GENETIC RESOURCES

Promoting Poverty Alleviation, Food Security, and Resource Conservation:

Strategies for Achieving Balanced National Policies on Genetic Resources

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EXECUTIVE SUMMARY

Today's shifting global conditions have created unprecedented population growth, a decline in water quality and availability, and the loss of species, ecosystems, and arable land. If the trend continues it will challenge the sustainable development and security of rich and poor countries alike in the coming century, accelerating and exacerbating hunger, disease, and poverty.

But genetic resources can reverse this trend in a variety of ways. Genetic resources are the building blocks of life for all people and the natural environment. Maintaining genetic diversity ensures that the web of life can continue for future generations. By using genetic material, new crop varieties can be continuously developed to better resist pests and adapt to changing environmental conditions. Genetic material and the associated traditional knowledge of healers and communities from nearly every country around the world provide a tremendous and indispensable source of materials for research in the most modern laboratories. These resources have been also used to produce cancer-fighting drugs, dietary supplements, and chemicals for clothing manufacturing. By securing potential royalty or direct revenue streams, genetic resources open the doors to new avenues for development for even the poorest nations. Guaranteeing the availability of and universal access to genetic diversity is critical to our ability to confront these fundamental challenges.

The critical importance of guaranteeing universal access to, equitably sharing in the benefits from, and conservation of these resources has often been overshadowed by other issues in a world dominated by short-term political and financial horizons. While these issues had been largely ignored for years with little apparent short-term repercussions, politicians and policymakers can no longer side-step them. The international community has begun to recognize the environmental, agricultural, social, cultural, and economic importance of genetic resources, launching two international treaties governing key aspects of their management.

Given the growing global concern about these issues, the Rockefeller Foundation convened two meetings in September 2003 to examine options and design strategies for strengthening national and sub-regional capacity to analyze, develop, and implement laws and policies affecting the conservation, use, exchange, and ownership of genetic resources. This report, which is a product of those meetings, seeks to: draw attention to the critical need for supporting efforts by countries to develop coherent genetic resources policies and programs; and outline strategies for addressing the complex challenges inherent in these issues drawing upon the expertise and experience of experts from diverse backgrounds.

Responding to these challenges today offers both short-term and long-term benefits. Immediate benefits include increased food production, medical advances, decrease in socioeconomic gaps, and greater global security. Looking to the future, investing in genetic resource research and use today offers solutions to tomorrow's problems.

Long-term progress requires efforts at all levels—local, national, regional, and global—to clear up uncertainty in the genetic resources policy environment and to encourage the optimum conservation, exchange, and use of those resources. The proportional increase in genetic resources policy and law-making at national levels offers an opportunity to: craft policies that meet the specific development, natural resource, and other policy needs of particular country; implement international obligations; and fill in the gaps.

To achieve these goals, individual nations must increase their capacity for governing and promoting access to and use of genetic resources. At the same time, an opportunity exists for the international community to come together to promote sustainability through genetic resources.

Primarily, stakeholders must embrace and strengthen multi-stakeholder, multi-disciplinary, and multi-sectoral *modus operandi.* Since genetic resource use may benefit a variety of fields—agriculture, health, economy, environment—the means and policies for governing genetic resources should also cross multiple jurisdictions.

On the national level, there is greater need for strengthened capacity for cross-disciplinary interaction. Nations should create a culture of national ownership of their valuable genetic material and dedicate a critical mass of funds for a multi-jurisdictional approach to governing these resources. In addition, nations should empower indigenous and local communities in policy-related interventions. These communities tend to know the most about the resources and thus are often subject to exploitation.

Globally, the scientific and research community should identify areas where research is lacking and conduct universally relevant research to fill these gaps. To ensure these improvements, the report suggests creating an independent advisory board to provide assistance to donors and interested institutions to identify gaps in research and warn away from non-relevant or redundant research projects.

Rather than creating a blanket model law for genetic resource policy, an alternative methodology should be explored that would allow individual nations to tailor policies based on their resources and needs. Developed through pilot projects, such a methodology that is built upon a multi-stakeholder, multi-disciplinary, and multi-sectoral approach would focus on learning by doing and would address the unique context of each country.

This report suggests a way forward that takes into account the political and policy parameters that bind genetic resources. Based on the legal and scientific technical experience of nations' genetic resources policy to date, the report identifies what is and is not known, and what capacities are needed in order to make progress—especially at the national level in developing countries. Accordingly, this report is directed in particular at donors, individuals, and institutions that are working to develop and implement national-level genetic resource policies.

RECOMMENDATION HIGHLIGHTS

1. Embrace and Strengthen Multi-Stakeholder, Multi-Disciplinary, and Multi-Sectoral Modus Operandi
2. Create a Culture of National Ownership
3. Develop Methodologies for Identifying Scientific Research Needs and Support Natural and Social Research
4. Strengthen the Cross-Disciplinary Capacity of Teams Responsible for Developing and Implementing National-Level Genetic Resource Policies
5. Empowering Indigenous Groups and Local Communities in Policy-Related Interventions
6. Dedicate a Critical Mass of Resources to Interventions Within Countries
7. Catalyze High-Level Political Commitment and Public Awareness
8. Create a Global Project Clearing-House Mechanism
9. Strengthen the Capacity of National Representatives in International Fora
10. Conduct Universally-Relevant, Priority Research
11. Support Pilot Projects to Develop Alternative Methodology
12. Launch Follow Up Processes to Share Learning and Refine Research Agenda

See pages 7-20 for detailed recommensdations.

I. INTRODUCTION AND BACKGROUND

A. GENETIC RESOURCES: THE KEYSTONE FOR FOOD SECURITY, HUMAN HEALTH, AND PROVERTY REDUCTION

Genetic resources are the building blocks of life for all people and the natural environment. Maintaining genetic diversity ensures that the web of life can continue for future generations. It gives plants and animals the ability to adapt to a changing environment, such as new pests, drought or new climatic conditions. Shifting global conditions have always been a part of human experience, but unprecedented population growth, the decline in water quality and availability, and the loss of species, ecosystems, and arable land, as well as climate change, will challenge the sustainable development and security of rich and poor countries alike in the coming century. Unfortunately, these processes will accelerate and dramatically exacerbate problems currently facing humanity, including hunger, disease, and poverty. Guaranteeing the availability of and universal access to genetic diversity is critical to our ability to confront these fundamental challenges.

1. Reducing Hunger and Increasing Food Production

As a result of skyrocketing population growth, the Food and Agricultural Organization of the United Nations (FAO) estimates that food production must increase by 75 percent in the next 50 years. At the same time, changing lifestyles and urbanization, including the emergence of mega-cities, will demand new food products. The ability of scientists and farmers to develop and produce food for themselves and others is entirely dependent upon the seeds (genetic resources) they plant. Maize, for example, in Central America, is a staple crop for many Africans. Its ability to survive, particularly in areas prone to drought, pests or increasingly saline soils, depends on access to varieties that have particular adaptations or resistances to the plethora of problems facing agriculture."[1] Ever changing conditions—natural and human-induced—demand that new crop varieties be continuously developed to better resist pests and adapt to changing environmental conditions. Since the dawn of agriculture, farmers have used genetic variation available in plants to develop new varieties of crops. Without access to a diverse base of genetic resources, farmers may be unable to meet the food and nutritional demands of the exploding population worldwide.

2. Combating Disease and Improving Health

The health of all people—indigenous people, urban consumers, rural farmers—is dependent not only on the food they eat, but the medicines they take to combat disease. Genetic material and the associated traditional knowledge of healers and communities from nearly every country around the world provide a tremendous and indispensable source of materials for research in the most modern laboratories. An extract from Madagascar's rosy periwinkle provides the basis for two pharmaceuticals for the treatment of childhood leukemia.[2] As the world's population grows and environmental conditions change, humanity will inevitably be faced with new diseases. The emergence of AIDS and the recent outbreak of SARS are only two of many examples. Without access to a diverse base of genetic resources, scientists and public health officials may be unable to protect humanity from the diseases of today and tomorrow.

3. Fighting Poverty

Maintaining an abundant natural resource base and healthy population are also vital to the fight against poverty. Genetic resources—as the key to new products and industrial process—further support this fight. A new dietary supplement being developed by Pfizer, Inc., based on the hoodia cactus, a traditional appetite suppressant used by Kholsan hunters in Southern Africa, is expected to generate significant revenue.[3] An enzyme discovered under a flamingo's nest in a Kenyan saline lake now bleaches blue jeans in Europe and the United States. Through securing potential royalty or direct revenue streams, genetic resources open the doors to new avenues for development.

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[1] African Perspectives on Genetic Resources: A Handbook on Laws, Policies, and Institutions (Kent Nnadozie et al., eds., 2003).

[2] *Id.*

[3] *Id.*

4. Addressing the Challenges of Today and Tomorrow—Conserving and Using Genetic Resources

The international community has recognized the environmental, agricultural, social, cultural, and economic importance of genetic resources, launching two international treaties governing key aspects of their management. The critical importance of guaranteeing universal access to, equitably sharing in the benefits from, and conservation of these resources has often been overshadowed by other issues in a world dominated by short-term political and financial horizons. While these issues have been largely ignored for years, with little apparent short-term repercussions, politicians and policymakers can no longer side-step them. Efforts to collect and conserve vital seeds are slowly but surely slowing or stopping. As this process of collection, conservation, and research continues to slow, large multi-national agri-business and pharmaceutical companies, public sector research institutions, farmers, and others will begin applying their individual and collective political muscle to put the issue of genetic resources on the political agenda.

Ignoring these issues is likely to lead to growing numbers of the hungry and further compromise public health (exacerbating and accelerating, for example, the effects of AIDS). Negligence will continue to reduce income streams for individuals and businesses alike. As unrest grows among the poor, hungry, and sick, politicians that ignore these issues today risk not only their own political careers, but also jeopardize long-term global security.

Responding to these issues now, however, could have tremendous short-term benefits resulting from increased food production, medical advances, decreased disparity between rich and poor, and greater global security. The food we eat and the ability to protect the health of our children and grandchildren from disease depends upon the actions we take today to conserve and use the world's genetic resources. The potential for productive use of these reserves provides a compelling principal motive for conservation and establishes their value as raw materials.

Looking to the future, actions taken today to guarantee universal access to, and conservation and equitable utilization of, genetic resources is a legacy of unquantifiable value to future generations. Investing now in genetic resources is comparable to buying an insurance policy—the seeds available today may hold solutions to tomorrow's problems. Without investing today in collecting, conserving, and sharing these genetic resources, we compromise our collective long-term ability to respond and adapt to unforeseen changes.

5. Genetic Resources Policies—The Global and National Challenge

As noted above, two international treaties address the management of genetic resources and implement the intent of other sometimes conflicting treaties in the midst of global debates over ownerships and benefit rights of genetic material. They provide a framework on which to base genetic resource policies, as well as questions about trade and intellectual property regimes that present significant challenges for national governments. However, the lack of funding to accumulate the scientific knowledge and to develop the conservation programs necessary to maintain and use genetic diversity seriously hampers national-level efforts to develop and implement national genetic resource policies.

National governments, especially those in developing countries, have been hard-pressed to develop or sustain the comprehensive, integrated policies and programs required to adequately understand, conserve, share, and use their genetic heritage. The ability to benefit from or even protect those materials has escaped poor countries, especially the poorest communities in those countries. Without first knowing the extent and value of a country's genetic resources (from varying perspectives, including the host country and user countries), the capacity of national research and development institutions to exploit and thereby add value to national genetic resources, and the degree of a country's dependency on genetic resources obtained from other countries, it is almost impossible to constructively engage in informed and fair "access and benefit sharing" of these resources as called for in international agreements. Without a clear national policy about genetic resources and without clarifying the role of the various ministries (e.g., health, agriculture, trade, science) or stakeholders (e.g., farmers, scientists, physicians, traditional healers, private sector), it is almost impossible to build a shared vision or gain support for mechanisms to use, trade, share, learn about or conserve a county's genetic heritage and knowledge.

Given the worsening situation and rapidly growing global concern about these issues, the Rockefeller Foundation convened two meetings in September 2003. This report, which is a product of those meetings, seeks to: draw attention to the critical need for supporting efforts by countries to develop coherent genetic resources policies and programs; and outline strategies for addressing the complex challenges inherent in these issues, drawing upon the expertise and experience of experts from diverse backgrounds. Accordingly, this report is directed in particular at donors, individuals, and institutions that are working to develop and implement national-level genetic resource policies.

To achieve these objectives, this report attempts to accumulate and take stock of the experience of those who have been on the front lines in global policy debates, as well as those on the ground who are trying to conserve and use genetic resources for the benefit of humankind. The report suggests a way forward that takes into account the political and policy parameters that bind genetic resources. It also addresses the legal and scientific technical experience of genetic resources—what is and is not known, and what capacities are needed in order to make progress—especially at the national level in developing countries.

How we use and share genetic resources and compensate to communities and countries where genetic resources originate is critical to our immediate and long-term survival.

B. THE CURRENT POLICY CONTEXT FOR GENETIC RESOURCE REGULATION

Ensuring that humanity continues to benefit from genetic resources requires a multi-pronged strategy that promotes their optimum conservation, use, and exchange. Developing policies and laws concerning who has the right to control and use genetic resources, and when, how, and by whom they should be conserved, is technically complicated and politically controversial. In part, the controversy is rooted in dramatic progress in biological science and biotechnology that has created a potential (to date, only partially realized) market for genetic material as a "resource" for research and development in numerous sectors. Consequently, genetic resources are (or are perceived to be) subject to new values, uses, and (sometimes) competing demands.

Not surprisingly, interested parties frequently disagree about plant, animal, fish, and microbial genetic resources —who owns or controls these resources, who should have access to them, for what purposes, on what terms (benefit-sharing, conservation, etc.), and whether the consent of the local community should be required. These debates are further exacerbated by an overall legal environment that is not well defined and by problematic existing models of regulation. In the absence of legal certainty, an evolving climate of distrust and lack of cooperation is threatening to undermine the sharing and use of a wide range of genetic resources.

There are now frequent reports of international genetic resource collecting efforts—even those explicitly limited to conservation by public sector agencies—being blocked by government officials who refuse to provide access to crop or medicinal plant genetic resources. Sometimes these refusals are made as part of an explicit assertion of national sovereignty; other times, they are made reluctantly by officials who are afraid to take responsibility for unwittingly giving away what could turn out to be valuable national patrimony. Some indigenous and local peoples are declaring moratoria on collecting in their communities until their rights are more clearly defined and understood. Given these trends, some formal sector institutions are appealing for a new climate of cooperation as their own research and development efforts are being threatened.

Despite the growing contention over control of genetic resources, data concerning the value of genetic resources that defines optimal ranges of diversity of genetic resources for conservation (how much diversity is enough and at what levels?), market value, and local-use values is lacking. Representatives of national crop, livestock, fisheries, and forestry genetic resources programs readily acknowledge that they have not identified or inventoried (much less characterized and evaluated) much of the genetic diversity within their own borders. They also admit to having very little data regarding the local uses and current and potential future values of genetic resources.

This lack of information is serving to exacerbate rather than alleviate tensions between interested parties. In the absence of reliable data, most parties appear willing to err on the side of assuming the maximum potential commercial value for the genes, gene-sequences, and related information sequestered in the flora and fauna under their control. This lack of data is also being used to forestall policymaking to the detriment of countries, communities, and genetic resources. There is a need to develop models for rapidly gathering and analyzing relevant data. This may then allow for the creation of different regulatory mechanisms for resources with different values.

Throughout the last two decades, there has been a great deal of activity in international fora regarding the regulation of genetic resources. This activity has, in large part, been motivated by a desire to address the increasingly complicated and controversial nature of managing genetic resources. There has also been a relatively large increase in the level of national-level activities attributed to three interlinked factors.

First, issues of critical importance to many countries have not been or are not being addressed definitively or satisfactorily in international fora. For example, many developing countries are seeking to create national laws to protect Farmers Rights.[4] Farmers Rights were included in the "mix" of subjects considered in the negotiations of the

[4] The concept of farmers' rights arises from the historical contribution of farmers and their communities to the development of a portfolio of genetic diversity within crops and other species. The debates in FAO starting in 1979 concerning the unquitable.

International Treaty on Plant Genetic Resources for Food and Agriculture (the "International Treaty"). The International Treaty acknowledges that the responsibility for realizing farmers' rights rests with national governments and calls on the parties to take measures to protect and promote farmers' rights, leaving precise definition of these rights to the governments. Developing countries have been making efforts to get the creation of internationally binding obligations on the protection of traditional knowledge on the agenda of a number of international fora, including the millennium round negociations under the auspices of the WTO and at WIPO's Intergovernmental Committee on Intellectual Property, Genetic Resources, Traditional Knowledge and Folklore. In the absence of any, or sufficiently promising, progress in international fora regarding these issues, many will "plough-on alone" at the national level.

Second, many countries develop national laws in response to purely domestic factors regardless of international developments. These proactive, bottom-up, country-driven processes are important for developing national policies that are of particular relevance to the needs of the resource poor. Laws and policies related to seed quality and marketing, and those bolstering informal seed supply systems, are examples of purely domestic initiatives. In several instances, countries have also started to develop comprehensive national legislation and policies related to genetic resources with the aim of providing a better foundation for the conservation and use of these precious resources.

Finally, many countries are taking action for a variety of reasons to implement provisions of several international agreements related to genetic resources. The Convention on Biological Diversity (CBD), which entered into force in 1993, requires parties, among other obligations, to create "conditions to facilitate access to genetic resources for environmentally sound uses by other Parties and not impose restrictions that run counter to the objectives" of the CBD. Similarly, despite the fact that the Agreement on Trade Related Aspects of Intellectual Property Rights (TRIPS) entered into force in 1995, most developing countries have not implemented its minimum standards for plant varieties and animal breeders' protection. The Cartagena Protocol on Biosafety came into force in September 2003, establishing processes that parties must follow when shipping live, genetically modified organisms (LMOs) across international borders. Given the Protocol's recent entry into force, countries are only now beginning the implementation process. The International Treaty is expected to come into force in 2004, establishing a system for multilateral exchange and benefit sharing for a specific list of crops and forages. Needless to say, no country has implementing legislation in place for this treaty yet.

Critical to the successes of national policymaking processes is the timely and effective engagement of local communities. Local concerns about resource use and management are of utmost importance (see Report of Working Group 4). Poor people at the community level are directly dependent on these resources and can play a critical role in improved management. Multi-stakeholder processes incorporating local stakeholders must be encouraged to allow for the development of a more balanced approach to access and benefit-sharing policies. The present policy climate is too driven by international and national priorities.

There are also significant regional activities underway in South America, the Andean community, and in Africa; the African Union has supported an effort to develop an African Model Law for Genetic Resources. As the parties to these international and regional agreements continue to meet to make important decisions about legal and policy issues[5] and begin the process of implementation, they will need to dedicate additional human resources at a national level for their implementation.[6] Even countries that have not signed on to these agreements will need to dedicate domestic human resources to deciding whether or not they should join the World Trade Organization (WTO), International Union for the Protection of New Varieties of Plants (UPOV) or the International Treaty. The result is a huge increase in the number of fora where policy analysis and decision-making must occur, as well as the number of people who must develop expertise in the subject matter to make those decisions.

In short, efforts are required at all levels—local, national, regional, and global—to clear up uncertainty in the genetic resources[7] policy environment and to encourage the optimum conservation, exchange, and use of those resources. The proportional increase in genetic resources policy and law-making at national levels offers an opportunity to: craft policies that meet the specific development, natural resource, and other policy needs of particular country; implement international obligations; and fill in the gaps.

There has been an evolutionary process in the body of literature upon which national governments can rely when developing genetic resource policies. These include international initiatives that identify options for developing

5 For example, many believe that enforcement mechanisms, such as user provisions, have not been adequately addressed in international treaties.

6 Furthermore, there is discussion of an international convention on access and benefit sharing, which would require even more time, resources, and expertise from countries.

7 More accurate terminology would be "genetic resources-related" but the authors have adopted this more reader-friendly "genetic resources" for the sake of simplicity.

national laws[8] to implement specific international commitments. Regional studies have documented a range of legislative, institutional, and practical experiences in governing genetic resources at the regional and national levels, taking into account international, regional, and national legal contexts, politics, traditional social concepts, and other local factors.[9] However, there remains a strong need to develop and make widely available better methodologies and criteria for surveying and taking into account the local natural and social science context in developing genetic resource policies.

To respond to the need for genetic resources policies that are responsive to the local context, the Rockefeller Foundation, which has had a long-standing interest in genetic resources, convened two meetings in September 2003. The goal of these meetings was to examine, in more detail, how to "advance the state-of-play in the field" with respect to the development of national laws and policies affecting genetic resources. Desiring to engage individuals and institutions with longstanding and emerging expertise, meeting participants included scientists, lawyers, community and NGO representatives, donors, policymakers, and others with relevant experience at the local, national, regional, and international levels. The meetings were designed to draw heavily on the experience of organizations that have a long history with genetic resource issues in developing countries—ELI, based in Washington DC, USA, and the International Plant Genetic Resources Institute (IPGRI), based in Rome, Italy, as well as their partner organizations that have been actively engaged with genetic resources. In particular, the meetings were designed to distill experience and lessons from ELI's and SEAPRI's joint work that led to the publishing of *African Perspectives on Genetic Resources: A Handbook on Laws, Policies, and Institutions* by the African Union[10] and IPGRI's and IDRC's work with the Genetic Resources Policy Initiative (GRPI).[11] Consequently, many of the recommendations made in this report are based on these experiences and lessons learned.

The first meeting was held in Frascati, Italy, September 5-7, 2003, and involved more than 40 participants (see Appendix B for a complete list of participants). Participants included individuals from ELI, SEAPRI, IPGRI, and their respective international-, regional-, and national-level partners. Representatives from three major donor institutions with a longstanding interest in genetic resources policy actively engaged in the meeting: the Rockefeller Foundation, the International Development Research Centre, and SIDA/SAREC. The meeting was facilitated by the Meridian Institute whose mission is to help people solve problems and make informed decisions involving multiple points of view. The meeting was composed predominately of individuals with experience developing and implementing national-level genetic resource policies in developing countries. The agenda was intended to examine options and design strategies for strengthening national and sub-regional capacity to analyze, develop, and implement laws and policies affecting the conservation, use, exchange, and ownership of genetic resources. A report of that meeting, including a more detailed description of the meeting objectives, agenda, list of participants, and summary of breakout groups' recommendations is included in Annex B.

The second meeting was composed of a subset of the participants from Frascati meeting. This group met in Bellagio, Italy, at the Rockefeller Foundation's Conference Center from September 9-11.[12] Participants in Bellagio had the opportunity to reflect on the conclusions and recommendations from Frascati and discuss in more depth specific strategies for strengthening the capacity of national governments to develop and implement sound genetic resource policies and the capacities of stakeholders to engage in and contribute to these processes.

The Bellagio group identified and examined a range of issues related to national governments, stakeholders, and crosscutting initiatives. With respect to national governments, the group discussed strategies to build capacity to: identify, generate, and develop appropriate methodologies for using relevant scientific, legal, market, and cultural information; promote intra- and inter-institutional

8 This includes but is not limited to: 1) Carlos Correa, Establishing a Disclosure of Origin Obligation in the TRIPS Agreement (2003); 2) Crucible II Group, Seeding Solutions Vol. 2 Options for National Laws Governing Control Over Genetic Resources and Biological Innovations (2001); 3) IPGRI, Key Questions for Decision-Makers: Protection of Plant Varieties Under the WTO Agreement on TRIPS (1999); 4) Dan Leskien & Michael Flitner, Intellectual Property Rights and Plant Genetic Resources: Options for a Sui Generis System (1997); 5) G.S. Nijar, In Defence of Local Community Knowledge and Biodiversity: A Conceptual Framework and the Essential Elements of a Rights Regime (1996); 6) M. Petit, C. Fowler, W. Collins, C. Correa & C-G Thornstrom, Why Governments Can't Make Policy: The Case of Genetic Resources in the International Arena (2001); 7) Kerry ten Kate & Adrian Wells, Preparing a National Strategy on Access to Genetic Resources and Benefit-Sharing (2001).

9 This includes but is not limited to: 1) Susan Perkoff Bass and Manuel Ruiz Muller (Eds.) Protecting Biodiversity: National Laws Regulating Access to Genetic Resources in the Americas (2000); 2) Kent Nnadozie et. al., African Perspectives on Genetic Resources: A Handbook on Laws, Policies, and Institutions (2003) (publications available at http://www.eli.org); 3) Devendra Gauchan, Bimal Baniya, Madhusudan Upadhyay & Anil Subedi, A Case Study of Plant Genetic Resources Policy for Food and Agriculture in Nepal (2003).

10 Information about this publication can be found at http://www.eli.org.

11 More information about the GRPI project is available at http://www.grpi.org

12 Since 1959, the Rockefeller Foundation's Bellagio Study and Conference Center on a hilly peninsula in the middle of Lake Como, has welcomed scholars, scientists, artists, writers and policymakers from all over the world to carry out their scholarly work. The Center convenes interdisciplinary small working groups to develop innovative solutions to significant issues and problems within or across fields. The Bellagio meeting described in this report was the first in a series of four meetings, which will address issues related to intellectual property.

cooperation; identify and engage stakeholders; participate effectively in international obligations; and strengthen enforcement policies, regulations, and other obligations. With respect to stakeholders, the group discussed strategies for building capacity to understand and influence policymaking processes and generate and present relevant information. In addition, with respect to cross-cutting initiatives, the group discussed approaches for promoting: awareness and understanding of the issues by governments, funders, and the public; legal, scientific, cultural, and economic research and methodologies; critical levels of funding; and long-term, proactive approaches.

II. RECOMMENDATIONS FROM BELLAGIO: AN AGENDA FOR ENHANCING NATIONAL CAPACITY FOR GENETIC RESOURCE POLICYMAKING

Participants in the Bellagio meeting were asked to recommend specific interventions that would lead to better genetic resources policies and laws at the national level. The Bellagio Group focused, in particular, on interventions related to policymaking and implementation processes, awareness raising, capacity strengthening, and research activities. The following recommendations reflect these proposed interventions and integrate related ideas and suggestions from the Frascati Meeting and subsequent discussions among Bellagio participants. As we are still at a very early stage in the definition and understanding of the key research issues, their linkages, and more importantly their solutions, the proposed research agenda leaves room for further definition through an iterative learning approach.

1. Embrace and Strengthen Multi-stakeholder, Multi-disciplinary, and Multi-sectoral *Modus Operandi*

Laws and policies concerning the conservation, use, and exchange of genetic resources cut across the jurisdictions and interests of the national ministries of agriculture, environment, health, rural development, trade, and industry, among others. They affect the interests of farming communities, private sector companies, civil society organizations (CSOs), and parliamentarians. Well-grounded analysis of policy options depends upon data from applied research in numerous fields, including genetics, taxonomy, conservation biology, ecology, anthropology, and economics. Furthermore, given the fact that forest, livestock, crop, aquatic, and microbial genetic resources are so tightly linked within ecosystems, there is an increasing level of awareness that laws affecting genetic resources associated with one sector cannot and should not be developed in isolation from policies affecting genetic resources associated with other sectors. Accordingly, whenever possible, interventions to support genetic resource policymaking should be structured to reflect these facts.

IPGRI has recently launched the GRPI project[13] to work on genetic resources policy issues at the national level, incorporating multi-stakeholder, multi-sectoral, and multi-disciplinary approaches (i.e., the "three multies"). The experience of working with the three multies is a relatively new one for both the donors and project partners, highlighting the need to discuss and make recommendations concerning methods for effectively working through the three multies.

Accordingly,

1.1 wherever possible, activities to raise awareness, build capacity, and conduct research concerning national genetic resources policymaking should embrace multi-stakeholder, multi-disciplinary, and multi-sectoral *modus operandi.* Appropriate procedures and structures need to be developed to ensure that multi-stakeholder, multi-sectoral, and multi-disciplinary activities related to national-level genetic resource policies are real, and do not just exist on paper.

The assumption in many interventions purporting to embrace multi-stakeholder, multi-sectoral, and multi-disciplinary *modus operandi* is that simply bringing representatives together from different stakeholder positions, disciplines, and sectors is all that is required to take advantage of the multiplicity of perspectives involved. To the contrary, substantial and higher-than-previously degree of financial and human resources have to be dedicated to strengthening the collective capacity of participants to appreciate the insights provided by and work through the three multies with representatives of the other disciplines, stakeholders, and sectors involved.

1.2 To be successful, multi-stakeholder, multi-sectoral, and multi-disciplinary interventions at national levels need to be structured in a way that a wide range of national participants can take ownership.

13 GRPI is supported by governments and foundations and is jointly executed by IPGRI and Canada's International Development Research Centre (IDRC). It is rooted in the idea that regulation of the use, control, management and conservation of genetic resources has become increasingly complex and fragmented across different policy-making bodies in any given country. GRPI aims to use a two-step process to help governments and regional groupings to build a more coordinated policy platform.

1.3 Responsibilities for governance, coordination and output development should be distributed among representatives of a range of different institutions representing the different stakeholders, disciplines, and sectors that are supposed to be involved in genetic resource policymaking.

1.4 When working in multi-stakeholder, multi-disciplinary, and multi-sectoral processes, IPGRI's research to date suggests that it is important not to concentrate too much decision-making authority, coordinating functions, and research, advocacy, and capacity-strengthening activities in one institution. Moreover, institutions taking on coordinating functions must enjoy the respect of other stakeholders as open and transparent players.

1.5 Building a greater awareness nationally—among politicians, policy makers and the general public—on the value of genetic resource policy is vital in order to ensure an adequate level and duration of effort.

Out of the three multies, multi-disciplinarity is perhaps the hardest to integrate meaningfully into national genetic resources policy-related interventions. Furthermore, among the range of stakeholders that potentially should be involved to date, indigenous peoples and local communities, have been the least well engaged in such activities.

Recommendations about how to improve the integration of a range of disciplines and create space for the participation and leadership of indigenous peoples and local communities in genetic resources policy-related projects are set out in sections 3, 4, and 5 below. Recommendations about both processes and requisite resources are set out in sections 2 and 6 below.

2. Create a Culture of National Ownership

Ownership of genetic resource policy projects by national participants at different levels of government and across a variety of sectors is essential to ensure their support for and ultimate success of project activities. Conversely, donors and project partners should avoid purely extractive research projects involving outside researchers touching down in a country for just long enough to gather information from national research institutions for subsequent, independent analysis.

To foster ownership, projects should be structured to:

2.1 Involve a wide array of national participants.

2.2 Leverage and incorporate the strengths of existing local and national institutions.

2.3 Focus and respond to priorities—both in terms of subject matter and methodologies adopted—defined by national participants.

2.4 Provide national participants with "space" and resources to be creative, take risks, and make mistakes.

2.5 Include national participants in the governance and provide them opportunities to participate in making key decisions.

To support the creation of this culture of ownership,

2.6 A study should be conducted to document and evaluate the strengths and weaknesses of different methods to encourage ownership by national partners in national-level, genetic resources policy-related projects that embrace multi-stakeholder, multi-disciplinary, and multi-stakeholder modalities.

3. Develop Methodologies for Identifying Scientific Research Needs and Support Natural and Social Research

In general, policy instruments and policymaking at the local, national, regional, and global levels affecting the control, management, use, and conservation of genetic resources have progressed faster than, and without adequate grounding in, parallel research efforts in the natural and social sciences. Although a growing body of useful studies that identify legal options for national policymakers to choose from exists, these studies generally do not include consideration of any country-specific natural and social scientific data. Important data for consideration includes the identification, characterization, and evaluation of genetic resources; their current and potential local-use value and potential future value measured in terms of their contribution to community livelihoods in the context of local power, ethnic, and class relations; their current and potential future commercial value; and their rates of erosion. The absence of social scientific data is, in general, even more acute than the absence of natural scientific data. To develop sound instruments, policymakers also need to be aware of the extent of a country's dependence on external genetic resources for its own research and development efforts as well as the capacity of national research and development institutions to add value to genetic resources through product development.

Research in the relevant fields of inquiry—economics, anthropology, conservation biology, taxonomy, genetics, and others—can be very expensive and progresses only incrementally over long periods of time. Research within each of these fields is potentially endless, as one line of inquiry leads to another.

Accordingly,

3.1 Future country-specific and local interventions should include the collection and synthesis of available natural and social scientific data that would strengthen national partners' capacity to identify and evaluate genetic resources policy options. Where it is determined that critical baseline scientific information is lacking, support for research to fill those gaps should be included as a part of the overall intervention.

3.2 Guidelines should be developed, based on comparisons of experiences of different countries, to identify what kinds of natural and social scientific data, and how much of it, is needed to adequately inform the critical analysis of different policy options.

4. Strengthen the Cross-Disciplinary Capacity of Teams Responsible for Developing and Implementing National-Level Genetic Resource Policies

To date, coordinators of genetic resource policymaking initiatives appear to have assumed that, by bringing together representatives from different stakeholder groups and sectors, the requisite range of disciplines will be automatically included in the mix and integrated into project work. Despite the best intentions of project planners, genuine interdisciplinarity (particularly in terms of the integration of social sciences) is still lacking in most of these projects.

Accordingly,

4.1 Individuals and institutions with relevant disciplinary expertise in the countries and sub-regions concerned should be proactively identified and involved in project planning and follow-through. In countries where there are no such individuals or institutions, projects should include explicit strategies to fill those gaps: a) in the short term, by introducing expertise from outside for technical guidance and backstopping under the defined leadership of a national authority; and, b) in the long term, by investing in the development of the relevant expertise within the country.

4.2 The capacity of teams that develop national policies concerning genetic resources to work on a cross-disciplinary basis needs to be strengthened. Specifically, these capacity-building efforts must allow these teams to:

- **Understand the significance of data that is generated through applied research in social and natural sciences as a foundation for good policymaking;**
- **Identify categories of baseline data that policymakers need to make decisions in the policymaking process;**
- **Collect and synthesize existing baseline data;**
- **Stimulate the generation of additional data to fill those gaps; and,**
- **Convert that data into recommendations regarding policy and law.**

5. Empowering Indigenous Groups and Local Communities in Policy-Related Interventions

Farmers and indigenous groups, and other members of local communities that employ a genetically-diverse range of materials as one of their strategies to improve their livelihoods, are among the most important actors to be included in a multi-stakeholder process. These groups tend to be poor, and often are located in centers of genetic diversity, predominantly in developing countries. Despite their central role in the conservation and use of genetic resources for food and agriculture (GRFA), they tend not to be involved in the development of national (and international) policies on the conservation and sustainable use of these resources; however, these policies affect their livelihoods, and more particularly, the range of choices regarding materials and technologies that are available to them in maintaining and improving their farming systems. Genetic resource policies developed without consulting these individuals (and understanding the strengths and weaknesses of their systems for using and managing local resources) can have a negative impact on the genetic diversity of materials available to them, and, where they are linked, a negative impact on their livelihoods.

In efforts to include these stakeholder groups to date, donors and project partners have significantly underestimated both the methodological complexity of creating "space" for the effective inclusion of indigenous peoples and farming communities into project activities, and the cost, time, human resources, and the project-wide, collective capacity that is required. Indigenous peoples and farming communities are uniquely disadvantaged by a

combination of factors, including: a) geographic distance from the national capitals where most of this activity is concentrated; b) historical estrangement from national political processes; c) low socio-economic status among the other stakeholders; d) lack of formal education (frequently being illiterate, and sometimes not speaking the national language spoken in the capital); e) lack of financial support for their participation in such processes; and f) general sense of disempowerment leading to discomfort when expected to participate as equals with other stakeholders.

It is not only the capacity of indigenous peoples, farmers, and members of local communities that needs to be strengthened as a pre-requisite for meaningful integration into national-level genetic resources policy projects. Other stakeholders also need to have the capacity to work with indigenous peoples and local communities. Strengthened representatives of research institutes, government departments, private sector companies, and many CSOs are frequently on the flip-side of the factors listed above, making it as difficult for them to understand indigenous peoples and local communities as it is for indigenous peoples and local communities to understand them. Capacity strengthening for other stakeholders in this context is almost entirely lacking in known genetic resources policy-related projects.

One element of this work is to improve understanding of farmers' and indigenous groups' perspectives on the relevant issues. Another element is to develop appropriate intervention methods or processes to ensure the effective and appropriate involvement of different stakeholders, and farming and indigenous communities in particular.

In sum, a wide variety of methods are required to accommodate the global diversity of indigenous peoples and local communities, the national political contexts within which they are situated, and the kinds of policies and activities in question.

Accordingly,

5.1 More effort is needed to meaningfully engage indigenous peoples and local farming communities into multi-stakeholder oriented projects concerning the development of genetic resources policies.

5.2 Awareness-raising and capacity-strengthening activities with indigenous peoples and local communities should be included as a precursor to, or parallel with, their participation with other stakeholders in interventions concerning laws and policies affecting genetic resources.

5.3 Communications and capacity building should be conducted in such a way as to "meet the indigenous peoples and farming communities on their own terms" as much as possible.[14]

5.4 Future interventions should include capacity building for representatives from the public and private sectors and CSOs involved in multi-stakeholder policy development projects to be able to work effectively with indigenous peoples and local communities.

5.5 The experiences of indigenous peoples' and farming communities' involvement—as leaders, participants, and sometimes as tokens—in awareness-raising, capacity-strengthening, research, and advocacy vis-à-vis the development of genetic resources policies should be systematically documented, synthesized, and analyzed to develop methodologies and recommendations for improving participation of these groups. This work should be led, wherever possible, by members of indigenous peoples and local communities.

6. Dedicate a Critical Mass of Resources to Interventions Within Countries

To date, donors and genetic resource policy project partners have significantly underestimated the cost, time, human resources, and the project-wide, collective capacity that is required to establish and maintain multi-stakeholder, multi-disciplinary, multi-sectoral projects at national levels. Much of the more-than-expected need for resources is related to implementing the recommendations above. For example, as part of a strategy to foster national ownership, for larger projects at least, it is necessary to establish a national team to govern and coordinate activities. Ideally, this team should include representatives of different stakeholder groups, sectors, and disciplines involved to promote their buy-in. In addition, considerable backstopping from outside technical experts will also be necessary to assist the coordination of project activities.

National participants are generally not accustomed to working with many of the partners they would be expected to cooperate within multi-stakeholder, multi-sectoral, multi-disciplinary projects. These new partnerships are not always immediately self-justifying. The rewards of such interaction (i.e., the development of

[14] For example, unless otherwise specified by the indigenous peoples or local community concerned, contact with them should be established and maintained through their own local institutions. It is necessary to ascertain from community perspectives with respect to the issues at hand. Capacity strengthening exercises should take place within the community and should be structured to take the community members' perspectives actively into account. Opportunities for protracted contact with, and technical backstopping from, "neutral" outside experts is an essential part of this process. Key concepts need to be translated into local languages and explained in locally meaningful terms.

locally-responsive, balanced, and sustainable policies) take a long time to be realized; in the meantime, there is an (understandable) tendency among participants to "lapse-back" into their more familiar partnerships with other "like-minded" government departments, CSOs, or industry groups. Especially in the early stages of such projects, it is critical to build-in the active presence of experts in the relevant disciplines to circulate among the national participants to keep them in touch with the project. Such experts should remind them of the value of the novel enterprise in which they are participating and the importance of not short-cutting longer procedures that are necessary to guaranteeing true "buy-in" from a multiplicity of stakeholders. As noted above, if these experts are not available from within the country concerned, they have to be introduced from outside. All of these activities require substantial investment of financial and human resources.

Additional support must be made available for developing strategies to reach out to high political levels and to follow-up on those strategies (see 7 below).

These previously unforeseen demands for additional human and financial resources are compounded by the fact that policy development concerning genetic resources is very slow in most countries. Over the period of time it takes to achieve a significant step in the development, adoption or implementation of a policy or law, governments can change, key contacts within departments can be transferred to other areas, CSOs and private industries may disappear from view, and other events within the country will frequently eclipse the apparent importance of genetic resources policy development. To have an impact under these circumstances, donors, international research institutes, and/or national agencies seeking to promote participatory, multi-stakeholder, multi-disciplinary, and multi-sectoral interventions must demonstrate to their national partners that they are "in it for the long haul" and can be trusted to be constant when all other variables are subject to change. Repeated demonstrations of good faith and dedication to working with national participants are required to inspire their trust and enthusiastic participation in these activities. A similar long-term counterpart commitment on the part of national governments is necessary.

Accordingly,

6.1 Donors and project partners should ensure that national projects have a critical mass of human and financial resources to support national-level multi-stakeholder, multi-sectoral, and multi-disciplinary projects, and must be prepared to make a long-term commitment to sustain learning and genetic resources policy formulation processes.

7. Catalyze High-Level Political Commitment and Public Awareness

There is a general lack of awareness of the public and within high-level national political circles of the value of genetic resources, especially GRFA, and the potential impact of different regulations governing their conservation, use, and management. As a consequence, there is often little domestic support to initiate adequate law and policy development processes. Draft laws have frequently been left sitting, unattended for years, as a result of being eclipsed in perceived importance by other events, or because they are caught in inter-departmental struggles. In many instances, bills have actually been passed into law, but became *de facto* dead letters because necessary resources were not dedicated to their implementation and enforcement. The engagement of high level politicians is critical in genetic resources policymaking, particularly in ensuring consultation and collaboration among ministries. The absence of consultation and collaboration among different government ministries can lead to inter-ministerial competition, policies that lack cross-sectoral coherence, and barriers to effective implementation. A number of different kinds of interventions, by a number of different actors, are possible.

The above introduction and recommendations below suggest that mention be made of the need for consultation and collaboration across sectoral ministries, and that this may require that the multi-ministry process be driven and coordinated by higher level authorities. Otherwise, coherent policy formulation is highly unlikely. The least successful route is if one ministry alone drives the policy formulation process, creating inter-ministerial competition and lack of cross-sectoral coherence.

Accordingly,

7.1 There should be more interventions designed to raise the awareness of national decision-makers and to encourage them to provide increased political support for development and implementation of laws and policies related to the conservation, use, and management of genetic resources.

7.2 High level political people—be they senior bureaucrats or Parliamentarians—should be included as a stakeholder group in multi-stakeholder interventions. To that end, they should be encouraged to participate in project activities. They should also be more explicitly targeted as one of the groups to be influenced through those activities.

7.3 Project partners should invite key politicians to the sites of particularly interesting genetic resources related activities, such as national crop research institutions to learn how extensively breeders, and consequently farmers, rely upon a diversity of genetic resources to improve crop varieties.

7.4 Project partners should establish better ties with local media to generate awareness of their own and related activities.

7.5 Donors should be more proactive in communicating their commitment to supporting genetic resource policy development to national and sub-regional political leaders and decision-makers. The political clout of project participants is often insufficient to influence legislators and politicians. The donors should form themselves into a coalition as part of a strategy to ensure their message reaches higher political levels.

7.6 The donors' coalition should conduct country and sub-regional visits to meet with high-ranking political representatives. They should hold high-profile field visits, seminars, and press gatherings in target countries and regions. They should release position papers in the name of the coalition. Donors should encourage recipients of their funds to include activities designed to influence high-level political representatives within projects involving genetic resources policy analysis.

8. Create a Global Project Clearing-House Mechanism

Currently, there is insufficient coordination at all levels between donors, international research organizations, national and regional project partners, and local stakeholders concerning the genetic resources policy-related activities that they support, coordinate, and/or participate in. Part of the problem is due to insufficient access to, and sharing of, available information. Donors, project leaders, participants, and stakeholders frequently are not even aware of related projects that are taking place at the same time, sometimes in the same country. Research products are not being effectively distributed. Lessons learned within projects are generally not shared with the outside world. This lack of information-sharing is one factor contributing to unnecessary repetition in project activities and products. Available support for interventions is not being fully exploited, and the field overall is developing more slowly than is necessary. Improved information sharing would contribute to a more efficient use of resources.

Accordingly,

8.1 A clearinghouse mechanism for genetic resources policy-related projects should be created. The clearinghouse's database should be searchable by subject matter, coordinating and participating institutions, country and/or subregional focus, discipline, etc.

8.2 As a condition of financial support, donors should require applicants to provide initial and ongoing details about how their proposed activities complement projects listed in the clearinghouse mechanism (in terms of objectives, scope, partners and methodology).

The database should include not only official project products, but also the original project proposals, technical reports, lists of national/regional/local partners, and their contact details. The database should include fields wherein project participants could record assessments of the strengths and weaknesses of the project, and provide advice for future parties engaging in similar research. Links to existing clearing mechanisms, such as the CBD clearinghouse mechanism and World Agricultural Information Centre (WAICENT) at FAO should be provided. The donor-donee culture generally does not promote "owning-up to mistakes" in the manner anticipated in these latter data fields. Additional incentives would be necessary to encourage people to share such information. Donors should develop a common requirement for project managers to provide information on "lessons learned" for publication in the clearinghouse as a condition of support. The donors should also state explicitly in their guidelines that "making mistakes" is an unavoidable part of the research-development continuum, and that reasonable mistakes will not contribute to a negative assessment of the projects involved. The donors should also support a small project to collect such data from a representative sampling of past projects.

9. Strengthen the Capacity of National Representatives in International Fora

To date, several initiatives have aimed to strengthen the capacity of permanent representatives from developing countries, posted in Geneva, to participate in negotiations under the auspices of the WTO (e.g., Quaker Friends Service Committee and the International Centre for Trade and Sustainable Development (ICTSD)). Since many of the representatives attending these fora are not permanently out-posted to the cities where the fora are located, the capacity-strengthening activities will have to be brought to them. Additional regional and international

training efforts are needed not only to strengthen the effectiveness of national negotiators in these fora, but also to improve their capacity to develop, implement, and enforce genetic resources laws at home. Policymakers in the home capitals—as the source of instructions to negotiators—also need to be engaged in these capacity-building efforts.

Accordingly,

9.1 More work should be undertaken to strengthen the capacity of developing country representatives to effectively participate in a wide range of regional and global fora where genetic resources polices are considered, including the CBD, the World Intellectual Property Organization (WIPO), the Commission for Genetic Resources for Food and Agriculture (CGRFA), the Governing Body of the International Treaty (in the future), Free Trade Area of the Americas (FTAA), and the Communidad Andina. Wherever possible, these activities should be integrated into or closely coordinated with parallel efforts aimed at awareness-raising, capacity-strengthening, and advocacy among policy makers in the countries' capitals.

9.2 Where there are significant contextual similarities and potential economies of scale, this work could be conducted on a sub-regional basis, pulling together representatives from neighboring countries. These capacity-strengthening activities should be organized in conjunction with, and through the offices of, existing sub-regional and regional organizations.

10. Conduct Universally-Relevant, Priority Research

An essential part of creating a culture of local ownership is to provide national partners with the opportunity to influence the scope of activities and methodologies to be followed in conducting research, capacity building, awareness raising, and advocacy for national genetic resource policies. There are a number of priority research issues that are almost universally relevant as a result of: a) national and local priorities and demands; b) state parties' obligations to implement international agreements (e.g., CBD, WTO/TRIPS) and the International Treaty; and, c) ongoing negotiations of new international agreements (e.g., an international convention on access and benefit sharing under the auspices of the CBD and a convention on the protection of traditional knowledge and genetic resources under the auspices of WIPO). Additional research on the following issues is a priority in order to understand the nature and scope of the issue from the national perspective and to identify and evaluate the different policy options for addressing these issues.

10.1 What type of policy echanisms and/or strategies are necessary to promote global public access to genetic resources and related technologies?

10.2 How do property rights systems affect the legal status of genetic resources and consequently access to and benefit sharing from the use of these resources?

10.3 How should Farmers' Rights and/or the rights of indigenous peoples and local communities vis-à-vis access to, and control and management of genetic resources be defined under national law?

10.4 What types of mechanisms and/or strategies are needed to ensure that the proposed international convention on access and benefit sharing (ABS) is enforceable, in accord with the CBD and the International Treaty, and suitably adapted to different kinds of genetic resources

10.5 What are the strengths and weaknesses of laws implemented in genetic resource user countries to enforce access and benefit-sharing requirements ("user measures")?

10.6 What are the options for implementing Prior Informed Consent (PIC) measures in the context of ABS regulation?

10.7 In addition, case studies that documented, analyzed, and compared different national experiences concerning: 1) the development and/or re-evaluation of national access laws (wherein the accumulated literature, policymaking tools, and lessons learned could be applied to develop model best practices); and, 2) the most appropriate forms of access regulation to facilitate bio-prospecting related to different sectors and kinds of genetic resources would be extremely useful for policymakers

This list of issues is not exhaustive and is reflective, in part, of the composition of the Bellagio Group.

11. Support Pilot Projects to Develop Alternative Methodology

Many of the participants in the Frascati and Bellagio meetings strongly expressed the need for developing alternative legal approaches to genetic resource regulation.

Since the first introduction of a specific access to general resources regime in the Philippines in 1994, the majority of specifically-tailored regimes have followed the original model. While providing valuable experience, several serious concerns have been raised about the impact and characteristics of this regime, including the chilling effect on academic and commercial research and the lack of flexibility to respond to the needs and capacities of the various actors involved in the use of different types of general resources.

A number of countries are in the process of launching genetic resource policymaking initiatives to develop new genetic resource laws or refine existing ones. To respond to these needs in a fashion that takes into account the unique context of each country, it is proposed that:

11.1 A new methodology for genetic resource policy and regulatory development be created rather than a model law. This methodology would be developed through pilot projects in three or four countries at different stages of policy development, and with different genetic resource endowments, different dependencies on external genetic resources, and different levels of indigenous research and development capacities. It would build on the general principles of the three multis approach and focus on learning by doing. The methodology developed and other research products of the pilot projects would be made available through relevant clearinghouse mechanisms.

12. Launch Follow Up Processes to Share Learning and Refine Research Agenda

As this work is still at such an initial stage, it is recommended that follow up processes, such as repeat Bellagio group meetings, will be an important mechanism for shared-learning and research agenda refinement.

III. NEXT STEPS

The Bellagio Group was brought together over the course of five days to assess the current, cumulative, state-of-the-art methods and practices for awareness raising, capacity strengthening, advocacy, and research initiatives in the field of genetic resources law and policy. Based on that assessment, the group has been able to make a number of general recommendations for strategic interventions over the coming years. However, the group does not have a continuing mandate to monitor developments in the field, refine or make new recommendations, or provide technical backstopping to donors, international agencies, research institutes, and national and regional partners as they attempt to follow those recommendations.

An independent panel of experts or an advisory board, independent of institutional ties, could provide this form of assistance to donors and interested partnering institutions. In particular, it could identify critical gaps in the cumulative body of research in the field, and alternatively, warn parties away from topics that have already been subjected to exhaustive treatment. It could provide advice on "best methodological practices" to link inclusion of different stakeholders with the intervention's objectives. In this way, upon request from donors or project leaders, the panel or board could provide advice for "quality control."

The composition of the panel or board would have to be more diverse than that of the Bellagio Group. It would require a stronger representation of experts with interdisciplinary expertise in natural and social sciences and genetic resources policymaking. It would also require experts in participatory research methods and, possibly, sustainable livelihoods-informed analysis.

Subsequent meetings of the Bellagio Group and/or this expanded panel of experts will be an important mechanism for sharing experiences and lessons and refining the research agenda.

APPENDIX A
NATIONAL, REGIONAL AND INTERNATIONAL EXPERIENCE – A REPORT FROM FRASCATI

Frascati, Italy, September 5-7, 2003

This meeting was originally conceived of as an opportunity for participants from two relatively large projects concerning policymaking related to genetic resources at the national level to compare lessons learned about project governance and research methods and to identify critical research questions and capacity-strengthening requirements that need to be addressed to make accelerated progress in the field. The two projects were the *Genetic Resources Policy Initiative* (GRPI) which is jointly executed by the International Development Research Centre (IDRC) and the International Plant Genetic Resources Institute (IPGRI) and *Developing Legal Frameworks Governing Access to Genetic Resources in Africa* executed by the Environmental Law Institute (ELI). Since both of the projects (as well as IDRC, IPGRI and ELI as institutions in their own right) depend upon close linkages with other local, national, and international institutions engaged in awareness-raising, capacity-strengthening, advocacy, and research in the same field, it quickly became evident that the focus of the workshop should be broadened to include a much wider variety of players and perspectives. By the time the workshop actually took place, so many additional participants had been added that the GRPI and ELI projects served as just two case studies among many presented for participants to use as critical points of departure for recommendations about improved interventions in the field.

Global perspectives on national policy-making related to genetic resources were presented by representatives of a number of intergovernmental organizations: the United Nations Food and Agriculture Organization (FAO), the United Nations Environment Program (UNEP), the Organization for African Unity (AU), the Southern African Development Community (SADC), and the East African Plant Genetic Resources Network (EAPGREN). Further experiences concerning the international coordination of national and sub-regional interventions were provided by the World Conservation Union (IUCN), IPGRI, ELI, the Sociedad Peruana de Derecho Ambiental (SPDA) and the International Center of Insect Physiology and Ecology (ICIPE). Finally, there were three presentations of national case studies focusing on developments in Nepal, Zambia and Egypt. These presentations were made by a combination of representatives from NARS, universities, civil society organizations, and intellectual property offices. The agenda for the meeting, and the full list of participants, is included below. PowerPoint presentations can be accessed at http://www.www.eli.org/africa/rome.htm.

After a day and a half of presentations and plenary discussion of issues, participants were divided into groups to make recommendations regarding necessary steps in terms of process, infrastructure, capacity-building and research to accelerate the development of:

1) harmonized national regulatory frameworks in the context of implementing international obligations,
2) national access and benefit sharing mechanisms, and
3) national farmers' rights policies and laws.

Summary reports of the working group deliberations are set out in the following pages.

Report from Working Group 1: Coordinating/Harmonizing National Processes to Implement International Obligations (e.g., CBD, FAO-IT, WTO, WIPO, UPOV)

Introduction

The group was asked to recommend what was necessary, in terms of process, infrastructure, capacity and research to move forward in coordinating/harmonizing international obligations affecting genetic resources at a national level.

By way of introduction, and to provide a framework for its following comments, the group thought it was important to state clearly that many of the problems in this field are caused by the fact that most policy issues related to genetic resources are still not widely enough appreciated among the general population of most countries, and as a result there is little incentive to prompt political leaders into action. A notable exception is the public debate and generally high level of political activity in many countries regarding GMO-crops. This became a hot issue because it immediately made sense to most people as a result of the fact that they have to make choices about what they are going to eat. However most issues related to genetic resources conservation and use continue to be ignored by the general public. We need to "elevate the game" so that it is in the minds of most people, to be able to mobilize political capital among champions.

1. Factors hampering national coordination of policymaking regarding genetic resources

Here the group confined itself largely to commenting on political structural impediments to coordinated policy-making at the national level. While all national systems are different from one another, the participants felt that the following list of factors was more or less common to all of the countries that were represented in the group. Political economy leads to competition between departments and ministries:

- The structure of resource allocation among ministries does not encourage (in fact, generally discourages) efforts to coordinate multi-sectoral, multi-stakeholder, and multi-disciplinary approaches (i.e., the "three multies") to the development of policies affecting genetic resources (GR).
- GR issues are multi-sectoral and therefore stretch across the vertical boundaries that generally define departmental and ministerial jurisdictions. The vertically arranged structure of government ministries is not well adapted to dealing with essentially horizontally-defined issues.

- Low levels of public awareness of the value of diversity of genetic resource, and GR-related policies, lead to their being a low priority issue for political leaders.
- Insufficient information: environment, agriculture, bio-prospecting instruments.
- There is fragmented political ownership of potential policymaking initiatives in many countries due to these factors listed above. Consequently, in most countries, it is not possible develop the requisite critical mass of political willingness to 'kick-start' policy development in the area.
- The incentive and motivational structures to support cross-sectoral issues are weak.
- External (biased) pressure from multilateral institutions, donors, influential countries insisting on implementation of UPOV 1991-style protections for plant varieties as a condition of closing bi-lateral trade deals, etc.
- Lack of central coordination at the national level.
- Contradictions between the mandates of different government departments, and as a result, contradictions between existing national laws and regulations, and contradictions between initiatives to develop further laws and regulations.
- Suspiciousness on the part of policy-makers that they are receiving highly politicized scientific data from different actors in the field, including within their own departments. Vulnerability of policy-makers to that highly politicized interpretation of data.
- Evaluation difficulties in C&B-analysis regarding international agreements.
- Problems in bringing in all actors and creating a leveled playing field for interaction. This is challenge associated generally with multi-stakeholder, multi-sectoral, multi-disciplinary work.
- Weak national institutions.

2. Potential remedial action — Interventions/coordination approaches

Here the group considered a range of potential interventions to respond to the problems listed above.

- Public awareness of the value of a diversity of GR, and by extension, policies and laws affecting the way in which they are conserved and used could be significantly raised by being much more strategic about associating (or 'piggy-backing') GR issues with current, highly-visible, and volatile issues (e.g. climate change, fresh water/land degradation, food security, poverty alleviation, etc).
- Cross departmental/ministerial committees could be formed to minimize vertical structural impediments.
- Better procedures for sharing natural and social scientific data and policymaking initiatives across ministries and departments.
- Much more systematic evaluation of coordination efforts to date including studies of transaction costs associated with various mechanisms.
- Creating a National Clearing House Mechanism for genetic resources-related natural and social scientific data, law-related information and policy development activities.
- Developing political coalitions: bringing together committed high-level politicians with a shared vision and who are willing to commit political capital to promote inter-sectoral processes (for example, the UK's ODA-Minister, Clare Short, and the CIPR-process UK)

3. Specific issues to address

Here the group identified a number of cross-cutting issues that need to be addressed in the context of future interventions

3.1. Information

- There should be specially-designed brochures for the average reader to tell them about the importance of genetic resources and, by extension, policies and laws affecting their conservation and use.
- Existing research work on the value and importance of GR needs to be translated into easier to digest popular formats and targeted to policymakers.
- More work needs to be done to create a platforms to bring together the “three multies” at national levels as a means of sharing information.

3.2. Capacity

- Inclusion of GR-courses in the curricula of high schools and universities
- Training in GR-issues for diplomatic service/negotiations
- Technical training in ministries and institutions/agencies
- Evaluation of transactions costs involved in coordination (and lack of coordination) across sectors

3.3. Research

- More research is needed regarding the value of a diversity of GRs across sectors.
- Need to perfect processes for coordination among the “three multies.”
- There is a need for a better understanding/systematic diagnosis of appropriate leverage points to catalyze and/or share political capital across sectors in furtherance of appropriate GR-related policymaking.

3.4 Processes

- There is a need to exploit the political economy and create incentives that give high visibility and promote proactive approaches to implementing GR-related policies.
- It is necessary to identify and promote/encourage champions for the cause.
- It is necessary to encourage dialogue among ministries to work together.
- Donor behavior must be modified to be more tolerant to accommodate open ended or slow and difficult procedures and progress in project implementation. They would allow for a longer period of time for projects and project impacts, e.g. allow for a 10-year perspective.

- A common vision or coordination among donors needs to be fostered. One focus of this vision should be a commitment to deepening their collective support for coordination of the “three multies” in genetic resource policy-related work at national levels.
- Donors should form themselves into a coalition to create a long-term commitment, both intellectually and financially to supporting activities in this field.

4. Concluding comment

To be able to make progress in developing policies and laws concerning the conservation and use of GRs, it will be necessary to engage in multi-stakeholder, multi-sectoral, multi-disciplinary processes. It is very difficult to obtain the political and financial support necessary to underwrite such activities. Much more is necessary to elevate the game politically to develop the cumulative political capital necessary to be able to structure policy-making processes that embrace the “three multies”.

Report from Working Group 2: Access and Benefit Sharing Systems

Introduction

The group was asked to recommend what was necessary, in terms of process, infrastructure, capacity and research to move forward in the development of access and benefit-sharing mechanisms at a national level.

The working group first identified the critical components necessary for optimal development and implementation of an access and benefit sharing (ABS) system. These components are:

1. Identifying and organizing the focal point
2. Assessing ABS policy objectives
3. Raising public awareness
4. Training for policy development and implementation
5. Drafting ABS procedures and legislation
6. Identifying national funding mechanisms
7. Interacting with international system

The order of each item on the list was based, in part, on how frequently the issue was noted by the participants, with the more frequently mentioned issues being listed first. All of the items were considered important priorities that a country should systematically address.

A key cross-cutting theme that was raised in the group was the idea of integrating the concept of conservation into the design and implementation of all components of the ABS system. The participants all felt strongly that a new paradigm was necessary. Their reasoning was that without short-term and long-term conservation, the system would be undermined, having no reason to exist. ABS systems can be designed to support conservation objectives, for example, by channeling funding to conservation initiatives. Finally, there was some concern that without integrating conservation issues into ABS regulatory frameworks, a so-called "harvest mentality" would dominate.

Identification and organization of national ABS focal points

The discussion of this issue began with identification of the need for the office of the "national ABS focal point" to have a multi-sectoral approach to all subsequent work carried out by that office. Several proposals were advanced, including having ministries share this responsibility and creating a multi-sectoral advisory committee that would act in an advisory capacity. The participants highlighted the need to clarify the role of the advisory committee. In identifying what institution should act as the national ABS focal point, two key steps were discussed: 1) identifying the relevant stakeholders, and 2) assessing their capacity. Workshops and consultative processes were recommended as ways to accomplish these steps.

2. Assessing ABS policy objectives

The first step in determining the best means to respond to a demand for policy-development within a country is to take an inventory of relevant resources, their value, their custodians, the relative scientific, technical capacities the relevant stakeholders, existing laws, and the policy-development mandates of the relevant institutions within the countries-concerned. (This inventory serves to inform the issues described in 2-7 below as well.) Participants acknowledged the difficulty of determining the economic value of genetic resources.

Another key activity in setting policy is assessing needs, identifying national priorities, and determining how to integrate ABS policies to address them. In some cases, these needs and priorities may be identified from existing documents, however new research may be necessary. The participants acknowledge that ultimately, the identification of needs and objectives are political decisions. There was not, however, enough time for thorough discussion regarding how to influence political decision-makers. The group briefly discussed one important strategy: that of raising public awareness about the importance of genetic resources, and the laws and policies that affect them. This discussion is summarized in the following section.

3. Public awareness

There were several suggestions regarding strategies to raise public awareness regarding genetic resource issues: media and other forms of campaigns; using NGOs to work with local communities; demonstrating the relevance of GR to daily issues; visits or field trips to local communities; and international gene banks and GR projects. Syntheses of existing research and additional research where gaps exist in current literature concerning a) the value of GRs (both locally and on international commercial markets) and b) the causes of genetic diversity erosion are critical inputs to the success of these awareness-raising strategies. It is important to include locally-relevant examples that highlight the importance of policy alternatives and the impacts of different kinds of policy approaches in those studies.

Capacity-building is critical at both the development and implementation stage of ABS systems. Key groups that need training are: government officials responsible for developing and implementing policy, scientists managing GR and gene banking, lawyers involved in drafting and implementing ABS policy, and local communities seeking to participate in ABS discussions and negotiations. Examples of specific capacity-building needs include developing national biotechnology capacity and capacity to develop and manage information systems relevant to ABS.

5. ABS procedures and legislation

The participants identified the need for developing model laws and institutional procedures at the levels of both a) whole, integrated national systems, and b) detailed, niche-oriented responses to particular issues that arise in the context of a national system. These models should be based, in part, on research describing and evaluating the experiences of other countries and regions. Some of the specific issues that need to be addressed in this context are:

- prior informed consent;
- the scope of ABS regulation (what types of GR, biological versus genetic resources);
- the problem of common resources shared by regions within a country and among countries;
- avoiding the “chilling effect on research” by creating a flexible mechanism for facilitating access and benefit-sharing mechanisms (who should participate, what are the triggers for benefit sharing, what type of benefits should be available, what is the legal framework for ownership in the country); and,
- user mechanisms, such as disclosure requirements in patenting procedures, to support provider country ABS systems.

The idea of having access to international gene banks to store national genetic material was discussed as a possible benefit; some participants raised cautions about this approach, especially with regard to certain insecure gene banks.

The need for a multi-stakeholder approach in developing these procedures and laws was confirmed, including gene bank representatives and local communities. The need for ongoing interaction with the international community to share and benefit from other experiences was emphasized.

6. National funding mechanisms

It is necessary to identify adequate funding mechanisms to develop and implement national ABS systems. Two options were suggested in this context: using the benefits from GR development and obtaining outside donations. However, participants acknowledged that both options were limited. Benefits from GR development are uncertain and would need to be shared among a wide array of stakeholders. International funds for these purposes are difficult to obtain, if available at all. The group noted that it was important to design an ABS system that took funding limitations into consideration in order to develop a system that could function in practice.

7. International systems

The participants noted that it was important to influence the relevant international conventions, policies, and activities on issues relevant to ABS systems, including expanding the scope of GR regulation and addressing conflicts. One specific opportunity that was highlighted was the upcoming discussion of an international instrument on ABS. The need to train negotiators to effectively represent national or regional positions was also highlighted, as well as the need to develop general negotiating skills. The effectiveness of Brazil's academy for foreign diplomats was noted as an example.

Report from Working Group 3: Access and Benefit Sharing Systems

Introduction

Working Group 3 discussed ABS issues in a parallel session to Working Group 2, which also focused on ABS issues. Working Group 3, like Working Group 2, identified the critical components necessary for optimal development and implementation of an access and benefit sharing (ABS) system. While Working Group 2 described these components with text (see above), Working Group 3 presented these components in a graphic that is presented below. The graphic depicts a methodology for ABS policy development that 1) establishes a baseline; 2) sets objectives of an ABS policy and legal regime, largely in consideration of existing constraints; 3) sets objectives that are driven by the aspirations of a country; 4) develops policies and laws in consideration of baseline information, objectives and potential challenges during implementation (i.e., anticipatory implementation); and, 5) implements

Methodology for ABS Policy Development

Baseline	Objectives (Reactive)	Aspirations (Proactive)	Anticipatory Implementation and Policy Development	Implementation
Information Needs Genetic, biological "assets" Key interests of key players (e.g., companies, communities, public sector) Demand, markets for GRs Better understanding of R&D processes Economics, value of GR Ownership issues (maybe further down the line) Administrative and research institute capacities	What do we want as a country (goals and objectives of an ABS policy and legal regimes…)? Legal Status of GR Scope of ABS PIC State, Communities, ? Community Awareness and Involvement Shared GR Among Countries Benefit Sharing	Benefit Sharing	Too Many International Instruments User Objectives Community Awareness and Involvement Monitoring and Compliance Sectorial Tensions Shared GR Among Countries Benefit Sharing	Monitoring and Compliance Sectorial Tensions
Sectorial Tensions (Actors, Power, …)				

the policies and laws.

Working Group 3 recommends further development and refinement of this methodology for ABS policy development. While the Working Group recommended additional work on the methodology, noting that significant amounts of additional detail could be added, the Working Group also cautioned about investing too many resources in such an exercise. This caution stems from the Working Group's belief that a general methodology to guide the process is needed; a prescriptive roadmap is impossible given the forces and factors that vary from country to country.

The Working Group also recommended that the full process described above (and, similarly, by Working Group 2, be tested in selected regions and countries. The Working Group specifically recommends that the methodology be tested in both countries with existing legislation and countries currently without genetic resource legislation.

The Working Group members discussed at length the importance of process in developing and implementing policies. For example, the Working Group noted the critical importance of getting the right people involved, at the right time, with clear direction and incentives, etc.

The Working Group discussed whether there were generic interventions that could be recommended for improving and accelerating the process of ABS policy development. In particular, the group explored possible interventions related to research, information, capacity, and process. While Working Group members could point to various interventions related to any of these topics (e.g., research), they concluded that generic interventions could not be recommended in the absence of a particular country context.

In closing, the Working Group noted the critical importance of coordinating work and sharing information among existing and future ABS policy-development initiatives.

Report from Working Group 4: Farmers' Rights (Renamed: "Indigenous Peoples and Local Community Rights")

Introduction

The group was asked to consider, what was necessary, in terms of process, infrastructure, capacity, and research to move forward in developing Farmers Rights policies and laws at a national level.

The work of the group breaks down into the five interlinked topics.

1. A framework to evaluate interventions
2. The identification of what groups should be the beneficiaries of collective rights

2.1. The need to rename the focus of our discussions

Different laws can apply to different groups of people

3. The subject matter of the rights concerned
4. The content of the rights concerned
   - 4.1. The content of local laws, customs, and traditions
   - 4.2. The content of supplementary national laws
5. Evaluating the potential impact of interventions

The group chose to integrate consideration of processes to follow-up on these topics instead of making methodology/processes a separate topic.

1. Critical framework for evaluation of laws, policies and related interventions

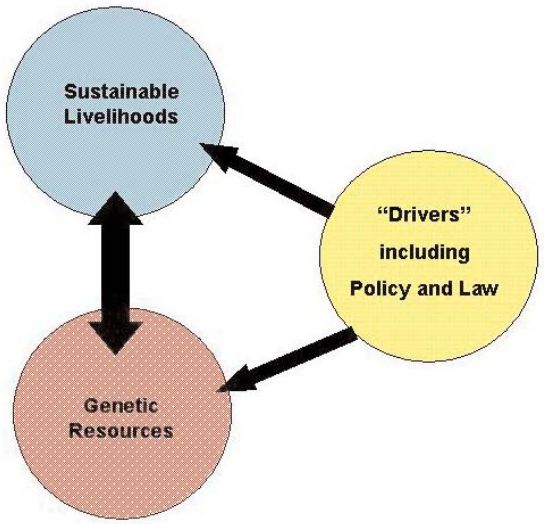
The group agreed that laws and policies concerning farmer rights, and interventions to promote the development of those laws and policies, should be evaluated on the basis of how they affect the relationship between the genetic resources to which communities have access and the livelihoods of those communities. If the policy or law in question impacts negatively on the contribution that a genetic resource makes to the livelihood of a community, then it should be rejected; if positive, then it is should probably be adopted.

The group used the diagram below as a visual aid during its discussion. While somewhat simplistic, the diagram captures the essence of the group's thinking on this point.

2. The identity of beneficiaries and related issues

2.1 The need to rename the focus of our discussions

The group was concerned that the term "farmers' rights" might not encompass a sufficiently wide range of people or resources. The group wanted to be explicit that the collective rights it wanted to promote extend beyond people engaged in traditionally recognized forms of agriculture. For example, the group wanted to include people harvesting wild plants and weedy relatives of crop plants. The group also wanted to note the difference between local communities and indigenous peoples. Both may be engaged in agricultural activities at the local community level, however,



indigenous peoples are recognized in international law, and in the laws of many countries, as having a distinct set of legal rights. Ultimately, the group recommended adopting the term “indigenous peoples and local communities’ rights.” These rights are broader in scope and include farmers’ rights.

Each country has a distinct socio-political history and will include within it different groups of peoples. It is ultimately a decision to be taken at the national level what groups of peoples should be the beneficiaries of these rights, and the names or titles used to describe those peoples. One of the first research questions that needs to be asked at the outset of interventions promoting indigenous peoples’ and local communities’ rights will be: Who should be the beneficiaries of such laws in the country concerned? Of course, the answer to this question will be hotly contested in countries where peoples are engaged in struggles to have their cultural/political identity legally recognized.

2.2. Different laws can apply to different groups of people within the same country

In some countries, different groups of people with distinct cultural/political identities enjoy different rights. Directly related to this phenomenon is the fact that, in many countries, the legally recognized “source” of laws or legal authority applying to those peoples is different from the source of laws that applying to everyone else. For example, within the jurisprudence of a country, the legally recognized right of indigenous peoples to hunt, fish or occupy lands may be *justified* by the fact that those peoples were engaged in those activities prior to colonialization. This justification would not apply to other non-indigenous peoples in the country.

Consequently, one research question that needs to be asked is: Do the groups identified in the country concerned enjoy special rights linked to their cultural/political identity? Related and consequent questions are: What is the content of those rights? How do those rights affect/intersect with existing GR-related laws in the country concerned? How do those rights relate to any of the rights that are included within the meaning of indigenous peoples and local community rights and the included term “farmers’ rights”? These questions are directly related to questions that must be asked in the following sections.

3. Subject matter of the rights

It is necessary to identify what genetic resources, under what circumstances, will be subject to indigenous peoples and local community rights. To this end, the group felt that the most important resources would be those that are associated with the livelihoods of the communities concerned. Consequently, one research question would be: What are the genetic resources associated with the livelihoods of the identified beneficiaries in the country concerned? To this end, the group recommended the creation of an inventory of those resources. One way to start this inventory would be to survey existing literature in the field. In addition, or as an alternative, a better way would be to work with the communities to have them identify those resources themselves. Of course, the community would have to be engaged, participating, and, in many instances, leading this kind of intervention. It should not be carried out as part of a program of work decided upon outside the community, thereby limiting the community involvement

to simply providing information. Instead, all such work should be based upon a demand coming from within the community for such research. It should also be structured in such a way to provide "space" for the community to take a lead role in defining priorities, methods, etc.

The group wanted to emphasize the importance of not limiting the inventory and related rights to traditionally-used materials (i.e., landraces and local breeds, etc). To do so would be to take a "frozen rights" approach to defining indigenous peoples and local community rights. Instead, it is important to include materials that have been much more recently introduced into the livelihood strategies of the communities concerned. A related research question is: How would rights with respect to non-traditional materials (e.g. modern varieties) intersect with intellectual property laws, or any other relevant law, in the country concerned?

4. Regarding content of rights

4.1. The content of local laws, customs and traditions

Regarding the content of rights, the group agreed that countries should defer to the customs, practices and traditions of the local peoples to a) define the rights concerning the GRs, and b) the means of enforcing those rights.

Taking this approach opens a number of research questions including the following:

How does the community define those rights on its own terms and within its own framework of social, political, and legal reference?

- How do those rights (once identified) interface with the national constitution and laws regarding intellectual property, seed quality control and release, land-use, conservation, etc?

- In this context, the group recommended a comparative study of how indigenous peoples' and local communities' laws, customs, and traditions are recognized (or not) by national law in different countries.

At this point, the group engaged in discussion of research methodologies.

The group recommended that it would be necessary to conduct a qualitative survey of community practices to obtain much of the needed data. Wherever possible, the communities themselves should lead the research work. It would generally be necessary to support capacity-building work within the communities to get them to a position where they could meaningfully address the issues concerned. Because it would not be possible to discuss the issues with all members of the community, the first step should be to work with representatives of the traditional healers, community leaders, and community decision-arbitrators. Then, as a means to ensure validity, the next step would be to corroborate results by interviewing a number of community members, women, extension agents to see

if the responses from the healers, leaders, and arbitrators are similar to their own impressions. The group recommended that it was critical to involve women from the communities in the interventions whenever possible. The group recommended a study on the successes and failures of past remedial efforts to involve more women at the community level in policy development and particularly in genetic resources policy development.

4.2 The content of supplementary national laws

In addition to deference to community customs, it may be necessary to look at parallel means to define rights, e.g. through national legislation. This would be particularly important if local customs, laws or traditions did not include what the group had identified as minimum standards for indigenous peoples and local community rights. The first minimum standard was that indigenous peoples and local community rights should not be less than the rights available to the communities concerned pursuant to international agreements that the country has signed. For example, UPOV 1978 preserves the right of communities to save and exchange seed. If the country is a signatory to UPOV 1978, then all indigenous peoples and local communities within that country should enjoy the right to save and exchange seed, regardless of whether or not this right is included within their local legal or customary systems. One related research question therefore would be: What are the minimum standards that can be derived from the international agreements that the country has signed? In this context, the scope of inquiry should go beyond UPOV, TRIPS and the CBD, and should include human rights instruments, regional instruments, etc.

A second minimum standard identified by the group was that indigenous peoples should enjoy a range of monetary and/or non-monetary benefits as a condition of their granting access to GRs on indigenous lands.

5. Evaluating the potential impact of interventions

In this last section, the group returned to the discussion in Section 1 regarding the evaluative framework. Having gone through the discussions summarized in Sections 2-4, the group re-iterated its recommendation to ask the following question with respect to the recognition of any potential right (included within the meaning of indigenous peoples and local community rights): Would the right have a positive or negative impact on the livelihood of the community concerned?

The group recognized that in order to evaluate potential impacts it would be necessary to have much more data from the natural and social sciences, particularly from economics and anthropology, than most people engaged in policymaking generally have access to. Time did not permit for more discussion of the type of data or from what disciplines the group thought would be most worthwhile. Nor did the group have time to identify useful existing literature that would help people engaged in interventions “think-through” the issues.

The group did, however, discuss one example that illustrated the need to consider a wide range of data in conducting an evaluation of potential impact of different policy options. The hypothetical example concerned a series of

farming communities situated at different levels, and within different agro-environments, on the side of the mountain. Generally, crops grown at higher elevations tend to be high in carbohydrates but low in protein. Whereas, crops grown at lower elevations tend to be high in protein but low in carbohydrates. There is a market at mid-elevation where farmers from upper and lower elevations meet and exchange seeds, cuttings and livestock. Through this means, the people from high and low altitudes are able to achieve a balance of proteins and carbohydrates in their diet. The group then was asked to consider the effect of introducing a system of *sui generis* intellectual property rights that would vest exclusive rights of control in communities over their varieties and breeds. (The group did not actually say that such rights were a critical element of indigenous peoples' and local communities' rights, but agreed to work with this example.) The group imagined that the result would be a freeze on exchanges at the mid-station as community "owners" sought to maximize their market exclusivity, either on bilateral basis with other locals or on a wider regional or international basis. Of course, there is always the rare possibility that one of the community-owned varieties or breeds would hit "green gold" on the international market, and profits could be used to compensate all of the communities for their collective loss through the freeze on exchanges at the mid-station. While unlikely, it is a possibility that needs to be considered. Evaluation of the pros and cons of introducing such *sui generis* IP rights, therefore, requires data about the identity and characteristics of genetic resources in the area; their uninterrupted use-value, from a livelihoods perspective, within the local system of production, and the potential international market value for the same resources. These data are derived from taxonomy, conservation biology, botany, anthropology, economics, and law. Exhaustive impact analysis depends upon data from all of these disciplines.

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