



Implementing the access and benefit-sharing provisions of the CBD: A case for institutional learning

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Abstract

Institutional learning has been studied under different labels within different social science disciplines. In this paper, we will apply an integrated conceptual framework that starts out from a notion of boundedly rational actors. It builds on the literature on policy learning as well as on the field of organizational learning as it has been established in management science. Within this framework, institutional learning is understood as a process in which individual or collective actors acquire knowledge that leads to a change in their behavior and results in a new or amended institutional design in a given policy arena. A policy arena is constituted through a set of actors with distinct agendas and objectives in one issue area of policy making. Therefore, the empirical analysis of institutional learning processes in international policy arenas has to study the role of actors and networks in the development of the respective arena as well as the precise steps of the learning processes and the key influencing factors.

This will be done in the analytical part of the paper which focuses on institutional learning in the implementation process of the access and benefit-sharing provisions of the Convention on Biological Diversity (CBD). It will be shown that the first decade in the implementation process since the Convention's entry into force in 1993 has demonstrated the CBD's potential for institutional learning and that this potential is key for successful subsequent decision-making.

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1. Introduction

The Convention on Biological Diversity was negotiated under the auspices of the United Nations Environment Programme (UNEP) and entered into force in December 1993, one and a half years after it was opened for signature at the UN Conference on Environment and Development (UNCED) in Rio de

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Janeiro. 188 Parties have ratified the Convention up to now—with one prominent exception being the United States—and have thereby committed themselves to the conservation and sustainable use of biological diversity as well as to the fair and equitable sharing of the benefits arising from the use of genetic resources (Swanson, 1999; Le Prestre, 2002; SCBD, 2003). It is the implementation process of the third element of these goals which this study will explore.

The access and benefit-sharing provisions of the CBD have caused controversial debates between developing and developed countries and among advocacy groups—from indigenous and local communities to business and industry. In fact, the positions on “ABS” (access and benefit-sharing) at the international level were, and to some extent still are, highly polarized. While representatives from countries providing genetic resources and many NGOs view companies and researchers that are involved in bioprospecting¹ as “biopirates”, members of the business community regard the CBD as an ill-structured and uninformed UN-process, governed by politicians who vastly over-estimate the value of genetic resources (ten Kate and Laird, 1999; Blais, 2002; ten Kate, 2002). Nevertheless, the fair and equitable sharing of benefits from genetic resources is a global transnational problem that requires an international response. This policy field involves actors from various countries with highly divergent interests ranging from development aid, commercial interests in the pharmaceutical and agro-industry, to pure research. In the current situation, only a number of disparate national and regional regulations address the issue but no international consensus exists so far.

During the first decade since the CBD’s entry into force, however, mutual understanding within the international community, governmental and non-governmental, has grown. It seems that there is an increased awareness of the urgency of an internationally agreed approach to the utilization of genetic resources and compensation on both sides. So far,

¹ Bioprospecting has been defined by Artuso (2002, p. 1355) as the “purposeful evaluation of wild biological material in search of valuable new products.” For the history and connotations of the term, see Eisner (1989), Scholz (2004).

the implementation of the ABS provisions can be characterized as a pragmatic step-by-step approach that takes account of the existing different rationales and interests. What renders the ABS debate an interesting case of institutional learning is the fact that the Convention process is a highly dynamic one with different phases and periodic advances. In addition, research and development in the field of biotechnology is developing dynamically and quite rapidly putting up new challenges for political responses. Any international agreement on ABS will have to take account of these processes and divergent interests in its institutional design and be able to respond accordingly. This study will explore the CBD’s capacity as an institution to govern this highly complex issue. It will be studied to which extent institutional learning processes can be detected in the direction of improving coordinated international responses to the problem. Moreover, we will analyze which actors and networks were relevant in this policy arena and which factors influenced these developments.

The paper is structured as follows. Section 2 will provide the analytical foundations for the conceptual framework to study institutional learning processes in international governance processes as presented in Section 3. Section 4 will focus on the implementation process with regard to the access and benefit-sharing provisions of the CBD. We will sketch the problems and challenges underlying these provisions and analyze the learning phases in this particular field from 1992 until 2004. Subsequently, the actor networks, and key influencing factors in these learning processes will be examined. Final conclusions will be drawn with regard to possible next steps.

2. Approaches to institutional learning

Processes of social or institutional learning have been studied under various labels within different social science disciplines. To qualify as institutional, learning processes have to refer to a collective level that exceeds the realm of individual decision-making and renders them social. In the confines of this paper, institutions will be understood as collectively shared norms, values and belief systems that govern the

behavior of individual or collective actors.² The understanding of learning processes varies between different approaches and different disciplines.

In economics that adhered for a long time to rational choice concepts assuming fixed preferences and complete information of individual actors, a growing body of literature³ is concerned with social learning which has been defined rather broadly as occurring “in any situation in which agents learn by observing the behavior of others” (Gale, 1996, p. 617). Other approaches address collective learning processes on a population level or in social networks. For instance, evolutionary algorithms use the paradigm of genetic selection to model learning processes within populations over time (Goldberg, 1989). The neuronal network approach, by contrast, builds on the idea that learning processes take place in some network structure for the processing of information. These networks can be modeled within individuals as well as within groups or social networks (Salmon, 1995). More recent concepts of collective learning in economics are concerned with herd behavior and informational cascades. These are instances when individuals ignore the private information and subjective probabilities they usually employ and follow the behavior of others whom they assume to be better informed than they are. These models have been used to explain mass panics, social customs, and the persistence of inefficiencies in companies although the agents do have better information at their disposal (Gale, 1996). As yet, none of these approaches, however, has been applied to specific policy issues within an interlinked web of actors. The largely abstract conceptualization of learning processes and the focus on the process dynamics rather than the specificities of the knowledge and behaviors being learned prevent these approaches from being directly applied to biodiversity governance.

Nevertheless, these models provide a point of departure for the study of collective learning processes in policy arenas since they conceptualize the individual actor within his or her social contexts. Thereby, most of these models divert from the notion of rationality where agents are endowed with more or less complete information about their choices and the related consequences. They follow the concept of bounded rationality that acknowledges the fact that human agents have significant constraints in their cognitive abilities to conceive, process and memorize knowledge (Simon, 1957, 1991; Salmon, 1995). For the study of policy arenas in biodiversity governance, this assumption provides a fruitful starting point since it directs the attention to the question of how knowledge is being taken up, processed and diffused and which kinds and groups of agents are involved.

In the field of political science, a number of theories emerged that contribute to the topic of social learning.⁴ In his historical study of social policy-making in Britain and Sweden, Heclø (1974, p. 306) starts out from the premise that “learning can be taken to mean a relatively enduring alteration in behavior that results from experience; usually this alteration is conceptualized as a change in response made in reaction to some perceived stimulus.” As opposed to Etheredge (1981) who solely studies governments as learning agents, Heclø (1974) examines different societal actors such as elites, networks, and other social groups agents in societal learning processes. To study a spectrum of different actors with diverse interests, knowledge structures and resources can help to acquire a better understanding of the interaction processes in international policy making such as in the implementation of the CBD.

Whereas these approaches focus on domestic politics, another body of literature addresses policy learning in the international arena and investigates whether and how states learn from each other and whether and how international communities are able to learn. Rose (1991, 1994) addresses issues of “lesson-drawing” where one state benefits from the experiences made by other states. Understood as the

² The Science Plan of the Institutional Dimensions Project of the International Human Dimensions Programme on Global Environmental Change defines institutions as “systems of rules, decision-making procedures, and programs that give rise to social practices, assign roles to participants in these practices, and guide interactions among the occupants of the relevant roles” (IHDP, 1999).

³ For an overview over the economic approaches to learning, see Kirman and Salmon (1995), Brenner (1999), Slembeck (1999), Clemens and Haslinger (2001).

⁴ For an overview of the policy science perspectives on learning, see Bennett and Howlett (1992), Parson and Clark (1995), Busenberg (2000b), LaPalombara (2001).

adoption or the adjustment of existing solutions to domestic conditions, this notion of policy learning has been studied as diffusion processes (Tews et al., 2003).

The prominent Advocacy Coalition Framework as developed by Sabatier (1988) and Sabatier and Jenkins-Smith (1999) conceptualizes policy-oriented learning as “relatively enduring alterations of thought or behavioral intentions that result from experience and that are concerned with the attainment or revision of the precepts of one’s belief system” (Sabatier, 1987, p. 672). These changes have been studied empirically within coalitions of actors that share one belief system and one conviction on how to solve a particular policy problem. Sabatier’s focus lies on “issue domains” that have been constituted around a policy problem such as agricultural policy or air pollution control and within which different advocacy coalitions strive to realize their preferred solution. Through learning, these coalitions change their belief systems and consequently their policy goals will be altered with a possible influence on the actual policy process.

Whereas this approach can help to understand coalition formation and lines of argumentation in the policy process, other approaches to policy learning such as the Punctuated Equilibrium approach (Baumgartner and Jones, 1993; True et al., 1999) and the Multiple Streams approach (Kingdon, 1995; Zahariadis, 1999) emphasize the significance of single events that spark off learning processes such as disasters or fundamental court rulings (Busenberg, 2000a,b). The analysis of learning processes in certain policy arenas, therefore, should search for these key events that trigger further learning.

The concept of epistemic communities as developed by Peter Haas (1992) and Adler (1992) draws attention to mostly internationally organized networks that are united by their shared beliefs and convictions about particular political problems and the favorable solutions to them. These networks usually consist of scientists, lobbyists, political decision makers and advocacy groups that need to be analyzed when social learning in an international realm should be understood. In a seminal study of the international response to environmental threats, the *Social Learning Group* (2001) simultaneously analyzed the influence of ideas, interests, institutions, actors and their interactions on the actual practices how societies addressed these

problems. For the purposes of the analysis of international learning processes, this ambitious attempt to study a spectrum of networks and actors that interact on the basis of different ideas and knowledge structures, of interests and of institutional frameworks can provide a pathway for the development of a fruitful conceptual framework.

Studies in organizational learning highlight further key aspects of learning processes that help to understand the dynamics as well as the drivers and the hindrances of those processes. Concepts of organizational learning—also named as “the learning organization”—have been developed in management studies to describe processes of organizational change that take place at a collective level.⁵ In this body of literature, the distinction between individual and collective action is crucial—in particular for the choice of the appropriate theoretical and analytical approach. It is commonly assumed in this literature that organizations exist on the basis of collective action. According to Argyris and Schön (1996, p. 8), it is the precondition of collective action that the individual member “must (1) devise agreed-upon procedures for making decisions in the name of the collectivity, (2) delegate to individuals the authority to act for the collectivity, and (3) set boundaries between the collectivity and the rest of the world.” These requirements pertain to a number of social actors and collectivities such as non-governmental organizations, neighborhood councils, scientific communities and societies, and certainly companies.

Also in these approaches, it becomes clear that social learning encompasses a dimension of changes in values, norms and beliefs that transcend the sphere of pure cognitive knowledge. Therefore, simple training of cognitive skills or technological improvements might be helpful but it hardly suffices to tackle the deeper dimensions of commonly shared values, norms and general convictions. These insights direct the focus of empirical research in concrete case studies also on the quality of the learning processes in different phases.

⁵ For prominent studies in the field, see Shrivastava (1983), Senge (1990), Argyris and Schön (1996), Berthoin Antal (1998), Denton (1998), Argote (1999).

3. Conceptualizing institutional learning in international policy arenas

Within this paper, institutional learning is understood as a process in which individual or collective actors acquire knowledge that leads to a change in their behavior and results in changed institutional arrangements. Actors in this sense are citizen groups, interest groups, business corporations, representatives of governments or actor networks consisting of various of these actors. Following the above-mentioned definition of institutions as rules that provide frames for the behavior of actors, these actors are conceived of as possible learning agents. Institutional change is the noticeable result of the cognitive change on the side of the actors that is, nevertheless, a necessary element of a learning process as Bennett and Howlett (1992, p. 285) formulate: “most of the authors argue that learning does not actually occur unless there is some kind of policy change which results from that learning process”.

Institutional learning starts out from the assumption that actors act in an uncertain environment and on the basis of incomplete information. They even do not have fixed preferences since these might change over time due to learning processes. During policy processes such as negotiation, bargaining or within assessment processes (Mitchell et al., in press), actors develop new knowledge and acquire existing knowledge from others (Christiansen and Tangen, 2002). This assumption mirrors insights from constructivism, where actors have to construct meaning in an environment of uncertainties (Haas, 2001).

A *policy arena* is constituted through a set of actors with distinct agendas and objectives in one issue area of policy making. These issue areas will be addressed as issue domains which have been defined as fields of political debate, decision-making and implementation that center around a societal problem such as biodiversity conservation, preventing climatic change, protecting the ozone layer or avoiding health risks (The Social Learning Group, 2001). Given the specific structures and different societal implications of possible solutions, these arenas differ largely in the kind and number of actors involved as well as in the intensity of the debate. For instance, climate change has proven to be a far more difficult area for political decision-making than has been the case with the

protection of the ozone layer. These key features of the specific issue domain and the policy arena attached to it have to be identified since they determine the chances and boundaries of learning processes in these fields (Underdal, 2002).

Building on the Advocacy Coalition Framework as developed by Sabatier (1988) and Sabatier and Jenkins-Smith (1999), key *actor coalitions* have to be identified that advocate certain policy agendas and decisions on the basis of a common belief and problem perception in a given issue domain. The debate in these issue domains can be dominated by different advocacy coalitions with different objectives and basic beliefs.

Research in organizational learning has identified numerous *drivers and hampering factors* for learning processes within organizations that can also be analyzed in broader contexts that exceed the scope of formal organizations (e.g. Siebenhüner, 2002a,b). They pertain to numerous aspects ranging from the formal hierarchical aspects, to cultural aspects, to behavioral aspects and to external factors. With regard to organizational learning, the following factors have been identified in empirical studies and theoretical considerations to be influential in learning processes. Many of them can also be applied to the empirical study of learning in policy arenas when the policy arena itself is regarded as a loosely coupled organization. In the subsequent analysis of the implementation process of the ABS provisions of the CBD, the following factors will be studied in greater detail:

- intense, open and transparent *communication structures* for information diffusion (Daft and Huber, 1987, Crampton et al., 1998);
- existence of effective *learning mechanisms* such as regular evaluations, specific committees, workshops etc. (Poper and Lipshitz, 1995, Armstrong and Foley, 2003);
- commonly shared *values and norms* in relation to the solution of actual problems (Schein, 1985);
- *conflicts* over resources, values and identities which foster the demand for change and might spark off learning processes (Probst and Büchel, 1997, Rothman and Friedman, 2001).

Many of the observable learning processes in organizations are triggered by *external factors* rather

than by internal ones. For the study of learning processes in organizations, these external influences can be highly significant. These factors include political pressures, changing demand structures, new competitors, new scientific findings, technological innovations, criticisms from NGOs, other parts of industry or from the media. In the following study we will treat factors that are outside of the specific policy arena of biodiversity governance within the Convention process of implementing the CBD as external factors.

4. Analyzing the implementation of the CBD's access and benefit-sharing provisions

4.1. *The policy arena*

As set out in Article 1, the third objective of the CBD is the “fair and equitable sharing of the benefits arising out of the utilization of genetic resources, including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding” (SCBD, 2003, p. 4). Apart from inherent social, cultural and spiritual values of bio- and genetic diversity, most commercial benefits arise in the field of agricultural and pharmaceutical applications.⁶ These can be generated by the commercial use of new sorts of plant species, which provide specific tastes or characteristics, by the utilization of certain natural substances for medical treatment, or for pharmaceutical uses, e.g. the development of new drugs. Most of these benefits are expected to be generated at markets in industrialized countries with an expanding biotechnological and ‘life science’ industry. The genetic diversity, however, is highest and therefore most promising in the developing world, where most countries do not have the technological and financial capacity to utilize these resources for advanced commercial exploitation. This is why the Convention in Article 15 seeks to promote “sharing in a fair and

equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources” (SCBD, 2003, p. 11). It is exactly this search for balance between the rights of providers and the interests of users which is at the heart of the CBD's ABS provisions.

The related provisions of the CBD have been described as a milestone in the regulation of ABS since they describe the substantive and procedural requirements for everybody with an interest in research and commercial use of genetic resources (ten Kate and Laird, 1999). The CBD endorses the sovereign rights of states over their biological resources and leaves it to the national governments to regulate access to genetic resources. At the same time, the CBD requires its Parties to facilitate access and to promote the exchange of genetic resources and traditional knowledge in return for financial and technological support and scientific cooperation. Countries providing genetic resources are expected to strike a balance between facilitating access and regulating it so that resources are used in an environmentally and socially sustainable way and benefits may be obtained through commercial negotiations.

Subsequent to the CBD's entry into force, the number of countries which concluded national and/or regional access regulations on the access to genetic resources grew—rather slowly but continuously. The policies centered around the definition and setting up of rules and requirements for so-called bioprospecting activities, i.e. research in genetic resources ‘in situ’. Access legislation has been enforced either as rather general environmental or sustainable development framework laws regulating bioprospecting and export activities or as specific new laws or modifications of existing legislation. Most of them spell out the principles of prior informed consent (PIC) and mutually agreed terms (MAT) as stated in the Convention (Glowka, 1998). Moreover, a number of regional legislative and policy measures were developed, e.g. by the Andean Community, the ASEAN countries, and the Organisation of African Unity (OAU).

The development of national and regional access laws and policies showed that the CBD stimulated a learning process among its Parties, both as an impact

⁶ See the examples for best-practice contracts at <http://www.biodiv.org>.

of international standards at the national level and as mutual reinsurance among member states. However, no agreement at the international level has been reached so far that details internationally binding standards for bioprospecting activities, for exporting genetic resources and for the utilization and distribution of benefits derived from these resources. The international process, nevertheless, can build upon national experiences.

For the purposes of this study, we will focus on the international implementation process of the CBD's access and benefit-sharing provisions. We define institutional learning in this particular issue domain as a process where individual or collective actors acquire knowledge and advance practically in finding agreement on the international regulation on the access to genetic resources and on the sharing of the benefits arising out of their utilization. The precise steps in this direction and to implement the ABS provisions of the CBD will be delineated in *passim*.⁷

4.2. Learning phases and obstacles

4.2.1. 1992–1998

In the first phase after its entry into force in 1993, the CBD's implementation efforts focused on setting up the administrative structures of the Convention at international and national levels. Substantive work addressed issues of biodiversity conservation, biological safety and ecosystem preservation. For the first 5 years, the international debate on ABS was rather timid and confined to stocktaking exercises by the CBD Secretariat. Parties provided information on existing legislation, administrative and policy measures with regard to ABS. At the national and regional levels, a number of biodiversity rich developing countries prepared and adopted ABS legislation and other policy measures. Predominant examples are the Philippines and the Andean countries, Costa Rica (Richerzhagen and Holm-Müller in this volume),

Mexico (Brand and Görg, 2003), Fiji and Eritrea (Glowka, 1997).⁸

In the meantime, many recipient countries⁹ started to involve business and industry as well as the scientific community in the debate through dialogues and other means of information sharing. The overall response by these interest groups in recipient countries, however, was apprehensive—the mentioning of guidelines to define a set of standards for bioprospecting activities in line with the CBD caused concern rather than active cooperation. An earlier attempt within the OECD to develop a common 'code of conduct' of these countries was put aside as a draft. It was obvious that there would have been no acceptance for an approach which had not been supported by all Parties from the beginning. This early phase was characterized by an overall uncertainty in decision-making and lack of direction within the negotiation process. The fact that the United States remained outside the community of Parties to the CBD caused additional uncertainty.

At the same time, this first phase was also marked by some necessary initial steps in the implementation process of the CBD. In 1998, the fourth Conference of the Parties, which was held in Bratislava, decided to establish a panel of experts on ABS. It had to be composed of representatives from the private and public sectors as well as representatives of indigenous and local communities. The task of this panel was to develop a "common understanding of basic concepts and to explore all options for access and benefit-sharing on mutually agreed terms including principles, guidelines, and codes of conduct of best practices for access and benefit-sharing arrangements" (SCBD, 2003, p. 487). This decision prepared the ground for new developments in the ABS policy arena and

⁷ Data for this study was collected through desk top studies of available documents, a number of personal interviews conducted in October 2003 at the Secretariat of the CBD, and observations at numerous COP and experts' meetings between 1998 and 2002.

⁸ The Philippines stood alone in developing legislation during a time period of general inactivity shown by other provider countries' governments. The Philippines' approach turned out to be quite rigid and cumbersome for scientists and companies. This example taught other provider countries a lesson to develop effective, but less restrictive mechanisms. In the meantime, the Philippines have modified their legislation to make it more feasible for researchers.

⁹ We refer to provider countries as countries of origin of genetic resources and that predominantly export these resources. Recipient countries, by contrast, are those who import genetic resources. In general, a country can be both recipient and provider countries.

exhibited a special feature of the CBD process, i.e. the active involvement of non-state actors.

4.2.2. 1999–2002

The second phase in the implementation process refers to the 4 years of consultations and negotiations that prepared the adoption of the Bonn Guidelines (SCBD, 2003, p. 831ff.). The expert panel met twice, first in San Jose, Costa Rica, in 1999 and, reconvened by a decision of COP-5, in Montreal in 2000. Its task was to define common ground for the next steps to enhance the implementation of the CBD's access and benefit-sharing objectives. The expert panel focused on the principles of prior informed consent (PIC) and mutually agreed terms (MAT). By the same token, the experts also addressed questions related to intellectual property rights (Dutfield, 2002) and in this regard, measures to be taken by recipient countries (Barber et al., 2003). The establishment of an expert panel and the direct involvement of non-governmental actors in the decision-making process enabled a thorough reflection in the policy arena. Although the panel could not resolve all uncertainties and its composition was criticized due to the governmental appointment of the experts, it was a significant achievement to identify the various actors in the policy arena and to give them the opportunity to clarify their respective expectations, roles and responsibilities.

The expert panel presented the results of its work to the fifth COP in 2000 in Nairobi. On this basis, Parties decided to establish an Ad Hoc Working Group on Access and Benefit-sharing mandated to draft international guidelines as a framework for national implementation. In this Working Group, Switzerland continued to spearhead the discussion on the recipient countries' side.¹⁰ Drawing on work by the expert panel, the Swiss delegation, together with Germany, moved forward their earlier proposals for guidelines (Tully, 2003). Germany became a facili-

tator in the debate in 2000 in Nairobi at COP-5 when it offered to host the first meeting of the Working Group.

The two meetings of the Working Group provided learning platforms for the exchange of existing knowledge and the advancement of the international decision-making process. Both committees were successful in fostering the mutual learning process and prepared the landscape for the institutional innovations of the next phase.

4.2.3. 2002 and beyond

The Bonn Guidelines (SCBD, 2003, p. 831ff.), which were developed and negotiated by the Ad Hoc Working Group in 2001 and adopted by COP-6 in April 2002, built upon this exchange of expertise. Their approval followed extensive renegotiation in a contact group to include the issue of "user measures" (Barber et al., 2003). This outcome of the working group as adopted and modified by COP-6 can be regarded as an institutional learning process since it drew on the acquisition of new knowledge in the expert panel and the working group itself which resulted in the development of a new agreement. The expeditious and consensual establishment of the Bonn Guidelines as a voluntary policy instrument came to the surprise of many observers. At the same time, this learning process would probably not have taken place without the institutional backing in the implementation process.

The World Summit on Sustainable Development in Johannesburg, which took place August/September 2002, put additional pressure on the CBD process. During the preparatory process of the Johannesburg Summit, biodiversity in general had not played a major role, but even in the early drafts of what later became the Johannesburg Plan of Implementation (JPOI), the challenge of the ABS issue was visible. Long before the Summit itself, in the chairman's text of the fourth preparatory meeting in Bali, the call for an international regime on benefit sharing had become visible, but this reference was not taken up until very late in the negotiation process. Only when delegates realized that little consensus could be found in other areas, agreement on the call for the start of official negotiations on a regime on benefit sharing was found. In this sense, the ABS issue was used as a token for a 'political game' in the final phase of the World Summit

¹⁰ An earlier proposal of "Draft Guidelines on Access and Benefit-Sharing Regarding the Utilization of Genetic Resources" had been developed by Switzerland as a non-paper for discussion at the first meeting of the Expert Panel. This draft had been prepared jointly by the Swiss State Secretary for Economic Affairs, the Swiss Federal Institute of Intellectual Property and the Swiss Agency for the Environment, Forests and Landscape.

Johannesburg.¹¹ While many welcomed the Summit's decision as the first clear joint commitment of governments to actually deliver results in the implementation of the CBD's access and benefit-sharing provisions, others cautioned against a development which would possibly paralyze efforts to promote the implementation of the Bonn Guidelines.

The seventh meeting of the Conference of the Parties (COP-7) in February 2004 in Kuala Lumpur, Malaysia, took up the call from the World Summit. It decided to mandate the ABS Working Group to negotiate an international regime on access and benefit sharing with the aim of adopting an instrument or a number of instruments. The decision calls for two meetings of the Working Group before COP-8 to be hosted by Brazil in 2006. The ABS-Working Group is asked to collaborate closely with the Working Group on Article 8(j), which deals with the issues of indigenous and local communities and traditional knowledge, and is encouraged to cooperate with other relevant international organizations in the field. The negotiations towards an international regime on access and benefit sharing should build upon experience and lessons learned in the implementation of the Bonn Guidelines and other approaches to complement the Guidelines.

This agreement at COP-7 also surprised numerous observers since the preparatory meetings revealed serious conflicting interests and significant opposition to the emergence of an international regime on ABS. However, the dynamics of the international process proved to be capable of overcoming this resistance and to integrate critics into the process. Therefore, we also consider this outcome as another obvious step in the institutional learning process within the ABS policy field.

4.3. Actor networks—facilitators and obstacles

The CBD is an international agreement between governments, but it addresses issues that bear high

¹¹ Even though provider countries had originally hoped for a regime access and benefit sharing relating to biodiversity, the Summit's recommendation ended up being limited to benefit sharing relating to genetic resources within the framework of the CBD. It was only later in 2003 at a meeting on the Multi-year Programme of Work for the Conference of the Parties (MYPOW) that it was expanded to include access as well.

relevance for the non-governmental sector such as business and industry, science and non-governmental organizations as well as indigenous and local communities. In the international policy arena of the debate on the ABS provisions a number of coalitions between these actors has emerged that group around certain common commercial or development interests. Applying the conventional framework of the North–South-conflict, however, falls short in this case, because of the different layers of interests and because of the complex and dynamic context of the ABS issue itself. Based on the public announcements and apparent political strategies, the following actor coalitions can be distinguished. The categorization refers to providers and recipients of genetic resources and is not necessarily identical with the self-perception of the involved actors or their proclaimed interests.

4.3.1. Strong user interests

On one end of the spectrum, one can identify a coalition that explicitly articulates the interests of the industrial users of genetic resources. In this coalition, the pharmaceutical and the agro-industry have a strong influence on other actors such as governments. This coalition has reservations with regard to internationally binding ABS regulations and strives to enable bioprospecting research activities in biodiversity rich countries with as few administrative restrictions as possible. It views the existing patent regulations as sufficient and is hesitant with regard to technology transfers in particular in developing countries. Led by the United States as the only industrialized country that has not ratified the Convention so far, this loose coalition shares a general skepticism towards UN-conventions and processes. As expressed by U.S. representatives in the CBD negotiations, the coalition rather supports bilateral agreements between government institutions, science and the private sector as it has been demonstrated by the National Cancer Institute (as part of the National Institutes for Health in Bethesda, Washington). The Institute has set up an International Cooperative Biodiversity Groups Program (ICBG) which facilitates cooperation between these groups (Scholz, 2004). The program has been often referred to in the CBD negotiations. Apart from the U.S. government, the coalition also includes representatives from the pharmaceutical industry with a strong representation in the US.

4.3.2. *Process facilitators*

A second coalition can be identified that promotes further international agreements in the ABS field and facilitates the processes of finding these agreements. On the government level, this coalition includes a number of industrialized countries such as Switzerland, Australia, Canada and the European Union—all of them being recipient countries with strong pharmaceutical and life-science industries. It has been their articulated interest to balance industry interests and development goals on the basis of an international regulation that sets clear standards and rules and, thereby, enables scientific research through eliminating uncertainties.¹² In the past negotiation processes under the CBD, these countries have served as a facilitator and financed and organized meetings, drew up drafts of guidelines and promoted negotiations on an international regime. The Bonn Guidelines can be seen as a result of these efforts and the countries within this coalition promote the implementation of the Bonn Guidelines as the foundation of a voluntary mechanism to help strengthen the existing international regime. For instance, Germany became a facilitator in the debate when it offered to host the Working Group on Access and Benefit-sharing.

4.3.3. *Provider interests*

A third coalition is formed around the common interest of providers of genetic resources, i.e. those countries and communities on whose territories a large percentage of the world's genetic resources can be found and that provide new genetic material and possibly respective knowledge on their commercial and scientific uses. It is one common interest of this coalition to regulate bioprospecting activities and to

ensure the transfer of the benefits arising out of bioprospecting to the source countries and communities. The Philippines and the Andean Community have spearheaded the biodiversity-rich countries in their early implementation efforts through the implementation of rigid national and regional provisions for any kind of bioprospecting activity on their territory. However, experience has shown progressive effects of these regulations. The coalition's interests have most prominently been formulated by the so-called "Group of Like-minded Megadiverse Countries" established in 2002 and composed of Mexico, Brazil, China, Colombia, Costa Rica, Ecuador, India, Indonesia, Kenya, Mexico, Peru, South Africa and Venezuela.¹³ Based on their natural heritage representing nearly 70% of the global biological diversity, the group demands for a more progressive strategy for the implementation of the ABS provisions of the CBD. Their interests include building up national regulatory and administrative capacities to deal with the use of genetic resources and to facilitate project funding as well as stakeholder participation. They managed to include user measures and proposals for the disclosure of origin of genetic resources in the Bonn Guidelines. Proponents of this group also call for the establishment of an international legally binding regime and promote further negotiations in this direction. The outcomes of COP-7 to negotiate such a regime can in grand part be viewed as a success of this coalition.

Apart from the Megadiverse countries and countries with strong developing economies, the negotiation of the Bonn Guidelines surfaced a second set of providers primarily from Africa and some small island developing states. Lacking the necessary technological capacities, these countries are focused on poverty alleviation and prevention of biopiracy. They view all bioprospecting as being dangerous as they have no resources to challenge biopirates and patents and to enforce ABS agreements. It is their desire to establish a regime which will protect their interests in foreign countries and which will help respond to their poverty issues.

¹² Industry representatives from these countries often regard the current situation with no binding international regulations as highly unproductive since they need to negotiate individually with numerous governments and local and indigenous groups to be granted access to genetic resources. One representative from Novartis described the burdensome attempt to find an agreement with the Brazilian government which finally failed due to criticism of the legitimacy of a bilateral agreement between Novartis and the government. Critics feared a buy-out of genetic resources to the benefits of the central government. In this situation, an international regime can help to legitimize these agreements as long as they adhere to international standards.

¹³ The Group issued the Cancun Declaration on 18 February and the Cusco Declaration on 29 November 2002 that can be accessed at <http://www.comunidadandina.org/ingles/document/cusco29-11-02.htm>.

Provider interests are also brought to the fore by communities and advocacy groups who support indigenous and local communities' interests. This group represents a broad spectrum of stakeholders in provider countries who have created a cohesive platform to promote their claims. It remains to be seen how tightly this coalition will hold together in possible upcoming negotiations on a global regime.

4.4. *Influences on learning*

Which factors influenced the learning processes as described in the implementation process of the ABS provisions? In *passim*, we will focus on four key elements that have been carved out in Section 3.

4.4.1. *Communication structures*

The flow of knowledge between the actors involved is an indispensable ingredient of collective learning processes as the organizational learning literature conveys. Therefore, open and transparent communication structures are key for the diffusion of knowledge and, by the same token, they promote the emergence of trust among different actors.

When viewed under this perspective, the ABS policy arena can be described as communication intense due to frequent communication on the international level at COP meetings and preparatory meetings. These processes have a bias towards governmental representation but when compared to other policy arenas, ABS-related communication processes have been rather inclusive as far as non-governmental organizations and indigenous groups are concerned. Key facilitators to these processes have been the CBD Secretariat and a number of national governments such as Switzerland and Germany as well as a number of developing countries such as Costa Rica and the Andean states that organized workshops, helped indigenous groups to raise their voice and developed innovative legislation. The Secretariat located at Montreal with about 70 staff is perceived by most observers as provider of well-balanced information and in its self-conception, it merely endows parties and interest groups with neutral information on the existing positions and suggestions. As in the general CBD process, the Secretariat has also been highly

successful in its support of communication and negotiation processes through the provision of suggestions for possible solutions and formulations of agreements.

By contrast, a general distrust between industry groups and indigenous and local groups from biodiversity-rich countries remained throughout the communication processes. Being fed by highly divergent interests, this distrust in parts also permeated through the governmental communication of biodiversity rich and recipient country positions. Nevertheless, the outcomes of the negotiations as embodied in the Bonn Guidelines and in the COP-7 decisions demonstrate that this distrust cannot fundamentally hamper the progress of the implementation process.

4.4.2. *Reflexive mechanisms*

In the organizational learning literature, reflexive mechanisms are seen as crucial platforms for the exchange of knowledge, the fertilization of past experiences and thorough reflection of new perspectives on the problems at hand, on possible solutions and the current situations (Poper and Lipshitz, 1995; Siebenhüner, 2002a). Typical examples for reflexive mechanisms are regular evaluations, specific committees, or topic-centered workshops.

In the ABS policy arena, reflexive mechanisms can be observed in four instances. First, the expert panel established in 1998 included numerous government-appointed experts and a number of experts from non-governmental groups. Through its international composition, the expert panel allowed for a mutual exchange of knowledge on the underlying problem and on possible solutions on how to regulate it. The mandate explicitly asked for the open exchange of knowledge and the review of existing practices on the national level. To facilitate this exchange and to fertilize it for future agreements, the panel had the difficult task to clarify common terms such as “country of origin”, “prior informed consent”, “mutually agreed terms” as formulated in the Convention. Due to the professional process facilitation through the Secretariat and the advisory character of the panel, the panel was successful in this exercise and in the overall reflection process even though fundamental conflicts among the different interest coalitions and their respective experts remained.

Second, the Ad-Hoc Open-Ended Working Group on ABS, established in 2000, took up the results of the expert panel to debate them on a governmental level with a more pronounced connection to policy making. This Group provided the platform for the drafting of the Bonn Guidelines that can be labeled as a significant learning result that emerged from the fruitful debates in the Group and the subsequent debates in a contact group on ABS formed at COP-6. In the follow-up process to the adoption of the Bonn Guidelines, the Group also served as the forum for reviewing the experiences made with the implementation of the Guidelines. Even though the implementation process in national legislation and practices has been described as rather slow by most observers, the reflexive mechanism functioned inasmuch as it allowed for the exchange of existing knowledge which was fed into the next steps of policy making.

Third, the Conference of the Parties also served as a reflexive mechanism since it assembled the actors from the governmental and non-governmental side with the purpose of exchanging views and finding agreement on key aspects of the implementation of the Convention. The COP is first and foremost the forum for the expression of national interests and condensed experiences that come out of the preparatory meetings and the respective working groups. In essence, the COP critically reviewed past experiences, adjusted processes and formulated new objectives. In contrast to many critical views of the consensus-based international negotiation procedures of the UN, the outcomes demonstrate the ability of these processes to come to often highly complex and demanding agreements that go beyond the lowest common denominator of all interests. The dynamics of these processes in most cases seem to allow for a mutual learning process and the formation of a commonly shared rationale (Siebenhüner, 2003).

Fourth, smaller contact groups and international workshops served as reflexive mechanisms that helped to exchange views and knowledge of experts. They have been organized by different non-governmental organizations such as the Global Biodiversity Forum (GBF), the World Conservation Union (IUCN), the UN University and others to promote the dialogue, establish trust and to move the negotiation process forward.

4.4.3. Values, norms and conflicts

As the organizational learning literature suggests, commonly shared sets of values and norms committed to creativity, flexibility, and the solution of actual problems help learning processes to come about and to materialize in concrete action. However, also certain sorts of conflicts among values and identities have been found as instigative for learning processes. In the case of the ABS policy arena, one can observe conflicts among highly diverse interests and fundamental values that, by and large, are shared by the coalitions described above.

A first value cluster can be identified around the economics and foreign trade ministries as well as many representatives from industry who focus on the promotion of research in natural substances and their commercial use. The underlying values seem to be a stronger focus on fulfilling human needs by commercial products rather than the preservation of genetic resources as such. By contrast, a second cluster linked to the process facilitator coalition seeks to develop a functional voluntary regime with due attention to the preservation of natural habitats and environmental conservation per se. The conviction shared even by many governmental representatives in particular from the environment ministries is the need to further the protection of genetic resources *in situ* and to limit human interference. An ABS regime can help in this direction through endowing national protection projects in biodiversity-rich countries with the necessary financial means. A third cluster of values gives highest priority to equity issues on a global scale. As maintained by many developing-country representatives, the ABS regulations should predominantly serve the development needs of communities in the South. Therefore, technology and knowledge transfer from industrialized countries to developing countries is seen as crucial, e.g. in the form of scientific research facilities and know-how. Moreover, equity can also be promoted by a functioning market and the opportunities to share its benefits, as maintained by the Megadiverse countries.

As Fisher and Ury (1981) and Rothman and Friedman (2001) point out, conflicts between these values do not necessarily hamper learning processes but require the agents to get to know each other's values and basic interests to reflect on one's own values and to promote solutions that form around

compromises between these. The existence of divergent values in the ABS policy arena has not led to a halt of the political processes. They obviously helped to advance reflection processes. Moreover, the interests are maintained by similarly strong coalitions so that particular interests cannot be pushed through by one coalition but conflicting interests have to be negotiated.

4.4.4. *External influences*

Progress and learning processes in the ABS-policy arena have also been influenced by factors that originate from outside of this arena. One key influence on the agreements reached at COP-7 in Kuala Lumpur which mandated the Working Group on ABS with the start of negotiations about an ABS regime was the Johannesburg process. As described by participants, slow progress in other fields led policy makers in the preparatory process and on the Summit itself to push for advancements in the ABS field. This observation is mirrored by the description of interviewees who link the successful agreement on the Biosafety protocol in 2000 to the failure of the WTO Summit in Seattle. Both incidents lead to the hypothesis that the biodiversity field is often used to maintain momentum in multilateral negotiation processes once processes in other fields come to a deadlock. One can speculate that the rather weak regulations of the CBD without binding quantified objectives render the field more attractive to policy makers than more controversial issues such as debt relief or climate change.

5. Conclusions and future implementation challenges

When viewed under an institutional learning perspective, the actors in the ABS policy arena have demonstrated an ability for this kind of learning—even though actual implementation is still one step behind. As the case study shows, there have been significant advancements to concretize the ABS provisions of the CBD and to establish a negotiation platform for a possible regime. Given the complexity of the CBD/ABS process and the many obstacles and the diversity of interests and actors involved, this is far from trivial.

The research of this paper suggests that these learning processes can be attributed to a number of influencing factors:

- the existence of actor coalitions with balanced and strong facilitation interests;
- the establishment of reflexive mechanisms that gather and assess the existing knowledge and prepare new decisions;
- a functioning communication and process facilitation infrastructure;
- predominantly productive conflicts; and
- international negotiation dynamics that pressurized the processes in the policy arena.

On the background of these theoretically grounded findings, conclusions can be drawn also for other policy fields where institutional learning can provide a way to solve fundamental policy problems.

It is too early to judge whether or not the CBD as an institution has the capacity to achieve the ambitious goal of “stopping the loss of biodiversity until 2010“ as called for by the Heads of State and Government in Johannesburg in 2002. Neither can be predicted whether an international agreement will be found on how to regulate access to genetic resources and benefit sharing. The first decade in the implementation process, however, has shown the CBD’s potential for institutional learning and that this potential is one of the key features for successful decision-making. Even though the aforementioned success factors have proven to be helpful for institutional learning in the field, they cannot guarantee for the success of the next steps but they provide good starting conditions to master the numerous upcoming challenges in implementing the ABS provisions.

The paradigm of fair and equitable benefit-sharing implies significant challenges and concerns that need to be addressed by the actors in the policy arena in the future. First, solutions are sought in how to define and measure benefits. Most pharmaceutical and agricultural research requires long series of costly screening and testing of possible substances. Subsequent product developments and market potentials remain uncertain. Therefore, precise quantification of the monetary values of the future revenues is extremely difficult (ten Kate and Laird, 1999). Second, the questions

has to be addressed, who should be involved in the compensation scheme. Identifying the entitled recipients of benefit-sharing in the resource countries is often difficult: Most bioprospecting activities as well as conservation measures are carried out by non-governmental actors such as pharmaceutical companies, research institutes, conservation agencies and other private organizations. Moreover, the traditional ethno-botanical knowledge of local and indigenous communities about the uses of certain substances must be recognized and many of the resources are of ubiquitous nature and not endemic to only one country. Third, the precise compensation scheme, its functions and compliance control must be designed. Most bilateral compensation schemes of the past have focused on non-monetary compensation such as technology transfers, joint authorship, capacity building, etc. (Blais, 2002). The enhancement of conservation and scientific capabilities in the biodiversity-rich countries is of high importance for the protection of biological diversity. Also other forms of support for local and indigenous communities—e.g. official recognition by the state legislation or the provision of certain rights—can be interesting forms of compensation. However, monetary compensation schemes will be of increasing importance as soon as considerable revenues will be generated with products developed from genetic resources. These monetary compensation schemes need to be developed carefully and can be linked to actual sales numbers, to royalty schemes according to patent law or to the needs of provider communities. Any agreement on access to genetic resources and benefit-sharing will need a control mechanism and a framework of legal security. Given the complexities of modern research methods and the opportunities to keep benefits secret to outsiders, this mechanism will have to be responsive and flexible as well.

The implementation of the ABS provisions demands not only from the parties mutual understanding, but also the support from a range of stakeholders, such as industry, non-governmental organizations and local communities. As with many problems in global environmental change and sustainable development politics, but particularly with the extraction and utilization of genetic resources in so-called “life sciences”, scientific

research has developed rapidly within the last decade while administrative structures did not keep pace with these advancements. However, the international community has made significant progress in addressing the questions posed above within international negotiation processes under the umbrella of the CBD. Given the structural preconditions and experiences of the actors involved, further learning processes are likely but not certain given the multitude of other influences in negotiation processes.

Acronyms

ABS	Access and Benefit Sharing
ASEAN	Association of Southeast Asian Nations
CBD	Convention on Biological Diversity
COP	Conference of the Parties
GBF	Global Biodiversity Forum
ICBG	International Cooperative Biodiversity Groups
IUCN	The World Conservation Union
JPOI	Johannesburg Plan of Implementation
MAT	Mutually Agreed Terms
MYPOW	Multi-year Programme of Work of the Conference of the Parties up to 2010
NGO	Non-Governmental Organisation
OAU	Organisation of African Unity
OECD	Organisation for Economic Cooperation and Development
PIC	Prior Informed Consent
UNCED	United Nations Conference on Environment and Development
UNEP	United Nations Environment Programme

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