangements. In both candidate cases, the properties from which resources are taken or to be taken are those under the exclusive jurisdiction and control of KWS although in some cases, they are fringed or infringed upon by local communities. These include national parks. Indeed it is expected that the desired resources will only be in uninhabited areas, but sometimes the knowledge of the inhabitants may play a crucial role in determining the desirability of the resources. Although not specifically provided for, Traditional healers and other community members may have specialized knowledge of the indigenous resources that will be extremely valuable to the bioprospecting endeavour; therefore mechanisms for equitable compensation must be developed. The alternative is not only unfair exploitation of these communities, but the real possibility of actual hostilities and bad public relations for all the parties involved and the related transactions.

This is apparently being taken into account by KWS in the ensuing negotiations with Genencor. KWS believes that it will be necessary to incorporate the interests of local communities near or around the areas were the relevant resources have been collected in order to ensure that their needs are met fairly and interests protected.

6.3 Public Education/Awareness
As indicated, the level of public awareness of biodiversity issues is felt to be low. Because of the importance of these resources to the country’s socioeconomic development, and as part of the effort to raise the priority of these issues on national policy agendas, an ongoing education/sensitization effort is required at all levels of society. There is, however, a need to define the focus of education for each stakeholder group.

6.4 Knowledge Base
This scoping exercise has further highlighted one of the major objectives of this project, that is, the need to build the knowledge base through more and better
research, documentation, and dissemination. Priorities include building databases of ABS transactions; keeping abreast of current information, tools, and trends in law, policy and science; discovering and promoting best practices in sustainable use of biological resources; creating appropriate fora for the inclusion of local communities and “ecosystem managers” for educational and policymakers purposes; investigating the potentials and challenges of different conservation strategies; building institutional capacity in various sectors in order to develop authoritative repositories of knowledge in key areas; and drawing on international sources of expertise to fill knowledge gaps, e.g., in law and policy, with an emphasis on creating mutually beneficial international exchanges.

6.5 Capacity
It was evident that the relevant institutions within the country suffer significant handicaps arising largely from inadequate infrastructure, insufficient resources and manpower in the agencies/departments administering the different categories/aspects of genetic resources. Additionally, existing staff are not satisfactorily trained to bring them up to date with latest concepts and issues in genetic resources regulation and administration.

7. NEXT STEPS
The subsequent monitoring and analyses of the selected, and possibly other, agreements including the valuable lessons to be learnt from their execution and/or implementation will constitute the core of the second phase of this project. The analyses will include more in-depth study of:
a) negotiation process;
b) parties to the negotiations;
c) local community participation;
d) terms and conditions of the contracts;
e) relative resources and sophistication of actors;
f) infringement and enforcement;
g) follow-up and monitoring.

In line with the global project objectives and targets, among the issues for consideration is how experiences garnered from them can assist ongoing policy making processes especially the negotiations of the international regime on ABS.
Overall context

Peru (and the Andean Region in general) has made important progress in the area of policy and legislation regarding access to genetic resources and benefit sharing (including the protection of traditional knowledge). However, this progress contrasts with the slow process of implementing ABS provisions. Whilst Venezuela and Bolivia have about 6 or 7 cases of ABS contracts, the situation in Colombia, Ecuador and Peru is less well known given the disperse information there is. There are a number of projects under way though information is still “informal” and anecdotal in nature.

In the case of Peru, the main national competent authority, the National Natural Resources Institute – INRENA, has been less than forthcoming in providing official information regarding number and location of ABS or bioprospecting projects. To date, the other two national authorities – Agrarian Research National Institute INIA and Vice ministry of Fisheries - have not celebrated any access contracts. There are however a few well known examples (still to be fully evaluated and analyzed) such as the International Cooperative Biodiversity Group Program, the International Potato Center – ANDES cooperation project, the CIP – McKnight project, the Kina Biotech project, the Instituto de Investigaciones de la Amazonia Peruana – BIOTA project, and a few others.

This situation makes it necessary to have individuals (i.e. Junior Researchers) involved in a series of activities which include assisting to meetings, having interviews, preparing and compiling relevant documents – files, writing up meeting reports, writing short essays – research papers which facilitate further understanding of issues and add new views and positions to ongoing debates. The number of “experts” (or so called “experts”) in the region (and worldwide) has remained rather stable over the years although there is a core group of individuals who in some way have streamlined debates and generated ideas. It is hoped that with this type of project new, fresh ideas and enthusiastic and well trained and educated individuals can be part of and influence national, regional and international discussions.

Results of the Laying the Foundations project:

1. SPDA’s Junior Researcher (Ms. Pamela Ferro) participated in a three week training course in Montreal, Canada in October, 2004. There, she received basic training and information regarding ABS related issues (including access and bioprospecting, intellectual property and traditional knowledge). As a direct result of this training, our Junior Researcher is planning to do her University Law Degree Thesis on access and benefit sharing and protection of traditional knowledge. As a preparatory phase (and with the guidance of the Director of the Program of International Affairs and Biodiversity – Manuel Ruiz) she is writing a short research paper to be published as part of SPDA’s Policy and Environmental Law Series (in June, 2005). As part of here continued involvement in ABS (and related issues)
our Junior Researcher is now research assistant in a GEF – UNDP funded pilot project to develop a National Public Traditional Knowledge Register for Amazonian communities (of the Shipibo – Conibo nationality). She also took part in and helped organize two decentralized workshops with communities in the Andes and Amazon region (Cajamarca and Iquitos) as part of the Genetic Resources Policy Initiative. Our Junior Researcher is also helping in the preparation of a regional capacity building course based on IPGRI’s – ISNAR’s Module on Policy and Law of Relevance for the Management of Plant Genetic Resources for Food and Agriculture. Finally, as part of her further training and capacity building process, SPDA has the possibility of sending our Junior Researcher to Washington University (in Saint Louis), to an IP Clinic (which has a MLL Masters of Law Program). This is part of an overall Memorandum of Understanding SPDA has with Washington University.

2. SPDA’s Junior Researcher is now working on a model contract / agreement on access to genetic resources and traditional communities related knowledge in the Huancavelica area (Andes). This work includes reviewing model agreements and assessing PIC provisions and the best way to undertake a consultation process in the area.

3. SPDA’s Junior Researcher has produced a draft research paper on “A pending Gap in ABS Legal Frameworks and Agreements: The Liability Issue”. This paper takes a preliminary look at a series of issues related to ABS and the problems of liability, especially in the context of Common Law and Roman – Continental Legal Systems.

4. SPDA’s Junior Researcher has undertaken interviews with key officials in public institutions which have jurisdiction in ABS related matters. These include: the National Environmental Council (CONAM), Natural Resources National Institute (INRENA), the National Institute of the Sea (IMARPE) and the Agrarian Research National Institute (INIA). This interviews have contributed to prepare a compilation and preliminary analysis of official Material Transfer Agreements (MTAs) used for access to in situ and ex situ genetic resources and to understand the gaps and problems authorities face in the implementation of Decision 391 on a Common Regime on Access to Genetic Resources.

Second phase of the Laying the Foundations Project

Towards the second phase of the Laying the Foundation Project, SPDA looks forward to analyze two relevant case studies in relation to the implementation of the ABS framework in Peru. The fist case under consideration would be the evaluation of the “Agreement on the repatriation, restoration and monitoring of agro-biodiversity of native potatoes and associated community knowledge system” that was signed last December among the Association of Communities in the Potato Park, represented by the Association for Nature and Sustainable Development (ANDES) and the International Potato Center (CIP). The mentioned
agreement among six indigenous communities in the Andes mountains and the International Potato Center (member of the CGIAR) has been qualified worldly as a unique in its genre and as a way to recognize not only indigenous contribution to agricultural biodiversity but also as a legal base to understand and promote in situ and ex situ conservation for the common aim of preserving the richness of genetic resources and associated knowledge. It is therefore of much interest to evaluate how the prescriptions of ABS regime in Peru would be fulfilled under such agreement. In particular, some questions can be of special interest in order to replicate the model to future experiences: CBD principles to be considered; relations with international conventions in relation to IP clauses, in particular with the International FAO Treaty on Food and Agriculture; how PIC provisions are to be articulated; legal character of the material transferred; title under which they are being transferred; legal instruments adopted for the transference of the materials; rights of small farmers over the repatriated material; provisions for the transference of the repatriated material to third parties; considerations of indigenous traditional knowledge in the agreements; transaction costs; social capital component involved.

The second case SPDA would like to analyze is a collecting of PGRFA and traditional knowledge project where the International Potato Centre is working with 8 communities in the Andes in Huancavelica. This project seeks to catalogue local crops and TK and implies the need to undertake a PIC process and comply with national ABS rules. This is an interesting case in that it addresses PGRFA rather than focus on the more classical pharmaceutical targeted bioprospecting.
Annex II  Report & Programme from Junior Researchers’ Workshop

Four junior researchers – Daniel Aguilar from Costa Rica, Raghu Velankar from India, Lillian Cherotich from Kenya, and Pamela Ferro from Peru – traveled to Montreal to participate in a three-week workshop on access to genetic resources and benefit-sharing. Three of the four junior researchers had legal backgrounds – Mr. Aguilar had completed his undergraduate degree in law and has begun a Masters degree in environmental law; Ms. Cherotich had completed a law degree; and Ms. Ferro was part way through her law degree – while Mr. Velankar had a background in botany.

As outlined in the programme below, the workshop was organized around three themes – the legal framework for ABS, stakeholders, and intellectual property rights and technology transfer. In exploring each of these themes, there were presentations from leading experts in the field, including professors, a representative from the CBD Secretariat, and government officials; roundtable discussions with NGO and aboriginal representatives; field trips to visit research facilities; as well as plenty of opportunity for group discussions and exchanges of ideas.

As part of the workshop, the junior researchers chose an ABS issue of interest to them and began research on this issue using the McGill library facilities. Upon their return home, the junior researchers completed their research and drafted a partnership paper with the supervision of the lead researcher from their organization. All four of the junior researchers completed a partnership paper and these are being edited for publication.

During their stay in Montreal, the junior researchers were billeted with local area residents and had the opportunity to interact with McGill students. Lasting bonds were formed both within the group of four researchers and with the people they met while in Canada. This has already resulted in one McGill law Ph.D. student visiting with Lillian in Kenya while the student was there conducting research.

The feedback from the workshop has been very positive both from the project partners and from the junior researchers themselves. In their evaluations of the workshop, comments from the junior researchers included:

“I have learned that no matter how different the countries are and their cultures, developing countries with a rich biodiversity face the same problems when talking about access to genetic resources.”

“The sessions were very participatory and allowed the participants to share experiences and ask questions that made these sessions very lively, information and enjoyable.”

“I think this workshop set up the first step in the road to construct new contacts and linkages among different countries around the world. As well I think it works [to]
highlight some issues [that] constitute the more challenging and controversial for our developing world. Finally, I want to say that this workshop also worth [it] because through it, we could share many different experiences and views of the world that underlies the ABS issues.”

The workshop “covered more than my expectation. Not only it dealt with basic details but later it exposed us to other dimensions also.”

Since the workshop, the junior researchers have gone on to do various things. As described in the reports from their respective project partners, both Ms. Ferro and Mr. Velankar have continued to work with their organization on ABS issues. Mr. Aguilar is continuing his Masters degree and Ms. Cherotich is preparing to begin her Masters studies as a Rhodes scholar at Oxford. All the project partners are looking forward to building upon this initial success to hold future junior researchers’ workshops and to work towards making this a self-sustaining venture.

‘Laying the Foundations’ ABS Capacity-Building Workshop for Junior Researchers

Montreal, October 18th-November 5th

**Week 1 October 18th-24th**
**Theme: Legal Framework for ABS**

**Monday, October 18th**
Meet & greet, introduction to program, orientation
Time: 9 to noon
Location: Common Room, 3661 Peel
Session leader: Kathryn Garforth

Historical overview of ABS
Time: 1-3 pm
Location: Common Room, 3661 Peel
Session leader: Kathryn Garforth

Sharing of experiences on what junior researchers have been learning at home
Time: 3:15-5 pm
Location: Common Room, 3661 Peel
Session leader: Kathryn Garforth

**Tuesday, October 19th**
Seminar on the WTO, especially TRIPS
Time: 9 am to noon
Location: Common Room, 3661 Peel
Session leader: Kathryn Garforth

Seminar on the CBD
Time: 1-2.30 pm
Location: Common Room, 3661 Peel  
Session leader: Valérie Normand, SCBD  

Discussion of topics for partnership papers  
Time: 3-4 pm  
Location: Common Room, 3661 Peel  
Session leader: Kathryn Garforth  

Wednesday, October 20th  

Environment Canada perspectives on ABS  
Time: 10-11:30 am  
Location: Common Room, 3661 Peel  
Session leader: Tim Hodges, Jock Langford & Sophie Bernier, Environment Canada  

Introduction to library system & research time  
Time: 1-4 pm  
Location: McGill libraries  

Thursday, October 21st  

Seminar on national and regional ABS regimes and access agreements  
Time: 9 to noon  
Location: room 102, 3674 Peel  
Session leader: Jorge Cabrera  

Exercise on drafting national legislation and access contracts  
Time: 1-4 pm  
Location: room 102, 3690 Peel  
Session leader: Jorge Cabrera  

Travel to Ottawa Thursday evening  

Friday, October 22nd  

Meeting with Government of Canada inter-departmental committee on ABS  
Time: 10-11:30 am  
Location: Environment Canada, Place Vincent Massey, Gatineau  
Session leader: Tim Hodges  

Roundtable with Canadian NGOs  
Time: 1-4 pm  
Location: IDRC offices, 250 Albert St., Ottawa, room 701  
Session leader: Kathryn Garforth  

Saturday, October 23rd  

Seminar on FAO and ITPGRFA  
Time: 9 am to noon  
Location: Marriott Residence Inn  
Session leader: Witold Tymoski, CISDL Research Fellow
PM: site-seeing

**Sunday, October 24th**
All day: site-seeing and free time

**Week 2 October 25th-31st**
**Theme: Stakeholders**

**Monday, October 25th**
Roundtable on traditional knowledge and biodiversity with Aboriginal representatives
Time: 9 am to noon
Location: IDRC offices, 250 Albert St., room 502
Session leader: Kathryn Garforth

Trip to Eastern Cereal and Oilseed Research Centre, government research facilities
Time: 1-3 pm
Location: Central Experimental Farm, 960 Carling Ave.
Session leaders: Peter Mason and André Levesque

*Return to Montreal Monday evening*

**Tuesday, October 26th**
Research time
Time: all day
Location: McGill libraries

**Wednesday, October 27th**
Seminar on science of biotechnology
Time: 9:30 to 11:30 am
Location: room 408, Lyman Duff building
Session leader: Dr. Robert Murgita

Trip to research facilities at McGill University, MacDonald Campus
Time: 1:30 to 4 pm
Location: Raymond Building
Session leader: Prof. Donald Smith, McGill Plant Sciences Dept.

**Thursday, October 28th**
Research time
Time: 9 am to noon
Location: McGill libraries

Seminar on participating in an international collaborative research project
Time: 1-4 pm
Location: room 102, 3690 Peel
Session leader: Marie-Claire Cordonier Segger, CISDL Director
Dinner with CISDL members

**Friday, October 29**
Seminar on ABS and human genetic resources  
Time: 10 am to noon  
Location: Room 301, 3661 Peel  
Session leader: Maria Graciela De Ortuzar, Visiting Professor, National University of La Plata

Seminar on publishing your research  
Time: 1-4 pm  
Location: Common Room, 3661 Peel  
Session leader: Marie-Claire Cordonier Segger

**Saturday, October 30**
Research time

**Sunday, October 31**
Research time and site-seeing

**Week 3 November 1st - 5th**  
**Theme: Intellectual Property Rights and Technology Transfer**

**Monday, November 1**
Review of IPRs & relationship to ABS  
Time: 9 am to noon  
Location: Common Room, 3661 Peel  
Session leader: Kathryn Garforth

Seminar on UPOV & WIPO  
Time: 1-4 pm  
Location: Common Room, 3661 Peel  
Session leader: Kathryn Garforth

**Tuesday, November 2**
Seminar on technology transfer in international biodiversity agreements  
Time: 9 am to noon  
Location: Common Room, 3661 Peel  
Session leader: Isabel Noriega, Ph.D. candidate

Lunch with Devlin Kuyek, GRAIN  
Time: noon to 2 pm  
Location: Thomson House

Case study: *Monsanto v. Schmeiser*  
Time: 2-4 pm  
Location: Common Room, 3661 Peel  
Session leaders: Kathryn Garforth
**Wednesday, November 3rd**

Research time  
Time: 9 am to 11:30 am  
Location: McGill libraries

Poster session with McGill students  
Time: 11:45 to 2:30  
Location: Atrium, New Chancellor Day Hall

Research time  
Time: 3-5 pm  
Location: McGill libraries

**Thursday, November 4th**

ABS governance – the road ahead & Brainstorming on what researchers can do when they return home  
Time: 9 am to noon  
Location: room 102, 3690 Peel  
Session leader: Kathryn Garforth

Research time  
Time: 1-4 pm  
Location: McGill libraries

**Friday, November 5th**

Workshop evaluations  
Time: 10-11 am  
Location: CISDL offices, 3661 Peel  
Session leader: Kathryn Garforth

Presentation by Prof. Jerome Reichman, Duke University  
Time: 11:30-12:30  
Location: room 202, OCDH

Research time  
Time: 1-5 pm  
Location: McGill libraries

*Final group dinner*
Annex III  Report from ‘Laying the Foundation’ Side Event during ABS WG3

CISDL coordinated a side event on Thursday, February 17th during the 3rd meeting of the CBD’s Ad Hoc Open-Ended Working Group on ABS. The purpose of the side event was to present the results from the ‘Laying the Foundation’ project and, in particular, to discuss the ideas in the partnership papers prepared by the junior researchers (see agenda below). An information document was prepared and distributed to the participants. The document set the context for the project by summarizing the international research agenda on ABS law and policy based on the brainstorming meeting organized by CISDL and IDRC during COP-7 in Kuala Lumpur in February 2004 and the subsequent ABS Scoping Study prepared by CISDL. The information document also describes the research priorities of and the project partners in the ‘Laying the Foundation’ project. It also includes summaries of the junior researchers’ partnership papers.

The side event was chaired by Marie-Claire Cordonier Segger, CISDL Director, who welcomed everyone and introduced the programme and the presenters. Kathryn Garforth, CISDL’s project coordinator for ‘Laying the Foundation’, presented the summaries of the four partnership papers. Discussion of the project and the ideas in the papers was led by Kent Nnadozie, SEAPR-ICIPE’s lead researcher in the project, and Jorge Cabrera, from CISDL and the University of Costa Rica.

Prof. Cabrera discussed the paper by Daniel Aguilar on ABS and transboundary genetic resources. Prof. Cabrera pointed out that transboundary genetic resources are an issue for many countries and regions. Decision VII/19 on ABS from COP-7 only recognizes the issue of transboundary genetic resources but does not make any recommendations in this area. He stated that many potential elements of the international regime need this kind of in-depth analysis.

Prof. Cabrera also discussed the paper by Pamela Ferro on ABS and liability. He agreed that it is important to integrate liability rules into the international regime. There is a need to carry out detailed design of the elements of the international regime otherwise the regime will not take into account the ramifications of some of the proposals and the international community will risk creating a regime with general terms and ideas but that is ultimately ineffective. Liability terms are often included in ABS contracts but it is difficult to put these terms into practice and there have been cases of breaches of these contracts. In her paper, Ms. Ferro proposes an international tracking body and perhaps some sort of ombudsman to enforce liability clauses which Prof. Cabrera concluded was an interesting idea.

Mr. Nnadozie began with some general comments on the ‘Laying the Foundation’ project and how it responds to a lack of capacity and human resources. Bringing junior researchers into the ABS field can introduce new ideas to solve intractable problems and ease the transition from the current experts to the next generation. Mr. Nnadozie then discussed the ideas in Raghu Velankar’s paper on ABS, Indigenous peoples and India, and Lillian Cherotich paper on ABS, local communities and Indigenous peoples. At the conceptual level, traditional
knowledge has a different foundation from that underlying the negotiations of the international regime. Traditional knowledge is just one component of indigenous life and focusing on it in particular takes it out of context and may fragment the system. At the practical level, even if the international community is able to design an international regime or create contracts, how will these be monitored and tracked? The trans-community nature of indigenous knowledge can make it difficult to identify where the knowledge came from for ABS purposes. There are many communities with divergent views so it can be difficult to engage communities in the process. Similarly, indigenous communities are not necessarily interested in monetary benefits and money can be very disruptive to their way of life but monetary benefits tend to be the focus of the benefit-sharing side of ABS. Finally, from Mr. Nnadozie’s experience, the participation of indigenous and local communities needs to be encouraged and their world views need to be incorporated into the process. Communities need to lead the process.

After the presentations, the floor was opened for questions and discussion. The comments from the audience members ranged from remarks that the true custodians of the resources must lead the ABS process with advice from experts to clarifications about the intentional or inadvertent nature of breaches of ABS contracts to questions about building capacity now for the ongoing negotiations.
Laying the Foundations:
A partnership for researching the monitoring and enforcement of access and benefit-sharing contracts, and building the next generation of experts.

THURSDAY, FEB 17,

Third Meeting of the Ad Hoc Open-ended Working Group on Access and Benefit-Sharing, 14 – 18 February 2005, Bangkok, Thailand

SIDE EVENT PROGRAMME

1. Welcome and Introduction
   Marie-Claire Cordonier Segger, Director, CISDL

2. An Emerging International Research Agenda on ABS Law and Policy?
   Kathryn Garforth, Legal Research Fellow, CISDL
   Summaries of Four Legal Working Papers
   - The Discovery of Eden: Paradise or Problem for Indigenous Peoples and Local Communities and Access to Genetic Resources, by Lillian Cherotich, Kenya
   - Access to Genetic Resources and Benefit-Sharing, Indigenous People and India, by Raghu Velankar, India
   - Sharing Transboundary Genetic Resources: A Challenge for a Fair International Regime on Access to Genetic Resources and Benefit-Sharing, by Daniel Aguilar, Costa Rica
   - Access to Genetic Resources, Benefit Sharing, and Liability, by Pamela Ferro, Peru

3. Discussion of the Legal Working Papers
   Kent Nnadozie, SEAPRI – ICIPE, Kenya
   - The Discovery of Eden: Paradise or Problem for Indigenous Peoples and Local Communities and Access to Genetic Resources, by Lillian Cherotich, Kenya
   - Access to Genetic Resources and Benefit-Sharing, Indigenous People and India, by Raghu Velankar, India

4. Discussion of the Legal Working Papers
   Jorge Cabrera, Lead Counsel, CISDL and Professor, UCR
   - Sharing Transboundary Genetic Resources: A Challenge for a Fair International Regime on Access to Genetic Resources and Benefit-Sharing, by Daniel Aguilar, Costa Rica
   - Access to Genetic Resources, Benefit Sharing, and Liability, by Pamela Ferro, Peru

5. Questions and Discussion among Participants