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PROGRAM ON HUMAN RIGHTS

***Indigenous Knowledge and
the Rule of Law: Reflections
from Brazil***

Paul E. Little

Program on Human Rights, Center on Democracy, Development, and the Rule of Law
Freeman Spogli Institute for International Studies



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Center on Democracy, Development,
and The Rule of Law Freeman Spogli Institute for International Studies
Stanford University
Encina Hall
Stanford, CA 94305
Phone: 650-724-7197
Fax: 650-724-2996
<http://cddrl.stanford.edu/>

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ABOUT THE AUTHORS

Paul E. Little is a program officer for the Gordon and Betty Moore Foundation's Andes-Amazon Initiative. Before joining the Foundation, Little taught in the Anthropology Department at the University of Brasilia, and has also taught at the University of Azuay and the University of Cuenca, in Ecuador. In 2000, he occupied the Elena Amos Latin American Eminent Scholar Chair for the Center for International Education at Columbus State University, Georgia. Most recently, his research has focused on the social and environmental history of Ecuadorian and Brazilian Amazonia. Little holds dual Ph.Ds. in Anthropology from the University of Brasilia and in Latin American Studies from the Latin American Graduate School of Social Sciences. He has served as a voting member of the Brazilian Federal Advisory Council on Traditional Knowledge and has studied indigenous and mestizo societies of the Ecuadorian Andes.

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Introduction

The widespread expropriation of indigenous environmental knowledge and its subsequent use for commercial and social gain by others represents a contentious new front in the struggle for indigenous peoples' rights. During most of the latter half of the 20th century, the myriad knowledge systems of indigenous peoples were considered an anachronism by modernization theory, which postulated that these systems would slowly disappear as the reach of modern science expanded and supplanted them due to its purported superiority.

After one decade of the 21st century, this situation has changed dramatically as indigenous knowledge systems are now being revalued in innumerable ways by a host of global actors. Indigenous knowledge systems have newly acquired "heritage" value as a rich global depository of humanity's millenary cognitive history. These systems can have great "economic" value by providing shortcuts for bio-prospectors seeking new genetic material for pharmaceuticals, foods and cosmetics. They have "ideological" value as an important source of ritual and information for a thriving New Age romantic movement. They have "medical" value as increasing numbers of people use shamans and indigenous healers to cure their ailments. And indigenous knowledge systems offer high "environmental" value as potential paths to the sustainable use of varied world ecosystems.

With the marked increase in access to and use of indigenous knowledge by non-indigenous people and groups over the past two decades, the issue of Intellectual Property Rights has become a new site in the broader struggle for respect of indigenous peoples' rights. From the perspective of indigenous peoples from around the world, many of whom have millennial cultural roots, the field of Intellectual Property Rights is a relatively recent phenomenon that only emerged during the past two centuries within a specific Western, individualistic concept of private property. The current international legal framework of intellectual property is founded in the notion of private ownership of knowledge, including scientific and technological knowledge that for most of human history had circulated across cultures and continents without ownership claims. The main counterweight to the notion of private control of knowledge has come from the State, which posits itself as the legitimate depository of the "public good" and hence as the arbiter of the use of public domain knowledge. This entrenched private-public dichotomy, through which much contemporary proprietary law is filtered, does not provide any clear space for communal property systems to operate without being encroached upon either by private economic interests or by the public claims of the State. Indigenous knowledge systems, as varied as they are, do exhibit certain characteristics in common: they tend to be collectively constructed and controlled; their principal means of transmission is oral; they operate within holistic frameworks that link ritual, technics, empiricism and cosmology; and, they occupy a marginalized space within modern, industrial society.

When indigenous people seek to protect the rights to their knowledge, they are confronted by a body of law that is generally unable to take their proprietary systems into consideration. In recent years, a new set of international forums and instruments are attempting to address the normative issues regarding the rights of indigenous people to their knowledge. The "Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization" to the Convention on Biological Diversity (CBD) is an international agreement which aims at sharing the benefits arising from the utilization of genetic resources in a fair and equitable way, taking into account all rights over those resources and their associated knowledge. It was adopted in 2010 by the Conference of the Parties to the CBD but will only enter into force after fifty nations ratify it.¹ Another important international agreement that has direct implications for indigenous knowledge is the "International Treaty on Plant and Genetic Resources for Food and Agriculture" of the

¹ As of April, 2012, only three nations have ratified the Nagoya Protocol.

United Nation's Food and Agriculture Organization (FAO), which was signed in 2001 and entered into force in 2004.

While the implications of these and other instruments are being worked out at the international level, another set of issues are being hammered out within national policy frameworks. Indeed, many of the conflicts over indigenous knowledge rights are played out at this level and demand rapid policy responses. This paper will focus on one such national context, that of Brazil, an epicenter of the struggle for the recognition and protection of the rights of indigenous peoples due to its high socio diversity—with 235 indigenous societies that speak approximately 180 different languages²—and its record levels of biological diversity housed in a host of tropical biomes (rainforest, savannah, wetlands, and semi-arid lands).

Many diverse rights issues have emerged over the past two decades regarding indigenous knowledge systems, and the Brazilian federal government has been faced with the task of developing rules of engagement between indigenous people and both commercial interests and academic researchers. In this paper, I will analyze two sets of emblematic, policy-inflected cases from the past two decades (the 1990s and 2000s)—one involving sustainable development projects and the other, agricultural crop varieties—in an effort to document some of the complex processes through which the Brazilian federal government began to establish the “rule of law” over the issues of access to and use of indigenous knowledge and of ways of protecting it from expropriation by outside forces, a process which is far from complete.³ By taking a longer term view, I hope to identify some of the underlying issues that Brazil faced during this time and provide a brief ethnographic reading of the way that encounters with indigenous environmental knowledge by scientists, companies, governments have occurred.

The cases to be examined here derive from the author's “observant participation”⁴ while fulfilling roles as a member of the Brazilian National Advisory Council on Traditional Knowledge, as an anthropological consultant to the Ministry of the Environment and as the head of a research team on traditional knowledge at the University of Brasilia.

PD/A: Sustainable development projects confront indigenous knowledge

The Pilot Program for the Protection of Brazilian Tropical Forests (hereafter “Pilot Program”) grew out of national and international concern over the accelerated destruction of the world's tropical rain forests, and during its fifteen-year existence it represented the most ambitious effort in Brazil to protect its Amazon and Atlantic tropical forests. Based upon a proposal originally made by then German Chancellor Helmut Kohl at the 1990 Group of Seven Industrialized Countries⁵ (G-7) meeting in Houston, the Pilot Program began operation in 1995, after several years of intense negotiations and program design initiatives, with joint financing by the G-7 countries and the Brazilian government.

² See the most recent latest quinquennial report from the Instituto Socioambiental (2011) for an in-depth guide to indigenous peoples in Brazil.

³ McAllister (2008) presents an excellent analysis of environmental work performed by Brazil's innovative Public Ministry in which emphasis is given to the importance in Brazil of establishing effective regulatory enforcement and concludes that this has resulted in new cultural sense of the rule of law, thereby “making law matter,” as the title of the book indicates.

⁴ This phrase comes from Bruce Albert's (2002) playful flipping of the long-standing anthropological method of “participant-observation” and is an attempt to name the methodological situation whereby anthropologists who are actively involved in the struggles of indigenous peoples, whether as advisors to them, as expert witnesses in court cases or as policy wonks, then write ethnographic accounts of these encounters.

⁵ Canada, France, Germany, Great Britain, Italy, Japan and the United States.

The PD/A Project (Demonstrative Projects/Type A) within the Pilot Program promoted innovative environmental initiatives at the local level through the financing of small-scale sustainable development subprojects and the subsequent dissemination of successful experiences, thereby providing a positive “demonstrative” effect. The negotiations for formulating the Pilot Program in the early 1990s provided for a new political space for civil society organizations which, in turn, fostered the formation the Amazonian Working Group (Grupo de Trabalho Amazônico – GTA), now one of the most important socioenvironmental networks of Amazonian civil society organizations. The PD/A Project was one of the few spaces within the entire Pilot Program that directly involved local civil society associations, organizations and cooperatives as an integral part of its financial and technical support. Approximately ten percent of the formally approved PD/A subprojects dealt directly with indigenous peoples, four of which will be discussed below.⁶

The “Living Pharmacies” subproject⁷ was initiated in 1997, among the Jaminawa, Kaxinawa and Kulina societies of the state of Acre and designed by a non-governmental organization (NGO) with a long history of work with indigenous peoples. Its activities included taped interviews with elder indigenous herbalists from sixteen communities, the translation of the tapes into Portuguese, the analysis and systematization of this knowledge, the collection of medicinal plants for pharmacological analysis to evaluate their therapeutic efficacy, the installation of so-called living pharmacies (medicinal horticultural plots) in four indigenous communities and in the training center operated by the NGO, and the development of teaching materials about this knowledge to be disseminated in all of the indigenous communities covered by the subproject.

The subproject immediately ran into obstacles, many stemming from the multiple, sometimes contradictory, jurisdictional issues that did not adequately take into account the specificity of indigenous knowledge issues. During the first year of operation, for example, the subproject was halted by a legal injunction from the state of Acre’s attorney general’s office which claimed that the research was being conducted without the proper authorizations, including one for the export of genetic material out of the state. In all, five prior authorizations were needed for the complete operation of the subproject: one from the federal Indian agency (for operating on indigenous lands), one from the federal environmental agency (for dealing with federally protected lands), one from the federal research council (for approval for a foreigner [from Argentina] to do research in Brazil) and two from the state environmental agency (one for the use of state biodiversity and the other for exporting it outside of the state).

In the initial stages of the collection and analysis of medicinal plants, members of the executor NGO were unable to find locally based pharmacological specialists to do the chemical analyses, so they contacted specialists in the Amazonian state of Pará, who agreed to do the analyses in conjunction with a research institute in the United States which, for its part, demanded in return that at least one specimen of each studied plant be stored *ex situ* in its botanical garden. Thus, the execution of the subproject rapidly evolved into one that was exporting biodiversity outside of the country. Furthermore, due to the novelty of this type of research and the lack of a formal legal code regulating it, the issue of whom the collected germ plasm belonged to was also an open question. This legal morass was too much for the subproject to handle and the phase of collection was never implemented.

Even in the seemingly simpler matter of access to knowledge, problems arose. In this case, it was never clear to those involved who the ‘owner’ was of the knowledge that was recorded. Was it the herbalist? Or the members of the herbalist’s community? Or the herbalist’s tribe? Or the anthropologists (indigenous and non-indigenous) who recorded and translated the information? Or the NGO that executed the subproject? Or the

⁶ The indigenous projects of the PD/A are analyzed in more depth in Little (2010b), from which much of this section is drawn.

⁷ PD/A subproject #137, which operated from 1996-1999, was titled “Installation of Living Pharmacies in Indigenous Territories in the State of Acre.”

PD/A Project that financed the subproject? Or was this knowledge part of the public domain? These questions placed the subproject within a second legal morass.

In spite of all these problems, this subproject was selected to participate in the EXPO 2000 held in Hanover, Germany, as a model project in indigenous medicinal knowledge and practice. Independently, a German film crew sought permission (which was not granted) to produce a short video about the subproject. This strong international acclaim for the subproject reveals yet another contradiction, in which the strong interest by Western industrial countries in traditional indigenous knowledge serves to encourage and give prestige to these types of activities while, at the same time, the myriad local, regional and national issues just outlined are ignored.

The "Traditional Medicine" subproject⁸ was initiated in 1999 by several small indigenous societies who lived along the Negro River in the state of Amazonas and yielded very different results. The general objective of this subproject, which was far more modest than Living Pharmacies subproject, was to raise local awareness concerning the value of traditional medicine. The activities designed to achieve this objective included the gathering of shamans and medicine men together with local indigenous political leaders to share knowledge and the implementation of village horticultural gardens of medicinal plants in local communities. In all, several meetings were held and 20 medicinal horticultural gardens planted (some of which subsequently fell into disuse) in the span of one year. The subproject experienced no legal difficulties and was well received by local indigenous communities, including young people.

What explains the widely divergent outcomes of two indigenous subprojects dealing with the same theme? The Traditional Medicine subproject which, coming three years after the start of the Living Pharmacies subproject, was able to learn from this prior subproject's errors, thereby indicating a type of reverse demonstrative effect. Furthermore, it did not disseminate local knowledge beyond the level of the local community; it did not involve the removal of germ plasm from indigenous lands. Hence it did not require the granting of the many authorizations needed by the Living Pharmacies subproject nor did it pose any novel legal problems over control and ownership of local knowledge. The fact that the original idea for the subproject came from local indigenous community members, rather than from a non-indigenous NGO, meant that the degree of support it had was strong from the start. In addition, responsibility for the execution of the subproject lay with the regional indigenous federation that formally represented the communities, such that political control over the entire process remained within indigenous hands. When outside expertise was needed, it was subcontracted by this indigenous federation, which maintained direct oversight of all activities conducted by outsiders. Finally, by building an appreciation of the importance of traditional medicinal knowledge as a first step, a cultural base was established for further activity in this area.

Two other subprojects⁹ in the state of Acre involving agro-forestry management techniques delved into the interface between Western scientific knowledge and indigenous knowledge over a six-year period and demonstrated the enormous possibilities for the creation of new hybrid knowledge based in an "interscientific dialogue"¹⁰ between indigenous knowledge systems and modern Western techniques. The first of the two subprojects, which operated among the Kaxinawa, Kulina, Jaminawa and Machineri societies in the state of Acre, was executed by an NGO and had as its main objective the training of local indigenous agents in agro-forestry management techniques by Western-trained ecologists and botanists who had prior experience in working with indigenous peoples. These training sessions were based on the existing structure used by the

⁸ PD/A subproject #570, which operated from 1999-2000, was titled "Incentives for the Recovery of Traditional Medicine among Indigenous Groups of the Negro River."

⁹ PD/A subproject #138, which operated from 1996 to 1999, was titled "Implementation of Agroforestry Management Techniques in Three Indigenous Territories;" PD/A subproject #718, which operated from 2000 to 2003, was titled "Agro-forestry Management in Indigenous Territories."

¹⁰ I first proposed this concept in Little (2002) and developed it ethnographically in Little (2010a).

same NGO for training of indigenous bilingual teachers. The newly trained indigenous agro-forestry agents then applied these techniques in their local communities, adapting and improving upon them according to local social and environmental conditions, and shared their experiences with the other indigenous agro-forestry agents. A follow-up subproject further advanced this dialogue with the training of new agro-forestry agents now being conducted by the indigenous agents training in the first subproject and not by outside experts.

In both subprojects not only was dialogue taking place between Western environmental knowledge and traditional indigenous environmental knowledge, but also between the environmental knowledge systems of the four ethnic groups that participated in the subproject. One of the results of this multiple dialogue was the creation of many new agro-forestry management techniques that were tailored to the specific environmental needs of the communities involved. The indigenous agro-forestry agents were not only creating new knowledge but were also responsible for applying it. The application of this new knowledge in the local communities of the agents permitted the testing and refinement of this knowledge and provided the community with the direct benefits of its application. In addition, the exchange of knowledge between different indigenous societies established new forms of interaction that moved intercultural relations in unprecedented directions. Finally, the reunion of these agents to share experiences and the publishing of didactic materials partially written and totally illustrated by them served to further enrich and expand the newly created knowledge base.¹¹

As a result, a new sense of identity was established whereby the notion of *extension agent*, a term that had historically referred to the one-way transfer of Western knowledge to indigenous groups, was now occurring as an internal process. The use and flow of knowledge functioned with several types of informal control, which meant that the subprojects did not enter into the murky waters of Intellectual Property Rights, since the knowledge was generated and applied locally to attend to the local demands of indigenous communities. Then, in 2002, near the end of the second subproject, the job position of “Indigenous Agro-forestry Agent” was incorporated into the state administrative structure of Acre as a new type of career, just as had happened earlier with the job position of “Indigenous Bilingual Teacher,” thereby giving an administrative recognition and financial sustainability of this new indigenous knowledge space.

These four PD/A subprojects all dealt with indigenous knowledge but did so in markedly different ways. In general, when control over the knowledge was maintained at a local level and stayed within the hands of indigenous communities and their representative organizations, very few difficulties were encountered. When external actors entered into the situation, and sought to gain access to and use this knowledge for their own interest, however, then innumerable problems developed, for which the Brazilian policy framework was wholly unprepared. The Living Pharmacies subproject, for example, experienced so many of these problems that it was unable to achieve the majority of its initial objectives.

Another lesson that can be extracted from these examples is that collaboration between indigenous peoples, Western-trained scientists and government agencies can occur and produce positive results, as the case of the two subprojects on agro-forestry management techniques attests. All four of the cases took place in what can be considered to be the “pre-normative” phase of relations between the Brazilian government and indigenous peoples with respect to their knowledge. In the next section, which analyzes examples from the first decade of the 21st century, the effort to establish an acceptable rule of law in this field comes to the fore.

¹¹ Freschi (2010) provides an excellent review of the Indigenous Agro-forestry Agents’ training process, along with some trenchant critiques of contemporary ethnoscience.

EMBRAPA: Working with knowledge located along the borders of the public domain

With the ratification of the Convention of Biological Diversity in the early 1990s, Brazil initiated a major effort by the Brazilian government regarding the use of the country's "genetic resources," a wholly new concept that did not have a clear definition or a policy framework for their management. It was only when a high profile scandal erupted in 2000 involving the Swiss pharmaceutical company Novartis that the Brazilian federal government was pressured to establish a minimal set of norms for the use of the country's genetic resources. Novartis had signed a three-year contract with the Brazilian state-controlled organization BioAmazônia, which had been established by the government as a means of catalyzing its biotechnology sector. The contract, which was negotiated without the knowledge of BioAmazônia's Board of Directors or the Environmental Ministry, put in place a system of collection of genetic material from the Amazon rainforest by Novartis and ceded patent rights to them for any new products that were developed in their laboratory from this material. When news of this agreement reached the press, there was an outcry from scientists and representatives of governmental agencies, who claimed that it would be harmful to the country. After several months of heated debate, the contract was rescinded.¹²

The following year, Provisional Decree #2166 was promulgated by the Executive Branch, which established the National Council for the Management of Genetic Resources (CGEN) and gave it policy-making authority to regulate the protection of and access to genetic resources and to traditional knowledge associated with them, as well as the distribution of benefits derived from their use.¹³ In performing this new function, six advisory councils were established to provide it with informed input and to write draft regulations. One of the most active of these was the National Advisory Council on Traditional Knowledge Associated with Biodiversity (hereafter "Advisory Council").¹⁴ During its first years operation, debates in the Advisory Council focused on three pressing tasks: defining the scope and application of the concept of free, prior informed consent; defining the proprietary status of traditional knowledge that has been placed in readily accessible, electronic data bases; and defining which parts of traditional knowledge should now be considered to be part of the public domain and hence accessible to all citizens.

This last issue brought the Brazilian Agricultural Research and Development Agency (EMBRAPA), the highly respected national research institute on agriculture and ranching, directly into the fray concerning indigenous agricultural knowledge. The two situations to be analyzed below highlight the divergent ways that EMBRAPA approached the thorny issue of deciding if and when the knowledge and use of agricultural crop varieties (manioc and corn), developed over past centuries by indigenous peoples, could be considered to be part of the Brazilian "public domain."

Indigenous representatives to the Advisory Council wanted to use CGEN to receive formal recognition of their historical role in the development of these crop varieties and gain some type of proprietary rights over them, which would allow them some control over the way that these varieties were used by researchers performing genetic manipulation to produce ever new varieties. The issue that initially sparked debate within the Advisory Council revolved around manioc (cassava), one of the Brazil's most significant contributions to world agriculture. Over the centuries, indigenous peoples have developed a wide range of plant varieties of manioc, though there is no clear line of traceability of their origin to specific indigenous societies due to the complex, intertwined processes of ethnocide and ethnogenesis that radically altered the ethnic composition of indigenous societies since the arrival of Europeans in the continent at the beginning of the 16th century. One

¹² Garcia dos Santos (2003) provides a good summary of the principal issues regarding this scandal.

¹³ This Provisional Decree has been renewed over the past eleven years as a stop-gap measure to be used until a National Law on Access and Benefit Sharing can be passed in Congress. Given the numerous unresolved issues and the bitter split between environmentalists and ranchers in the Congress, there is little prospect of getting a law passed soon.

¹⁴ During the first six years of operation of the Advisory Council (2002-08), I served as the representative of the Brazilian Anthropological Association on the Council.

attempt to resolve this issue was the proposal, during the early years of CGEN, for constructing a regional database tied to specific indigenous societies that would affix “ownership rights” to specific crop varieties and establish a fund that would funnel royalty monies from the use of these varieties. However, the conceptual and operational challenges were so great that this proposal never moved forward.

Genetic experimentation with varieties of manioc by EMBRAPA represents one of their cutting edge areas of research, and when several indigenous representatives raised the possibility, in one of the Advisory Council meetings, of the Brazilian government (and hence EMBRAPA) recognizing indigenous ownership of these numerous varieties, the scientists from EMBRAPA strongly objected. Their basic line of argument was that the knowledge that originally developed these plant varieties had been so diffused over these past centuries that it now belonged to the Brazilian “public domain” and hence no ownership could or should be recognized. They also indicated that the Advisory Council was established under the aegis of the Convention of Biological Diversity, and that crop diversity was the proper domain of the FAO “International Treaty on Plant and Genetic Resources for Food and Agriculture,” whose status as a treaty was higher than that of a convention, such as the Convention on Biological Diversity. Finally, they argued that manioc, as an original product of Brazil, should be used for the benefit of all Brazilians.

Given the difficulty in determining the traceability of the knowledge of specific crop varieties, and the lack of an adequate framework for establishing proprietary rights, the indigenous representatives were forced to concede this issue but not before raising an important set of issues regarding what agricultural knowledge should justifiably be considered to be part of the public domain and what knowledge of crops still formed part of the proprietary domain of specific indigenous societies.

A second situation, also involving EMBRAPA, offers a fascinating contrast to that of the debate over manioc. Here, the issue is over the use of varieties of corn and involves a specific indigenous society: the Krahô, inhabitants of Brazil’s central savannah. In the 1970s, the Federal Indian Agency began a concerted development program with the Krahô focused on the introduction of massive rice cultivation, as a means of weaning them from their subsistence livelihood based in hunting and small-scale farming. These projects failed miserably and had the collateral effect of provoking the loss of many of their traditional agricultural crop varieties.

By the early 1990s, the Krahô were living in impoverished conditions when a new generation of leaders sought to rejuvenate their traditional agricultural practices. One such effort led to the reestablishment of their traditional seed-trading fair amongst their different communities in an effort to gain more agricultural sustainability.¹⁵ In the midst of these changes, several Krahô elders recalled that in the 1970s researchers from EMBRAPA has collected numerous agricultural plant varieties on their lands for storage in the newly created national germ plasm bank. That led several Krahô leaders to approach EMBRAPA concerning the possibility of gaining access to corn seed varieties that had disappeared from their habitats as part of an effort to rejuvenate their traditional gardens.

Several years of negotiation led to the development of a joint four-year project, which began in 2000, whereby one of the Krahô elders would be allowed to enter into the germ plasm bank (maintained at a temperature of -20°C) and select seeds from six corn varieties to be reintroduced into the Krahô’s agricultural plantings. EMBRAPA officials were pleasantly surprised the following year when these same Krahô leaders returned seeds from their plantings to replace the ones taken the previous year in the germ plasm bank. When it was later revealed that those specific corn seeds were actually collected on Xavante Indian lands (and not Krahô lands), the Xavante requested (and were granted) access to seeds from the EMBRAPA bank, and these seeds were subsequently reintroduced into their agricultural plots.

¹⁵ Much of the information here is derived from Ávila’s (2010) research, whose results were published after his premature death in early 2010.

In these two situations, we find slightly differing expressions of the notion of the public domain, though both are in alignment with the reigning notion that attributes to the State control over material and knowledge that lies in the public domain. In the case of the corn seeds, special access was granted by the State to two indigenous societies, who nonetheless had to enter into special negotiations with EMBRAPA, even though these seeds had been taken from indigenous lands without any compensation. This notion of a public domain is quite different from the internal public space of the Krahô Indians as expressed in their seed-trading fair, whereby seeds and knowledge flow freely based on mutual agreements on reciprocal relations between communities. In spite of these differing notions of ownership, the corn project shows that conflict can be avoided, and mutually beneficial relations can be developed if there is good faith between the parties and a general willingness to negotiate.

Conclusions

The two sets of policy-related cases analyzed here, which occurred over the past two decades in Brazil, provide for an ethnographic window into some of the dilemmas faced by the Brazilian federal government in attempting to address the myriad issues surrounding the indigenous peoples' knowledge. During the 1990s, in what I characterized as the pre-normative phase, the PD/A sustainable development subprojects encountered many problems with regard to indigenous knowledge, which in hindsight served the function of pressuring the Brazilian federal government to develop norms and regulations at the intersection of environmental policy and interethnic relations. With the promulgation of the Provisional Decree in 2001, which established the National Council for the Management of Genetic Resources, several dilemmas needed to be addressed within this new policy framework.

The two situations involving EMBRAPA revealed that the notion of the public domain, particularly in relation to traditional agricultural knowledge, is a fluid one and can best be resolved through ongoing negotiations with indigenous peoples and their representative organizations. In this process, I argue that a major effort to establish the rule of law was undertaken by the Brazilian federal government, but that process is still in its incipient stages. The cases analyzed here, however, seem to offer a glimmer of hope that the rights of indigenous peoples to their knowledge can be protected, while at the same time, contribute in new ways to the social and environmental challenges that Brazil will face in the future.

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