



April 2016

The Nagoya Protocol and Indigenous Peoples

Maria Yolanda Teran

The University of New Mexico, mteran@unm.edu

Recommended Citation

Teran, M. Y. (2016). The Nagoya Protocol and Indigenous Peoples. *The International Indigenous Policy Journal*, 7(2).

DOI: 10.18584/iipj.2016.7.2.6

The Nagoya Protocol and Indigenous Peoples

Abstract

This article is about Indigenous peoples' involvement in the Nagoya Protocol negotiations from 2006 to 2010, as well as in its implementation to stop biopiracy in order to protect *Pachamama*, Mother Earth, and to ensure our survival and the survival of coming generations. The Nagoya Protocol is an international instrument that was adopted in Nagoya, Japan in October 2010 by the Conference of Parties (COP 10) and ratified by 51 countries in Pyeongchang, South Korea in October 2014 at COP 12. This protocol governs access to genetic resources and the fair and equitable sharing of benefits arising from their utilization (access and benefit sharing [ABS]). It has several articles related to Indigenous peoples and traditional knowledge, as well as:

- The interrelation and inseparable nature between genetic resources and traditional knowledge;
- The diversity of circumstances surrounding traditional knowledge ownership, including by country;
- The identification of traditional knowledge owners;
- The declaration of Indigenous peoples' human rights; and
- The role of women in the biodiversity process.

In addition, this protocol lays out obligations on access, specifically participation in equitable benefit sharing, the accomplishment of prior and informed consent, and the mutually agreed terms and elaboration of a national legal ABS framework with the participation of Indigenous peoples and local communities in order to have well-defined roles, responsibilities, and times of negotiations.

Keywords

Nagoya Protocol, genetic resources, traditional knowledge (TK), biopiracy, Indigenous peoples, human rights, Mother Earth's rights, prior and informed consent (PIC), mutually agreed terms (MAT), contracts, access and benefit sharing (ABS), monetary and non-monetary benefits, national and international laws, customary law, sui generis protection, code of ethics, bio-cultural community protocols

Acknowledgments

I would like to thank the Elders of my community for guiding my way of feeling, thinking, and being that allowed me to participate with a clear mind and respect at international meetings on genetic resources and traditional knowledge. My deepest thanks to the Indigenous International Forum on Biodiversity (IIFB) and the Indigenous Women Network on Biodiversity from Latin America and the Caribbean (IWNB-LAC) for being together all these years to defend our resources and life through an organized and documented effort. I would also like to acknowledge the moral and financial support from the Vice-President of the Equity and Inclusion Division and the Director of Native American Studies Department at the University of New Mexico.

Creative Commons License



This work is licensed under a [Creative Commons Attribution-Noncommercial-No Derivative Works 4.0 License](https://creativecommons.org/licenses/by-nc-nd/4.0/).

The Nagoya Protocol and Indigenous Peoples

Indigenous Peoples, through the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP), have been granted the right to "full and effective participation in all matters that concern them and their right to remain distinct and to pursue their own visions of economic and social development" ("United Nations Adopts Declaration," 2007, para. 5); yet, the experience of Indigenous Peoples participating in the drafting and implementation of the Nagoya Protocol shows that there are still obstacles to achieving this goal. This article explores Indigenous Peoples' involvement in the Nagoya Protocol negotiations from 2006 to 2010, as well as in its future implementation to stop biopiracy, to protect *Pachamama* (Mother Earth), and to ensure our survival and the survival of the coming generations. The purpose of this article is to highlight the necessary conditions to have full and effective participation from Indigenous Peoples in policy processes that affect them, as well as to share with Indigenous youth the Indigenous Peoples' strategies and protocols used during the negotiations of the Nagoya Protocol, an international instrument that was adopted in Nagoya, Japan in October 2010 by the Conference of Parties (COP, 2010b) and ratified by 51 countries in Pyeongchang, South Korea in October 2014 at COP 12 (COP, 2014). This protocol concerns access to genetic resources, and the fair and equitable sharing of benefits arising from their utilization, termed "access and benefit sharing" (or ABS). It has several articles related to Indigenous Peoples and traditional knowledge, as well as recognizing:

- The interrelationship and inseparable nature of genetic resources and traditional knowledge;
- The diversity of circumstances surrounding traditional knowledge ownership, including across countries;
- The rights of traditional knowledge owners;
- UNDRIP (UN, 2008); and
- The role of women in the biodiversity process (Secretariat of the Convention on Biological Diversity, 2011).

This protocol is important to Indigenous Peoples because it lays out obligations in terms of access: Specifically, it requires equitable benefit sharing, the accomplishment of prior and informed consent (or PIC), and mutually agreed terms (or MAT), and the elaboration of a national access and benefit sharing legal framework with the participation of Indigenous Peoples and local communities in order to have well-defined roles, responsibilities, and participation in negotiations.

I am from the Kichwa Nation from Ecuador. I am the education and culture coordinator of Andes Chinchasuyu Indigenous Organization from Ecuador and an active member of the Indigenous Women Network on Biodiversity for Latin America and the Caribbean (or in Spanish, Red de mujeres Indígenas sobre Biodiversidad de América Latina y El Caribe [RMIB-LAC]). Since 2006, I have been following the processes involved in protecting biodiversity and participating in several national and international meetings related to the Convention on Biological Diversity (CBD). In particular, I was following the

issues that concern traditional knowledge, indicators, agriculture, and education on biodiversity. I was not participating fully in the initial discussions about the International Regimen on Access and Benefit Sharing (later adopted as Nagoya Protocol) due to its heavy technical language and to its different view of the meaning of Mother Earth, Pachamama, and her beings. Most of the ABS meetings were in English, which was a problem for the Indigenous participants from Latin America who are Spanish speakers. They were able to follow the discussions thanks a sister from Almaciga, a non-governmental organization (NGO) from Spain, who translated. I, personally, witnessed how difficult it was to follow the discussion of technical terms. Afterwards, when Indigenous Peoples had to provide positional papers on a draft of the International Regime, I organized three international meetings at the University of New Mexico (UNM) to write our position papers collectively, following comprehensive analysis and discussion among Indigenous Peoples from New Mexico and abroad. I made the decision to follow the ABS process having in mind my combined roles as a woman and a community member, and that UNM would be a potential resource to give support to our people. I educated myself on this subject, which resulted in my nomination as one of the negotiators from Latin America and the Caribbean. Currently, I am still following the Nagoya Protocol, which now is in the implementation stage, as part of the Informal Advisory Committee on capacity building for the implementation of the Nagoya Protocol.

Background to the Nagoya Protocol: The Convention on Biological Diversity (CBD)

The CBD (1992) is an international agreement that was adopted in 1992 with signatures from 168 countries. It entered into force on December 29, 1993. Every 2 years, this convention has a meeting known as the COP, the first of which was held in 1994 in the Bahamas from November 28 to December 9 (COP, 1994). This first convention recognized the vital worldwide importance of conserving biological resources for economic and socially sustainable development that benefits all of humanity (COP, 1994).

The CBD (1992) has three main objectives:

- a. The conservation of the biological diversity,
- b. The sustainable use of its components, and
- c. The fair and equitable benefit sharing arising from the use of genetic resources. (Article 1, para. 1, p. 3)

The CBD's (1992) preamble recognized Indigenous Peoples' close relationship with and dependency on biological resources—in terms of their traditional knowledge, the role of women in biodiversity conservation, sustainable use of biological diversity, and use of biodiversity in the eradication of poverty. Article 8(j) cites:

Each contracting Party shall, as far as possible and as appropriate:

Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of Indigenous and local communities^[1] embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices. (CBD, 1992, p. 6)

Article 10(c) stated: “Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements” (CBD, 1992, p. 8).

Article 15 is specifically concerned with State access to genetic resources following the obtainment of both prior and informed consent and mutually agreed terms:

15.1. Recognizing the sovereign rights of States over their natural resources, the authority to determine access to genetic resources rests with the national governments and is subject to national legislation. (CBD, 1992, p. 9)

15.4. Access, where granted, shall be on mutually agreed terms and subject to the provisions of this Article. (p. 10)

15.5. Access to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party (p. 10).

Despite recognition of Indigenous Peoples and identification of issues of relevance to them, Indigenous Peoples were not invited to attend these initial biodiversity meetings. Nevertheless, in 1996, several Indigenous brothers and sisters from Latin America and the Caribbean created the International Indigenous Forum on Biodiversity (IIFB, 2016), and started to participate in these international meetings. Considering the fact that the nation states involved in these meetings were discussing different themes regarding Indigenous Peoples, genetic resources, traditional knowledge, and intellectual property, the participation of Indigenous Peoples was paramount in ensuring their perspectives were represented. After some years of national and international political lobbying, a Working Group was created on Article 8(j) at COP 4 in 1998 in Bratislava, Slovakia (COP, 1998). In addition, there were three other important events during the fourth COP (1998):

- a. The recognition of the International Indigenous Forum on Biodiversity as the advisory body for the COP;
- b. The recognition of the International Indigenous Forum on Biodiversity as the advisory body for the Subsidiary Body on Scientific, Technical, and Technological Advice (or SBSTTA); and

¹ The COP 12 in South Korea adopted the use of the terminology “Indigenous Peoples and local communities” (IPLCs), instead of “Indigenous and local communities” (COP, 2014). As such, this article will use the terminology “Indigenous Peoples and local communities.”

- c. The establishment of an Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(j) and Related Provisions.

The International Indigenous Forum on Biodiversity delivered to the States their own terms of reference and related provisions for the future implementation of Article 8(j) to avoid the Subsidiary Body on Scientific, Technical, and Technological Advice's "non-Indigenous" reinterpretation of those terms (COICA, OMAERE & OPIP, 1999, p. 70). At the same COP 4 meeting (COP, 1998), the Indigenous Women's Network on Biodiversity was created with the intention of including women's voices in biodiversity discussions. Afterwards, this network expanded to Africa, the Arctic, Asia, Latin America, and the Caribbean. Since 1998, Indigenous Peoples' participation has increased thanks to the Indigenous permanent lobby. In May 2000, at COP 5 in Nairobi, Kenya (COP, 2000), the role and contribution of Indigenous women in the CBD process was recognized (Tauli-Corpuz, 2000; M. E. Choque, personal communication, April 12, 2010).

The newly established 8(j) Working Group was very active in bringing forward Indigenous views in the elaboration of Bonn Guidelines (CBD, n.d.b) on monetary and non-monetary benefits (COP, 2001)—for example, the *Ake:kon* Guidelines (CBD, 2004) on the evaluation of cultural, environmental, and social impacts on Indigenous Peoples and their lands, the Tkarihwaí:ri Code of Ethical Conduct (COP, 2010b), and the access and benefit sharing negotiations (CBD, n.d.c), among other topics.

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)

The third objective of the CBD (1992) refers to fair and equitable sharing of benefits arising from genetic resource use. In September 2002 in Johannesburg, the World Summit on Sustainable Development called for the negotiation of an international regime within the CBD to promote and safeguard this sharing of genetic resources among stakeholders (UN, 2002). The 2004 COP (the seventh such conference) mandated the following: the establishment of the Ad Hoc Open-Ended Working Group on Access and Benefit Sharing (or ABSWG), the elaboration and negotiation of an Access and Benefit Sharing International Regime (which would work towards the implementation of Article 15 of the CBD outlining access to genetic resources), and the implementation of Article 8(j) of the CBD on traditional knowledge and its three objectives (COP, 2004).

The Nagoya Protocol sought to internationally regulate bioprospecting activities undertaken for commercial and non-commercial purposes, as well as to regulate the privatization and marketization of new medicines that are based on discoveries from natural products and traditional knowledge (Secretariat of the Convention on Biological Diversity, 2011). In many developing countries, traditional medicines are used for the population's primary healthcare needs. According to the World Health Organization (WHO, 2002), in India 65 percent of the population uses traditional systems of medicine, and in Africa the number is 80 percent. Presently, these natural products play an important role in the development of new drugs, making significant contributions to large pharmaceutical companies' development of modern medicines, such as cancer drugs, for example (Laird & Wynberg cited in Bavikatte & Robinson, 2011).

Authors Ten Kate and Laird (1999) have estimated the annual value of products derived from genetic and biological resources—including extracts, combination molecules, and enzymes that are used in pharmaceutical products, botanical medicines, agro-industrial crops, horticulture, cosmetics, and crop protection products—at approximately \$500 billion to 800 billion USD. If, hypothetically, 10 percent of this amount derives from the use of traditional knowledge, then the original, traditional products and Indigenous Peoples' traditional knowledge would have an approximate value of \$50 billion to 80 billion USD per year. Calculating 10 percent of the \$50 billion USD as the value of Indigenous knowledge at the global level would add up to \$5 billion annually from gross sales. In a commercial scenario, if Indigenous Peoples were paid even 10 percent of this \$5 billion USD, it would add up to \$500 million a year from net sales, an amount that would be useful in solving the basic needs of Indigenous Peoples (Ruiz Müller, 2006).

To cite a specific example, Avon is a company based in the United States that specializes in personal care products (i.e., skincare and beauty products) using a direct sales approach in which the company's representatives, who are primarily women, sell products to their friends and acquaintances. Afterwards, some of their customers in turn become salespeople—thereby building and perpetuating the chain business in living rooms and street corners rather than in Avon stores. Avon is estimated to have earned approximately \$333 billion in annual sales in 2015. Its skincare products alone, which have been made with medicinal plants from Asia, earn the company \$90 billion per year (Global Industry Analyst cited in Hammond, 2013). Given the profitability of products made from natural products and using traditional knowledge, many in the international community recognized the need for regulation in order to protect less wealthy and powerful stakeholders.

Over the course of 6 years, the Ad-Hoc Working Group on Access of Benefit Sharing had several meetings trying to attend to and balance the variety of interests involved in biodiversity—such as commercial exploitation, sustainable use, and conservation through the lens of bioprospecting. The Ad-Hoc Working Group on Access of Benefit Sharing solicited input from Indigenous Peoples and local communities through the Ad-Hoc Open-Ended Inter-Sessional Working Group formed in Article 8(j) of the CBD and related provisions that focus on traditional knowledge (Bavikatte & Robinson, 2011).

The Nagoya Protocol was adopted at the COP 10 on 29 October 2010 in Nagoya, Japan (COP, 2010a), and ratified at COP 12 in South Korea in October 2014 (COP, 2014). It aims to provide legal certainty and transparency for users and providers of genetic resources, specific obligations for compliance, a framework for domestic legislation or regulatory requirements such as the prior and informed consent and the adherence of contracts to mutually agreed terms. Compliance with the provisions of the protocol and its required conditions for access to genetic resources ensures fair and equitable benefit sharing with the provider party and with Indigenous Peoples when accessing their traditional knowledge, innovations, and practices that are associated with genetic resources (Secretariat of the Convention on Biological Diversity, 2011).

Indigenous Peoples participated in the International Regime on Access and Benefit Sharing meetings. The International Indigenous Forum on Biodiversity and the Indigenous Women's Network on Biodiversity from Latin America and the Caribbean (or IWNB-LAC), Asia, Africa, and the Arctic, in partnership with some friendly parties and alliances with non-governmental environmental organizations, universities, and research institutes developed strategies to defend Indigenous Peoples'

bio-cultural rights. This defense is being accomplished with the consideration that our survival and cultural diversity depends on our lands, territories, waters, resources, traditional knowledge, and ecosystems, and on the balanced relationships between human beings and Mother Earth, *Pachamama*. With this background in place, then, let us discuss the outcomes that resulted from the participation of Indigenous Peoples and local communities in access and benefit sharing meetings—meetings in which the environment was structured unequally in terms of negotiations and power.

Indigenous Peoples' Participation in the Access and Benefit Sharing International Regime Negotiations

The Nagoya Protocol began with the decision taken at COP 7 in 2004 in Kuala Lumpur:

... [The COP] decides to mandate the Ad Hoc Open-Ended Working Group on Access and Benefit Sharing with the collaboration of the Ad Hoc Open-Ended Inter-Sessional Working Group on Article 8(j) and Related Provisions, ensuring the participation of Indigenous and local communities, non-governmental organizations, industry, scientific and academic institutions, as well as intergovernmental organizations, to elaborate and negotiate an international regime on access to genetic resources and benefit sharing with the aim of adopting an instrument/instruments to effectively implement the provisions in Article 15 and Article 8(j) of the Convention and the three objectives of the Convention. (COP, 2004, D1, p. 5)

The International Indigenous Forum on Biodiversity, the Indigenous Women's Network on Biodiversity (IWBB), and Indigenous Women's Network on Biodiversity from Latin American and the Caribbean participated in several Access and Benefit Sharing International Regime negotiations from 2006 until 2010 when it was finally adopted as the Nagoya Protocol. During this period of time, the discussions centered on:

- The nature of the International Regime either as a legally binding instrument or another voluntary instrument;
- The scope of access to genetic resources;
- Traditional knowledge and benefit sharing;
- Establishing objectives aimed at facilitating access to genetic resources and that guarantee benefit sharing;
- The required elements to facilitate access to genetic resources, and to guarantee prior and informed consent of the provider party, benefit sharing with mutually agreed terms, and documents to endorse the certificate of origin;
- Disclosure of the origins of resources in requests for patents; and
- The participation of Indigenous Peoples in benefit sharing when their traditional knowledge is used.

The States represented at the CBD had divergent positions at the initial meetings. For instance, the countries from the “South” considered themselves as “provider countries” or “countries of origin” for the resources in question. These are very diverse countries that are located in Latin America and Southern Asia, which, together with the African group, desired to have an Access and Benefit Sharing International Regime that was legally binding for the COP 8 (COP, 2006). The United States and Canada from the “North” as well as Australia, New Zealand, and the European Union considered themselves “users” of resources and have tried to pursue a non-legally binding protocol in alignment with those by the World Business Organization (WBO) and by the World Intellectual Property Organization (WIPO) (Indigenous Peoples Council on Bio-Colonialism, 2006; Terán Maigua, 2014).

In 2008, the lack of agreement among the CBD State parties changed in Bonn, Germany when COP 9 took the Decision IX/12 on Access and Benefit Sharing and reached an agreement on four important points, which were:

- a. The agreement on the Annex 1 of the Decision IX/12 that, for the first time since 2004, provided the frame and the elements for the Access and Benefit Sharing International Regime;
- b. The agreement to begin the negotiations based on texts; several organizations including Indigenous Peoples and local communities were invited to present operative texts for the elements mentioned in the Annex 1 of the Decision IX/12;
- c. The establishment of three groups of technical and legal experts (GTLE) to advise the Access and Benefit Sharing World Group on the concepts, terms, functional definitions, and sectorial focus of the agreement, as well as sharing expertise on issues related to compliance and traditional knowledge associated with genetic resources; and
- d. The agreement to have three Access and Benefit Sharing World Group meetings, each for 7 days, with the goal to conclude the negotiations before the COP 10 in Nagoya (COP, 2008; see also Bavikatte & Robinson, 2011).

In Hyderabad, India in July 2009, the Indigenous Peoples and local communities had the first opportunity to give their input on traditional knowledge associated with genetic resources to the Access and Benefit Sharing Working Group. From their involvement, the Group of Technical and Legal Experts accomplished five important achievements, which expanded the interpretation of Article 8(j) and the inclusion of Indigenous Peoples and local communities in the Nagoya Protocol:

- a. The inseparable link between the genetic resources and traditional knowledge was established;
- b. The need for prior and informed consent and benefit sharing arising from any use of Indigenous Peoples and local communities’ traditional knowledge was mandated;
- c. Compliance with community laws and procedures in accessing resources and knowledge was specified;

- d. The “subject to national law” component of Article 8(j) was substantially weakened by interpreting it as indicative of a State’s duty to facilitate the rights of Indigenous Peoples and local communities rather than giving States the discretionary power to decide whether or not to uphold these rights; and
- e. The importance of UNDRIP in interpreting the provisions of the CBD for the purposes of the Protocol was enshrined (Bavikatte & Robinson, 2011).

Following this meeting, from July 2009 to October 2010, there were several reunions, such as the Working Group on Access and Benefit Sharing meetings, the Friends of the Co-Chairs meetings, the Inter-Regional Negotiating Group (ING) sessions, and the Co-Chairs Informal Inter-Regional Consultations. At all these meetings, Indigenous Peoples and local communities strategically used the achievements of the Group of Technical and Legal Experts meetings on traditional knowledge to their benefit. During the negotiations, Indigenous Peoples developed a variety of strategies to defend their views through lobbying Indigenous and non-Indigenous delegates, working closely with governments that supported Indigenous concerns, and networking worldwide with Indigenous Peoples.

In March 2010, at the ninth meeting of the Access and Benefit Sharing Working Group in Cali, Colombia, the co-chairs provided attending parties with a co-chairs text, which tried to balance the interests of the stakeholders. This text was the basis for the meeting’s discussions and negotiations. From the Inter-Regional Negotiations Group that met in Montreal came a text in brackets that was negotiated at the second meeting of the Group in October 2010 in Nagoya. In the final negotiations in Nagoya, Indigenous Peoples and local communities tried to secure five key positions for inclusion within a potential access and benefit sharing protocol. These positions were:

- a. To eliminate the Article 8(j) term “subject to national law” from the Protocol provisions dealing with the rights of communities over their bio-cultural jurisprudence related to access and benefit sharing, traditional knowledge, and genetic resources before it became a legal “term of art” and started to be used in other COP resolutions;
- b. To retain references to compliance with customary laws and local community protocols in the text of the Protocol to secure respect for community systems of governance by nation states;
- c. To secure the rights of Indigenous Peoples and local communities over their genetic resources in the Protocol;
- d. To ensure reference to UNDRIP in the preamble of the Protocol; and
- e. To prevent the forum from shifting to the WIPO’s conception of compliance relating to traditional knowledge, and to affirm that the Protocol is the main instrument to enforce the CBD in relation to rights over genetic resources (Bavikatte & Robinson, 2011).

Next, I look at how Indigenous Peoples participated effectively in these meetings despite unfavourable and complex circumstances.

Indigenous Peoples' Participation Strategies in the Access and Benefit Sharing International Regime Meetings

I was part of several access and benefit sharing meetings and made note of their complicated processes. The Indigenous Peoples and local communities had to overcome confusion, fear, and disappointment in order to finally converge to support the urgent need for national and international instruments to defend our right to have our vision and input represented at meetings where key concepts, articles, and negotiations were discussed (Y. Terán, personal testimony, January 25, 2006). Many Indigenous Peoples felt that the Access and Benefit Sharing International Regime was written from a Western perspective.

In our vision the plants, animals, rivers, everything is related and interconnected. We believe that the resources from Mother Earth are for the well-being of humanity. Consequently, it was very painful for us to understand these initial discussions on the commercialization of our resources and to put a price on genetic resources and traditional knowledge. (N. Reyes, personal communication, January 25, 2006)

At the International Indigenous Forum on Biodiversity, we² demanded consistent Indigenous participation in the discussions and the creation of a Working Group on Access and Benefit Sharing, a request that was denied several times. However, Indigenous Peoples and local communities were present in the forum's access and benefit sharing meetings and gave their declarations, which included clear recommendations. In 2006, for example, the International Indigenous Forum on Biodiversity pointed out that our knowledge has an intrinsic link to our resources; therefore, our rights over our genetic resources will be recognized and protected, and the States will recognize Indigenous Peoples' own systems of protection that are embedded in our traditions and Indigenous laws. We demanded from the States the recognition and protection of our human rights concerning the lands, territories, and waters traditionally occupied by Indigenous Peoples as well as rights over our traditional knowledge. We emphasized that any regime must recognize Indigenous Peoples' rights in a manner that is consistent with the international system of human rights and the customary law of Indigenous Peoples (International Indigenous Forum on Biodiversity, 2006).

The International Indigenous Forum on Biodiversity, the Indigenous Women's Network on Biodiversity, and the Indigenous Women's Network on Biodiversity from Latin American and the Caribbean participated in access and benefit sharing discussions as observers. In order to have our comments included in the operative texts, we needed the support of a Convention on Biological Diversity State Party. Usually, we were supported by the African group or by Norway, and a few times we were supported by Ecuador, Bolivia, Panama, Mexico, and Peru. As Indigenous Peoples, we made the firm decision to participate in the whole access and benefit sharing process. A young Indigenous woman, who is a lawyer from Argentina and a member of the Indigenous Women's Network on Biodiversity from Latin American and the Caribbean, carried out capacity building activities on access and benefit sharing among Indigenous women of the Latin American and the Caribbean region. In simple terms, she explained to us what a genetic resource is and how, from each organ of a plant (e.g., leaf, flower), there

² As an Indigenous person, I have included myself as one of the members of the group representing Indigenous Peoples; based on the community-based protocol used, it is appropriate to say we.

comes the potential for development of different products that can be sold in international markets in order to generate profits. This money, however, stays only with the transnational corporations, pharmaceutical companies, and researchers prospecting the resources without any benefit to Indigenous Peoples—despite the fact that we are the ancestral guardians and keepers of biodiversity (Terán Maigua, 2014).

From the beginning, the International Indigenous Forum on Biodiversity and the Indigenous Women's Network on Biodiversity from Latin America and the Caribbean faced difficulties following the access and benefit sharing discussions because there were conducted in English, whereas in Latin America and the Caribbean region the most common language spoken is Spanish. Nevertheless, Indigenous Peoples tried to participate in the access and benefit sharing meetings, which were held after 6 p.m. and included no officially provided translation services. The *Almáciga* Foundation Group of Intercultural Work from Spain provided translation from English to Spanish. During these 6 years of negotiations, the International Indigenous Forum on Biodiversity, together with the Indigenous Women's Network on Biodiversity and the Indigenous Women's Network on Biodiversity from Latin America and the Caribbean, developed several strategies in order to be able to follow and participate at access and benefit sharing meetings:

- Local, national, and regional training. The Indigenous Women's Network on Biodiversity from Latin America and the Caribbean played a critical role in capacity building in Latin America and the Caribbean concerning themes related to the CBD, Article 8(j), Article 10(c), traditional knowledge, prior informed consent (PIC), mutually agreed terms (MAT), community protocols, and political lobby. From 2009 to 2013 Indigenous Women's Network on Biodiversity from Latin America and the Caribbean trained several Indigenous Peoples from communities in Latin America and the Caribbean, 80 percent of whom were women and 20 percent of whom were men. This capacity building was carried out thanks to a memorandum of understanding (MOU) signed by the Indigenous Women's Network on Biodiversity from Latin America and the Caribbean and CBD Secretariat, with financial assistance from the governments of Spain and Japan, and with technical support from the CBD's Program on Article 8(j) and access and benefit sharing Indigenous focal point, which was created with financial resources from the Government of Spain to provide Indigenous participants with tools for more complete and effective participation at CBD as well as access and benefit sharing meetings. The workshops resulted in more visibility for Indigenous women, the elaboration of the CBD Gender Plan with the participation of two members of the Indigenous Women's Network on Biodiversity (one from Philippines and other from South America), an increase in participation by Indigenous Peoples and local communities, and an increase in their awareness of and education about the CBD.
- Revision of official texts to include written comments from Indigenous Peoples and local communities to be presented at national and international meetings.
- Skype meetings to divide the revision of the texts, to clarify doubts, and to strategize about the participation of women.

- Creation of an Indigenous access and benefit sharing negotiators' group, which was composed of 10 Indigenous brothers and sisters from different geographical areas of the world. I was one of the negotiators for the Latin America and the Caribbean region. The International Indigenous Forum on Biodiversity group had a number of discussions before arriving at a solid and coherent position within the access and benefit sharing process. We had to negotiate among ourselves first to get a working environment based on trust, respect, and solidarity, and to forward a common position to the CBD State Parties about the official texts. Then, we continued negotiations among the International Indigenous Forum on Biodiversity and some State parties (Y. Terán, personal testimony, April 12, 2010).
- Indigenous Peoples' caucuses, Indigenous women's meetings, Indigenous youth caucuses, and preparatory meetings for the COP were conducted, as well as meetings with particular States' parties to discuss and defend specific issues, such as genetic resource and traditional knowledge rights, or to explain the significance for Indigenous Peoples regarding the importance of lands, territories, and waters for our survival and cultural diversity.
- Participation in several sessions such as the Working Group on Access and Benefit Sharing meetings, the Friends of the Co-Chairs meetings, the Inter-regional Negotiating Group sessions, the Co-Chairs Informal Inter-regional Consultations, and in the inter-sessional meetings. These meetings were held until late at night with no translation from English to Spanish.
- Careful follow-up on negotiations and preparations to make rapid collective political decisions during the access and benefit sharing meetings. For instance, at the Montreal meeting in 2010, the International Indigenous Forum on Biodiversity negotiators on access and benefit sharing, together with other International Indigenous Forum on Biodiversity participants, decided to abandon the meeting because the protocol for participation had been changed and the Indigenous negotiators did not have the opportunity to speak. Afterwards, we returned to the conference room and presented our concerns with the support of the African group. The two negotiators from Latin America and the Caribbean (one from Mexico and one from Ecuador) were responsible for writing the International Indigenous Forum on Biodiversity position, and I was nominated to read it in English. However, in this political venue, a few members of the International Indigenous Forum on Biodiversity from Latin American and the Caribbean and the Indigenous Women's Network on Biodiversity from Latin America and the Caribbean played a crucial role: We were inside the room forming a semi-circle to support our negotiators. When the tranquility and the order returned to the meeting, the other members of the International Indigenous Forum on Biodiversity came back into the room. One member described the experience by saying:

Indigenous brothers and sisters from Latin American and the Caribbean participated in the whole access and benefit sharing process with honesty, consistency, perseverance, and decision. We put our hearts and minds into each meeting and received the guidance and spiritual strength from our Elders, families, and communities. Our ceremonies, offerings, prayers, chants, reciprocal support, and tears helped us, the Indigenous women from Latin America and the Caribbean to continue calmly in these tiring,

technical, and difficult dialogues under an umbrella of Western paradigms. (F. López, personal communication, April 12, 2010)

- Lobby the delegates during the negotiations and work closely with governments that understood and supported Indigenous issues, while also writing paragraphs, declarations, articles for publication, correcting documents, and attending consultations. The process of lobbying took some time to be more fluid and inclusive, as the States' representatives wanted to consult only with specific Indigenous delegates.
- Organize side events to discuss Indigenous Peoples' concerns using prepared PowerPoint presentations, and to train and guide youth and new participants.
- Create worldwide networking among Indigenous Peoples to convince them to lobby their own governments about Indigenous concerns over access and benefit sharing or to prepare written documents outlining Indigenous Peoples' positions to guide the access and benefit sharing discussions at an international level.

In 2009, the Indigenous Women's Network on Biodiversity from Latin America and the Caribbean made alliances with the Universidad Particular de Loja from Ecuador and with the University of New Mexico (UNM) through several departments such as El Centro de la Raza, Native American Studies, the Latin American and Iberian Institute, Indigenous Law Faculty, Indigenous Planning, Iberian Science, Technology and Education Consortium, and the Ortiz Center. UNM, together with the New Mexico Acequias Association, the Indigenous Yánesha Organization from Peru, and the Kichwa Indigenous Organization Andes Chinchasyu from Ecuador, created an advisory group for the Indigenous Women's Network on Biodiversity from Latin America and the Caribbean in the CBD process. This advisory group provided the International Indigenous Forum of Biodiversity with three documents: two on the Indigenous position on access and benefit sharing and the third related to the adoption of Indigenous Peoples' terminology (instead of Indigenous Peoples and local communities) in future decisions and secondary documents under the CBD, as appropriate.

The first meeting at The University of New Mexico (UNM) was held in November 2009 in collaboration with an Indigenous expert from Mexico. The second took place in December 2009 with the support of an Indigenous woman expert from Peru, and the third meeting occurred in February 2013 with the support of UNM's Indigenous Law Faculty and Natural Justice. Several delegates from the Universidad Intercultural de Mexico; Universidad Fray Lucca de Cuernavaca, Mexico; Indigenous leaders from Bolivia, Peru, Ecuador, Venezuela, and the United States; Indigenous experts on access and benefit sharing from Peru and Mexico; lawyers from Natural Justice (a non-governmental organization); and UNM. Indigenous and non-Indigenous professors participated in meetings held at UNM. Documents were collectively written, corrected, and submitted to the CBD Secretariat. The second document, titled "Culture and Knowledge are NOT Negotiable," was the basis for the International Indigenous Forum on Biodiversity to start the access and benefit sharing discussions in Cali, Colombia in 2010. The third paper on the justification to change the terminology to "Indigenous Peoples" instead of "Indigenous Peoples and local communities" was considered during the meetings of the Conference of Parties (COP 11 and COP 12) (COP, 2012, 2014). We received financial support to cover the cost of logistics from some UNM departments and from people who were sympathetic to our goals. We made a

*minga*³, or collective work, to defend our life, resources, and traditional knowledge (Terán Maigua, 2014).

The rights of Indigenous Peoples in the Nagoya Protocol are a result of hard fought battles by the International Indigenous Forum on Biodiversity over every comma and word. With strong support, especially from the African group and from Norway, Indigenous Peoples and local communities gained significant ground on their rights over traditional knowledge, genetic resources, and the recognition of their customary laws by giving more content to Article 8(j) and 10(c) of the CBD (Bavikatte & Robinson, 2011). Through these discussions to defend the conservation of biodiversity; ecosystems; Indigenous ways of life; land tenure and use; the right to culture, knowledge and practices; food; and economic security, Indigenous Peoples generated the “bio-cultural rights” that have an explicit link to conservation and sustainable use of biological diversity (Bavikatte & Robinson, 2011), which were advocated during international biodiversity negotiations as a defense against “biopiracy” of knowledge and resources (Bavikatte & Robinson, 2011).

Nagoya Protocol on Access and Benefit Sharing and Indigenous Peoples and Local Communities

What did Indigenous Peoples and local communities achieve during these 6 years of intense and difficult negotiations? The Nagoya Protocol is the first piece of international law that was negotiated after the adoption of UNDRIP. The Protocol has a preamble—36 articles—and one annex on monetary and non-monetary benefits. Indigenous Peoples and local communities lobbied governments during these years of negotiations to ensure inclusion and recognition of their rights.

The preamble of the Nagoya Protocol has seven paragraphs relevant to Indigenous Peoples and local communities and their traditional knowledge. They refer to Article 8(j); the interrelation and the inseparable nature between genetic resources and traditional knowledge; the owner or holder of traditional knowledge, including countries; Indigenous Peoples and local communities’ right to identify within their communities the rightful holders of traditional knowledge; UNDRIP; and non-extinguishment of existing rights. The vital role of women in access and benefit sharing, and their full and effective participation in biodiversity conservation policymaking and implementation, is also recognized in the preamble.

The Protocol has obligations and regulatory requirements on access and benefit sharing to provide legal certainty, such as:

- Access to genetic resources;
- The fair and equitable sharing of benefits arising from the utilization of genetic resources and obligations of compliance, such as prior and informed consent (PIC) and mutually agreed terms (MAT);

³A Kichwa word meaning “collective work” where all community members participate to achieve several things. Examples of such communal labour include cleaning and repairing roads, which all people participate in, including children, youth, women, men, elders, and community leaders.

- The monitoring of genetic resources use and the designation of checkpoints and reporting requirements for access, including prior and informed consent; and
- The establishment of a certificate of compliance recognized at the international level given by the providers of genetic resources to the Clearing House of the Protocol on Access and Benefit Sharing.

The Protocol also has articles related to traditional knowledge associated with genetic resources held by Indigenous Peoples and local communities, as well as to genetic resources themselves including where Indigenous Peoples' rights over those resources have been recognized. In these cases, informed consent with Indigenous Peoples and local communities should be sought prior to participating in access and benefit sharing in accordance with mutually agreed terms, domestic legislation, and Indigenous Peoples and local communities customary laws, community protocols, and procedures. The Protocol also has articles on awareness raising and capacity building with the participation of State parties, including women and Indigenous Peoples and local communities, that will be carried out with sustainable financial mechanisms and resources. The Protocol seeks the technology transfer, collaboration, and cooperation in technical and scientific research.

During the negotiations, Indigenous Peoples and local communities exerted great effort and used intercultural protocols for lobbying, as well as several strategies to reach a final Protocol text that recognized our rights, genetic resources, and traditional knowledge's link to genetic resources, equal benefit sharing, women's participation, and prior and informed consent and mutually agreed terms that would be obtained through culturally appropriate methods. F. López (personal communication, October 29, 2010) described it by saying:

For six years we defended with love and passion the sustainability of our Mother Earth to ensure our life and the survival of the coming generations. Indigenous Peoples will continue to be the guardians and protectors of Mother Earth, *Pachamama*, and all her beings in the same way that our ancestors did.

The Implications of Nagoya Protocol on Indigenous Peoples' Lives

An Ecuadorian Elder reacted in this way to the Nagoya Protocol implications:

Since ancestral times, Mother Earth has been cared for, protected, and respected by Indigenous Peoples as a living being and life giver. She is the basis for human and cultural development. Since our childhoods, we have learned how to treat the plants, the animals, and all resources that are forming the ecosystems. We were taught how to talk to the plants and how to ask permission before using them either as medicine or protection. In that regard, our grandparents shared with us that the resources are for the benefit of all humanity free of charge in accordance with our ancestral values of sharing and caring for one another, reciprocity and protecting our sacred land, *Pachamama*. Indigenous Peoples have land, territories, and waters surrounded by medicinal plants and herbs that we use only whenever necessary. They grow freely for our collective well-being. We never put a price on a plant. We never have the idea that outside our

communities there are people and organizations that are making a profit from the use and commercialization of our plants.

This contemporary world is going against the natural laws that our ancestors transmitted to us orally from one generation to the next. I do believe that the Nagoya Protocol is going to change our life. We will be forced to think and act in a new way. It will not be easy to change our thinking, feeling, and acting concerning our Mother Earth and her beings. We need to understand clearly the content, significance, and impact of this new international document in our lives. I already have several questions and contradictory feelings: Are the involved States willing to respect our rights, our intellectual property? Are they willing to work with Indigenous Peoples side-by-side within a framework of mutual respect and understanding? Do the States know that we, the Indigenous Peoples, have practiced traditional knowledge since ancestral times? Do they know that our resources and knowledge are secret and sacred?

This is like a puzzle, and together we need to work on the Nagoya Protocol implementation with honesty and transparency. Then we must talk and exchange thoughts, respecting the diverse ideas and cosmos visions. We need to construct a clear, legal, technical, and institutional framework to deal correctly with this new type of business regarding our resources and traditional knowledge. (A. M. Guacho, personal communication, March 16, 2015)

The core of the Nagoya Protocol is contradictory to Indigenous Peoples' way of life due to the fact that it has to tackle complex technical issues and commerce. One participant described this phenomenon by saying:

Generally speaking, transnational companies have the economic and political power to establish a business and solve problems according to their interests. They have the human and technical capital to carry out commercial and non-commercial research, to establish various products from medicinal plants, and to sell these products worldwide. The millionaire earnings are only for the benefit of companies, for the researchers, for some universities and institutes. Oftentimes there is a lack of benefit sharing with the owners of the resources and traditional knowledge linked to them. (J. C. Sarango, personal communication, March 16, 2015)

In this regard, access and benefit sharing businesses are unequal because there is no balance and justice in the development of these companies. On the contrary, Indigenous Peoples become the poorest of the poor. Their life paradigms are completely opposite. Whereas Indigenous Peoples see the Earth as a mother to be cared for, respected, and loved, the Western world views the Earth as full of resources to be used for monetary purposes without caring for her natural assets and humanity.

New challenges are coming for Indigenous Peoples, especially those related to a national access and benefit sharing framework in order to have legal certainty regarding traditional knowledge protection, prior and informed consent, mutually agreed terms, and acceptable research and business processes. The implementation of the Nagoya Protocol needs to be accomplished with the full and effective participation of Indigenous Peoples and local communities in order to ensure the inclusion of our rights and customary laws. Furthermore, we urgently need technical, intercultural working teams in areas

concerning access and benefit sharing in order to participate under equal conditions and from a real understanding of access and benefit sharing issues. I described the information required for benefit sharing by stating:

Researchers will need precise information regarding financial resources, procedures, dates, type and number of researchers, type of benefits, the duration of benefits, ways to co-publish, how many chapters, pages, and individual or collective authorship. (Y. Terán, personal testimony, March 16, 2015)

How technical capacity building will occur and the ways in which technology will be used also needs to be well defined. In business, Indigenous Peoples must be considered as partners, as friends, and not as competitors. We are ready to work with States, investors, national and international companies in the achievement of a sustainable development that will respect Indigenous protocols; codes of ethics; customary laws; individual and collective rights; our right to self-determination; ancestral ownership over our lands, territories, and waters; and our right to say no if the project is not beneficial to us (Terán, 2008).

States themselves are facing problems in the implementation of the Nagoya Protocol; some are still working on the access and benefit sharing national framework. According to participants at the Workshop on Biodiversity held in Cochabamba, Bolivia in 2013, the design of the legal framework needs more discussion to better understand the implications and facilitate political decision-making, and it is still necessary to clarify several access and benefit sharing issues with participation from Indigenous Peoples. States will need to define which ministry or department is going to handle access and benefit sharing requests, ensure adequate staffing, and allocate sufficient financial resources to create a sustainable budget. States are conscious that every case is unique and different. With respect to traditional knowledge associated with genetic resources, When drafting domestic laws based on the Nagoya Protocol, States need to take into consideration customary law, access and benefit sharing community protocols, prior and informed consent, minimum requirements for mutually agreed terms, as well as creating a model outlining necessary clauses in contracts concerning benefit sharing arising from traditional knowledge associated with genetic resources (F. López, personal communication, December 12, 2013). There are good and bad access and benefit sharing examples, but in any case Indigenous Peoples must be ready with their own access and benefit sharing community protocols in order to make sound business decisions.

Examples of Access and Benefit Sharing

The Nagoya Protocol is quite complex, and its implementation will mostly depend on the political will of States to work within a clear access and benefit sharing legal framework and to include all social actors in the negotiations. The main purpose of the Protocol is to stop biopiracy and to develop business relationships based on mutual respect and understanding. For all Indigenous Peoples around the world, this protocol is a new challenge to deal with at both the national and international level. Intercultural capacity building will be needed to understand the content and consequences of the Nagoya Protocol on humanity and life—especially on Indigenous Peoples and local communities whose survival depends mainly on biodiversity and resources within their local ecosystems. The interchange of information will play a crucial role in following the best examples of access and benefit sharing and to avoid those that do

not accomplish these goals. Let us now look at some cases of biopiracy and access and benefit sharing in South America. These examples demonstrate the need for the Nagoya Protocol in order to prevent these vulnerabilities to biopiracy.

On May 10, 1993, Ecuador signed an agreement with the National Cancer Institute of the United States of America through the Indigenous Federation of Awa Centers of Ecuador (located in the provinces of Esmeraldas, Carchi, and Imbabura) and Colombia to allow the study of medicinal plants that are found in the Awa territory that may be used for the prevention and/or cure of cancer and AIDS. As a result of this study, the New York Botanical Gardens now has 4,500 specimens of medicinal plants. The Ministry of Environment of Ecuador is required to monitor this project, as well as submit an accountability report on behalf of the institute (de la Cruz, 2006).

The patent for “ayahuasca,” a sacred plant found in the Amazon River Basin of Brazil, Colombia, Ecuador, Guyana, Peru, Surinam, and Venezuela that is used in ceremonial and spiritual rituals and respected by some 390 Indigenous nations, was revoked. After living 8 years with the Indigenous Cofan and Siona, Mr. Loren Miller, an American citizen, took specimens from their territory and patented the species *Banisteriopsis caapi* in June 1986. He never deposited a botanical sample in a herbarium in Ecuador. In 1994, the Coordinadora de las Organizaciones Indígenas de la Cuenca Amazónica (COICA), together with the Amazon Alliance and the Center for International Environmental Law (CIEL), filed a complaint with the registrar of patents and trademarks in the United States, which succeeded in overturning the patent because Mr. Miller did not meet the novelty requirement. The patent, which had been granted for 17 years, expired on June 17, 2003 (de la Cruz, 2006).

Ecuador implemented the first Pro-Benefit Project on access and benefit sharing with the participation of the Federation of Organizations of the Napo Kichwa Nationality (FONAKIN) and the German pharmaceutical firm Schwabe S. L. On May 5, 2005 in Archidona, Ecuador, an agreement was signed and from March to May 2006, a training course was conducted entitled, *Commercial Use of Medicinal Plants and Traditional Knowledge: Risks and Opportunities*. However, the project was not completed (de la Cruz, 2006).

In Costa Rica, there was also a case involving the Instituto Nacional de Biodiversidad (INBio), a non-governmental organization created in 1989 to support the biodiversity conservation in Costa Rica. This institute works in five thematic areas: national inventory of biodiversity, bio-informatics, communication and education, biodiversity management and bioprospecting, and in the establishment of North-South contractual cooperation. INBio has more than 50 agreements with industry and the academy for projects involving high technology, laboratory equipment, and personnel training. It has vast experience in access and benefit sharing and has worked with several academic institutions and centers for research, creating a link between science and legislation. For instance, INBio worked on the project, Medicines Discovered Based on Natural Products from the Costa Rican Biota. This venture was proposed by INBio, sponsored by the International Cooperative Biodiversity Group, and financed by the United States’ National Institutes of Health (NIH). The research was carried out by Harvard University (the principal researcher), the University of Michigan, and INBio.

In this case, the institute has developed with clarity among the research team in terms of access, bioprospection, and contractual obligations, including benefits and other results referred to in the Nagoya

Protocol. It has clearly defined the types of research that may be undertaken; the amount of money and time allocated for research; time allotments for capacity building; requirements for scientific data sharing, monitoring, and reporting; as well as creating an addendum in the event that changes need to be made to the original contract.

INBio Institute achieved positive results during this access and benefit sharing case, which included:

- Finances to cover four years of research;
- Workshops to improve knowledge about biodiversity research;
- Capacity building among INBio scientists at the labs of the University of Michigan and Harvard University, and at the businesses within the consortium;
- Interaction with senior scientists who used new techniques and technologies that will be useful for future project development;
- Workshops on conservation for the scientist and conservationist communities;
- Funding for the acquisition of books and materials about Costa Rican biodiversity for distribution in rural educational centers and other interested parties;
- Business experience on issues related to biodiversity;
- Agreements with third parties (i.e., companies); and
- Scientific publications in partnership with the INBio Institute.

Despite these positive experiences, INBio still faces legal problems in relation to the implementation of the Nagoya Protocol, such as difficulties meeting the requirements of the three organizations involved and the use of federal funding from the United States. The majority of negotiations are carried out over the Internet and by telephone, thus requiring more time to reach an agreement and increasing the time needed for parties to sign the documentation giving prior informed consent. Moreover, the transfer of samples to places that are not specified in the initial contract requires written authorization from the providers (INBio)—which implies yet more time and effort. The same written procedure is necessary with research results and bio-prospecting activities, and their economic applications. The auditing of contracts, however, does not have specific protocols and, in the case of a party's non-compliance, it will be necessary to have legal counsel abroad, which may prove costly. INBio's experience is a good example of what is needed in terms of contracts and regulations in order to encapsulate transparency in the research and development process (Cabrera Medaglia, 2013).

On the other hand, however, there are also access and benefit sharing examples that fail to comply with the requirements for success. This was the case of the Expedición de Muestreo Oceánica Global at the National Park of Galapagos in Ecuador. Between 2003 and 2004, J. Craig Venter, a scientist and entrepreneur, and his team of researchers collected more than 150 samples of 200 liters of seawater every 200 miles. The samples were collected from the waters of the National Park of Galapagos in

Ecuador. This collection was for a scientific study examining the microbiological diversity in the Galapagos, aiming to examine the impact of humans on the environment and to better understand the evolution life on Earth. A memorandum of understanding was signed between the Institute for Biological Energy Alternatives (IBEA), which Venter founded, and the Ministry of Environment from Ecuador (MEA), but unfortunately this memorandum did not precisely state the quantities that would be collected, and did not provide a complete description of the samples that would be taken from the water. By 2004, it was already known that some of these marine microorganisms have potential for use in industry, including as biofuel (Nemogá-Soto & Lizarazo Cortés, 2013).

In this case, the samples of seawater were collected from international waters without following access and benefit sharing rules—samples came from 17 countries in Central and South America (Ecuador, Mexico, Panama, and Honduras), Canada and the United States, Oceania, the South Pacific, Europe, and the United Kingdom. The Estación Científica Charles Darwin gave permission to carry out the research in Ecuador, and the National Park of Galapagos gave authorization to collect the samples for two years with the option to renew if mutually agreed upon. A researcher from the Universidad de Guayaquil in Ecuador provided technical advice. The memorandum of understanding did not have a paragraph related to benefit sharing; however, Clause 5 referred to the publication and diffusion of information from the project. All the analyzed data were to be archived in public repositories and published in scientific forums as a way of recognizing that the information comes from the genetic patrimony of Ecuador. IBEA and MAE, together with the National Park of Galapagos, will work together on one or more publications to analyze the genomic information collected during this study. The involved parties also agreed that other international collaborators and scientists will be recognized as authors of these publications. Finally, this information will be shared with public and educational institutions, especially those from Ecuador, taking into consideration the scientific use of this information (i.e., it is not for commercial use).

In 2004, the first results from this expedition were published in *Science* (Venter et al., 2004). In 2007, other data was published in a series of eight articles in the open access publication *PLOS Biology*, where three of the articles were catalogued as scientific (Kannan, Taylor, Zhai, Venter, & Manning, 2007; Rusch et al., 2007; Yooseph et al., 2007). None of these articles included an Ecuadorian as either a researcher or a collaborator. The J. Craig Venter Institute indicated that it would not claim patents or other intellectual property rights over the genomic DNA and sequenced data (Nemogá-Soto & Lizarazo Cortés, 2013).

This example from Ecuador offers multiple lessons to be learned for future access and benefit sharing cases, such as:

- The need for public policy related to accessing genetic resources and the contracts required for scientific research on biodiversity;
- The elaboration of a model requiring researchers to indicate the origin of collected samples (this is both a legal and political issue);
- Enforcement of international standards by patent offices and scientific journals;

- The creation of a model for digital genetic information and for scientific interchange purposes to have clear rules on where and how to archive the genetic digital information coming from this scientific study, as well as clear decisions on the purposes of the scientific interchange within a frame of mutual scientific understanding and acknowledgment among the involved researchers and in accordance with the signed MOU;
- The establishment of checking points for compliance according to the ABS national regulatory framework;
- The need to ensure adherence to Bonn Guidelines, and
- The implementation of the Nagoya Protocol, taking into consideration other related international instruments such as the CBD and the United Nations Convention over the Sea Rights and Exclusive Economic Zone (Rimmer, 2009).

Moreover, involved parties need to consider the development of regional co-operation and common guidelines to deal with this type of project. When formulating the terms of the memorandum of understanding—as was the case in Latin America and the South Pacific where the memorandums were poorly structured—there need to be specific parameters to define what is and is not permissible under the agreement. While on the other hand, the agreement signed between the J. Craig Venter Institute and Australia had rigorous terms governing benefit sharing that implied a strong national regime on access to genetic resources in Australia (Rimmer, 2009).

It would also be important to proceed cautiously in the creation of a model for the dissemination of results in accordance with intellectual property and bio business, as well as the establishment of better communication among the authorities in each country and at other institutions, such as the Ministry of Environment, national parks, and universities, among others. In the case of the Galapagos Park, there were several gaps in ABS compliance and, for this reason, we recommend creating a model for the promotion of results in accordance with the rules and procedures related to intellectual property nationally and specifically for bio-business (e.g., access, PIC, MAT, veto). This communication will aid in the formulation of public policies that address issues in a reasonable timeframe, taking into consideration the complex and novel situations in terms of both legal and technical elements. There must also be specific documentation on the administration of research, bio-prospection, and access and benefit sharing (Nemogá-Soto & Lizarazo Cortés, 2013).

From the aforementioned examples, one can see the complexity involved in resolving cases of biopiracy, as each case has its own specific circumstances and a variety of considerations must be weighed using human and technical resources. Patents and their revocation require the investment of considerable financial and legal capital that are often more readily accessible to transnational corporations, pharmaceutical companies, research institutes, and universities than to individuals and communities. Indigenous Peoples and local communities have had unequal participation in the implementation of the Nagoya Protocol; therefore, it is compulsory for us, as Indigenous Peoples, to understand this Protocol and to develop capacity within our communities at all levels in order to protect our rights. The bio-cultural community protocols will play a crucial role in the world of business and within Indigenous communities (J. Males, personal communication, March 16, 2015).

Bio-Cultural Community Protocols

Indigenous Peoples and local communities are developing more relationships with external actors such as governmental offices, researchers, companies, and non-government organizations. These relationships demand follow-up on protocols in order to have norms, rules, and customary laws related to Indigenous Peoples' governance and administration of their lands and territories respected, including the role of traditional knowledge in the conservation and sustainable use of biological diversity. Therefore, it is necessary to invest time and resources in developing bio-cultural community protocols in order to have a clear understanding of the rules, norms, and unique regulations for internal and external interactions between Indigenous Peoples and researchers. Furthermore, these protocols must provide information about rights, responsibilities, and cultural norms that will maintain social cohesion and strengthen rights, values, and customary processes in decision-making. These bio-cultural community protocols should be linked to national and international legal frameworks related to Indigenous Peoples' rights (Shrumm & Jonas, 2012).

The implementation of the Nagoya Protocol has been in place since 2014; yet, Indigenous Peoples still need to be creative when it comes to adopting and implementing these protection mechanisms related to genetic resources and the traditional knowledge associated with them. It is essential to have our community protocols prepared in different formats through video, photos, theater, and/or role-playing—because Indigenous Peoples come from oral tradition, we must design our community protocols in practical, approachable forms, such as audio or visual mediums. In the past, we experienced success using this approach to include more Indigenous participation in a United Nations Program where, after several meetings, they decided to accept the grand proposals in different formats, and even in Indigenous languages. Community protocols are built and validated collectively over a number of years with participation from men, women, youth, and Elders. They are holistic and, in the access and benefit sharing process, they will set the tone, conditions, and aspirations of Indigenous Peoples regarding research, negotiations about local resources and knowledge, or the misuse of our resources and/or traditional knowledge. The Kuna author López Miro (2014) said that in Panama's Pueblo Guna region, the communities have the right to approve or not approve research. If the research goes against their customary laws or cultural and spiritual values, then they have the right to veto it. Depending on the circumstances, some parts of the community protocol would be delivered to the relevant authorities. These community protocols are crucial to protect the traditional knowledge. If there is a case of access and benefit sharing, in the initial conversations about gaining access to genetic resources, if Indigenous Peoples have their community protocols ready, they would deliver relevant information related to that specific case to the representatives of the company, usually to inform them of the community's views, rules, and expectations. The access and benefit sharing community protocols determine who owns the genetic resources and associated traditional knowledge, how prior and informed consent and mutually agreed terms will be obtained, how access should be accomplished, and how benefit sharing will occur. In the words of A. M. Guacho:

The protocols are in the oral memory of our peoples, but we need to remember, re-learn and re-work them according to current needs. It is important for us to gain internal strength of our governance systems, local authorities, and all Indigenous Peoples and have new leadership with a renewed and strong Indigenous spirituality. (A. M. Guacho, personal communication, April 18, 2013)

The process of the elaboration of community protocols will help us to understand what prior and informed consent is in a practical way, and it would provide us with the ability to analyze information, especially before consenting to or denying involvement from Indigenous Peoples in any particular negotiation or when signing a contract. For this reason, as A. Guamán explains:

It is expected that while the implementation of the Nagoya Protocol is in progress, the Indigenous Peoples, through formal and informal training, gain a full understanding of the various issues and working groups on biodiversity and access and benefit sharing. They can later participate in meetings knowing beforehand the issues pertaining to biodiversity and related topics. Women play an important role in creating new capacities, because they are the cultural pillar of Indigenous Peoples and the main transmitters of knowledge, language, and culture. (A. Guamán, personal communication, April 18, 2013)

Indigenous Peoples must build technical and political teams, strengthen their alliances, and consolidate their connections with academia, as this may serve to support the design and implementation of capacity building, technology adoption, the transfer of knowledge about biodiversity from past research, and the discovery of its potential uses in order to valorize community assets and work in partnership on publications in order to disseminate collective knowledge (Cabrera Medaglia, 2013).

J.C. Sarango suggests that,

Through an honest analysis, Indigenous Peoples can assess the use of traditional knowledge in research in terms of risks, challenges, benefits, and necessary safeguards. There should be time allotted to acquire a shared agreement on the mechanisms needed for its protection. Each member of the community must give his or her ideas on cataloguing and registering traditional knowledge, and his or her agreement or disagreement with these mechanisms. From these steps, it would then be decided how to handle on-going follow-up on the use of genetic resources and associated technical knowledge by outside institutions, and how to halt the access to and use of sacred and secret plants. (J. C. Sarango, personal communication, March 16, 2015)

Indigenous Peoples need to make important decisions to keep and protect our traditional knowledge. Our self-determination will determine the elaboration of *sui generis* systems of traditional knowledge protection and the creation of a Council of Elders to give input on and guide the critical issue of traditional knowledge protection following customary law and national law. In this regard, Indigenous Peoples should build their capacity to catalogue traditional knowledge in order to understand the process, and thereby identify, collect, organize, register, and record traditional knowledge so they may maintain and protect it, and participate in benefit sharing both now and for future generations. This catalogue could be made in both Indigenous languages and other languages using traditional and modern technologies. This process of cataloguing must be achieved with consultation, prior and informed consent, mutually agreed terms, and the full and effective participation of Indigenous Peoples and local communities. The protection of traditional knowledge could be made in two types:

- a. Preventive protection to avoid the illegal use of intellectual property and traditional knowledge, and

- b. Positive protection in which Indigenous Peoples promote their traditional knowledge, control its utilization, and receive benefits from its commercialization (Organización Mundial de la Propiedad Intelectual [OMPI], 2012).

Several articles of the National Constitution of Ecuador (Tribunal Constitucional, 2008) relate to the rights of Mother Earth and the rights of Indigenous Peoples related to land, resources, and prior and informed consent. Articles 71 to 74 specifically refer to the rights of Nature or *Pachamama*, and Article 57 recognizes 21 collective rights for Indigenous Peoples, among which the following stand out:

Article 5: To keep ownership of ancestral lands and territories and to obtain free awarding of these lands.

Article 6: To participate in the use, usufruct, administration, and conservation of natural renewable resources located on their lands.

Article 7: To free prior informed consultation, within a reasonable period of time, on the plans and programs for prospecting, producing and marketing non-renewable resources located on their lands and which could have an environmental or cultural impact on them; to participate in the profits earned from these projects and to receive compensation for social, cultural, and environmental damages caused to them. The consultation that must be conducted by the competent authorities shall be mandatory and in due time. If consent of the consulted community is not obtained, steps provided for by the Constitution and the law shall be taken.

Article 8: To keep and promote their practices of managing biodiversity and their natural environment. The State shall establish and implement programs with the participation of the community to ensure the conservation and sustainable use of biodiversity.

Article 12: To uphold, protect, and develop collective knowledge; their science, technologies and ancestral wisdom; the genetic resources that contain biological diversity and agricultural biodiversity; their medicine and traditional medical practices, with the inclusion of the right to restore, promote, and protect ritual and holy places, as well as plants, animals, minerals, and ecosystems in their territories; and knowledge about the resources and properties of fauna and flora. All forms of appropriation of their knowledge, innovations, and practices are forbidden (Tribunal Constitucional, 2008, pp. 36-37).

At the regional level, Article 7 of Decision 391 of the Andean Community of Nations (CAN: Bolivia, Colombia, Ecuador and Peru) adopted on July 2, 1996 stated that member States “recognize and value the rights and decision making powers of Indigenous, Afro-American, and local communities over their traditional knowledge, innovations, and practices associated to genetic resources and derived products” (p. 57). Article 35 mentions “the conditions for access and use of this knowledge should be determined by the Indigenous Peoples and those interested in a Contract for Access (to genetic resources)” (p.58). The Eighth Temporary Provision calls for the establishment of a “special regime or a harmonization regulation, as applicable, aimed at reinforcing the protection of know-how, innovations, and traditional practices of Native, Afro-American, and local communities” (cited in Ruiz Müller, 2006, pp. 57-58).

Considering national and regional legislation, however, several questions arise from this:

- a. How would access and benefit sharing and biopiracy cases be addressed and solved in countries that are still waiting for the ratification of the Nagoya Protocol by their national government?
- b. How will the Nagoya Protocol enter in force in countries where Indigenous Peoples are still not recognized as Indigenous?
- c. Will such countries have an access and benefit sharing national framework in the short-term and mid-term?
- d. How will Indigenous Peoples' prior and informed consent and mutually agreed terms be obtained?
- e. What access and benefit sharing procedure will be followed in the Andean Community?⁴
- f. In which ways are States going to involve Indigenous Peoples on access and benefit sharing matters?
- g. Are States and companies willing to share their assessments of the social, cultural, and environmental impacts on Indigenous Peoples and Mother Earth as a result of an access and benefit sharing project?
- h. How will Indigenous participation in the benefits be determined?
- i. What will be the percentage, conditions, and duration of the benefits?
- j. Are Indigenous women going to participate as co-researchers and in benefit sharing?
- k. How will traditional knowledge be protected?
- l. Will Indigenous Peoples have adopted access and benefit sharing community protocols before the development of projects?
- m. Will Indigenous Peoples, including women, be able to participate in future meetings of the Nagoya Protocol?
- n. Will Indigenous Peoples have sustainable financial resources for capacity building on the Nagoya Protocol?

⁴ I refer specifically to the Andean Community because I come from that area. In Latin America, Bolivia, Colombia, Ecuador, and Peru we deal with genetic resources, traditional knowledge and benefit sharing, biopiracy cases, and a variety of development projects. I ask this question also considering the political circumstances of the region. In order to apply the Nagoya Protocol, it will be necessary to have the political will to build a clear national regulatory framework and to have the full and effective participation of Indigenous Peoples from that region.

Conclusion

The Nagoya Protocol is about the access to genetic resources and the fair and equitable sharing of benefits arising from their utilization. As Indigenous Peoples,

All of us must remember that our resources are our relations, the relationship between men and women with Mother Earth, and that among Indigenous Peoples, a song, story, or medicinal knowledge has a reciprocal relationship and connection with particular human beings, animals, plants, and places. (Cajete, 1986, p. 187)

The Nagoya Protocol is in the process of being implemented in the countries that already ratified it at COP 13 in South Korea. There are several legal and institutional challenges to overcome in order to have a clear process with legal certainty for providers, users, companies, researchers (both for commercial and non-commercial enterprises), universities, institutes, and for Indigenous Peoples and other stakeholders. There are compliance requirements that need to be achieved, such as a legal framework for access and benefit sharing in the execution and enforcement of the Nagoya Protocol. Therefore, all stakeholders involved in the negotiation will need to:

- Know their specific roles, responsibilities, and should follow Indigenous protocols to schedule appropriate negotiation times, respecting cultural needs such as allowing time for the community to review negotiation materials, and scheduling around seasonal cultural activities;
- Acquire prior and informed consent and mutually agreed terms using culturally appropriate methods and tools. In Ecuador, for example, the Instituto Ecuatoriano de Propiedad Intelectual (IEPI, 2011) elaborated written guidance for obtaining prior and informed consent in the Kichwa and Shuar Indigenous languages;
- Have in place a certificate of origin process, equal benefit sharing requirements in accordance with real Indigenous needs and priorities, sustainable funds for capacity building at all levels, intercultural teams working on access and benefit sharing, protocols that include Indigenous Peoples as co-researchers and co-publishers on projects, an Indigenous code of ethics and bio-cultural community protocols; and
- Consider the collective intellectual property of Indigenous Peoples and the full and effective participation of Indigenous negotiators,⁵ including more women and International Indigenous Forum on Biodiversity members, in the next meetings on the Nagoya Protocol.

In terms of capacity building on Nagoya Protocol issues, the Indigenous Women's Network on Biodiversity's experience could be used to achieve the necessary knowledge and strategies for ethical participation in access and benefit sharing negotiations, ensuring they occur within a framework of

⁵ Two Indigenous representatives were selected by the International Indigenous Forum on Biodiversity in South Korea at COP 13. Initially, the author of this article was nominated for the Latin America and Caribbean region. She declined the nomination due to health issues. The final representatives were two males, one from Panama and one from the United States.

understanding, friendship, and mutual respect. Anaya (2013) recommended, for example, that companies exercise due diligence by dialoguing with Indigenous Peoples prior to the beginning of research, and informing and consulting with Indigenous Peoples about any business development. Anaya also recommended that both parties explore the possible benefits and harms of any business development from the beginning, obtain prior and informed consent, reach mutually agreed terms, and ensure the adoption of formal policies and practices that enshrine respect for Indigenous Peoples' rights. This due diligence would minimize the potential for misunderstandings, lack of trust, and the loss of time, energy, and resources.

Compliance with the Nagoya Protocol will necessarily be in line with the CBD (2003), UNDRIP (UN, 2008), the International Labour Organization (ILO) Convention, the Aichi Targets (CBD, n.d.a), National Strategic Plans and Sustainable Development Goals prepared by the Parties of the Convention on Biological Diversity (CBD), national and international instruments, access and benefit sharing community protocols, and customary laws. The Nagoya Protocol should be for the benefit of all—for humanity and Mother Earth, *Pachamama*—in the protection of genetic resources and traditional knowledge. In this way, ecosystems would be used with care, always taking into consideration the well-being, the *sumak kawsay*, of present and future generations.

We need to understand and implement the Nagoya Protocol, follow its technical and legal requirements, and include all interested stakeholders, including having the full and effective participation of Indigenous Peoples and local communities, on an equal footing. Nevertheless, this international instrument shall pursue social justice and be monitored periodically to ensure its goals of ensuring reasonable expectations of life and the survival of humanity and real care for Mother Earth, *Pachamama* are being achieved.

References

- Anaya, J. (2013). *Report of the Special Rapporteur on the Rights of Indigenous Peoples* (A/HRC/24/41). Retrieved from <http://unsr.jamesanaya.org/docs/annual/2013-hrc-annual-report-en.pdf>
- Bavikatte, K., & Robinson, D. (2011). Towards a people's history of the law: Bio-cultural jurisprudence and the Nagoya Protocol on access and benefit sharing. *LEAD: Law Environment Development Journal*, 7(1), 1-35.
- Cabrera Medaglia, J. (2013). Acceso a recursos genéticos, distribución justa de beneficios y análisis legal entre: Instituto Nacional de Biodiversidad de Costa Rica, Universidad de Harvard y Universidad de Michigan. In M. Rios y A. Mora (Eds.), *Seis estudios de caso en América Latina y el Caribe: Acceso a recursos genéticos y distribución de beneficios* (pp. 25-63). Quito, Ecuador: UICN-PNUMA/GEF-ABS-LAC.
- Cajete, G. (1986). *Science: A Native American perspective: A culturally based science education curriculum* (Unpublished doctoral dissertation). International College, Los Angeles.
- La Coordinadora de las Organizaciones Indígenas de la cuenca Amazónica [COICA], Omaere, & Organization of Indigenous Peoples of Pastaza [OPIP]. (1999). *Biodiversidad, derechos colectivos y régimen sui generis de propiedad intelectual*. Quito, Ecuador: Author.
- Convention on Biological Diversity (CBD). (n.d.a). *Aichi Biodiversity Targets*. Retrieved from <https://www.cbd.int/sp/targets/>
- Convention on Biological Diversity (CBD). (n.d.b). *Bonn Guidelines*. Retrieved from <https://www.cbd.int/abs/bonn/>
- Convention on Biological Diversity (CBD). (n.d.c). *Working Group on Access & Benefit Sharing*. Retrieved from <https://www.cbd.int/abs/wgabs/>
- Convention on Biological Diversity*. (1992). Retrieved from <https://www.cbd.int/convention/text/>
- Convention on Biological Diversity (CBD). (2003). *Texts and annexes*. Montreal: OACI.
- Convention on Biological Diversity (CBD). (2004). *Ake:kon Guidelines*. Retrieved from <https://www.cbd.int/doc/publications/akwe-brochure-en.pdf>
- Convention of the Parties (COP). (1994, November 28-December 9). *First ordinary meeting of the Conference of the Parties to the Convention on Biological Diversity* (COP 1). Nassau, Bahamas: Author. Retrieved from <https://www.cbd.int/doc/?meeting=cop-01>
- Convention of the Parties (COP). (1998, May 4-15). *Fourth ordinary meeting of the Conference of the Parties to the Convention on Biological Diversity* (COP 4). Bratislava, Slovakia. Retrieved from <https://www.cbd.int/doc/?meeting=cop-04>

- Convention of the Parties (COP). (2000, May 15-26). *Fifth ordinary meeting of the Conference of the Parties to the Convention on Biological Diversity* (COP 5). Nairobi, Kenya. Retrieved from <https://www.cbd.int/doc/?meeting=cop-05>
- Convention of the Parties (COP). (2001, April 7-19). *Sixth ordinary meeting of the Conference of the Parties to the Convention on Biological Diversity* (COP 6). The Hague, Netherlands. Retrieved from <https://www.cbd.int/doc/?meeting=cop-06>
- Convention of Parties (COP). (2004, February 9-20). *Seventh ordinary meeting of the Conference of the Parties to the Convention on Biological Diversity* (COP 7). Kuala Lumpur, Malaysia. Retrieved from <https://www.cbd.int/doc/?meeting=cop-07>
- Convention of Parties (COP). (2006, March 20-31). *Eighth ordinary meeting of the Conference of the Parties to the Convention on Biological Diversity* (COP 8). Curitiba, Brazil. Retrieved from <https://www.cbd.int/doc/?meeting=cop-08>
- Convention of Parties (COP). (2008, May 19-30). *Ninth meeting of the Conference of the Parties to the Convention on Biological Diversity* (COP 9). Bonn, Germany. Retrieved from <https://www.cbd.int/doc/?meeting=cop-09>
- Convention of the Parties (COP). (2010a, October 18-29). *Tenth meeting of the Conference of the Parties to the Convention on Biological Diversity* (COP 10). Nagoya, Aichi Prefecture, Japan. Retrieved from <https://www.cbd.int/doc/?meeting=cop-10>
- Convention of the Parties (COP). (2010b, October 18-29). *The Tkarihwaié:ri code of ethical conduct to ensure respect for the cultural and intellectual heritage of Indigenous and local communities* (Decision X/42). Retrieved from <https://www.cbd.int/decisions/?id=12308>
- Convention of the Parties (COP). (2012, October 8-19). *Eleventh meeting of the Conference of the Parties to the Convention on Biological Diversity* (COP 11). Hyderabad, India. Retrieved from <https://www.cbd.int/doc/?meeting=cop-11>
- Convention of the Parties (COP). (2014, October 6-17). *Twelfth meeting of the Conference of the Parties to the Convention on Biological Diversity* (COP 12). Pyeongchang, Republic of Korea: Author. Retrieved from <https://www.cbd.int/doc/?meeting=cop-12>
- de la Cruz, R. (2006). *Módulo 3: Bioprospección, experiencias anteriores en el Ecuador. Memoria de la FONAKIN y PROBENEFIT del curso de capacitación "Uso comercial de plantas medicinales y conocimientos tradicionales: Riesgos y oportunidades"* (Unpublished monograph). Archidona, Ecuador.
- Hammond, E. (2013). *Biopiracy watch: A compilation of some recent cases*. Pinang, Malaysia: TWN.
- Indigenous Peoples Council on Bio-Colonialism. (2006). *The Convention on Biological Diversity's International Regime on Access and Benefit Sharing: Background and considerations for Indigenous Peoples*. Retrieved from www.ipcb.org/pdf_files/absbriefcop8.pdf

- Instituto Ecuatoriano de Propiedad Intelectual (IEPI). (2011). *El Epibatidín presenta Saberes ancestrales, expresiones culturales y biodiversidad* (No. 1). Retrieved from http://gaceta.propiedadintelectual.gob.ec:8180/Comunicacion_libro/15964_espa%C3%B1ol/
- International Indigenous Forum on Biodiversity (IIFB). (2006). In *Report of the Ad Hoc Open-Ended Working Group on Access and Benefit-Sharing on the Work of Its Fourth Meeting* (p. 8). Granada, Spain. Retrieved from <https://www.cbd.int/doc/meetings/cop/cop-08/official/cop-08-06-en.pdf>
- International Indigenous Forum on Biodiversity (IIFB). (2016). *About*. Retrieved from <http://iifb.indigenousportal.com/about/>
- Kannan, N, Taylor, S., Zhai, U., Venter, J., & Manning, G. (2007). Structural and functional diversity of the microbial kinome. *PLOS Biology*, 5(3), 467-478.
- López Miro, F. (2014). Proceso de toma de decisiones del Pueblo Guna de Panamá. In *Visiones y experiencia de América Latina en tema claves para la implementación del Protocolo de Nagoya* (pp. 19-22). Retrieved from www.aladi.org/nsfaladi/estudios.nsf/.../2014_09_5.pdf
- Nemogá-Soto, G., & Lizarazo Cortés, O. (2013). Expedición de muestreo oceánica global en el Parque Nacional Galápagos: Actividades de colección y aplicación de legislación. In M. Ríos y A. Mora (Eds.), *Seis estudios de caso en América Latina y el Caribe: Acceso a recursos genéticos y distribución de beneficios* (pp. 77-88). Retrieved from <http://portals.iucn.org/library/sites/.../2013-041.pdf>
- Organización Mundial de la Propiedad Intelectual (OMPI). (2012). *Guía de la Organización Mundial de la Propiedad Intelectual para la catalogación de los conocimientos tradicionales*. Retrieved from http://www.wipo.int/export/sites/www/tk/es/resources/pdf/tk_toolkit_draft.pdf
- Rimmer, M. (2009). The Sorcerer II Expedition: Intellectual property and bio-discovery. *Macquarie Journal of International and Comparative Law*, 6, 147-187.
- RMIB-LAC & the Consulting Support Group of New Mexico for the RMIB-LAC during the CBD process. (2009). *Culture and knowledge are NOT negotiable*. Unpublished manuscript.
- Ruiz Müller, M. (2008). *La protección jurídica de los conocimientos tradicionales: Algunos avances políticos y normativos en América Latina*. Quito, Ecuador: UICN.
- Rusch, D., Andrews-Pfannkoch, C., Baden-Tillson, H., Beeson, K., Bermingham, E., Bonilla-Rosso, G., . . . Yooseph, S. (2007). The Sorcerer II Expedition: Northwest Atlantic through Eastern Tropical Pacific. *PLOS Biology*, 5(3), 398-431. doi: <http://dx.doi.org/10.1371/journal.pbio.0050077>

- Secretariat of the Convention on Biological Diversity. (2011). *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: Text and Annex*. Montreal: Author.
- Shrumm, H., & Jonas, H. (Eds.). (2012). *Bio-cultural community protocols: A toolkit for community facilitators*. Cape Town, South Africa: Natural Justice. Retrieved from <http://naturaljustice.org/wp-content/uploads/2015/09/Biocultural-Community-Protocols-Toolkit.pdf>
- Tauli-Corpuz, V. (2000). La actualidad en la ONU: El cabildeo y la defensoría de los Pueblos Indígenas en la Arena Internacional. Baguio, Filipinas: Fundación Tebtebba.
- Ten Kate, K. & Laird, S. (1999). *The commercial use of biodiversity*. London: Taylor & Francis Inc.
- Terán, Y. (2008). Indigenous Peoples and development changes. *Pachamama: A traditional knowledge newsletter of the Convention on Biological Diversity*, 2(2), 7-8.
- Terán Maigua, Y. (2014). Acceso a recursos genéticos y distribución de beneficios: Participación de la Red de Mujeres Indígenas sobre biodiversidad para América Latina y El Caribe. In M. Ríos y A. Mora (Eds.), *Acceso a recursos genéticos en América Latina y el Caribe: Herramientas de apoyo para la implementación* (pp. 35-60). Quito, Ecuador: UICN. doi: <http://dx.doi.org/10.1371/journal.pbio.0050016>
- Tribunal Constitucional. (2008, Octubre 20). *Constitución de la República del Ecuador 2008* (Registro Oficial N° 449). Quito, Ecuador.
- United Nations (UN). (2002, August 26-September 4). *Report of the World Summit on Sustainable Development*. Johannesburg, South Africa: Author. Retrieved from www.unmillenniumproject.org/.../131302_wssd_report_reissued.pdf
- United Nations (UN). (2008). *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP). Retrieved from www.un.org/esa/socdev/unpfi/documents/DRIPS_en.pdf
- United Nations adopts Declaration on Rights of Indigenous Peoples. (2007, September 13). *UN News Centre*. Retrieved from <http://www.un.org/apps/news/story.asp?NewsID=23794&Cr=indigenous&Cr1=#.V4PEi5GYsc>
- Venter, J. C., Remington, K., Heidelberg, J. F., Halpern, A. L., Rusch, D., Eisen, J. A., . . . Smith, H. O. (2004). Environmental genome shotgun sequencing of the Sargasso Sea. *Science*, 304(5667), 66-74. doi: <http://dx.doi.org/10.1126/science.1093857>
- World Health Organization. (2002). *WHO traditional medicine strategy 2002-2005*. Geneva: Author.
- Yooseph, S., Bafna, V., Brenner, S., Chandonia, J., Cieplak, P., Dixon, J., . . . Zhai, Y. (2007). The Sorcerer II global ocean sampling expedition: Expanding the universe of protein families. *PLoS Biology*, 5(3), 432-466. doi: <http://dx.doi.org/10.1371/journal.pbio.0050016>

Appendix A

Personal Communication and Personal Testimonies

- Choque, María Eugenia, personal communication, April 12, 2010. Partner from Bolivia and Focal Point for the South and for Article 8(j), Indigenous Women's Network on Biodiversity from Latin America and the Caribbean. Interview during the Sixth Workshop on the Preparation for the COP 10, Panama City, Panama.
- Guacho, Ana María, personal communication, April 18, 2013. Coordinator of the Guamán Poma Indigenous Organization of Ecuador. Interview at the Traditional Knowledge Workshop in Quito, Ecuador.
- Guacho, Ana María, personal communication, March 16, 2015. Coordinator of the Guamán Poma Indigenous Organization of Ecuador. Interview at the Workshop on Indigenous Timekeepers in Santa Fe, New Mexico, USA.
- Guamán, Adela, personal communication, April 18, 2013. Coordinator of Luz y Vida Indigenous Organization of Ecuador. Interview at the Traditional Knowledge Workshop in Quito, Ecuador.
- López, Florina, personal communication, April 12, 2010. Coordinator of the Network on Biodiversity from Latin America and the Caribbean. Interview during the Sixth Workshop on the Preparation for the COP 10. Panama City, Panama.
- López, Florina, personal communication, October 29, 2010. Coordinator of the Indigenous Women's Network on Biodiversity from Latin America and the Caribbean. Interview during the COP 10, Nagoya, Japan.
- López, Florina, personal communication, December 12, 2013. Coordinator of the Indigenous Women's Network on Biodiversity from Latin America and the Caribbean. Interview at the Workshop for Countries of the Amazon River Basin, Cochabamba, Bolivia.
- Males, Jorge, personal communication, April 18, 2015. Kichwa artist from Ecuador. Interview at the Traditional Knowledge Workshop in Quito, Ecuador.
- Reyes, Naniki, personal communication, January 25, 2006. Partner from Puerto Rico, Indigenous Women's Network on Biodiversity from Latin America and the Caribbean. Interview at the Fourth Meeting of the Working Group on Article 8(j), Granada, Spain.
- Sarango, Julio César, personal communication, March 16, 2015. Legal Advisor for Indigenous Peoples from Ecuador. Interview at the Workshop on Indigenous Law, Saskatoon, Canada.
- Terán, Yolanda, personal testimony, January 25, 2006. Partner from Ecuador, Indigenous Women's Network on Biodiversity from Latin America and the Caribbean.

Terán, Yolanda, personal testimony, April 12, 2010. Partner from Ecuador, Indigenous Women's Network on Biodiversity from Latin America and the Caribbean and access and benefit sharing negotiator for Latin America and the Caribbean region.

Terán, Yolanda, personal testimony, March 16, 2015. Partner from Ecuador, Indigenous Women's Network on Biodiversity from Latin America and the Caribbean.