



Genetic Resources, Justice and Reconciliation

Canada and Global Access
and Benefit Sharing

Edited by Chidi Oguamanam

GENETIC RESOURCES, JUSTICE AND RECONCILIATION

When the oral history of a medicinal plant as a genetic resource is used to develop a blockbuster drug, how is the contribution of Indigenous peoples recognized in research and commercialization? What other ethical, legal and policy issues come into play? Is it accurate for countries to self-identify as users or providers of genetic resources? This edited collection, which focuses on Canada, is the result of research conducted in partnership with Indigenous peoples in that country, where melting permafrost and new sea lanes have opened the region's biodiversity, underscoring Canada's status as a user and provider of genetic resources and associated Indigenous knowledge. This work is an important resource for scholars, corporations, Indigenous peoples, policy-makers and concerned citizens as Canada and other countries take on the implementation of access and benefit-sharing policies over genetic resources and associated Indigenous knowledge. This title is also available as Open Access on Cambridge Core at <http://dx.doi.org/10.1017/9781108557122>.

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CHIDI OGUAMANAM

University of Ottawa



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Preface
“*Mashkikiikwe*”

John Borrows

My great-great-grandmother was an Anishinaabe medicine woman: *mashkikiikwe*. Her name was Margret McCleod and she had an exceptional understanding of the natural world. The Saugeen peninsula in Ontario’s forests, fields and gardens were her home. She was intimately familiar with Georgian Bay’s rocky shores and dramatic limestone escarpments. She recognized and understood the varied forms of life this environment supported. As she walked through this world, she could name each plant, insect, bird and animal. Margret described this world in Anishinaabemowin: *mashkikik*, *manidooshensak*, *binesiiwak*, *aweskiiyak*. She would call plants *mashkikik* – which means ‘the strength of the earth.’ She would see insects as *manidooshesak*, or little spirits, as they are called in our language.

Each Anishinaabe name would generate awareness of the natural world’s character. This was not only the case in generic categories like plants or insects. Each species of plant or insect carried a name. For example, strawberries were *odeminan* – heart-berries, because of their shape, colour and heart-health properties. *Odeemin* was also the name of a man whose heart was healed through gaining powerful experiences after the love of his life died, and he passed to the other side. *Mandaamin*, corn, was the food of wonder and was brought to the Anishinaabe through love, conflict, care and experimentation. Each tree, stalk, blade and root would impart their own lessons and relationships to humans and their environment.

Margret found it difficult to translate what she knew into English. Though she was fluent in Anishinaabemowin and French, English was her third language and it was much harder for her to use. For instance, a chicken’s gender was analogized from learning about other barnyard animals: there were bull-chickens and cow-chickens, depending on whether the birds were male or female. While humorous, this example illustrates how challenging it was for some Indigenous people to help settlers see the detailed knowledge people like her possessed. Women, like my great-great-grandmother, might be dismissed as simple, primitive or pagan depending on who was observing or recording what was being said in English.

On the other hand, our plant knowledge was considered a threat in some circumstances. Its power to shape our beliefs and behaviour challenged Euro-Canadian assimilative philosophies and practices. For instance, religious societies on our reserve actively discouraged work with plants and medicines. Such work was regarded as superstitious, witchcraft or inspired by the devil by some Christian teachers. With great compulsion, they forced women to abandon their relationships with plants, insects, birds, animals, water and rocks by getting them to destroy the objects used to learn and practice Anishinaabe law and tradition. Fortunately, these people never quite succeeded in destroying our knowledge, though they did cause significant pain and loss.

As a result, much of our traditional knowledge was preserved because people kept speaking their language, thus retaining essential features of a relationship to nature that is non-Western in outlook and practice. Second, one of the societies insisting on the destruction of plant knowledge were themselves of a scholarly bent. The Jesuits wrote down the 'recipes' Anishinaabe women used on our reserve, thus preserving a vital thread for future generations. Third, the Midewin Society, our Grand Medicine Society, was never fully eradicated and it is enjoying a renaissance across Anishinaabe akiing (Ojibwe country) today. One aspect of this society regards plants as central to living well in the world (*mino-bimaadiziwin*) and thus continues to teach about physical and spiritual health rooted in these ancient relationships. Finally, people like my great-great-grandmother were storytellers and their words continue to circulate in our communities and beyond in the present day. These are the stories I often draw upon as a law professor engaged in the revitalization of Anishinaabe law. One of these sources is a book called *Tales of Nokomis*, by Verna Patronella Johnston, and she explicitly references that she learned these stories from Margret who, in turn, learned them from her great-great-grandmothers.

You cannot interact with the elders of my reserve without understanding that so-called traditional ecological knowledge is a vital part of our past and future. You cannot work with Anishinaabe law, health, spirituality, economics, politics, culture or any other part of our lives without seeing how deeply they are connected to our knowledge of the natural world. The same is generally true of Indigenous peoples in many parts of the world. Article 31 of the United Nations Declaration on the Rights of Indigenous peoples has made this clear, by stating:

1. Indigenous peoples have the right to maintain, control, protect and develop their cultural heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of their sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna and flora, oral traditions, literatures, designs, sports and traditional games and visual and performing arts. They also have the right to maintain, control, protect

- and develop their intellectual property over such cultural heritage, traditional knowledge and traditional cultural expressions.
2. In conjunction with Indigenous peoples, States shall take effective measures to recognize and protect the exercise of these rights.

Unfortunately, as the chapters in this volume explain, Canada and other nation states have not yet developed respectful ways of relating to Indigenous law and traditional knowledge. Governments and corporations seem to consider the country as being only a consumer of Indigenous genetic resources. Yet Canada produces knowledge, foods, medicines, cosmetics and other goods which are based on Indigenous cultural heritage, knowledge and cultural expressions. There is very little protection in this sphere, despite Canada's diverse ecological heritage, and Indigenous peoples' rich traditional knowledge. Thus, not only have we, as Indigenous peoples, been significantly marginalized in this global cultural and economic space, we continue to struggle with universities and corporations over the use or even abuse of our relationships with wild rice, corn, strawberries and insects. This even occurs in relation to our entire genetic inheritance which is increasingly important to biotechnological and other knowledge applications.

Today, our knowledge and relationships with the genetic diversity of our territories is threatened by governments, corporations, scientists and other bodies and individuals. Biopiracy and cultural appropriation abound. *Genetic Resources, Justice and Reconciliation* addresses these issues from international and Canadian domestic perspectives. Many Anishinaabe people enjoy sharing their knowledge *except* if it is obtained in improper ways or used for inappropriate purposes. As this book demonstrates, propriety and appropriateness are best defined in harmony with the systems which generate these insights. It is also important to note that there are some Indigenous ideas and practices that cannot be freely shared because of the protections created within Indigenous legal systems to ensure proper use, as any legal system will insist.

Thus, the focus of this book is on the significant challenges faced by Indigenous communities in securing respect for their legal systems, and in relation to how knowledge generated within their societies is used. It discusses how Indigenous peoples encounter 'political disinterest, entrenched interests, senior bureaucratic inertia and [a] fundamental failure to see Canada as both a user and provider of genetic resources and traditional knowledge.' The authors demonstrate that there can be no equitable knowledge governance without recognizing and affirming Indigenous law's role in creating a better relationship with one another and the natural world. Some of these laws will be recognized through the 'development of community protocols, establishment of Indigenous knowledge databases and their management, material transfer and other contractual agreements, revision of existing research protocols to directly accommodate equitable access and benefit

sharing; prioritization of resources to translate relevant documents, simplification of such documents in plain language and enhancing their accessibility, not excluding explanation of key terms.' The work of Access and Benefit Sharing Canada (ABS; www.abs-canada.org), as captured in some of the contributions in this book, show that Indigenous political agency will be affirmed when international and domestic law, along with corporate and scientific communities entrench Indigenous understandings of law in their work. Perhaps there is no more opportune time for Canada to heed that counsel than now – given the federal government's efforts related to 'truth and reconciliation.' Indigenous peoples' laws related to genetic resources must become more prominent in guiding intellectual property and broader knowledge governance policies.

Until Indigenous laws and governance are taken more seriously, trust between the parties will be difficult to generate. This challenge particularly pronounced when Indigenous-settler interactions are set by rules and terms which do not incorporate Indigenous views, as the following contributions in *Genetic Resources, Justice and Reconciliation* demonstrate. For this reason, Indigenous peoples have been slow to engage botanical, agriculture, food and beverage, pharmaceutical, biotechnology and cosmetic industries as they work to advance their agendas. The following chapters provide valuable insights into how Indigenous peoples, nation states, corporations, scholars and scientists might better address injustices encountered in the inequitable use of genetic resources and associated Indigenous knowledge. By using the concept known as ABS, this book introduces readers to the grounds which must be cultivated to build better relationships with the natural world, particularly when Indigenous knowledge is implicated in these efforts.

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In the years following the awarding of the SSHRC grant, we have been lucky to build on the tremendously resourceful student body at the University of Ottawa, especially our Indigenous students who did serve and continue to primarily serve as trainees in various capacities, including as research assistants, community liaisons and agents of mobilization. They helped not only to advance ABS Canada as an ongoing research network but also in ensuring that we had very healthy and sustainable community outreach and collaboration with Indigenous organizations, leaders and community members that partnered and participated in our field work. We are extremely proud to specifically mention the following as ABS Canada's Indigenous alumni: Christopher Folz, Jessica Saris, Jay Pelletier and Joel Morales. Other graduate alumni led by our long-suffering and outstanding Project Manager, Chris Koziol, include Katie Degendorfer, Freedom Kai-Philips, Ece Yilmaz, Jeremy Baarbé, Gaëlle Groux, Andrea Lesperance and Vipal Jain, some of whom doubled as members of the Open African Innovation Research (Open AIR) partnership project at the University of Ottawa.

Part of the evolution of our team is our transition into a research network. This was made possible through the generosity of some institutional partners and funders.

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PART I

The Evolution of the ABS Policy
Landscape in Canada

The ABS Canada Initiative

Scoping and Gauging Indigenous Responses to ABS

Chidi Oguamanam

Abstract

This chapter has three objectives: (1) to explain the concept and context for access and benefit-sharing (ABS) in Canada, (2) to outline the undergirding methodology and process for the research that resulted in this book and (3) to provide a concise annotation of the component chapters and demonstrate their cohesiveness in tackling the global challenge of ABS over genetic resources and associated traditional knowledge through Canadian insights.

INTRODUCTION

This edited collection focuses on the topical subject of how researchers, the private sector and various other interests obtain genetic resources from Indigenous territories for research and development of products related to pharmaceuticals, health, personal and sanitary care, agriculture, food, cosmetics, environmental management, etc. Often, these genetic resources are obtained in association with Indigenous peoples' knowledge – also referred to as traditional knowledge (TK) – of the uses of genetic resources, which have proven valuable for researchers and industries in the making of new products. Mindful of concerns about their inadequacy, we use the terms Indigenous knowledge and TK interchangeably without distinction. Historically, Indigenous or Aboriginal peoples' (terms deployed here ambidextrously and interchangeably also in their pragmatic essence)¹ relationship with researchers or industry bio-prospectors is fraught with suspicion. Research has been conducted by non-Indigenous peoples and entities, and the results and benefits of the research rarely applied to the communities whose Indigenous knowledge and genetic resources contribute to valuable research outcomes. This phenomenon is global and not just particular to Canada. It has given rise to international outrage symbolized in the concept of 'biopiracy.' Biopiracy refers

to the global exploitation of genetic resources in Indigenous and local communities by external interests. These external interests seek intellectual property rights (mostly patents) without adequate forms of compensation or equitable partnership with the peoples or communities who provide the genetic resources and the knowledge required to unlock the resulting ‘innovations.’

Since the 1990s, the international community has intensified efforts designed to address the injustice in the inequitable use of genetic resources and associated Indigenous knowledge through the concept known as access and equitable benefit sharing (ABS). ABS recognizes that global biological resources – including genetic resources – are essentially the heritage of humankind and should be accessible to those who seek to utilize them for various ends, including research and development, without undermining the interest of the various custodians who conserve those genetic resources. Consequently, the process for accessing those resources must be mediated by equitable framework(s) for sharing benefits arising from their use by all stakeholders, including Indigenous peoples. So far, there is a complex range of international legal instruments and policy initiatives on ABS such as the Convention on Biological Diversity (CBD), its Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing over Benefits Arising from their Utilization (NP), and the International Treaty on Plant Genetic Resources for Food and Agriculture (IT). An underlying premise of these instruments is that Indigenous peoples and Local Communities’ (IPLC) epistemic orientations and worldviews regarding genetic resources have strong conservation ethics. As such, ABS is a form of incentive directed at objectives related to justice and equity, support for conservation of genetic resources and mitigation of the earth’s ever-intensifying biodiversity crisis.

For the purposes of this book, it is important to note that while Canada is a party to the CBD and the IT, it has yet to accede to the NP, citing its lack of preparedness to implement ABS into domestic law. The NP and the subject of ABS generally raise complex issues that strike at the heart of Indigenous peoples’ search for equity, justice and reconciled relations with the governments of Canada and the country’s universities, researchers and corporate sector. These historic relationships with Indigenous peoples have been rancorous and a source of great suspicion and distrust. ABS implicates Canada’s relationship with Indigenous peoples in many interconnected and overlapping ways, including resource ownership, Indigenous treaty and constitutional rights, cultural appropriation, the role of Indigenous legal traditions, knowledge systems, heritage and worldviews over the conservation of biological diversity, and environmental stewardship. In 2016, Canada withdrew its lingering reservation against the United Nations Declaration on the Rights of Indigenous peoples (UNDRIPs) and has fully endorsed the instrument in accordance with federal government’s ‘reconciliation agenda.’²² Within and outside the NP framework, researchers, industry and bio-prospectors have continued and will continue to deal with Indigenous peoples, their genetic resources and associated traditional or Indigenous knowledge.

Contributions in this volume seek to explore the diversity of issues implicated in ABS with deliberate sensitivity to Indigenous peoples as key partners. These contributions add to mapping and conjecturing the pathways through which Canada and Indigenous peoples can effectively forge constructive partnerships to fully engage ABS as a crucial subject matter in Canada-Indigenous relations at a time when reconciliation with Indigenous peoples is official government policy. Canada's experience will resonate with many other industrialized countries, especially those with a history of colonial relations with Indigenous peoples.

ACCESS AND BENEFIT SHARING: CONSENSUS IN STALEMATE

In 2012, the government of Canada indicated that it would not ratify the NP citing lack of preparedness. Having advised Canada to refrain from ratifying the Protocol, Indigenous peoples argued that the Protocol was negotiated without consultation and therefore without their consent. What Canada may or may not do with the Protocol was not clear to them. Suspicion remains rife. So, for once, both parties are in agreement but for different reasons. Historically, Canada rarely agrees with Indigenous peoples on any issue. But the issue of ABS provides an extraordinary exception. Canada and its Indigenous peoples seem to agree on the need for more time to enable constructive engagements on ABS among stakeholders. Across diverse government departments with mandates that engage or are engaged by ABS, there is presently neither a clear pathway nor a strong interdepartmental strategy on the ABS file. The issue is effectively stalled.

Some attempts by the government to start the conversation on ABS, post-Nagoya, have been at best superficial without the substantive involvement of Indigenous peoples. The latter's lingering suspicion on the government's motives is historically informed. Perhaps more specifically, it is deeply influenced by Canada's role at the negotiations of the NP, which was, arguably, perceived by Indigenous peoples at home as pro-industry and anti-Indigenous interests despite the best efforts of Canadian leadership as permanent co-chair of the ABS negotiations. Such a disposition is consistent with the posture of many of Canada's industrialized country allies. At the very least, realistically, there are three major partners on ABS: the various levels of governments in Canada (federal, provincial/territorial and municipal), research/industry stakeholders and Indigenous peoples. The latter have yet to be taken seriously as key stakeholders in ABS.

THE ABS CANADA RESEARCH INITIATIVE: NETWORKING, PARTNERSHIP AND COLLABORATION

In 2011, the first major academic piece in Canada on the NP and ABS, following the signing of the Protocol in 2010, kicked off the conversation over how Canada can best position itself on the subject. Titled 'Genetic Resources & Access and Benefit Sharing: Politics, Prospects and Opportunities for Canada after Nagoya'

(Oguamanam, 2011), the study evaluated Canada's unique and complex ecological profile and its rich Indigenous knowledge heritage. It found that Canada is both a user and producer of genetic resources as well as endowed with many Indigenous peoples, cultures and knowledge systems. The paper concluded that such a status requires the country to show leadership and play a proactive role on ABS, which is inclusive of industry and Indigenous interests. That study provided the impetus for building a research team that successfully applied for an Insight Grant from the Social Sciences and Humanities Research Council (SSHRC) in 2014, titled 'Toward an Indigenous Sensitive ABS Policy in Canada.' This project is premised on the need to start a national dialogue and raise awareness on ABS among various stakeholders, especially Indigenous peoples, and enable all interests to engage one another as Canada mulls the NP.

The SSHRC initiative attracted other supplementary funders and partners resulting in the founding of a research network of professors, researchers, students and Indigenous organization partners, known as ABS Canada (www.abs-canada.org). Among other things, its mandates include the identification and collaboration with Indigenous institutional and other partners for the articulation of Indigenous perspectives on ABS as part of Canadian ABS framework. Also, the project aims to engage policymakers at federal, provincial and territorial levels in the area of awareness raising, networking, collaborative training and capacity building on ABS toward an equitable policy outlook that is sensitive to Indigenous interests and concerns.

SCOPING THE INDIGENOUS PULSE ON ABS THROUGH PARTICIPATORY ENGAGEMENT

The ABS Canada initiative organized a series of focus groups and interactive sessions on a regional basis, in partnership with Indigenous organizations and leaders. The first one was in Moncton, New Brunswick for the maritime region in 2015; the second event was held in Ottawa, Ontario for central Canada in 2016; and the last focus group was held in Saskatoon, Saskatchewan for the Prairies and Western Canada in 2017. In a participatory and collaborative environment, through these forums, the ABS Canada research network facilitated a national conversation that gauged Indigenous sensitivity, built capacity and attempted to garner a cross-section of Indigenous perspectives on the subject of ABS. A unique aspect of the partnership with Indigenous participants is the discretion reserved to Indigenous peoples to raise their own account and resolutions arising from the focus groups.³ The Maritime Aboriginal Peoples Council was able to leverage that discretion by issuing the *Petkoutkoyek Statement on the Access, Use, and Fair and Equitable Sharing of Benefits Arising Out of the Utilization of Genetic Resources and Associated Traditional Knowledge in Canada* promulgated at Petitcodiac (Petkoutkoyek), Moncton, New Brunswick on 16 October 2015. The Pekkoutkoyek Statement

dovetails with the 2011 *Iskensisk Declaration on the Access, Use, and Fair and Equitable Sharing of Benefits Arising Out of the Utilization of Genetic Resources and Associated Traditional Knowledge in Canada*, issued in Iskenisk, Mi'kma'k, Truro, Nova Scotia, on 28 March 2011. The *Iskensisk Declaration* is perhaps the first major exclusively Indigenous declaratory response and initiative on ABS issues in Canada. It is discussed in greater detail in Oguamanam and Roger Hunka's contribution to this volume (Chapter 3).

In addition to Indigenous peoples' active participation, all of these focus groups were resourced by keynotes and capacity building sessions from globally renowned experts on ABS from within (including Indigenous experts) and outside of Canada and, in some cases, with institutional support from the Secretariat of the CBD and the Food and Agriculture Organization. With the further assistance of the Open African Innovation Research (Open AIR) (www.openair.org.za) – one of ABS Canada's partners – and the generosity of several African delegations, ABS Canada personnel participated at the World Intellectual Property Organization's Intergovernmental Committee on Intellectual Property and Genetic Resources, TK and Folklore (WIPO-IGC) in a symbolic gesture of south-north development and capacity building. The WIPO-IGC is charged with developing text-based instrument(s) for effective protection of a range of subject matters pursuant to its self-explanatory nomenclature. In the WIPO-IGC, ABS and incidental matters, including disclosure of source of origin or genetic resources and associated TK in intellectual property, especially patent application, constitute key cross-cutting issues at the jurisdictional intersection of the WIPO and the CBD. Owing to serving as facilitators and active observers of the interchanges in the earlier-enumerated forums, ABS Canada teased out wide-ranging issues on the subject of ABS with consideration for Indigenous peoples as key stakeholders in the Canadian context.

Aside from the Canada-wide focus groups, ABS Canada also partnered with the College of Law at the University of Saskatchewan in organizing a highly successful symposium on 11–13 May 2017 in Saskatoon. The symposium drew Indigenous youth, thought leaders, Canadian academics and researchers who work in the area of ABS. Open AIR sponsored the attendance and participation of members of African Indigenous and local communities to the symposium who shared their experience on ABS with their Canadian counterparts as one of the highlights of the symposium.

Presenters at the symposium were shortlisted from entries received in response to a call for papers. In addition to two keynotes, a total of fourteen presentations were made at the symposium. Complemented by the editor's articulation of the insights from the three focus groups, the resulting papers from those presentations from members and partners of ABS Canada are presented in this book. The diversity of participants, their opinions and views from the focus groups as well as the diversity of categories of contributors in terms of this disciplinary backgrounds, practical

experiences and research profiles in the areas of ABS, Indigenous rights, research ethics, international governance, development and sustainability, is evident in the robust range of arguments and perspectives on ABS in the following chapters. Collectively, the chapters provide multifaceted insights for stakeholders in Canada thereby laying the foundation for future research and policy direction on ABS in Canada and globally.

STRATEGIC RESEARCH APPROACH TO A COMPLEX SUBJECT

The edited collection distinguishes itself through a unique mixture of research methodologies. As explained earlier, these involve sourcing opinion and data through on-the-ground participation and partnership with Indigenous peoples; engaging expert resource persons, specialist researchers and scholars; and facilitating their interactions with Indigenous peoples on the subject matter in the course of our research. In addition, the undergirding research and resulting publications are inspired by the opportunity for action on ABS in ways that seek to fill the void between the government and Indigenous peoples on how to move the ABS conversation forward. With eyes on advances on ABS from other jurisdictions since the NP came into effect, the book will be a crucial and handy instrument for all interests in ABS at a time of official stalemate on how to move the conversation forward. Perhaps more importantly, given Canada's bold initiative on reconciliation and the recent endorsement of the UNDRIPs, this project would contribute in complementing and advancing the reconciliation discourse in the direction of ABS – a subject that draws on multidepartmental or multisectoral interests at many levels of governments across the country.

ABS ISSUES: WIDE-RANGING AND INTERLINKED

Three years of partnership, collaboration and participation by and with Indigenous peoples on the issue of ABS in the Canadian context, albeit with broader ramifications for the global stage, have uncovered an open-ended catalogue of concerns that an Indigenous-sensitive ABS policy must address. As a crucial matter, Indigenous peoples have raised the issue of the trust deficit that historically characterized their relationship with the colonial state. The trust deficit runs deep in the ABS context, as Indigenous peoples accuse Canada of both failing to consult with them and not representing their interests at the NP negotiations, as well as other related antecedent and current initiatives relevant to ABS. Specifically, participants 'decried Canada's informal preference for the term "Indigenous and Local Communities," [over Indigenous peoples and Local Communities] as an attempt to undermine the [UNDRIPs]' (ABS Canada, Moncton Focus Group Report, 2015, 5).⁴ The trust question echoes beyond Indigenous peoples' relationship with the government, to include their long-running rancorous relationship with non-Indigenous researchers,

bio-prospectors and corporate entities. There is a shared impression among Indigenous peoples that Canada's lukewarm approach to ABS emanated from its prioritization of its status as a user of genetic resources and a biotechnology powerhouse for which the country panders to corporate interests (Oguamanam, 2011). This stands in contrast to Canada's dual status as both a user and a provider of genetic resources with associated Indigenous knowledge – a situation that requires the country to seriously consider Indigenous peoples as crucial partners in the discussion of ABS.

Indigenous peoples have associated the ABS discourse with deep-rooted constitutional dynamics in Canada over Indigenous rights. For many, ABS raises treaty rights, resource rights, even the right to Indigenous self-determination and many other considerations at the ever-constant legal and political flashpoints of Indigenous relations in Canada. In addition, Indigenous participants expressed concern that the historical and colonial divisions and fragmentation of Indigenous peoples along multiple classifications, such as reserve, non-reserve and various other categories, pursuant to the *Indian Act* approach, 'may, but must not be allowed to draw a wedge between Indigenous peoples, preventing collective action on the issue of ABS' (Moncton Focus Group Report, 2015, 7). For Indigenous peoples, ABS can be explored in the light of opportunities laid open in some progressive decisions of the Supreme Court of Canada such as *Calder v. Attorney General British Columbia*; *Delgamuukw v. British Columbia*; *Tsilhqot'in Nation v. British Columbia*; *Daniels v. Canada*; *Clyde River (Hamlet) v. Petroleum Geo-Services Inc.*, etc. ABS may be implicated in these decisions because they deal with a number of considerations, including but not limited to the duty to consult, extinction of rights, considerations of sovereignty, scope of title and whether the rights to genetic resources, mineral rights and associated Indigenous knowledge were ever ceded.

As both ideological and philosophical matters, Indigenous peoples argue that ABS is premised on 'propertization' of knowledge and natural resources under a market economic framework and constructs that are difficult to reconcile with Indigenous worldviews. One aspect of that disconnect is the singling out of genetic resources and even fragmenting them in relation to their specific applications⁵ under the ABS framework in contrast to Indigenous holistic outlook on humankind's interconnected relationship with all natural forces and resources. In Canada, as the effect of climate change continues to bear across all ecological regions (particularly the Arctic), Canada's intense quest for resource exploitation continues to put pressure on Indigenous ways of life, including indigenous knowledge and various natural resources raising analogues issues of ABS, equity, justice and sustainability in extractive resource contexts. Consequently, Indigenous peoples insist on the 'need to constitute and support Indigenous legal and organizational structures as part of internal capacity building required by Indigenous peoples' (ABS Canada Ottawa Focus Group, 2016, 7) in the context of ABS. Similar expectations are expressed in relation to Impact Benefit Agreements (IBA) as a tool to secure and balance interest

of Indigenous peoples in the extractive resource industry exploitation. Indigenous concerns over these parallel issues demonstrates the importance of capacity building going forward.

The NP, in the view of Indigenous peoples, is only a prototype of ABS. It neither prejudices relevant existing practices within and outside Indigenous communities nor precludes Indigenous peoples from initiating new options. For example, the FAO International Treaty raises ABS issues in the context of traditional farming, including TK and practices over the utilizations of plant genetic resources for food and agriculture. Yet, Indigenous peoples have noted that under the NP, they ‘have uninhibited freedom to constitute their own competent national authorities, focal points and other structures – including community protocols on ABS in a manner that reflects their ecological identity and the complex dynamic of their historical, regional and political contingencies within the Canadian Federation’ (Moncton Focus Group Report, 2016, 6).

Pushing back on the usual refrain by bureaucrats that it is difficult to identify legitimate stakeholders to effectively perform the duty to consult, Indigenous peoples insist that to the extent that the ‘Canadian “Federation” remains a work in progress, Canada needs to genuinely engage Indigenous peoples on nation-to-nation basis as a threshold imperative for recognition of Indigenous sovereignty and claims for self-determination within the Canadian federation’ (Ottawa Focus Group, 2016, 9). Consequently, the demarcations of authority between the federal and provincial/territorial governments in which the former retains primary jurisdiction over most Indigenous issues while the latter maintains control over natural resources is a derogation of the nation-to-nation principle. In regard to ABS, Indigenous peoples call on the government to recognize the legal status of seventy-three distinct Indigenous Nations across Canada on a nation-to-nation basis (Ottawa Focus Group, 2016, 5) and to establish a national consultation table from the seventy-three Nations of Indigenous peoples ‘to effectively engage with the details of required consultations and negotiations for the implementation of ABS in Canada’ (Moncton Focus Group, 2015, 6)

In the opinion of many Indigenous peoples, the concept of ABS is inherently ironic; it is a regime primarily directed at ensuring justice, fairness and equity, yet governments have capitalized on power and knowledge imbalances among stakeholders with the effect of exacerbating inequality and injustice. For example, as noted earlier, Canada did not fulfill its duty to consult before, during, or after the NP and its antecedent instruments. In addition, there is a lingering concern that Canada continues to engage in sporadically organized sessions on ABS and related matters that have no purposive focus on Indigenous peoples as key partners. As well, ‘federal outreach has largely been directed at large and national Indigenous organizations . . . and not at regional or local groups, who have a better understanding of the situation on the ground and a more direct line to the people being affected by government decision-making’ (Ottawa Focus Group, 2016, 5).

Indigenous peoples are apprehensive that in Canada's current approach to ABS-related negotiations, 'all delegations are led by government officials with limited [if any] input from Indigenous peoples' (Ottawa Focus Group 2016, 7). As noted earlier, the WIPO-IGC is an example of such negotiations where genetic resources, TK, and by extension, ABS, constitute cross-cutting issues between WIPO and the CBD. Further, there is little visible, if any, coordination across the several departments at federal, provincial and territorial levels to demonstrate awareness of the cross-cutting and cross-sectoral nature of ABS.

There is a general recognition that ABS is inherently a complex subject matter due to its cross-sectoral and hi-tech nature. As a consequence, a genuine attempt to recognize and realize the status of Indigenous peoples and enhance their participation in policymaking as key partners would require a proactive commitment on the part of the government to support and finance capacity building and capacity development on ABS and related matters. According to some, such matters could be wide-ranging regarding, for example, development of community protocols, establishment of Indigenous knowledge databases and their management, material transfer and other contractual agreements, revision of existing research protocols to directly accommodate ABS; prioritization of resources to translate relevant documents, simplification of such documents in plain language and enhancing their accessibility, not excluding explanation of key terms, etc. Remarkably, Indigenous peoples were clear that capacity building does not have to be a unidirectional initiative, but 'a two-way or multidirectional exercise. As such, while the governments need to support ABS capacity building in different directions, Indigenous peoples need to educate governments on how to engage and understand Indigenous peoples as important stakeholders in ABS' (Ottawa Focus Group Report, 2016, 10).

Capacity building is an initiative that should come from sources internal and external to Indigenous peoples. Internal capacity building refers to efforts within Indigenous communities to mobilize their members and educate individuals in relevant skills to effectively participate in ABS. This approach is consistent with the opinion of Indigenous leadership. For example, Indigenous lawyer and opinion leader, Roberta Jamieson, emphasizes, in another but relevant context, that Indigenous peoples must lead the charge for change as opposed to demanding new promises and wait in passive expectation for their fulfillment (Jamieson, 2017), which hardly happens. External sources of capacity building include all level of government within Canada and other related development initiatives within and outside of Canada capable of partnering with Indigenous peoples to develop capacity in ABS and related matters. Irrespective of any source or method of capacity building, Indigenous peoples seem to agree: 'all forms of support for capacity building and consultation must involve a transgenerational approach that deliberately engages Indigenous youths in learning and teaching on ABS and related concepts' (Ottawa Focus Group, 2016, 11).

Except for those that work in the area, it is quite obvious that most Indigenous peoples have yet to hear about ABS. This situation is no different in regard to other demographics, and for a good reason. ABS is a specialized subject by nature and requires dedicated commitment to raise awareness and build capacity around it. Despite the increasingly topical nature of the subject across national and international forums, some Indigenous people in Canada doubt whether ABS deserves any priority within the myriad challenges that affect them. For them, it is hard to locate where ABS ranks in relation to various competing priorities that constitute the features of Indigenous peoples' historic struggle for survival in Canada. Some of those priorities include widespread racism directed at Indigenous peoples, missing and murdered Indigenous women, unacceptable rates of youth suicide, disproportionate representation of Indigenous youth, women and men in the prison population, crises of access to quality and culturally sensitive education and health services; lack of access to safe drinking water; mental health and substance abuse issues, and overall poor standard of living.

Notwithstanding the reservations over the significance of ABS in the scheme of Indigenous peoples' priorities, as a matter of consensus, many seem to agree that ABS designates an opportunity for practical translation or realization of the spirit of UNDRIPs. As noted by participants at the Ottawa Focus Group, 'while ABS may not assume priority over the abject poverty and abysmal living standards of Indigenous peoples, when Indigenous history and the colonial experience of subjugation and deprivation is considered holistically, then everything – including ABS – is interconnected and assumes the same urgency' (Ottawa Focus Group, 2016, 9). In the present moment, as Roberta Jamieson (2017) puts it, 'when the spirit of reconciliation is trying to find its footing,' the prevalent cases of biopiracy or cultural appropriation undermines reconciliation. In principle, ABS is a response, in part, to cultural appropriation at least in the area of genetic resources and aspects of TK and must enjoy priority in the reconciliation initiative as an attempt to retrace centuries long and 'ongoing tragedy in the entire history of [Canada's] relationship with Indigenous peoples' (Jamieson, 2017).

Indigenous peoples recognize that biopiracy is an aspect of cultural appropriation that has historically done harm to them and their knowledge systems and ways of life. As such, they are in the best position to determine the suitable remedial options, including those within an ABS framework and how to go about them whether on the Nagoya template or in other regimes. In the spirit of reconciliation, the doors should be open for exploring reparation and other compensatory options for past abuses and appropriations of Indigenous knowledge using available mechanisms and remedies, including restorative justice in line with truth and reconciliation. Whatever the promise, prospects and actual results of ABS for Indigenous peoples, they are unequivocal that 'any preferred benefit sharing framework should be grassroots-driven and should not be conflated with or allowed to be a substitution for Canadian government's obligations to Indigenous peoples' (Ottawa Focus

Group, 2016, 6). In other words, benefits resulting from the implementation of ABS should not substitute or be made to subsidize government's responsibilities toward Indigenous peoples.

Indigenous peoples' unfettered ability to determine an acceptable ABS arrangement could contribute to the sustainability of their communities. One example of the importance of Indigenous intervention over the applications of biotechnology to their genetic resources comes from Mexico. Maize is at the centre of the cultural identity of Indigenous peoples of Mexico, a county said to be the authentic genetic origin of the crop. Similar to other economic crops, maize is a target of R&D through genetic modification and various applications of biotechnology, including terminator technology. Indigenous peoples of Mexico have argued that genetic modification or other applications of biotechnology to maize, or even other culturally sensitive crops, results in genetic erosion and external proprietary control of such crops. It is a development disruptive of Indigenous peoples' interests in the cultural and genetic diversity of maize that inextricably links the crop to their cultural, economic, and spiritual survival. It does not make much difference even where the undergirding R&D was ABS-compliant with the free, prior, and informed consent of Indigenous peoples. Although the deleterious effect of biotechnology on culturally sacrosanct crops could not necessarily be predetermined before the fact, at the very least, Indigenous peoples should be able to save or reserve the right, on a residual or contingent basis, against an R&D outcome that undermines their economic interests and cultural survival.

The development of TK or genetic resource databases through digitization, inventorying and other documentation options is one of the most prominent measures-based approaches aimed at strengthening Indigenous positions in ABS agreements. Affirming historic or prior applications of Indigenous knowledge, such databases constitute defensive protection against the use of patents to deny pre-eminence of TK as a prior art in specific contexts. Various forms of documentation enhance identification of genetic resources and associated TK and their uses through research and development in ways that ensure accountability for purposes of ABS. Notwithstanding its potential, the idea of TK database draws mixed reaction in Indigenous circles (Oguamanam, 2009), a sentiment that has been re-enforced among Indigenous peoples in Canada. Not least of the concerns is the suitability of digitization and other forms of TK documentation for accurate interpretation of Indigenous knowledge. Yet, as a pragmatic matter, many recognize the value of keeping TK database in specific situations; especially given regard to generational disconnect that results in the loss or erosion of TK with the passing of elders and knowledge keepers. A more sustainable approach to the erosion of TK via the demise of elders is one that prioritizes a healthy intergenerational process of knowledge apprenticeship and transfer.

Assuming technology-enhanced databases remain a viable strategy for augmenting knowledge of the uses of genetic resources, adaptations and transformations

of TK, concerns remain among Indigenous peoples over the governance, jurisdiction, control and access to those databases. Fresh apprehensions are raised over the security of such databases, the consequences of their inadvertent disclosure or deliberate compromise through technological sabotage such as hacking. In addition, the status of TK databases, as public or non-public domain assets, remains inchoate. Indigenous peoples identify or categorize their ability to participate in such technologically driven measures-based approach as an area for capacity building, given the burden of cost and expertise required to generate and administer that form of technological infrastructure. While attention is focused on the idea of dedicated TK database, little or no consideration is given to other forms of data generated as incidents of Indigenous-related research, which have consequences of ABS. This volume sheds some light on the increasing relevance of digital sequence information and data aggregation technologies and the ensuing changes in Indigenous research landscape and their ramifications for ABS.

Perhaps, a far more important concern relates to the broader issue of new technological strategies, including biological and digital technologies in the creation, manipulation and virtualization of datasets based on genetic resources and associated TK. These two mutually supportive technologies have redefined the process of doing research generally, even research that involves IPLCs, their genetic resources and associated TK in ways that attempt to disrupt the foundational logic and *raison d'être* of ABS. For example, the virtualization of various research data and their accessibility over the internet as well as the use of digital DNA or digital sequencing technologies and synthetic biological models readily de-link genetic resources and associated TK from their origins in specific IPLC in ways that circumvent the ABS imperative. While such practices designate the role of big data in the facilitation of research and knowledge production, it underscores a tension between big data and Indigenous peoples' interest in data sovereignty (Oguamanam & Jain, 2017). Virtualization of data through digital technology and the production of synthetics of new or adaptations of naturally occurring biological formulations through biotechnology enhance the liberalization and accessibility of vital data for R&D. But not only do they de-link genetic resources and associated TK from IPLCs, as may be applicable, they also threaten, if not undermine, Indigenous peoples' insistence that derivatives of genetic resources and TK constitute subjects of ABS.

Another important sentiment expressed by Indigenous peoples is the need to engage and share experiences on ABS and related issue over the struggle for the protection of TK with their counterparts from the global south. Indigenous peoples have observed that Canada is an active and heavily invested actor in North–South international development, knowledge transfer and capacity building with countries and local communities of the developing world as targets and recipients. So far, the call for South–North directional development, capacity building and knowledge transfer that targets Indigenous peoples as beneficiaries is self-evidently alien to Canada. One reason this expectation has yet to be met is that such action would

unmask Canada's historical subjugation of Indigenous peoples. Canada's vested interest in image laundering and image preservation does not position it as an enthusiast of this kind of clarion call. For that purpose, the underdevelopment and deprivations in Indigenous peoples and communities in Canada are analogized to a 'global South encased in the global North.' For Indigenous peoples of Canada and, certainly, their counterparts elsewhere in the developed countries, it is about time to acknowledge that they can benefit from in-kind development aid for capacity building from their local communities' counterparts from the global South or elsewhere, in the form of South–North capacity building. The issue of ABS presents an opportunity to creatively explore external development support in capacity and experience outside the conventional framework.

CHAPTER SYNOPSIS

This volume is divided into three parts. **Part I**, which opens with the present chapter, focuses on the evolution and the making of the fledgling ABS policy landscape in Canada. In **Chapter 2**, the duo of Timothy Hodges and Jock Langford, Canada's leading subject matter experts on domestic and international ABS policy development recount, on a historic basis, Canada's checkered role in the development of ABS in the international arena. In 'Canada and the Nagoya Protocol: Towards Implementation, In Support of Reconciliation,' they insist that new opportunities have opened up for Canada in the context of the current political climate for reconciliation for a more serious approach to ABS implementation. For them, ABS is an important site to give effect to the UNDRIP which has been fully endorsed by Canada without reservation. In **Chapter 3**, Chidi Oguamanam and Roger Hunka focus on the practical experience of the partnership between ABS Canada and the Maritime Aboriginal Peoples Council to explore insights and lessons for modelling an independent Indigenous capacity building and capacity development on ABS.

Contributions in **Part II** engage identifiable hurdles to ABS implementation. They cover conceptual questions and practical responses and insights on the path forward to the realization of Indigenous-sensitive ABS policy in Canada. In **Chapter 4**, Joshua Nichols explores the Canadian domestic and constitutional legal framework for Indigenous rights in relation to the meaning and implication of internationally sanctioned sovereign rights of states over genetic resources for a unitary nation-state structure vis-à-vis the model of shared or collaborative sovereignty, which is a better reflection of Canada's Indigenous relations. The current federal government of Canada's rapprochement with Indigenous peoples, Nichols argues, presents a new opportunity to adapt and reconcile the domestic legal framework to fit with the principles of self-determination and the spirit of the UNDRIPs for the implementation of a functional ABS regime in Canada. Writing in **Chapter 5** under the title: 'Making Room for the Nagoya Protocol in Nunavut' – Canada's largest Indigenous self-governing territory – Daniel Dylan indicates that

current legal regime for resource control is premised on the *Nunavut Land Claims Agreement*. The latter envisages impacts and benefits sharing over the extractive or non-genetic natural resources with no direct focus on genetic resources as envisaged in the ABS framework. With rapidly melting sea ice, Nunavut's wealth of genetic resources would become more evident in ways that would exacerbate rights claims. Dylan avers that the lacuna in the current Nunavut territorial legal framework could be tackled through the implementation of the NP which, he argues, will provide the opportunity to amend relevant ABS-related laws in Nunavut like the *Scientists Act* and to enact new ones to account for ABS and associated concepts.

In Chapter 6, Perron-Welch and Oguamanam harp on the desirability of a nation-to-nation approach to ABS routed through different layers of governments in Canada: Federal, Provincial/Territorial and Indigenous, under the principle of cooperative federalism and distinct orders of government. Despite its conceptual and governance challenges, with adequate political will, they argue, this approach could serve as an effective way to integrate Indigenous peoples' rights over genetic resources, TK and ABS as aspects of their self-determination. While current attempts at breathing new life into Indigenous relations in Canada are conducive for this progressive approach, for the desired outcome other layers of governments, notably provincial and territorial, ought to demonstrate stronger or commensurate commitment as the federal government which is leading the charge on reconciliation.

In Chapter 7, Oguamanam and Koziol underscore a fundamental flaw in Canada's approach to ABS. Specifically, they argue that Canada's tendency to underappreciate not only the interest of Indigenous peoples on the subject but also the country's status as both a provider and user of genetic resources and associated TK explains, in part, its lacklustre attitude to biopiracy. With predictable and unpredictable effects of climate change affecting genetic resources and biodiversity in Canada's extreme ecological regions, Canada's status as a provider of genetic resources will assume greater prominence than before. Oguamanam and Koziol explore concrete cases of what they call 'flashpoints of biopiracy' within Canada. They also speculate about potential sites and contexts for the future escalation of that phenomenon in the country. For them, ongoing acts of biopiracy at domestic levels, and its impending exacerbation drive the issue home to Canada contrary to the impression that biopiracy is a matter for Indigenous and local communities in remote parts of the global south and the developing world. Those tendencies constitute reason enough for Canada to identify with international efforts to implement ABS and stem the tide of abuse of Indigenous knowledge.

In Chapter 8, Larry Chartrand et al. chart an inward-looking pathway to identify Indigenous customary laws and practices that approximate an understanding of ABS from Indigenous worldviews. They selectively focus on a few Dene stories, offering some interpretative perspectives on them and extracting legal principles that are amenable to ABS. The essence is to assist researchers and Dene peoples in negotiating ABS agreements consistent with their laws and to elicit an introspective

approach to ABS by other Indigenous peoples as a crucial part of internal capacity building and capacity development on the subject. Some of the identified principles extrapolated from the stories such as equality, interdependence, sharing, reciprocity and mutual aid, go beyond the narrow instrumentalist prism of commoditization and commercialization of TK and GRs under the NP and related frameworks.

In [Chapter 9](#), Freedom-Kai Phillips explores experiences on ABS from three national contexts (Brazil, Namibia, and Australia) with better standing on the subject than Canada, drawing out lessons that could influence future implementation of an ABS regime in Canada. Specifically, some of the insights include a phased approach with immediate and long term targets for entrenching ABS; streamlining of both national and local frameworks for ABS implementation; a pooled national ABS fund, and the use of differential permit systems to account for distinctive users and uses of GRs and associated TK in specific contexts.

The four constitutive chapters of [Part III](#) are dedicated to new technological dynamics that influence the processing, generating and transfer of information related to genetic resources and associated TK and their ramification for the research ethics and implementation of ABS. In [Chapter 10](#), Peter W.B. Phillips, Stuart Smyth and Jeremy De Beer, writing under the title ‘Access and Benefit Sharing in the Age of Digital Biology,’ argue that digital technology problematizes the issue of physical alignment of genetic and genomic information with associated TK and their origins in IPLC for ABS purposes. They observe that out of expediency, NP could not directly tackle the subject of ‘digital biology’, and that normative studies and literature on ABS fail to engage it adequately. Accordingly, for effective application of ABS to advance R&D and meet industry and IPLCs’ expectations, there is urgent need to plug the gap in law and policy over the practical parameters to govern the relationship between TK and digital biology for ABS purposes. Interestingly, the CBD explores this subject head-on through its Ad Hoc Technical Expert Working Group on Digital Sequence Information on Genetic Resources which submitted its report in 2018. In [Chapter 11](#), Oguamanam takes on the same subject matter from a more extended perspective, focusing on the role of digital technology in open data, big data and data sovereignty and their ramifications for ABS and TK. The Chapter highlights the cumulative effect of these phenomena in virtualization and de-linking genetic resources and associated TK from their origins in IPLCs. However, it argues that a combination of purposive interpretation of the NP and progressive development in international law and policy on Indigenous peoples and TK suggests that these technological transformations do not undermine the essence of Indigenous-sensitive ABS. Rather, they underscore the need for a fluid regulatory space to ensure the ABS laws are attuned to fast-changing technological space.

In [Chapter 12](#), Kelly Bannister argues that ABS warrants a new approach to ethics by researchers beyond mere checkboxes and prescriptive formalities and compliance with local community protocols. Rather, researchers and Indigenous peoples must enter into an ‘ethical space’ to learn from each other within the framework of

relational ethics and in pursuit of deep-rooted and shared appreciation and respect as the best approach to mutually implement ABS. She selectively highlights established ethical codes and guidelines for research involving Indigenous peoples within the framework of a *relational* approach in two domains: national ethics policy for academic research involving Indigenous peoples in Canada; and international ethical standards in the discipline of Ethnobiology which must now accommodate considerations for ABS as the new reality of contemporary research. In **Chapter 13**, Thomas Burelli's empirical study indicates that researchers and Indigenous peoples have been forging research partnerships through various formal and informal protocols and agreements that reflect varying degrees of ABS sensitivity. It is not fashionable for researchers and bioprospecting entities, Burelli argues, to hide under the guise of the paucity of formal ABS laws in the specific jurisdiction as a licence to exploit TK and Indigenous peoples. Policymakers do not need to reinvent the wheel on ABS. He concludes that insights from the diversity of examined cases could constitute helpful starting points and building blocks for Indigenous-sensitive ABS in Canada and elsewhere.

In **Chapter 14**, Chidi Oguamanam concludes by synthesizing the various discussions that animated this book, reflecting on the challenges and opportunities which the present momentum for reconciliation in Canada poses for formal implementation of ABS. Noting the litany of precedents and practices within and outside of Canada, he highlights Canada's potential to tap into what he calls the 'late comer advantage' to implement a domestic ABS regime that optimizes lessons and insights including new challenges and opportunities arising from technological developments relevant to implementation of ABS. The chapter maps out a range of advantages to be explored in potential domestic implementation of ABS in Canada. Those advantages, the author argues, far outweigh obvious challenges and inherent obstacles. The chapter incorporates, on constructive and reflective basis, criticisms including highlights of omissions (e.g. the absence of insights or perspectives from corporations as major interests in ABS) in the undergirding methodology of the volume. Nevertheless, the author insists that the project has tried to both underscore the complexity and sophistication of ABS as a global subject matter with significant ramification for Canada while simultaneously contributing to demystify the concept. It is the author's expectation that the volume contributes in opening the policy space on ABS, as a work in progress, to catalyze conversations and consultations and to energize collaborations and partnerships required to take ABS seriously in Canada.

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NOTES

- 1 An insightful analysis of terms used to identify Indigenous peoples can be found at Ch. 1 in 'Just Don't Call Us Late for Supper – Names for Indigenous peoples,' in Chelsea Vowel, *Indigenous Writes: A Guide to First Nations, Metis & Inuit Issues in Canada* (Winnipeg: Highwater Press, 2016).
- 2 This announcement was formally made by Carolyn Bennet, Canada's Minister of Indigenous and Northern Affairs, at a UN Plenary Session on 10 May 2016. See www.cbc.ca/news/indigenous/canada-adopting-implementing-un-rights-declaration-1.3575272.
- 3 The reports of the three focus groups were each separately developed with input from Indigenous participants, which included the incorporation. In the case of the Maritime Indigenous peoples Council, their official written accounts of the focus groups as well as their feedback from each of the draft report and without prejudice to their independently generated declarations or statements such as the 2015 *Petkoutkoyek Statement on ABS*.
- 4 The Convention on Biological Diversity has now formally recognized the use of the term Indigenous peoples and Local Communities.
- 5 This is references to distinction which the International Treaty makes in regard to plant genetic resources for food agriculture and Nagoya Protocol's references to genetic resources in the context of the CBD framework whose undergirding objectives is the conservation of biological diversity. It also includes reference to constitutive active substance or substantive properties of genetic resources.

Canada and the Nagoya Protocol

Towards Implementation, In Support of Reconciliation

Timothy J. Hodges and Jock R. Langford

Abstract

Canada, individual Canadians and Indigenous representatives from Canada all played pivotal roles in developing international ABS policy and governance instruments. As a result, the Nagoya Protocol clearly reflects the participation of Indigenous negotiators and embodies a significant number of operative provisions of direct and meaningful relevance to Indigenous peoples in Canada and around the globe. While recent years witnessed an apparent hiatus of work on ABS within the Canadian government, efforts in policy and position development, together with consultations by federal, provincial and territorial governments made over the preceding decade represent a firm foundation for advancing ABS governance in Canada, now. The context for ABS in Canada has changed dramatically in recent years. Canada dropped its objections to the United Nations Declaration on the Rights of Indigenous peoples (UNDRIP) and the country is now seized with moving forward on reconciliation. ABS is at the confluence of the two powerful streams of the rights of Indigenous peoples and reconciliation. Implementing the Protocol will support UNDRIP and reconciliation. It is time to seize the opportunities inherent in ABS through the exercise of leadership at all levels – beginning with the Prime Minister of Canada and Indigenous peoples.

INTRODUCTION

After years of effort, in the early morning hours of 30 October 2010, a protocol on access to genetic resources and benefit-sharing (ABS) was adopted by consensus in Nagoya, Japan, by Canada and some 192 other Parties to the United Nations Convention on Biological Diversity (CBD). In the years preceding adoption, the

Canadian delegation played a central role in shaping the instrument. Yet despite its significant role in making the Protocol a reality, Canada now finds itself as a non-Party, and a laggard on domestic implementation of ABS. In stark contrast to countries around the globe that are now implementing their ABS obligations under the CBD and the Nagoya Protocol (NP), the ABS policy process in Canada has seemingly ground to a halt. The reasons are many – including complexity, political disinterest, entrenched interests, senior bureaucratic inertia and a fundamental failure to see Canada as both a user and provider of genetic resources (GRs) and traditional knowledge (TK) (Oguamanam, 2011). These impediments are not, however, beyond Canada's ability to overcome.

With this history in mind, we will use this chapter to argue that genuine opportunity exists to renew investments in ABS governance in Canada. Compelling new imperatives have arisen in the context of reconciliation and the adoption of the United Nations Declaration on the Rights of Indigenous peoples (UNDRIP) (Perron-Welch & Oguamanam, Chapter 6). We offer an analysis of implications of the ABS negotiations and the Protocol for Indigenous peoples from the perspective of our experiences as former Canadian officials engaged in domestic and international ABS policy development and, in the case of Timothy Hodges, as one of the two permanent co-chairs of the ABS negotiations. We describe some of the decisions and actions taken at the co-chairs' level to elevate Indigenous participation in the treaty talks and empower Indigenous voices. Finally, we pave the way for the important first steps towards ABS implementation in Canada by proposing a roadmap to 2020.¹

STRENGTHENING INDIGENOUS PARTICIPATION IN THE ABS NEGOTIATIONS: THE ROLE OF THE ABS CO-CHAIRS

Fernando Casas of Colombia and Timothy Hodges of Canada were elected as co-chairs of the Open-ended Working Group on Access and Benefit Sharing at the closing plenary of the eighth meeting of the Conference of the Parties to the CBD (UNEP CBD, 2006, 2). The election of two dedicated and functionally permanent chairpersons marked a shift in the process of negotiating a global ABS regime, which had previously lacked continuity and even-handedness in leadership and was marked by deep distrust among its many stakeholders. The election of co-chairs would have significant implications for the participation of Indigenous representatives in the ABS negotiations.

From the outset, the co-chairs operated with transparency, inclusiveness and fairness. The co-chairs engaged throughout the negotiations with a range of Indigenous representatives and with stakeholders (i.e. both providers and users) many of whom would ultimately find themselves implementing the eventual instrument on the ground (Hodges, personal notes for COP 8 Bureau meeting, Brasilia, May 2006).

Throughout their five-year tenure through to the Protocol's adoption, the co-chairs expended considerable time and political capital to promote the participation of Indigenous representatives in the negotiations. In relative terms, the CBD has rightly been considered an innovator among international fora in facilitating the participation and influence of Indigenous and local community representatives in its various subsidiary bodies. CBD Parties (including Canada) have volunteered significant monies to support such participation. However, in practice, all States jealously guard their prerogatives – limiting their willingness to accept Indigenous representatives as equals either on a Party's delegation or sitting independently at the negotiating table.²

The co-chairs were aware of this dynamic but equally aware of the central role Indigenous peoples play in protecting and sustainably using GRs and TK. The co-chairs understood that in order for the Protocol to be successfully implemented at the local level, the views and understanding of Indigenous peoples would need to inform government negotiators and be accounted for in the Protocol (Hodges, 2009). A key to facilitating meaningful and effective participation and influence of Indigenous representatives was developing close respectful relations with Indigenous participants. This was a major investment in time and effort but led to frank and constructive discussions.

One approach employed by the co-chairs to facilitate effective participation of Indigenous representatives, as well as stakeholder representatives, was the use of smaller, informal meetings. In 2010 alone, the co-chairs convened several such meetings in Montreal, Cali and Nagoya (Hodges, personal notes, 2010).

For example, during the first part of the ninth meeting of the ABS negotiating group (ABSWG9) in Cali, Colombia, the co-chairs deliberately placed the Indigenous representatives directly across from them at the centre of the negotiating table – a prime position in any negotiation and one very ably used by the Indigenous representatives (Hodges to Casas email, 10 March 2010). Further, the meeting witnessed the unprecedented nomination by the co-chairs of an Indigenous Canadian representative to co-lead an informal consultation on a key issue (Hodges, personal notes for ABSWG9, Cali, 27 March 2010). This reflected the co-chairs' deliberate strategy of moving past the understandable frustrations of Indigenous participants, who were emphatic in signalling their concern over the ability of the ABS protocol to advance Indigenous rights while ensuring the continuing active participation of Indigenous negotiators in the ensuing talks.

The co-chairs also promoted the influence of Indigenous and local communities (ILCs). At ABSWG9, for example, it became clear that the Parties did not support the human rights proposals from the International Indigenous Forum on Biodiversity (IIFB). The IIFB, in turn, placed priority on the protection of GRs of ILCs. Respecting the IIFB members' position, the co-chairs steered the negotiation towards the successful inclusion of Article 6.2 concerning access to GRs.

KEY PROVISIONS OF THE NAGOYA PROTOCOL RELEVANT
TO INDIGENOUS PEOPLES

ABS, in particular, the benefit-sharing component of ABS, has been justified through analysis of various principles of justice (Schroeder, 2009; Dauda, 2016). Yet despite the ethics-based language framing ABS, CBD Parties negotiating the ABS regime rarely employed a human rights-based approach to the negotiations. Indeed, despite consistent urgings of the co-chairs and relentless appeals from ILCs representatives and civil society organizations, negotiators from both the ‘user’ and ‘provider’ countries often appeared transfixed by GRs and monetary issues (Perron-Welch & Oguamanam, Chapter 6). Human rights and a broader search for justice often appeared of secondary concern during the talks. This is somewhat ironic; the very need for an international ABS regime was framed as a response to growing instances of biopiracy where alleged unethical or illegal behaviour was resulting in injustices to Indigenous holders of GRs and TK. Given the centrality of ethical concerns related to the fundamental questions surrounding benefit-sharing, the continuing paucity of ethical perspectives is noteworthy and troubling (De Jonge, 2009, 16). Despite these issues, the Protocol text ultimately adopted can clearly be viewed as a rights instrument – promoting equitable outcomes, the pursuit of justice, respect for human rights, and the achievement of fair and sustainable outcomes.

While largely eschewing ethics-based language in its final form, and failing to meet the expectations and needs of a number of Indigenous representatives involved in its negotiation, the NP contains a significant number of operative elements directly related to Indigenous interests – and as a whole empowers Indigenous peoples in the stewardship and governance of their GRs and TK. The brief review of the Nagoya text, outlined in Table 2.1, supports this point.

While of discounted importance to some negotiators during the ABS talks, it was clear from the co-chairs’ numerous in-country discussions with Indigenous peoples and stakeholder groups across all major regions that without substantive capacity-building provisions, Protocol implementation was unlikely to occur where it was most needed to assure sustainable development outcomes. Article 22 places particular emphasis on the need for Parties to facilitate the involvement of communities and requires ‘Parties to support the capacity needs and priorities of ILCs and relevant stakeholders, as identified by them, emphasizing the capacity needs and priorities of women (UNEP CBD, 2011, 16). While the specific mention of women is desirable, Indigenous peoples have also called for similar attention to be paid to the needs and priorities of Elders and youth (Oguamanam & Hunka, Chapter 3).

In addition to the specific articles mapped above, the Preamble of the Protocol is noteworthy for the substantive and strong paragraphs related to Indigenous peoples, their profound relationship with GRs and TK, and their existing rights (UNEP CBD, 2011, 2–3). Particularly significant is the reference to the relevance of UNDRIP.

TABLE 2.1 *Nagoya Protocol Provisions Related to Indigenous Interests*

<i>Article</i>	<i>Regarding</i>	<i>Obligations of Parties Related to Indigenous Rights</i>
5	Benefit-sharing For GRs and TK associated with GRs	5.2. Measures to ensure benefits arising from the use of GRs held by ILCs based on MAT 5.5. Measures to ensure benefits arising from the use of TK associated with GRs are equitably shared with ILCs based on MAT
6	Access to Genetic Resources	6.2. Measures to ensure that PIC of ILCs is obtained for access to their genetic resources
7	Access to TK associated with GRs	Measures, to ensure TK associated with GRs is accessed with PIC of ILCs and MAT is established
12	Traditional knowledge associated with genetic resources	12.1 Obligations to take into consideration ILC's customary laws, community protocols and procedures, as applicable with respect to TK associated with GRs 12.3 Support (a) the development by ILCs, including women, of community TK protocols, (b) minimum requirements for MAT to ensure equitable sharing of benefits for the use of TK associated with GRs 12.4 In implementing the Protocol, not restrict the customary use and exchange of GRs and associated TK of ILCs
16	Compliance	16.1 Measures to provide that TK associated GRs has been accessed in accordance with PIC and MAT 16.2. Measures to address situations of non-compliance
21	Awareness-raising	Measures to raise awareness of the importance of GRs and TK associated with GRs and related ABS issues such as: (b) Organization of meetings of ILCs and relevant stakeholders; (c) Establishment of help desk for ILCs; (h) Involvement of ILCs in Protocol implementation; and (i) Awareness-raising of ILC's community protocols and procedures

Note: The obligations in the Protocol have qualifiers such as the term 'as appropriate' – allowing Parties to decide on an obligation's appropriateness.

As legal scholars have noted, while not considered to be 'operative clauses,' preambles are not legally powerless (Hume, 2016). Indeed, the Protocol's preambular language provides powerful and compelling context informing the entire instrument and its interpretation and implementation.

CONSULTATIONS ON ABS WITH INDIGENOUS PEOPLES
IN CANADA: A BRIEF REVIEW

The ABS-related consultations held in Canada in the lead-up to Nagoya negotiations were atypical for their relative depth and diversity, and considerable effort was expended over the better part of a decade to inform and be informed on core ABS issues. One significant part of these efforts was Canada's capacity-building and engagement with Indigenous peoples, especially during the development of a Federal/Provincial/Territorial (F/P/T) National ABS Policy in 2009.³

Bonn Guidelines on Access and Benefit-Sharing (2000–2)

As the Bonn Guidelines were intended to be voluntary, the nature of the federal government engagement with Indigenous peoples in the Guidelines' development and negotiation reflected this fact (UNEP, 2002). Three National Aboriginal Organizations (NAOs) – Assembly of First Nations (AFN), the Inuit Circumpolar Council (ICC) and the Métis National Council (MNC) – were engaged directly and were all invited to participate on the Canadian delegation to Bonn in October 2001. While the NAOs chose not to attend the Bonn negotiations due to post-9/11 fears of flying, a respected elder (of the Okanagan First Nation) and holder of TK participated in the delegation. Her participation was helpful and valued, but hardly reflective of the broad and diverse views held by Indigenous communities across Canada. And while Canada was notably active in negotiations regarding GRs and TK of Indigenous peoples and local communities, Canada did not speak for the inclusion or reflection of Indigenous laws, customs, and perspectives in the resulting final text.

Post-Bonn Period (2001–3)

The period following adoption of the Bonn Guidelines witnessed several ad hoc regional workshops/meetings held on Article 8(j) and on the Guidelines (held with Yukon First Nations, the Nisga'a Nation, Saskatchewan Federation of Indian Nations, Cree of Quebec). During this period, representatives for the AFN, ICC and MNC actively participated before and during the negotiations of the CBD Working Groups on Article 8(j) and ABS (Langford, personal notes, 2001–2003).

Building Awareness and Scoping ABS (2003–6)

This was a very active period in which a number of sectoral workshops were held, a discussion paper and reports were issued and visits by Environment Canada officials were made to provincial/territorial capitals to engage these governments with responsibilities over public lands. In many capitals, discussions were held with

Indigenous representatives from within the province/territory. In 2004, an ABS workshop co-hosted by Council of Yukon First Nations was held in Whitehorse (Government of Canada, 2005). This workshop was attended by elders from the 14 Yukon First Nations, who called for a moratorium on access to GRs and associated TK (Langford, personal notes, 2004). In this same period, a scoping paper, *ABS Policies in Canada: Scoping the Questions and Issues*, was published for comment (F/P/T Working Group on ABS, 2005).

This period also saw the formation of a federal Interdepartmental Committee on ABS (ICABS), whose membership comprised all relevant federal departments, and the F/P/T Committee on ABS (F/P/T Committee on ABS), co-chaired by officials from Environment Canada and the Government of British Columbia. To our knowledge, this is the only period in Canadian ABS policy development in which governments made ABS documents public.

During this same period, Environment Canada's ABS Unit and Biodiversity Convention Office organized with the AFN the Tsleil-Watuth International Gathering on the Protection of Traditional Knowledge. The Gathering included a range of Indigenous participants from across the globe. A resulting statement, drafted by Elders, was presented by a delegation from Tsleil-Watuth First Nation at CBD COP8 in Curitiba (2006). A full report of the Gathering was not prepared by Environment Canada, as per the wishes of the Tsleil-Watuth First Nation.

A noteworthy report was prepared, however, during the same period by Environment Canada's ABS Unit on an international experts workshop co-hosted by Canada and Mexico in Cuernavaca, October 2004 (CONABIO and Environment Canada, 2005). The meeting convened a number of lead ABS negotiators and thinkers, including a good number of Canadian experts. Notably, the sole Indigenous participant at Cuernavaca was a representative from the AFN.

Developing a National ABS Policy (2006–9)

In this period, the federal Interdepartmental Committee on ABS (ICABS) frequently met. ICABS was established and chaired by Environment Canada, and included, *inter alia*, officials from Foreign Affairs and International Trade, the Department of Justice, Agriculture and Agri-Food Canada, Industry Canada and the Canadian Forest Service. The F/P/T Committee on ABS also met regularly. However, the NAOs who requested to participate on this committee were ultimately not included (due to a lack of consensus among the levels of government on allowing such participation). The NAOs did attend one F/P/T Committee on ABS in order to brief the Committee on their issues of interest, but the overall inclusion of Indigenous perspectives in the federal government's deliberations was clearly lacking.

On the capacity-building side, Environment Canada provided some funding for NAOs to develop their positions as the ABS regime negotiations progressed in

parallel with the domestic discussion. However, as noted in the ABS Canada focus groups, there remains a great deal of tension and mistrust between the NAOs and grassroots Indigenous communities and organizations. Government officials turned to the NAOs as a matter of efficiency, wishing to consult with Indigenous groups but clearly not too broadly or deeply – as this risked delay and had the potential to cause Canada bureaucratic and diplomatic headaches, as the Protocol talks accelerated.

Given the failings outlined above, one bright spot in the record remains; the 2009 consultations by the F/P/T working group, which included 19 regional meetings held coast to coast to coast with Inuit, Métis and First Nations. These meetings were held to receive a range of Indigenous views which would be taken into consideration when developing a F/P/T National ABS Plan. Participation was diverse – participants included knowledge holders (hereditary chiefs and elders), chiefs, provincial executives, lawyers and resource managers. There was widespread support among participants for the PIC/MAT obligation with a strong preference for legal ABS protection over a voluntary regime. However, many elders were more concerned about ensuring continued access to and use of medicinal plants, and protection for these plants from pollution and harvesting by others (Langford, personal notes, 2009).

The F/P/T National ABS Strategy was adopted at the Deputy Minister level but not at the Ministerial level, given that the mechanism for doing so (the F/P/T Council of Resource Ministers) was eliminated. During this period, no ABS documents were published or released publicly by the governments.

Nagoya Negotiations (2009–10)

The focus of international ABS negotiating strategy was developed by the federal government's ICABS with input from provinces and territories. Canada based its negotiating positions to be consistent with the F/P/T National ABS Strategy so one view within the governments was that consultations with Indigenous peoples on the Strategy was sufficient for negotiating the Protocol. The engagement was primarily with NAOs, which were provided with funds to develop positions and to participate on Canadian delegations. The Canadian delegation met periodically with IIFB members (including from Canada) during 2010 negotiations – in particular on human rights issues (Langford, personal notes, Cali 2010).

In final talks in Nagoya, as anticipated, the drafting group on Indigenous-related articles was regrettably closed to all but Parties – effectively disbaring IIFB participation. However, Indigenous representatives on the Canadian delegation were present through to the adoption of the Protocol. A Regional Chief of the AFN and a former Vice President International of the ICC participated at all the negotiating sessions in 2010. It is our view that the NAOs had a constructive influence over the delegation on a number of issues, for example, their opposition to the

disclosure of TK through the monitoring system. Nevertheless, as already borne out from the ABS Canada focus groups, limiting consultations to NAOs was clearly insufficient.

Canada's failure to broaden the spectrum of Indigenous voices at the negotiating table is reflected in the dismay voiced by many Indigenous participants in ABS Canada's focus groups. The general sense that representation amounted to little more than tokenism, and that the final outcome was more or less preordained, was a common refrain across communities and regions. These sentiments reflect important lessons for Canada as it participates in other international negotiations where Indigenous rights and interests are engaged.

Post-Nagoya Protocol (2010–17)

To move forward with implementation after the adoption of the NP, Canada should have consolidated its resources and turned its efforts to capacity-building. Instead, the federal government began to dismantle its ABS policy capacity. Following the Protocol's adoption and during the one-year period to sign the Protocol, budgets and human resources were significantly diminished. The result was a beclouding of earlier and genuine efforts by governments to develop ABS policy in Canada in consultation with Indigenous peoples and stakeholders. It may also, in part, serve to explain the current skepticism in many Indigenous quarters about Canada's ABS preparedness and engagement over the years.

Engagement with Indigenous peoples during the development of the national ABS Plan and NP negotiations involved considerable effort and financial resources. One could say that these efforts were progressive at the time, both within the Canadian government and among Parties to the CBD.

While these early efforts are notable, Canada appears to have subsequently lost interest in pursuing them seriously; after an initial burst of activity, Canada ceased significant consultations, postponed a final determination on whether or not to sign and ratify the NP, and effectively relegated the ABS issue to the margins as other issues and priorities diverted staff, material resources, and political attention.

Canadian Indigenous peoples' Views on ABS

As noted above, for many Indigenous peoples there was no opportunity to engage in policy decision-making or to be formally consulted by Canada, which tainted the process while further driving a wedge of misunderstanding and mistrust between Indigenous communities who hold TK and the government agencies and officials ostensibly acting in their best interests.

While impossible to fully characterize the wide-ranging views expressed over many years by Indigenous peoples and stakeholders on ABS and the Protocol, it is useful to note that a number of recurring themes have emerged. Not generally

opposed to ABS in principle, some Indigenous peoples noted that the various engagements/consultations undertaken were at odds with the government's obligations regarding consultation and accommodation. At the regional meetings, there was widespread support for PIC/MAT and legal protection. A starting point for ABS governance in Canada must be the adequate recognition of the rights of Indigenous peoples over GRs and TK. Capacity challenges were of central concern. Canadian governments were reminded that GRs and TK have significance beyond mere economic value. Several years later, Indigenous peoples have reinforced these views, with renewed intensity, while expressing even greater reservations as captured in the three reports of the ABS Canada focus groups (2015, 2016, 2017).

THE UNITED NATIONS DECLARATION ON THE RIGHTS OF INDIGENOUS PEOPLES (UNDRIP) AND ABS IN CANADA

It is important to recall that at COP9 (Bonn, 2008), Canada entered the critical final two years of ABS negotiations as one of only three CBD Parties that had not endorsed UNDRIP. While Canada ended the negotiations in 2010, having endorsed the UNDRIP with certain reservations,⁴ it was not until 2016 that the Prime Minister announced Canada's endorsement of the UNDRIP without reservations – consistent with Canada's commitment to reconciliation with First Nations, Inuit and Métis. The recent endorsement of UNDRIP without reservations was a significant commitment in itself. Furthermore, it has significant implications for NP implementation in Canada.

UNDRIP is an aspirational document, without the same international legal force as legally-binding trade and environmental agreements. In our view, it has not yet attained the status of customary international law. Nevertheless, significant potential for demonstrating adherence and support for UNDRIP lies in implementing UNDRIP under national law to operationalize these Indigenous rights. In this context, national implementation of the Protocol provides a unique opportunity to make progress and thus support Indigenous rights to GRs on their traditional lands and waters and their associated TK (Oguamanam, [Chapter 14](#)).

UNDRIP Articles 31, 29 and 24 are most relevant to the implementation of the NP in Canada. These articles call for:

- (1) the protection of TK including GR, seeds, medicines and knowledge of the properties of fauna and flora whereby States shall take effective measures to recognize and protect the exercise of these rights (UNGA 2008, 11–12);
- (2) the right to the conservation and protection of the environment and the productive capacity of their lands or territories and resources (i.e. sustainable use) including Canada's obligation to establish and implement assistance programs for Indigenous peoples for such conservation and

protection including taking effective measures to recognize and protect the exercise of these rights (UNGA, 2008, 11); and

- (3) the right to their traditional medicines and to maintain their health practices, including the conservation of their vital medicinal plants, animals and minerals including taking effective measures to recognize and protect the exercise of these rights (UNGA, 2008, 9).

Article 28 also provides that Indigenous peoples have the right to redress by just, fair and equitable compensation, for resources that they have traditionally owned or otherwise occupied or used, and which have been taken or used without their free, prior and informed consent (UNGA, 2008, 11–12). Article 38 requires states to take effective measures to recognize and protect the exercise of these rights (UNGA 2008, 13). It follows that Canada should provide effective mechanisms for prevention of, and redress for, any action that has the aim or effect of dispossessing First Nations, Inuit and Métis peoples of their lands, territories or resources, which of course would include their GR. While policy and administrative measures may be effective in most cases (especially as they relate to research conducted by public research institutes and universities) for implementing the Protocol in Canada (Oguamanam, Chapter 11; Bannister, Chapter 12; Bureli, Chapter 13) we believe such measures are insufficient for obtaining redress in Canada or other Parties to the Protocol.

While Canada currently has legal duties to consult the First Nations, Inuit and Métis, UNDRIP also states that Canada and other subscriber countries must consult and cooperate in good faith in order to obtain free, prior and informed consent of Indigenous peoples before adopting and implementing legislative or administrative measures that may affect them. The challenge for Canada is to consult efficiently and effectively as required by the SCC in *Clyde River (Hamlet) v. Petroleum Geo-Services Inc.*, 2017-SCC 40 and *Tsilhqot'in Nation v. British Columbia*, 2014 SCC 44 (Oguamanam & Hunka, Chapter 3) to develop a draft NP implementation strategy that recognizes the practical and very real constraints posed by consultations.

Article 18 is also particularly relevant to the implementation of the Protocol in Canada. This article expresses the principle that Indigenous peoples have the right to participate in decision-making in matters that would affect their rights, through representatives chosen by themselves. This obligation has relevance at the local level, whereby First Nations, Inuit and Métis should determine the contact person/institution and process by which access to GRs and/or associated TK shall be granted. Users need only know the PIC/MAT contact and procedures, whereas the local community can follow their customary laws and community decision-making. Development of such customary laws and cognate requirements such as biocultural community protocols are aspects of community preparedness and competence and incidental organizational capacity-building and development for ABS (Oguamanam & Hunka, Chapter 3).

GOVERNMENT OF CANADA'S PRINCIPLES ON ITS RELATIONSHIP
WITH INDIGENOUS PEOPLES AND IMPLICATIONS FOR
IMPLEMENTING THE NAGOYA PROTOCOL

On 19 July 2017, the Government of Canada made public its *Principles respecting the Government of Canada's relationship with Indigenous peoples* (Government of Canada, 2017; Perron-Welch & Oguamanam, Chapter 6). These principles have profound implications for the implementation of the NP and for the advancement of reconciliation. The Government of Canada has committed 'to achieving reconciliation with Indigenous peoples through a renewed, nation-to-nation, government-to-government, and Inuit-Crown relationship based on recognition of rights, respect, co-operation, and partnership as the foundation for transformative change.' In addition to committing to implement UNDRIP through a review of laws and policies, Canada has further committed to respect the inherent rights of Indigenous peoples including 'the rights that derive from their political, economic, and social structures and from their cultures, spiritual traditions, histories, laws, and philosophies, especially their rights to their lands, territories and resources.' Through these Principles, the government 'recognizes the reality that Indigenous peoples' ancestors owned and governed the lands which now constitute Canada, prior to the Crown's assertion of sovereignty' (Government of Canada, 2017). These commitments clearly have implications for ABS (Nichols, Chapter 4).

Relevant to implementing the Protocol, the government has indicated that in upholding the honour of the Crown, it requires 'the federal government and its departments, agencies, and officials to act with honour, integrity, good faith, and fairness in all of its dealings with Indigenous peoples including through fulfillment of its fiduciary obligations' (ibid.). The Principles, informed by UNDRIP, state that 'Indigenous peoples have a unique connection to and constitutionally protected interest in their lands, including decision-making, governance, jurisdiction, legal traditions, and fiscal relations associated with those lands.' Through the Principles, the government has committed to ensuring 'that Indigenous peoples and their governments have a role in public decision-making as part of Canada's constitutional framework and ensure that Indigenous rights, interests, and aspirations are recognized in decision-making' (ibid.). Importantly, the Principles state that Canada's commitments to a new relationship build on and go 'beyond the legal duty to consult' (ibid.).

The Government of Canada has stated that it will look for 'opportunities to build processes and approaches aimed at securing consent, as well as creative and innovative mechanisms that will help build deeper collaboration [and] consensus.' NP implementation clearly provides one such opportunity. These Principles have significant implications for developing a post-Nagoya national ABS policy, since there is now a higher standard for the inclusion of Indigenous peoples in consultations and decision-making than there was during past developments of a national

ABS policy, of Canada's strategy and positions for the negotiation of the NP and for ABS discussions on whether or not to sign the Protocol.

The Government of Canada now recognizes 'that meaningful engagement with Indigenous peoples aims to secure their free, prior, and informed consent when Canada proposes to take actions which impact them and their rights, including their lands, territories and resources' and 'extends beyond title lands' (*ibid.*). During the early period of Protocol talks (2008–9) Canada had not endorsed the UNDRIP. However, Canada endorsed the Declaration with reservations during the final stages of Protocol negotiations in 2010. Canada would not agree to the language of Free, Prior, and Informed Consent (FPIC) during the negotiations, instead only agreeing to the 'approval and involvement' of 'Indigenous and local communities.' Relatedly, Canada expressed little to no flexibility in defining the relationship between the NP and UNDRIP. Canada ultimately dropped its objections to a reference to UNDRIP in the NP's preamble near the end of the negotiations (ENB, 2010).⁵ As Canada accepts FPIC in its endorsement of UNDRIP, it follows that Canada could now employ 'free, prior and informed consent' rather than 'approval and involvement' when implementing the Protocol.

Finally, it is noteworthy that the Government supports a renewed fiscal relationship that will 'enable Indigenous peoples to have fair and ongoing access to their lands, territories, and resources to support their traditional economies and to share in the wealth generated from those lands and resources as part of the broader Canadian economy and these new approaches. . . include the negotiation of resource revenue sharing agreements' (*ibid.*). This commitment is relevant to Protocol implementation regarding benefit-sharing from the utilization of GRs in Canada.

A ROADMAP FROM NAGOYA TO OTTAWA BY 2020

Canada's ABS policy development experience to date has yet to bear fruit. ABS at the national/federal level appears to be suffering from a form of paralysis, despite significantly increasing efforts and resulting progress effected across the globe at national, sub-national and community levels. Retrospectively, it appears that the drivers of action or determinants of inaction in Canada on ABS over the past decade have predominantly been those related to concerns of certain industry and research sectors over implications for intellectual property rights and the transaction costs of introducing ABS governance in Canada. Such concerns have been amplified by the enduring misperception of Canada as solely a user of GRs (Oguamanam, 2011). As well, we see no concrete evidence that key federal government departments consider accession to and implementation of the Protocol as priorities.

We perceive an important shift in Canada regarding the relevance and significance of ABS. The principles and aims of reconciliation, together with the implementation of Canada's Principles and UNDRIP, compellingly argue for

broadening Canada's approach to ABS – moving beyond a focus on a narrow set of (sector-specific) economic interests towards a strategy that also seeks to advance Indigenous rights and interests. Furthermore, there is scope for viewing ABS in the context of implementing the 2030 Sustainable Development Goals. (The ABS Capacity Development Initiative, 2016).

Throughout the following section, we offer recommendations for five key components to ensure substantive progress: leadership within Canada; timely action; international leadership; consultation; and community-level action.

Leadership

The first step, albeit a large one, is for the Prime Minister to lead in *initiating* the implementation of UNDRIP in Canada by committing to implement the NP. His leadership and that of the Cabinet is needed to overcome the inherent inertia of the bureaucracy and the apparent reluctance of some industry sectors to respect Indigenous peoples' rights, in a manner appropriate within a nation-to-nation relationship. If implementing the NP were deemed a Prime Ministerial priority, the resulting positive political energy would mobilize action and capacity required for legislative, administrative and policy development, voluntary measures, meaningful consultations and community-level implementation.

Such leadership could come in the form of a commitment to legal protection (i.e. not just voluntary approaches), for access and benefit-sharing from the use of GRs on traditional lands and waters of Indigenous peoples and the protection of their associated TK, taking into consideration customary protocols and laws. This strategy was supported by most Indigenous participants in regional meetings prior to NP negotiations.

Leadership could also be demonstrated through the development of a new model for sharing resources on traditional territories (i.e. Crown lands and private lands) under an ABS regime. Indigenous peoples in Canada want control over access to and use of their GRs and associated TK. We propose that control over access be co-decided by Canadian governments and Indigenous peoples. With respect to negotiating MAT, we propose that Indigenous peoples have majority control over use and property rights issues and that a significant portion of scientific and monetary benefit-sharing flow to Indigenous peoples. Co-management of GRs in a nation-to-nation relationship would aid Indigenous peoples in that F/P/T governments, with more resources and capacity, would lead in ABS-related litigation in civil courts on behalf of Indigenous peoples. Granted, this arrangement would be a significant derogation from the historical (and contemporary) trend of the governments' spending large amounts of money to fight Indigenous nations' legal claims through litigation. We assume, based on the government's commitment to reconciliation, that they will rethink this position in the future, as they move towards true reconciliation that recognizes and respects UNDRIP rights.

Urgency

Speed in the exercise of leadership and policy development is of utmost importance. The year 2020 marks the culmination of the CBD's Aichi Biodiversity Targets 2010–20 initiative. Implementation of the Protocol is one of the Aichi Targets. Again, if Protocol implementation was judged a priority for the Prime Minister, it is not untenable that elements of a domestic framework ABS regime (including policy, administrative and legislative measures) could be in place by 2020. Such a possibility is increasingly slipping by as 2020 fast approaches.

There is also an urgent need to act: the longer Canada takes to implement a legal regime, the longer that Canada will remain at a disadvantage in the ongoing global ABS policy-making debates. There are three notable implications of Canada not acceding quickly to the NP. Perhaps most important is that there will not be legal protection in other countries for the PIC/MAT of Canadian providers or users of GRs and associated TK. This lacuna is becoming increasingly significant now that Canada's wealth of GRs is being unravelled in an unprecedented scale through the effects of climate change especially in the Arctic, which is the focus of intense economic activity (Oguamanam & Koziol, [Chapter 7](#)). Second, as a non-Party, Canada would continue to be absent from the decision-making table where NP Parties exercise the exclusive privilege of determining the further development of the international ABS governance regime, including concerns of Indigenous peoples. Third, there is a risk that Canadian science and industry sectors will lose opportunities to access and utilize the GRs of other countries, in the absence of Canadian measures to enforce compliance with those countries' ABS laws.

An important potential benefit of Canada's speedy progress on ABS implementation is the political capital and goodwill it would generate among the 195 other CBD Parties. As leading proponent of the CBD and host to the CBD Secretariat in Montreal, the advantages of Canada becoming Party to at least one of the CBD's protocols are patently obvious to all concerned.⁶

International Leadership

Once committed to a legal ABS regime in Canada, leadership could, in turn, be demonstrated internationally by developing an exemplary national system for implementing the NP. While legislation would form the core of legal protection and compliance measures, administrative, policy and funding measures would be necessary for effective implementation of the Protocol as a whole. The Canadian regime could involve regulatory, civil, customary law and perhaps criminal law in extreme cases. The goal could be to develop an effective and pragmatic national model that other countries could follow, especially in the context of implementing UNDRIP through ABS policy. The Protocol is the minimum standard for enforcing PIC/MAT; Canada could decide to have a policy with broader policy scope than the

Protocol. Indeed, this proposal is one of the outcomes from ABS Canada's nationwide focus groups on an Indigenous-sensitive ABS policy.

Consultations and Engagement

Given that the implementation of the Protocol will directly affect Indigenous rights, consultations should allow for consensus on a national ABS strategy. While the views of stakeholders will be important in developing a national ABS strategy, Indigenous peoples are rights holders and therefore there are associated legal obligations that need to be respected.

First Nations, Métis and Inuit should be included at the Ministerial level of a Federal/Provincial/Territorial/Indigenous peoples Resource Council to approve a national ABS strategy. Indigenous participation would also occur at the working level and senior executive committees. The National Aboriginal Organizations should also receive funding to participate in the NP implementation process, including in consultations. Measures should be undertaken to ensure that Indigenous women, elders and youths are well represented. Appointment of an Indigenous co-chair could be considered.

Consultations must necessarily include, but go beyond, the engagement of NAOs. Extra effort should be made to consult hereditary chiefs, knowledge keepers and other elders with TK of their biodiversity and plant-based medicine because they hold the TK associated with GR. The federal government would also be responsible for consulting more broadly, through a multi-pronged regional strategy, in order to seek out the range of available ABS expertise (i.e. among hereditary chiefs and elders, chiefs and band managers; national, provincial and territorial Indigenous leaders; Inuit regions; environment and resource managers; academics and sustainable development lawyers; science and industry sectors; and civil society representatives).

Given the significant effort needed to raise awareness and develop a working knowledge of ABS, consultations could best be focused on organizations and individuals who have been active or want to be active on ABS issues in the years to come. This is one of the lessons from the ABS Canada initiative. While there has been a void in ABS consultations in recent years, current Indigenous capacity for consultation can be found, for example, through members of the Social Sciences and Humanities Research Council (SSHRC) sponsored research program 'Intellectual Property in Cultural Heritage (IPinCH)'⁷ and the ABS Canada initiative.⁸

In implementing UNDRIP and the Government of Canada's Principles via ABS, we would advocate the establishment of an independent Indigenous body to promote Indigenous biodiversity-related issues (regarding the CBD's Articles 8(j) and 10(c) and NP). This 'Indigenous Council on Biodiversity' should be reflective of elders' concerns about access to and protection for medicinal plants, as well as the need to respect traditional Indigenous protocols governing the use of traditional

medicines. Some elders at the 2017 spring session of the ABS Canada Focus Group held in Saskatoon expressed similar sentiments.⁹ Main roles of the Council could include: leading on ABS capacity-building at the community level (e.g. development of codes of conduct, community protocols); administering a UN-like financial mechanism for local capacity-building for respecting, maintaining and protecting TK; providing for the protection of medicinal plants; and supporting sustainable use/development and ecosystem approach to management on traditional lands and waters.

Community-Level Actions

The PIC/MAT obligations of the Protocol provide that users of GRs and associated TKs held by ILCs follow the community process for their access and use. In this manner, customary protocols of the community are recognized. Of course, this means that communities need to take measures to prevent unauthorized disclosure by individual community members. By designating a community ABS focal point, the procedure for users would be clear. Users do not need to know details of the community decision-making processes (i.e. customary laws) except that time is necessary for communities to make their decisions.

The PIC/MAT process also means that communities that want a moratorium on accessing TK have that option. Furthermore, communities wishing to prevent access to sacred medicines and medicinal plants have the option to deny access to those outside the community (Oguamanam, 2003). To support community control over access and use of GRs and associated TK, Indigenous peoples will need the capacity and tools to negotiate PIC/MAT on fair terms (Oguamanam & Hunka, Chapter 3).

Consistent with Protocol Article 12, the government could immediately begin the work of developing documents with model language for adaptation by each community. Communities will likely need first to negotiate a confidentiality agreement at the outset of research (Burelli, Chapter 13). So, a model confidentiality agreement would be desirable. There are many existing examples of ABS model contract provisions for benefit-sharing that could be adapted for Indigenous peoples; for example, clauses that set out allowed uses and ownership of GRs and associated TK provide important legal clarity in MAT (ABS Capacity Development Initiative, 2017)¹⁰.

A National ABS Focal Point should lead in coordinating the development of these model clauses; however, these initiatives also need to be complemented by awareness-raising and capacity-building. Given that most communities are unlikely ever to have users request access to GRs and associated TK, it could be most efficient for the National ABS Focal Point to provide resources for expert legal capacity at the time users request access.

While it has been noted that Canada is lagging behind much of the rest of the world in genetic resource and TK governance development at the national level

(i.e. in the context of implementing the current global benchmarks established by the NP), instructive experiences exist in community-level ABS development in other parts of the world. There are also successful local examples in Canada (Oguamanam & Koziol, [Chapter 7](#)). Canada can and must learn from these experiences. One could envision the establishment of a pilot project among Canadian and overseas partners to support a South-North or North-North capacity-building initiative designed to support ‘Indigenous community-to-Indigenous community’ collaboration to jump-start concrete work on ABS at the local level in Canada. Indeed, there is nothing to disallow the establishment of such collaboration, even in the current absence of full national ABS leadership (Oguamanam & Hunka, [Chapter 3](#)).

CONCLUSION

Canada and Indigenous peoples in Canada have played pivotal roles in developing international ABS policy and governance instruments. While there has been an apparent hiatus on ABS within the federal government post-Nagoya, previous wide-ranging efforts at policy development and engagement conducted by the federal, provincial and territorial governments represent a firm, substantive foundation still valuable for advancing ABS governance in Canada.

Now that it has dropped its objections to UNDRIP, and with its population seized by the need to move forward on reconciliation, Canada has reached a historic juncture. The NP, when understood as a rights instrument supporting justice and fairness, offers a tool to promote UNDRIP and reconciliation. It is time for a fundamental shift in perspective on ABS in Canada – away from a narrow, user-based view towards a deeper and more inclusive rights-based understanding of the Protocol.

The rationale for implementing the NP has never been stronger and the need never greater. The opportunities inherent in ABS must now be pursued, and Canada should re-join the global ABS push. Our roadmap highlights the critical need for leadership at many levels – beginning with the Prime Minister of Canada and including Canada’s Indigenous peoples.

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NOTES

- 1 2020 is the terminal date of the 2010–2020 Aichi Biodiversity Targets which include the implementation of the Nagoya Protocol as one of the key targets.
- 2 The International Indigenous Forum on Biodiversity (IIFB) was formed during third Conference of the Parties of the Convention on Biological Diversity in Buenos Aires, Argentina, in November 1996. It is a collection of representatives from Indigenous governments, NGOs, scholars and activists that organize around the CBD and other international environmental meetings to coordinate Indigenous participation at these meetings.
- 3 This summary is based largely on co-author Langford's involvement in developing national ABS policy and related consultations, as well as his experience developing negotiating strategy and negotiating ABS instruments from the voluntary Bonn Guidelines in 2001 through to the adoption of the Nagoya Protocol.
- 4 Canada's volte face in endorsing UNDRIP albeit with reservations was in a way done under the pressure of the backlash from its intransigence in opposing the reference to UNDRIP in the text of the Nagoya Protocol.
- 5 Canada's conduct expectedly generated ill-feelings across Indigenous peoples world-wide. As a consequence, it undermined previous attempts to engage Indigenous peoples in the lead-up to the Nagoya negotiation and created the impression among Indigenous people that they were neither involved nor were their interests represented by Canada at Nagoya. Such an impression has continued to linger posing a challenge to prospective attempt to domesticate and implement the Protocol in Canada.
- 6 Canada also played a leading and vocal role in the negotiation of the Cartagena Protocol on Biosafety (which it signed but failed to ratify).
- 7 www.sfu.ca/ipinch/
- 8 www.abs-canada.org/
- 9 One the chapter's authors, Timothy Hodges, attended this session and had the opportunity to interact with the elders, including a very prominent Aboriginal elder and medicine man.
- 10 Since 2006, the German-based ABS Capacity Development initiative been engaged with development and implementation of national regulations on ABS across Africa.

Aboriginal Partnership, Capacity Building and Capacity Development on ABS

*The Maritime Aboriginal Peoples Council (MAPC)
and ABS Canada Experience*

Chidi Oguamanam and Roger Hunka

Abstract

This chapter focuses on frameworks for Aboriginal capacity building and capacity development on access and benefit-sharing (ABS) under the Nagoya Protocol (NP). It examines the experiences of the Maritime Aboriginal Peoples Council (MAPC) and its collaboration with ABS Canada and reflects on other possible avenues for building trust and effective collaboration for capacity building and capacity development on ABS. Noting that Canada has an enviable track record of supporting development initiatives in the global South, it argues that Canada – specifically its Aboriginal Peoples – could benefit from capacity development support on ABS even from third parties including Indigenous and local communities (ILCs) of the global South who have experience with ABS. A potential South–North or North–North capacity building and capacity development trajectory could represent an attempt to acknowledge the status of Aboriginal peoples in the likeness of a global South in the North in need of capacity building and capacity development in a niche and emerging field such as ABS.

INTRODUCTION

‘Capacity building’ and ‘capacity development’ are buzzwords in contemporary development, including international development and policy discourse. They designate a variety of support mechanisms, including processes and interventions directed to enable or empower institutions, communities, collectives or even individuals to obtain or acquire required skills, expertise, competences or knowledge to optimally perform or bridge existing performance or skills and competence gaps in

an identified area. Although in the strict sense, the two phrases do not mean the same thing, they are used interchangeably here for simplicity and pragmatic reasons. Theoretically, capacity building presumes there is no pre-existing capacity on the part of the target, whereas capacity development assumes the converse but aims at improving existing capacity. Capacity building and capacity development may define an intra-institutional need, i.e. it can apply within a firm or across related firms or institutions or their component departments (organizational capacity building and capacity development) or within a community or across related communities and their constitutive segments (community capacity building and capacity development).

However, in the context of the development discourse, these phrases find traction within the usual fault line of global North–South relations and power dynamics. However inaccurate, the South is often portrayed as lacking capacity and the North as having the desired capacity, notably in technology and infrastructure. The South is, therefore, a subservient or docile recipient of capacity building and capacity development in the fashion designed by the North. That approach is a corollary of colonial ideology, that is often knowingly or unknowingly weaved into the contemporary development narrative and policymaking. As a result, Indigenous peoples in Canada and elsewhere in the global North have often been characterized as the ‘South in the North,’ the ‘Fourth World’ that are perennially circumscribed in the historical inequities of colonialism (Wilmer 1993). Ironically, Canada is on the frontline of international development aids and other intervention initiatives in the global South. Canada and its developed colonial and industrialized counterparts are heavily invested in exporting ‘development,’ including its adjuncts such as capacity building and capacity development, to the global South. Not only does Canada have some of the globally reputable international development agencies, in addition to trade, international development is the fulcrum of Canada’s foreign relations. In this benevolent endeavour, Canada prefers to revel in its enviable, albeit suspect, recognition as a model of justice, equality, and an example of a viable multicultural liberal democracy and polity.

Yet, Canada remains in denial of the injustices that characterize the Aboriginal experience domestically, which have carved a deep scar on Canada’s national conscience. Today, the Indigenous peoples of Canada continue to remain the South in the ‘True North’ in terms of their living conditions and standard of living. For example, in a 2012 visit to Canada, then-United Nations Special Rapporteur on the Right to Food, Olivier de Schutter, lamented the magnitude of food insecurity among Northern Aboriginal communities and other remote Indigenous communities in Alberta and Manitoba. In his scathing remarks during that visit (which the then-Conservative government of Stephen Harper snubbed), the envoy characterized the conditions as not only ‘very desperate’ but the people as being in ‘extremely dire straits’ in regard to food insecurity. He counselled that ‘Canada needs to drop its

“self-righteous” attitude about how great a country it is and to start dealing with its widespread problem of food insecurity’ (Kilpatrick, 2012) that is visibly prevalent among Indigenous peoples.

Few things underscore the prominence of capacity building and capacity development more than their inclusion into modern treaties, other international legal instruments, and into the language of various manners of development agencies – World Bank, IMF, WTO, UNCTAD, UNDP, etc. While the focus on infrastructure remains constant, in most of these contexts, the specific subject matters or targets, as well as triggers for capacity building and capacity development, are either novel or emerging phenomena including contingency situations such as disaster mitigation response. Some examples of the focus of capacity building and capacity development in miscellaneous areas most relevant to Indigenous peoples include information communication technology, other paradigmatic innovations and technologies such as bio and digital technologies, the climate change phenomena, ocean ecosystems and fisheries management (Rutherford, Herbert and Coffen-Smout, 2004; Weng et al., 2015) conservation, livelihood improvement and poverty alleviation (Haque, Deb and Medeiros, 2009); research collaboration (Broad and Reyes, 2008; Smith et al., 2014); tourism development (Bennett et al., 2012) pandemics, and various forms of natural and human-made disasters of unprecedented magnitude, to mention a few.

In other cases, what may be new and in need of capacity building and capacity development is espoused as intervention or mitigation strategies, including governance, institution building, legal or regulatory capacity enhancement. Often, some of the prescribed responses are alien, to variable degrees, in relation to the existing worldviews, priorities or even aptitude of the target IPLCs. As well, they come with questionable and often paternalistic assumptions in regard to these target beneficiaries of capacity building and capacity development initiatives. With specific regard to the Nagoya ABS framework, Perron-Welch and Oguamanam (Chapter 6) observed that ‘the global norms on ABS reflect aspects of colonial legacy of fixation on economic appeal of raw materials’ through access mechanisms, while benefit-sharing takes the form of platitudes (Wright, 2017). In this market economic consideration, the valorization of genetic resources (GRs) as resources takes precedence over other cultural affinities that undergird Indigenous peoples’ relationship with life forces, including biological diversity, GRs and TK. There is often an unrecognized need to build and develop capacity for those who seek to build and develop capacity to understand their target beneficiaries.

The foundation of the modern international legal system, and more broadly the international order, is largely a derivative and continuation of the legacy of colonial relations. The Indigenous peoples of Canada and their counterparts elsewhere have been co-opted into that order. Until recently, that order called into question their humanity. It has yielded an intimidating or asymmetrical power relation that has taken Indigenous peoples’ priorities, worldviews and values hostage. Millennia of

policies of cultural subjugation, even cultural genocide, epistemic discrimination and devaluation, and determined but thankfully failed attempts to permanently 'solve' the 'Indian question' (Angie, 1996; Anaya, 2004) (through the eradication of the Indian) has left the 'Indian' and their counterparts, and victims of colonialism permanent targets and recipients of all kinds of capacity building and capacity development, in a way, as an inevitable form of a new and barely interrogated orientation.

In this Chapter, we address the capacity building and capacity development dynamic in the context of, and beyond the NP, with a focus on how Aboriginal capacity building and capacity development on ABS could be engaged in Canada against the backdrop of Canada's profile as an active actor in the international development space. We examine the first major ongoing and evolving capacity building and development initiative on ABS in Canada (courtesy of the MAPC and the ABS Canada research initiative) and how the outcome of that partnership helps foreshadow capacity building and capacity development towards an Aboriginal-friendly ABS regime in Canada.

CAPACITY BUILDING AND CAPACITY DEVELOPMENT AS AN IMPERATIVE

Without question, there are conspicuous bases for capacity building and for capacity development as strategies for tackling historic injustices in specific and variegated cases (Department of Justice, 2017). The most notable one is in relation to ABS over GRs and TK (Davis et al., 2015), as part of an important step towards justice, reconciliation and international and national cohesion on the Indigenous question. Perron-Welch and Oguamanam (Chapter 6) indicate that the protection of traditional knowledge issue, of which ABS is an adjunct subject, is fairly new in international law. Because of its cross-cutting nature, it is the focus of diverse sites for ongoing legal and policy capacity building and capacity development, as evident in various international law-making processes that have ramifications for ABS. For example, outside of the formal international institutional framework, the German-based ABS Capacity Development Initiative has been involved in building and developing capacity on the implementation of ABS regimes in Africa since 2006. This work has been on both a continent-wide basis throughout the African Union and on national basis across select countries in the region in a classical form of North-South capacity building and capacity development. This is but one example to show that ABS is a novel concept. Even the international community that, in part, collectively invented ABS, as a response and mitigating strategy to biopiracy, needs capacity building and capacity development with regard to the ramifications and applications of ABS.

In the Canadian context, part of the legal preparedness or lack thereof for an Aboriginal sensitive ABS lies in the broader dynamic of Canada's relationship with its Aboriginal peoples. As explored by Joshua Nichols in Chapter 4, Aboriginal

people's claims to GRs and associated traditional knowledge can be broached from within the flawed but salvageable architecture of s. 35 of the *Charter* (i.e. the *Constitution Act, 1982*). Nichols has highlighted and disclaimed the defective sovereign-to-subject foundation and the questionable presumptions that have since animated the interpretational orientation of s. 35 by the courts. That approach has created a series of barriers, scrutiny and constraints with regard to Aboriginal peoples' inherent rights to self-determination and self-government. These are intrinsic rights of any sovereign, which no other sovereign can grant to another, let alone extinguish.

Indigenous peoples' rights claims over biogenetic resources and traditional knowledge must, of necessity, issue from and be recognized as part of sovereign-to-sovereign relationship within the Canadian State. According to Nichols and other contributions to this volume (such as Perron-Welch & Oguamanam in [Chapter 6](#)), a progressive interpretational outlook on s. 35 and other frameworks of Canada's relationship with Indigenous peoples has become imperative. These approaches debunk the *terra nullius* doctrine and unequivocally recognizes the pre-contact, unbroken, and unceded sovereignty of Indigenous peoples and their relationship with Canada on a nation-to-nation basis. It is an outlook that grounds Indigenous peoples' rights to natural resources, including, of course, GRs and TK. By extension, such rights constitute the warrant for Indigenous peoples as parties whose interests are significantly engaged in ABS.

As Canada pursues the reconciliation agenda and portends to heed the Truth and Reconciliation Commission (TRC)'s call to action on UNDRIP, there appears a gap for building and developing capacity for a more progressive jurisprudence on Indigenous peoples in the context of new national and international interest on GRs and associated traditional knowledge and, by extension, ABS. Canada's first Aboriginal Minister of Justice, Jody Wilson-Raybould, has indicated that part of Canada's renewed rapprochement with Aboriginal peoples, in the spirit of reconciliation, is breathing new life into s. 35 of the *Constitutional Act, 1982* (Perron-Welch & Oguamanam, [Chapter 6](#)). That, in itself, is conceivably the first site for legal and jurisprudential capacity development¹ that would have direct ramifications for ABS.

International law vests the sovereign rights over natural resources and authority over ABS on states. But that authority is subject to the national law (*CBD*, Articles 15 (3)). In exercising that authority, the NP supports consideration for and the incorporation of 'indigenous and local communities' customary laws, community protocols and procedures, as applicable, with respect to traditional knowledge and associated genetic resources' (NP, Article 12(1)) for the implementation of ABS. Already, the principles of free, prior, and informed consent and consultation of Indigenous peoples in making decisions that affect them is affirmed in the NP. Those principles are now also part of the international law on Indigenous peoples and cemented in Canadian law, as recently affirmed by the Supreme Court of Canada in *Clyde River (Hamlet) v. Petroleum Geo-services Inc.* (2017).² In Canada and elsewhere, recognition

of Indigenous sovereignty includes the recognition of Indigenous legal traditions, customary practices and protocols. Doing so situates Canada as a country with plural legal traditions beyond its much-touted official Anglophone (common law) and Francophone (civil law) bi-juridical status. A fuller realization of that approach remains contentious in the history of Canada's relations with Indigenous peoples. It is a site for capacity building and capacity development for Aboriginal communities and all tiers of government in Canada. Such capacity building and capacity development could not be more urgent and compelling if Canada was to embark on implementing Aboriginal sensitive ABS within or outside the Nagoya framework.

From the foregoing, it is clear that capacity building and development is not a one directional top-down process with Indigenous peoples as the default recipients. Along these sentiments, Indigenous partners and participants at the 2016 ABS Canada Focus Group on ABS held in Ottawa, observed: '[c]apacity building [and development] on ABS need to be a two-way or "multidirectional" exercise. As such, while governments need to support ABS capacity building in different directions, Aboriginal peoples also need to educate the government on how to engage and understand Aboriginal peoples as important stakeholders in ABS' (ABS Canada, Ottawa, 2016, 10). There is much to be said for building and developing capacity of public servants and various policy-makers on cross sectoral scales on awareness of Aboriginal issues throughout the entire accoutrement of Canada's public service and national life generally, even more so in complexly lawyered and novel fields in which ABS is implicated.

CAPACITY BUILDING AND CAPACITY DEVELOPMENT IN THE NAGOYA PROTOCOL (NP)

Article 22 of the NP is devoted to *capacity building and capacity development*. That provision deploys the two phrases interchangeably. It prescribes that Parties shall cooperate in capacity building and capacity development for effective implementation of the NP. The NP's design of capacity building mimics the classical international development approach. Its blatant targets for capacity building include 'developing country Parties, in particular, the least developed countries and small island developing States among them, and Parties with economies in transition' (NP, Article 22). For the most part, this is a direct reference to the global South. The Article further provides that Parties shall draw expertise from 'existing global, regional, subregional and national institutions and organizations' to build and develop capacity. There is no direct reference to Indigenous peoples, in the strict sense, as direct targets for capacity building. Rather, the NP provides that in the context of capacity building and capacity development, Parties 'should facilitate the involvement of indigenous and local communities and relevant stakeholders including non-governmental organizations and the private sector'. In a way, Indigenous capacity building and development is not conceived as an imperative but

rather as an adjunct or subservient aspect of building capacity in a state Party. This approach does not address glaring situations of lingering colonial relations such as in Canada, where there is rarely a unity of purpose between a state Party and its IPLCs (Oguamanam, 2004).

The omission of Indigenous peoples as direct targets for capacity building and capacity development and the ambiguous and non-binding reference to facilitating their involvement in capacity building and capacity development is one of the gaps in the NP. The question begs asking, in what ways, to what extent and to what end can States 'facilitate the involvement of indigenous and local communities' in capacity building and capacity development? Despite the importance of ABS as a subject critical to Indigenous peoples' interests, in Canada and elsewhere, the focus of the capacity building provision on the global South reflects one of the perennial fault lines of international development – the presumption that Indigenous peoples of the global North are at parity with dominant populations in their current ancestral-homeland-turned-colonial enclaves and, as such, could not be the primary or legitimate target of capacity building and capacity development. This correlates to the tendency by colonial states, such as Canada, to direct their international development efforts, including capacity building and capacity development, to the global South under the pretext or assumption that there is no domestic development deficit in segments of its constituent units or populations as mentioned in Olivier de Schutter's remarks.

Under the NP, capacity building and development aims at strengthening human and financial resources, and institutional capacity. Targets of capacity building are required to 'identify their national capacity needs and priorities through national capacity self-assessments' while supporting 'the capacity needs and priorities of indigenous and local communities . . . as identified by them with special consideration for "the capacity needs of and priorities of women"' (NP, Art 22.3). The NP identifies key areas for capacity building and capacity development. They are: the overall capacity to implement and comply with NP obligations, to negotiate mutually agreed terms with users of GRs, to implement and enforce domestic legislative and administrative measures, and to develop valued-added endogenous research capacities to their genetic resource (NP, Article 22(4)(a–d)).

Finally, the NP outlines measures aimed at building and developing the capacity for implementation of ABS as follows: legal and institutional measures, training for skill in negotiating MAT, monitoring and enforcement of compliance, use of effective communication tools and internet-driven systems for ABS activities, and development and application of valuation methods. Other capacity-building and development measures relate to bioprospecting, including related research and taxonomic studies; sustainable transfer of technology; measures ensuring that ABS contributes to biodiversity conservation outcomes; and devising special measures to boost the capacity of ILCs, and capacity of women members of those communities to participate and benefit from ABS.

Pursuant to Article 22 of the NP on capacity building and capacity development, conceivably, the ability of ILCs to benefit from capacity building and development is at the discretion of state Parties to the NP. Two points should be addressed here: First, under the NP, there is a presumption that the developed, industrialized countries of the global North, who are essentially the users of GRs, have no need for capacity building and capacity development on ABS. Second, as outlined above, since ILCs are technically not parties to the NP, their interest in capacity building and capacity development is essentially secondary. In the Canadian context, both presumptions are fundamentally flawed because ABS is a novel concept. Both the providers and the users of GRs and TK (even if that categorization is misleading) are in need of capacity building and capacity development. As we argued earlier, even though international law recognizes sovereign states as Parties to the international conventions, that position is without prejudice to nation-to-nation or sovereign-to-sovereign status of component nations in a given State, where there is shared sovereignty with full rights of self-determination (Nichols Chapter 4).

In addition to the enduring trust deficit that defines Indigenous peoples' relations with colonial laws, including the international law-making process, the problematic approach to capacity building and capacity development underscores, in part, their lingering skepticism over the Nagoya ABS framework. At the ABS Canada Focus Groups, Indigenous partners and participants questioned the legitimacy of the NP as it relates to their experiences. They expressed deep resentment over Canada's perceived reprehensible role at the Nagoya deliberations. Specifically, as pointed out by Hodges and Langford (Chapter 2), the role included Canada's objections to the reference to 'Indigenous peoples' and preference for the term 'indigenous and local communities'³ as well as Canada's attempted but failed resistance to the inclusion of the UNDRIP in the preamble to the NP. Not only did Canada participate at the negotiations without consulting Indigenous peoples, Indigenous partners and participants argued that the NP is premised on principles that are irreconcilable with their worldviews.

Some of these objections are no longer as striking as when they were raised. This is largely due to policy shakeups on Aboriginal relations via the implementation of the TRC Report, unqualified endorsement of UNDRIP and progressive approach to s. 35 and nation-to-nation relations pursuant to the Justin Trudeau government's program on reconciliation. Yet Indigenous peoples remain cautious, insisting that the NP represents one ideology or pathway for ABS that does not preclude them from developing their own vision of ABS. As true as that is, many of the NP's elements for capacity building and capacity development are encouraging and can be adapted or internalized to drive Indigenous sensitive ABS within the overarching framework of self-determination. That is the approach taken by the MAPC in its partnership with ABS Canada dating back to 2011 to which we shall return later.

A PARTNERSHIP STRATEGY FOR CAPACITY BUILDING
AND CAPACITY DEVELOPMENT

The United Nations has deployed partnership building as a tool for sustainable development. Specifically, through both the millennium development goals (MDGs) (2000–15) and the Sustainable Development Goals (SDGs) (2015–30), the UN enunciated the instrumentality of partnership for advancing developmental goals. Although in those contexts, the UN's familiarity or preference for public sector cooperation or partnership with the private sector (the so-called PPP model) is evident (Chon, Roffe and Abdel-Latif, 2018). However, it does not underestimate the flexibility and inclusiveness required to put partnership at work for addressing capacity building and capacity development gaps. Accordingly, pursuant to SDG #17, the UN observes: 'A successful sustainable development agenda requires partnerships between governments, the private sector and civil society. These inclusive partnerships built upon principles and values, *a shared vision, and shared goals* that place people and the planet at the centre, are needed at the global, regional, national and local level' (UN, SDG, 2015).⁴

As we demonstrate below, after the NP was signed in 2010, perhaps the first Aboriginal-driven initiative to open a conversation on the NP and ABS, in general, has been at the instance of MAPC. MAPC is a regional Aboriginal leadership organization with a strong democratic ethos and deep roots in Aboriginal grassroots in the three Canadian maritime provinces: Nova Scotia, New Brunswick and Prince Edward Island. These provinces represent the traditional ancestral homelands of the Mi'kmaq, Maliseet, and Passamaquoddy Aboriginal peoples of Canada. MAPC is a federating Aboriginal institution for the region, through which the component native councils are able to exert relevance, project and protect the historic and contemporary Aboriginal interests in the region, as well as nationally and internationally. At the core of its objectives, MAPC is committed '[t]o remain ever vigilant and to take any and all measures available: at law, by politics, or through proactive advocacy to ensure that decision-makers do not subject our community of traditional ancestral homeland Aboriginal Peoples to social, economic, educational, political or individual disadvantage, stereotype, vulnerability, prejudice or discrimination' (MAPC, 2017, <http://mapcorg.ca/>).

Over the years, MAPC has remained resolute to the realization of that mandate and earned for itself integrity in advocacy, Aboriginal entrepreneurship and research. Today, it is an authoritative institution involved in continuing capacity building and capacity development that is required for Aboriginal peoples to effectively participate in the evolution or transformations of historical Aboriginal interests and in the emergent fields in which those interests are engaged. So far, given its commitment to capacity building and capacity development, MAPC has partnered with relevant national organizations, including the National Congress

of Aboriginal Peoples in establishing the ‘SAR Ikanawtiket’ in 2005 (Maritime Aboriginal Peoples Council, 2017). SAR Ikanawtiket is a project dedicated to fostering environmental respect and the realization of the Species at Risk Act (SARA). It is now the foremost and the most resourceful biodiversity conservation, capacity building and capacity development educational tool arising out of Aboriginal knowledge and worldviews of the living environment.

In addition to the SAR Ikanawtiket initiative, MAPC is a contact and contracted partner with constitutive native regional councils and relevant government agencies for a project on Oceans and Aquatic Resources Management, a region-wide initiative aimed at continuing, environmentally respectful and sustainable use by communities of the five regional watersheds in the maritime region, namely the Bay of Fundy, Eastern Shore Atlantic Ocean, Northumberland Strait, Bai De Chaleur and Atlantic Ocean. Using proactive and constructive partnerships, MAPC executes work under this project through the Maritime Aboriginal Aquatic Resources Secretariat (Maritime Aboriginal Aquatic Resources Secretariate (MAARS) 2017) – an incredible resource on Aboriginal sensitive, equitable and sustainable resource management.

As its *modus operandi*, MAPC is in the practice of using its ‘expertise and capacity to undertake a range of “pilot or regional” programs or initiatives’ as may be agreed to by member councils (Projects & Initiatives, 2017). According to it, ‘Sometimes, in the context of international subjects, MAPC will be mandated responsibility by the Member Councils, or National Organization, or Traditional Leaders, to follow a subject, make attendances, draft submissions, present same, and report on the outcomes by informal brief or by public paper’ (ibid.). MAPC undertakes these kinds of tasks through various commissions, the most ‘effective way to gather a large range of views from the traditional ancestral homelands of Aboriginal Peoples, and also serve as one vehicle to raise awareness about important topics, and help to build regional solidarity and focus of the advocacy’ (MAPC Commissions, 2017). Given its track record on issues relating to biodiversity conservation, MAPC readily focused on the NP and ABS to raise awareness and gather the views of aboriginal peoples on ABS immediately after the NP was signed in 2010.

In 2010, MAPC led the first major Canadian Indigenous initiative on ABS through a partnership that involved expert support from then Dalhousie University’s Professor Chidi Oguamanam, which resulted in a well-mobilized and well-attended Indigenous ABS forum. The partnership strategy reflected a constructive leveraging and adaptation of capacity building and capacity development vision of the NP text explored above. It also involved a significant degree of community awareness-raising on the subject of the NP and ABS even though not in the scale elaborated in Article 21 of the NP. The ongoing MAPC initiative is instructive in many respects, including but not limited to the following. First, by taking charge of capacity building without waiting for Canada, it rejects the location of IPLCs as second layer targets for capacity building under the NP.

Second, by seeking out its own partner(s) on the basis of trust without too much formalism, MAPC underscores Aboriginal initiative and exercise of freedom of judgment and decision-making in matters that concern them. Third, as an entirely MAPC initiative, the first major ABS forum was able to broach the issue of identifying, at least at the regional level, capacity needs and priorities, and consequently opened up a national dialogue on the need for Indigenous capacity self-assessments through broadened conversations on Indigenous-friendly ABS. Fourth, the deliberate attempt by MAPC to ensure equitable gender and transgenerational representation at the first major Aboriginal-initiated ABS forum demonstrated Aboriginal peoples' expansion of capacity need and priority to include not only women but also elders and the younger generation of Aboriginal youths.⁵

After two-day deliberations on ABS, under the auspices of the MAPC commissions program, men, women, elders, younger generations and members of traditional ancestral homelands of Mi'kmaq, Maliseet, and Passamaquoddy Aboriginal peoples of Canada, their collaborating partners and other indigenous delegations enunciated a fifteen-Article *Iskensisk Declaration on ABS*. The document is the first major Aboriginal charter on ABS in Canada and it is reproduced here *in extenso* without the preambles:

We the Aboriginal organizations and individuals assembled in our traditional ancestral homeland gathering site continuum of 10,500 years, declare the following as essential to keep under constant advisement in implementing the intent of the Convention on Biological Diversity in Canada for the access, use, and fair and equitable sharing of benefits arising out of the utilization of genetic resources and associated traditional knowledge . . .

Article 1: Mother Earth concentrates all energy to give life to everything, without asking for anything in return. Our worldview, as Aboriginal Peoples, requires us to respect Mother Earth and to conduct ourselves in a manner that does not violate our interconnected and interdependent relationship with our soils, waters, air, ice, mountains, and all natural life (biodiversity) on Mother Earth.

Article 2: Aboriginal Peoples within the Federation of the Peoples of Canada have survived the derogation of our complete liberties (rights) under treaties, dislocation from our traditional ancestral homeland territories, denial of our birthright identity, and forced disassociation from our languages, cultures, traditions, and practices thereto.

Article 3: Mother Earth and Aboriginal Peoples have been victimized by greed, the doctrine of terra nullius, the doctrine of dominance, and more, all of which have brought about the devastation of biodiversity; destruction of soils, waters, air, and ice; disassociation from respectful and caring practices; denial of peoples duties to future generations; discord between Peoples; disproportionate distribution of wealth from ingenuity and progress; disharmony in the manner and dislocation in the approach for the utilization of natural resources, their genetic characteristics, and their derivatives; and the dishonest treatment of traditional knowledge of Aboriginal Peoples.

Article 4: Aboriginal Peoples within the Federation of Canada must be allowed the responsibility to effectively demonstrate our vital role in conservation, sustainable development, and benefit-sharing under fair and equitable terms, as members of the family of humanity on Mother Earth.

Article 5: Aboriginal Peoples must not allow Canada to undermine or percolate subversive meaning to the Convention on Biological Diversity, or the decisions or protocols thereto, including the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization, to accommodate economic incentives alone or to slip the Convention, decisions, or protocols away from public view.

Article 6: Aboriginal Peoples' respect, knowledge, and holistic approach to natural resources and biodiversity includes the genetic properties of such resources and their derivatives. A restricted interpretation of the term 'genetic resources' disrespects the worldviews of Aboriginal Peoples and upstages or puts on hold discussions and concurrent work on the subject.

Article 7: There is within the Federation of Canada both a 'user' and a 'provider' construct to access and benefit-sharing. Accepting this 'user and provider' reality, reshapes the opportunities available and reveals the benefits and value of seriously engaging with Aboriginal Peoples in effective, meaningful, and open partnerships; no less than aspired in the Nagoya Protocol, and keeping under review the Convention on Biological Diversity, on access to genetic resources and the fair and equitable sharing of benefits arising from their utilization.

Article 8: Canada's assertion of complete authority to determine access to genetic resources is qualified and limited by the provisions of Sections 25 and 35 of the supreme national domestic law - the Constitution Act, 1982.

Article 9: Bio-technology activities which may affect Aboriginal Peoples' resources, access, and use rights require consultation and accommodation. If no accommodation can be achieved, then compensation must be made to the affected Aboriginal People. Anything less is considered to be an act of biopiracy.

Article 10: Canada's implementation of the Nagoya Protocol must have the full and effective participation and involvement of all Aboriginal Peoples within the Federation of the Peoples of Canada.

Article 11: Aboriginal Peoples, continuing within the boundaries of the Federation of the Peoples of Canada, take issue with the Nagoya Protocol restriction on capacity building limited to Peoples only of 'developing countries'. Aboriginal Peoples in 'developed countries', like Canada, require access to financial mechanisms and broad supports to develop capacity and awareness and for meaningful involvement and effective participation on access and benefit-sharing matters.

Article 12: The structure and operational framework of any ABS Clearing-House in Canada must be negotiated with the full and effective participation and involvement of all Aboriginal Peoples within the Federation of the Peoples of Canada.

Article 13: For basic transparency and representative governance in Canada, Aboriginal Peoples must be a part of the decision-makers and have seats within an oversight council for any National ABS Clearing-House.

Article 14: A National ABS Clearing-House and a National ABS Focal Point in Canada must comply with the constitutional provisions of Section 25 and 35 of the Constitution Act, 1982 and must honour jurisprudence on the subject of ‘dealings with Aboriginal Peoples’, which must not appear to be sharp – the Honour of the Crown is at stake.

Article 15: Access, use, and benefit-sharing of natural resources, genetic properties, and traditional knowledge has a moral, social, political, and economic dimension, which must be addressed through international norms and an international regime. Failure to adequately address or police access, use, and benefit-sharing from abuse, violates sustainable use of natural resources and the need to protect human health and the environment from adverse effects and from products or activities with suspect Source of Origin.

In 2014, four years after the *Iskenisk Declaration*, MAPC engaged with the ABS Canada research initiative as a core Aboriginal partner, as part of ABS awareness-raising and nation-wide capacity building and capacity development through, among other things, the instrumentality of focus groups. ABS Canada is comprised of interdisciplinary researchers, national and international experts, including Indigenous experts, students/trainees and experienced policy-makers working as a team on a project titled: ‘Building Capacity: Toward an Aboriginal Sensitive Access and Benefit Sharing over the Utilization of Genetic Resources in Canada.’ Its objectives as outlined in [Chapter 1](#) include capacity building and development through education, training, networking and participatory partnerships with Indigenous peoples for an exchange of ideas between them and other stakeholders on ABS. As part of its strategy and in partnership with MAPC, ABS Canada has convened nation-wide loosely guided focus groups on ABS allowing for open conversations about the challenges and prospects for a Canadian ABS policy that is respectful of Indigenous peoples as core partners. The initiative aims at seeking common grounds and deeper appreciations of the interests, challenges and perspectives of all stakeholder groups on ABS with special consideration and direct articulation of Indigenous peoples’ interests and concerns.

The MAPC-ABS Canada partnership is a confidence and trust-based relationship operating within a sanctioned Canadian research ethical framework of doing or conducting research partnerships by and with Indigenous peoples. It is premised on full consciousness and sensitivity to the long-standing relationship of mistrust and perennial suspicion, which characterize the checkered engagement between Indigenous peoples and researchers. Through personal goodwill of both individual and institutional actors behind ABS Canada and MAPC, the partnership has been able to navigate across occasional suspicion-laden low moments and trust-redeeming

high-points on the field, with each occasion representing a mutual teaching and learning moment for all participants. The ABS Canada team leveraged its mutual goodwill with MAPC in order to reach other Indigenous groups, peoples, leaders and participants in the nation-wide focus groups on ABS conducted across the regions.

A significant aspect of the partnership is MAPC's ability to assume ownership of the focus group process it hosted and, beyond that, its ability to provide advice and support on how to engage kindred Indigenous peoples, leaders and hosts of other regional focus groups. The focus groups were sites of intensive Indigenous participation in terms of recruitment, mobilization and agenda setting. After each focus group, ABS Canada released its factual summary account of the outcomes as pre-approved by participants. MAPC reserved the right to author and disseminate as it deems fit its own account of the focus group proceedings and outcomes from an exclusively Indigenous perspective. In the exercise of that right, after the first of the three nation-wide focus group proceedings hosted by MAPC in Moncton, NB on 15–16 October 2015, MAPC released the *Petkoutkoyek Statement on the Access, Use, Fair and Equitable Sharing of Benefits Arising Out of the Utilization of Genetic Resources and Associated Traditional Knowledge in Canada*. Stripped of its pre-amble, the ten-Article *Petkoutkoyek* Statement reads:

A representative group of Maritime Aboriginal Peoples continuing throughout the traditional ancestral homeland territories of the Mi'kmaq, Maliseet, and Passamaquoddy Aboriginal Peoples, together with ABS Canada (A Social Sciences and Humanities Research Canada Project titled: 'Towards an Aboriginal Sensitive ABS Policy for Canada') with several national and international experts on Access and Benefit Sharing (ABS), participated with the Maritime Aboriginal Peoples Council in a two day Maritimes Regional ABS Focus Group Session convened at Petitcodiac (PETKOUTKOYEK), Moncton, New Brunswick . . .

We promulgate our *Petkoutkoyek* Statement and commend this partnership initiative with ABS Canada to promote Aboriginal capacity building and awareness-raising on access and benefit-sharing, and urge ABS Canada to ensure that Aboriginal Peoples across regions share knowledge and engage on community solidarity and mobilization on the subjects of ABS, and we urge Councils of Governments within the Federation of Canada to take on ABS subject matter with deserving seriousness and genuine commitment.

Article 1: We require Canada to work with Aboriginal Peoples to develop our aboriginal human capacity on ABS, and to support us with the necessary financial and human resources to conduct effective, meaningful and transparent participation at fora on ABS, the Nagoya Protocol and the Convention on Biological Diversity;

Article 2: The Aboriginal Peoples of the 73 Aboriginal Nations of Aboriginal Peoples continuing throughout the Federation of the Peoples of Canada, assert our Aboriginal Right to maintain, control, protect and develop our cultural

heritage, traditional knowledge and traditional cultural expressions, as well as the manifestations of our sciences, technologies and cultures, including human and genetic resources, seeds, medicines, knowledge of the properties of fauna, flora, oral traditions, literatures, designs, sports, and traditional games, visual and performing arts. We also have the right to maintain control, protect, and develop our intellectual property over such cultural heritage, traditional knowledge and traditional cultural expressions;

Article 3: We require Canada to work and consult with all the Aboriginal Peoples of Canada to develop the necessary Aboriginal Peoples National Institutions on Access and Benefit Sharing throughout Canada, where Canada shall recognize multiple Aboriginal Peoples National Focal Points and multiple Competent National Authorities reflective of the 73 diverse Aboriginal Nations of Aboriginal Peoples continuing throughout the Federation of the Peoples of Canada;

Article 4: We require Canada to establish a national consultation table with representatives from the 73 Aboriginal Nations of Aboriginal Peoples, to discuss and determine the number of Aboriginal National Focal Points and Aboriginal Competent National Authorities necessary to implement and deal with the: protocols, processes and procedures on access to genetic resources and the fair and equitable sharing of benefits therefrom;

Article 5: The Councils of non-Aboriginal Governments must recognize that their homocentric worldview is dramatically different from our eco-centric worldview which must be recognized as a fundamental starting construct in formulating protection regimes for ‘Community Shared Ownership with Responsibility Rights’ as compared to formulating ‘Individual Proprietary Rights’;

Article 6: We require Canada to support our Aboriginal Peoples’ work to develop a framework on which to build a protection regime for ‘Indigenous peoples Intellectual Manifestations’ (IPIM), drawing from sacred, restricted or communal Traditional Knowledge about biodiversity – ‘Aboriginal traditionology’;

Article 7: We require Canada to support a representative table of the 73 Aboriginal Nations of the Aboriginal Peoples to expand on the monetary and non-monetary benefits and Annex of the Nagoya Protocol;

Article 8: We Aboriginal Peoples of our 73 Aboriginal Nations of Aboriginal Peoples within the Federation of the Peoples of Canada seek ‘full benefit capture’, from access to our genetic resources and use of our traditional aboriginal knowledge – ‘traditionology’;

Article 9: We Aboriginal Peoples of our 73 Aboriginal Nations of Aboriginal Peoples confirm that the transgenerational learning and teaching of our youth must always be foremost considered and incorporated into all aspects of our discussions about Access and the Fair and Equitable Sharing of Benefits advanced in the Nagoya Protocol and championed in the Convention on Biological Diversity;

Article 10: We the Aboriginal Peoples of our 73 Aboriginal Nations of Aboriginal Peoples as partners in the human family, approach the subject of ABS as State Parties to the Nagoya Protocol and the Convention on Biological Diversity, holding as a minimum standard and guide, the Purpose and Articles of UNDRIP.

LESSONS IN CAPACITY BUILDING AND CAPACITY
DEVELOPMENT ON ABS

We can draw a few lessons regarding capacity building and capacity development on ABS from the lens of the MAPC experience with ABS Canada on the basis of the 2010 *Iskenisk Declaration* and 2015 *Petkoutkoyek Statement* on ABS. First, even though the NP's vision of capacity building reinforces the gap in international development that ignores the genuine deficit in capacity building and capacity development in the global North, Indigenous people can seize the moment, invert the omission and seek real capacity development partners from both within the North and outside of it. For example, ABS capacity and awareness are far more advanced in the global South among developing countries such as India, Brazil, Peru, South Africa and Namibia to mention a few. This presents an opportunity for South-North capacity building outside the default North-South traffic of capacity building and development.

Second, and in a related vein, courtesy of MAPC and indeed all other Indigenous partners' contributions to the ABS Canada Focus Groups, an eloquent case was made for the need to build and develop the capacity of capacity builders. Specifically, development agents at state and non-governmental levels need to build and develop the capacity to fully understand the usual targets or recipients of capacity building and capacity development, namely IPLCs. There is much to be mutually learned from one another by all partners in capacity building and capacity development, warranting analysts to frame the experience as a solidarity-based partnership for co-development (Eade, 2007). Put differently, capacity building and capacity development need to be multidirectional interchanges. In a related observation, Bockstael (2017) argues that meaningful capacity building should not be a disguise to fit Indigenous people into an unjust colonial structure for ease of social control in furtherance of subjugation. Rather, it should support the enhancement of practical skills within the Indigenous community.

Third, Indigenous peoples have called attention to the need for transformational legal capacity building and development on ABS. Such orientation is necessary to fully engage an interpretative orientation of Canadian constitutional and jurisprudential architecture in favour of sovereign-to-sovereign relationship in which Indigenous peoples' rights to natural resources, including GRs, constitute inherent and inalienable right to self-determination (Perron-Welch & Oguamanam Chapter 6; Nichols Chapter 4). In this regard, Article 10 of the *Petkoutkoyek*

Statement bears repeating for emphasis sake: ‘We the Aboriginal Peoples of our 73 Aboriginal Nations of Aboriginal Peoples as partners in the human family, approach the subject of ABS as State Parties to the NP and the CBD, holding as a minimum standard and guide, the Purpose and Articles of UNDRIP’ (Hedges & Langford [Chapter 2](#)).

Fourth, Indigenous peoples are fully mindful of the capacity building and development architecture of the NP. Without underestimating its inadequacy, they have demonstrated pragmatism in appropriating and adapting those while striving to fill apparent gaps therein. For example, in its work, the MAPC undertakes grassroots mobilization and awareness-raising on novel developmental issues, including ABS. To this end, they have gone beyond special accommodation of women in the NP to include elders and youths with emphasis on transgenerational knowledge mobilization and exchange as a feature of the indigenous capacity building and capacity development. They also recognize the need for capacity building and development to enhance Aboriginal human, financial, organizational and institutional resources, and the role of government. Perhaps more importantly, as part of their right to self-determination, Aboriginal peoples have demonstrated commitment to self-assess, identify or set own capacity needs and priorities as an ongoing matter. In these regards, they have demonstrated the separate and unique historical colonial trajectories and shared experiences of the 73 Aboriginal nations which they insist should be units for nation-to-nation engagements for political and economic rapprochement. They have also gone beyond the economic appeal of ABS to include spiritual ramifications of the relationship with life forces, customary laws, practices and various other considerations that could expand suggested benefit categories under the NP.

Lastly, even within and outside of the Nagoya framework, the latter articulates significant insights and specifics for capacity building and development which Indigenous peoples consider very important to enhance equitable ABS. As technology, innovation, business and industry practices, knowledge – including traditional knowledge innovation and practices of Indigenous peoples – continue to evolve, ABS capacity building and capacity development would remain a work in progress. Overall, on a pragmatic basis, Indigenous peoples would benefit from capacity building and development on a wide array of areas including those identified under Article 22 of the NP.

Among priority areas for capacity building and development are research and development capacity on GRs and associated traditional knowledge, which are necessary to facilitate the understanding of their valorization and dynamics in the value chain as well as to enhance effective participation and engagement of Indigenous peoples with researchers and industry actors. Related to that is building and developing Indigenous peoples’ capacity to use information and communication technologies to leverage ABS opportunities and potentials. Another area of capacity building and development priority is the development of customary laws,

procedures and processes, in particular, biocultural protocols or forms of community protocols for ABS. In addition to customary law regimes, capacity building and development is required to boost formal legal skills for negotiating mutually agreed terms and incidental contractual or benefit-sharing, including intellectual property or related agreements. As well, strategies for effective involvement of Indigenous peoples not only in the making of ABS policies but also in their implementation are areas in need of Indigenous capacity building and development. Overall, legal, institutional, and organizational capacities for ABS-preparedness represents a priority area for capacity building and development. Aside from targeting Indigenous governance and organizational frameworks, such preparedness could account for inter-community (transboundary) and intra-communities' interests as may be potentially implicated in ABS. For example, Indigenous participants and partners in the ABS Canada Focus Groups expressed their desire to have their own competent national authorities, which is captured in the *Petkoutkoyek Statement* above. They also indicated that their customary laws and jurisprudence are able to deal with inter-communities or transboundary issues.

The level or degree of capacity building and development required in these priority areas are not even across jurisdictions within and outside Indigenous communities in Canada. For example, as Thomas Burelli notes in [Chapter 13](#), there are many practices and protocols relevant to ABS used by many Indigenous communities in their relationship and collaboration with researchers. Those are indications of existing capacity, requiring further development, rather than starting from scratch to develop capacity. Another example is the German-based ABS Capacity Development Initiative, which has significant experience with ABS capacity development in the global South, especially in Africa, including among others the development of biocultural protocols and facilitation of ILC-industry linkages for ABS. Those experiences can be rendered handy and scaled to fast-track Indigenous capacity building and capacity development in Canada and elsewhere in the global North on a South-to-North basis, a proposition that is currently within policy contemplation between ABS Canada and the ABS Capacity Development Initiative. That approach provides a vent for an alternative direction for capacity building and development to the narrative discussed earlier in this chapter.

CONCLUSION

There is potential and actual tendency to mirror capacity building and capacity development within the faultiness of North-South development constructs and its colonial undertones. As evident from our textual analysis of Article 22 of the NP on capacity building and capacity development, that construct hardly accounts for genuine capacity deficits among Indigenous peoples of the global North, such as Canada. The experience of the MAPC and ABS Canada in forging one of the

earliest awareness-raising, capacity building, and capacity development on ABS in Canada underscores the imperative for trust, solidarity, equality and respect in the power and role of partnership in driving the process. The NP has elaborate provisions and opportunities that effectively articulate ABS capacity building and capacity development priorities. It is clear from our analysis that those can be adopted or adapted, as the case may be, and inverted to further Aboriginal capacity development and capacity building in specific national, regional and local contexts. Within that flexibility and framework, there is a possibility to explore more opportunities for South-North or North-North solidarity for ABS capacity building and capacity development as an evolving and continuing experience. In Canada, all levels of government need to be proactive in supporting Aboriginal capacity building and development on ABS in the spirit of justice, equity and reconciliation.

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NOTES

- 1 Capacity development is used here advisedly in a technical sense. Canada already has an existing jurisprudence on s. 35 that leans toward a sovereign-to-subject relationship, which is now in need of capacity development or re-orientation toward unequivocal enunciation of sovereign-to-sovereign relationship. That is one of the expectations from the promise to breathe life into s. 35.
- 2 *Clyde River (Hamlet) v. Petroleum Geo-Services Inc* 2017 SCC 40, [2017] 411 DLR (4th) 571.
- 3 For many Indigenous peoples, this is a subtle attempt to re-deny or reignite debate over the status of Indigenous peoples as *people*.
- 4 *Goal 17: Revitalize the Global Partnership for Sustainable Development*, UNITED NATIONS SUSTAINABLE DEVELOPMENT GOALS, www.un.org/sustainabledevelopment/globalpartnerships/ (last visited 18 October 2016).
- 5 Delegates to forum were balanced in regard to gender and generational representation. Much emphasis was placed on the younger generation as the focus for capacity building and capacity development of Aboriginal issues generally but with specific regard to the novel issue of ABS.

PART II

Hurdles to ABS

*Conceptual Questions, Practical Responses
and Paths Forward*

Unsettling Canada's Colonial Constitution

A Response to the Question of Domestic Law and the Creation of an Access and Benefit-Sharing Regime

Joshua Nichols

Abstract

The aim of this chapter is to explore how the Canadian domestic legal framework for Aboriginal rights could affect the implementation of an access and benefit-sharing regime (ABS) pursuant to the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization* (NP). The chapter is divided into the following three sections. First, it briefly summarizes the limitations of the current s. 35 framework and shows how it is grounded on a unilateral notion of Crown sovereignty in which the only claim to Crown legitimacy is derived from the outmoded and racist fiction of discovery. Second, it shows that the Federal Government of Canada's move to fully endorse UNDRIP and move towards its implementation opens up the opportunity to remove the doctrine of discovery from Canadian law and build a s. 35 framework on a true *nation-to-nation* basis. Finally, it concludes by exploring how UNDRIP could be used to facilitate a proactive approach to self-determination, which includes control over traditional knowledge and biogenetic resources. This will establish what the necessary pre-conditions are for implementing an effective ABS regime in Canada.

INTRODUCTION

The aim of this chapter is to explore how the Canadian domestic legal framework for Aboriginal rights could affect the implementation of ABS pursuant to the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization* (NP). The question of

implementation draws out a line of tension in this area that stretches back to the adoption of the *Convention on Biological Diversity* (CBD) in 1992. In Article 15.1, the CBD recognized the ‘sovereign rights of States over their natural resources’ and that this right gave them the ability to determine access to genetic resources.¹ The implications of this could easily be overlooked. It is common for modern international legal instruments to be based on a simple model of a unitary nation-state (i.e. a state with a singular and sovereign people) and in such a state Article 15.1 would not be contentious. The problem is that there are a number of states where this assumption does not apply due to internal legal and political conflicts with Indigenous peoples. In these states, the constitutional basis of the domestic legal framework is contested and so cannot serve as a secure legal foundation for an ABS regime.

In Canada and other states like it (i.e. Australia, New Zealand, the United States and others), this problem is a particularly complicated area of legal contention. This line of tension is reflected in the NP. In the preamble, it acknowledges the *United Nations Declaration on the Rights of Indigenous peoples* (UNDRIP) and maintains that ‘nothing in this Protocol shall be construed as diminishing or extinguishing the existing rights of indigenous and local communities.’ The influence of UNDRIP is also reflected in how the NP attempts to develop ‘international access standards’ in Article 6.3 (f)–(g), which states that parties are to

set out criteria and/or processes for obtaining prior informed consent or approval and involvement of indigenous and local communities for access to genetic resources; and establish clear rules and procedures for requiring and establishing mutually agreed terms.

While this sounds promising for Indigenous peoples, it is qualified by the phrase ‘where applicable, and subject to domestic legislation.’ This chapter examines this line of tension within the Canadian context and highlights some of the possible areas of contention relating to the current framework for s. 35 of the *Constitution Act, 1982*, which states that ‘[t]he existing aboriginal and treaty rights of the aboriginal peoples of Canada are hereby recognized and affirmed.’ With these points of contention in mind, I will then show how trends within the case law combined with recent changes to Canadian policy relating to Indigenous peoples at the Federal level offer the possibility of an alternative approach, which would adapt to the domestic legal framework to fit with the principles of self-determination and free, prior and informed consent in UNDRIP. This offers the possibility of establishing a stable domestic legal environment that is required for the implementation of any functional ABS regime.

The Supreme Court of Canada’s current approach to s. 35 is designed on the presumption of actions taken by the Crown and therefore it positions Indigenous peoples as fundamentally defensive. The only proactive use that has been explored for s. 35 is for an Indigenous litigant to seek a declaration. This can be a very effective

strategy for shifting the grounds of policy negotiations with the Crown in some cases.² The problem for our present purposes is that the legal tests that would be applicable to concerns relating to the ownership of either traditional knowledge or biogenetic resources are problematic. Russel Barsh and James Youngblood Henderson aptly summarized the limitations of Aboriginal rights litigation almost twenty years ago, as they put it:

If all the hurdles announced by *Sparrow*, *Van der Peet* and *Gladstone* are assembled, they form a formidable and intimidating barrier: the Aboriginal practice at issue must be shown to be preexisting and central; it must be shown never to have been extinguished by the Crown prior to 1982; it must have been infringed by government action after 1982; the government action must be shown to have lacked adequate justification; and it must be shown to go beyond the reasonable discretion enjoyed by the Crown as a 'fiduciary' to determine whether the Aboriginal community concerned has been given an adequate 'priority' in the enjoyment of the resources it has traditionally utilized. All of this translates into a heavier evidentiary burden at trial, more expense, and greater risk of an adverse ruling, amounting to a present-day extinguishment of the rights asserted.³

While this serves to illustrate the problems with the existing framework, we need to keep in mind that this process to a limited – but not insignificant – degree, cuts both ways. That is, were Canada to simply and unilaterally implement an ABS system that did not incorporate processes that require the prior and informed consent of Indigenous peoples then the inevitable litigation result would effectively render the ABS system inoperable.

The primary problem with the s. 35 approach is that it is predicated on the notion that the relationship between the Canadian government and Indigenous peoples is that of sovereign-to-subject. Under this view, prior to 1982, Canada had the right to unilaterally extinguish the rights of Indigenous peoples. This is predicated on the idea that Canada acquired sovereignty over Indigenous peoples via a combination of s. 91(24) of the *British North America Act, 1867* (now the *Constitution Act, 1867*) and the treaties, which it unilaterally interprets as being a *sui generis* set of ceding and surrender documents (a curious status as it relies on the idea that Indigenous peoples lacked the degree of civilization required to be recognized as sovereign and yet possessed enough to cede and surrender any rights they did possess in perpetuity).⁴ This sovereign-to-subject model of Canadian sovereignty has been actively contested by Indigenous peoples for the last 150 years and its future is precarious at best. The case law has established that the basis of Aboriginal rights exists outside the Canadian legal system in the Indigenous occupation of land prior to the arrival of Europeans and that Crown sovereignty is '*de facto*' in nature.⁵ This implies Canada is not currently in possession of *de jure* sovereignty over the whole of the territory that it claims and renders any ability to unilaterally extinguish Indigenous rights, at any point in time, legally dubious. An unsurprising fact is that the only possible

foundation for Canada's claims to sovereignty over Indigenous peoples is the pernicious and racist legal fiction known as the "doctrine of discovery."

Recent policy changes in Canada seem to indicate that the government is taking steps to change the sovereign-to-subject framework by adopting the current international norms expressed in UNDRIP. This is a move that was recommended by the *Truth and Reconciliation Commission* in 2015 in both the Final Report and the Calls to Action.⁶ These recommendations have, at least potentially, begun to shape policy, as in 2016 the Federal Government endorsed UNDRIP without reservation and began moving towards implementation. As indicated by Hodges and Langford (Chapter 2) and Perron-Welch and Oguamanam (Chapter 6), it is also seen in the recently announced 'Principles respecting the Government of Canada's relationship with Indigenous peoples,' which directly recognizes that 'all relations with Indigenous peoples need to be based on the recognition and implementation of their right to self-determination, including the inherent right of self-government' and that Indigenous self-government is 'part of Canada's evolving system of cooperative federalism and distinct orders of government.'⁷ This affirmation supports a distinct move away from the sovereign-to-subject model of the relationship (and the doctrine of discovery that ultimately ground it) and towards a *nation-to-nation* model that draws on the history of treaty making between Indigenous nations and the Crown.

Given the problematic foundations of the existing framework for Aboriginal rights under s. 35, I have chosen to explore a different approach to the question of ABS implementation. Instead of simply assessing the fit between the NP and the existing constitutional framework, I will explore how UNDRIP offers a more flexible and, ultimately, more stable legal framework for implementing access and benefit-sharing (ABS) measures. This does not require full implementation of UNDRIP as a preliminary step. Rather, it requires that Canada align its domestic legal framework with the conclusions of the *Royal Commission on Aboriginal Peoples* (RCAP) regarding self-government. RCAP concluded that the inherent right of self-government is recognized and affirmed by s. 35 and further, that the emerging international principles provide additional support for 'the right of self-determination and the cultural and political autonomy of Indigenous peoples.'⁸

I want to be clear, I am not suggesting that Indigenous peoples should rule out the existing s. 35 framework. Rather, I want to highlight the fact that this framework should not be taken as *the* domestic framework. That is, it should not be understood to be solid all the way through and so unalterable. It is, like any legal framework, contested and open to change. The approach I would recommend is to understand and grapple with the technical intricacies of the current framework but to do so strategically so that the framework can be adapted to reflect modern international legal norms relating to Indigenous peoples. In my view, the bottom line of this approach is that the implementation of any ABS system must be consistent with the *nation-to-nation* relationship between the Crown and Indigenous peoples in Canada. In this regard, an UNDRIP-inspired pathway offers us a very promising way to move forward.

This chapter is divided into the following three sections. First, I briefly summarize the limitations of the current s. 35 framework and show how it is grounded on a unilateral notion of Crown sovereignty in which the only claim to legitimacy is derived from the outmoded and racist fiction of discovery. Second, I will show how the Federal Government of Canada's move to fully endorse UNDRIP and move towards its implementation opens up the opportunity to remove the doctrine of discovery from Canadian law and build a s. 35 framework on a true *nation-to-nation* basis. Finally, I will conclude the chapter by exploring how UNDRIP could be used to facilitate a proactive approach to self-determination, which includes control over traditional knowledge and biogenetic resources. This will establish what the necessary pre-conditions are for implementing an effective ABS regime in Canada.

THE LIMITATIONS OF THE EXISTING ABORIGINAL RIGHTS FRAMEWORK

Here, I will highlight some of the key elements of the current s. 35 Aboriginal rights framework, as developed by the Supreme Court of Canada. My treatment of this framework will be more summative than exhaustive due to space limitations. An exhaustive approach would need to survey a body of law that the Canadian Courts have developed over more than thirty years. My aim is more modest in scope. I will simply point out some of the principal features of the existing doctrine by referring to a small set of leading cases (*Sparrow*, *Van der Peet* and *Gladstone*) and show how the framework that they develop is dependent upon a unilateral notion of sovereignty.

In *Sparrow*, the Court was tasked with establishing an interpretive framework for s. 35(1) of the *Constitution Act*, 1982. The language of the provision itself is broad to the point of vagueness and so, the constitutional drafters leave the courts the task of drawing meaning out of it. The Court set out to do just that. Their task was made even more challenging by the fact that s. 35(1) is not a part of the *Charter* (which extends from ss. 1 through to 34) and thus is not subject to the limitations of s. 1 nor the notwithstanding clause in s. 33.⁹ The Court recognizes this problem explicitly when it states that

There is no explicit language in the provision that authorizes this Court or any court to assess the legitimacy of any government legislation that restricts aboriginal rights. Yet, we find that the words 'recognition and affirmation' incorporate the fiduciary relationship referred to earlier and so import some restraint on the exercise of sovereign power. Rights that are recognized and affirmed are not absolute. Federal legislative powers continue, including, of course, the right to legislate with respect to Indians pursuant to s. 91(24) of the *Constitution Act*, 1867. These powers must, however, now be read together with s. 35(1). In other words, *federal power must be reconciled with federal duty* and the best way to achieve that reconciliation is to demand the justification of any government regulation that infringes upon or denies aboriginal rights.¹⁰

The approach that the Court adopts here is fundamentally imbalanced. This reading of the words ‘recognition and affirmation’ in s. 35(1) is based on s. 91(24), but the Court does not go on to question the meaning of that provision. The text of s. 91(24) simply states that the exclusive legislative authority of the Parliament of Canada extends to all matters in relation to ‘Indians, and Lands reserved for the Indians.’ There is similarly no ‘explicit language’ in s. 91(24) that would grant the Crown undoubted sovereignty, legislative power and underlying title. Despite this fact since Lord Watson’s decision in *St. Catherine’s Milling* the courts have consistently read s. 91(24) as an unlimited grant of power over Indians and their lands.¹¹ In doing so, they have treated the meaning of the provision as being self-evident, but even from the limited positivistic terms of constitutional interpretation in the late nineteenth century, this is clearly an *interpretation*.¹² Nevertheless, the Court in *Sparrow* simply treats s. 91(24) as a kind of self-interpreting provision; as they put it ‘there was from the outset never any doubt that sovereignty and legislative power, and indeed the underlying title, to such lands vested in the Crown.’¹³ It is clear that the Court began their inquiry into the meaning of s. 35(1) with this conclusion firmly in place. This is why they refer to s. 91(24) as simply ‘federal power’, but what this interpretation misses entirely is any consideration of the legitimacy of this ‘power.’¹⁴ This interpretive decision is little more than begging the question (i.e. what is the nature of the relationship between Aboriginal peoples and the Crown?) and so there is little surprise that the framework that they have constructed upon it is circular.

If we extend our inquiry beyond the surface of s. 91(24) to its context, we see that the *British North America Act, 1867* was unilaterally imposed on Indigenous peoples in Canada. While s. 91(24) does assign exclusive legislative authority in relation to ‘Indians, and Lands reserved for the Indians’ to the Parliament of Canada, it does not determine the nature of this relationship. The pre-dominant approach in Canada has been to regard the relationship as being one of the sovereign-to-subjects, but the question then is how did this relationship get established. The historical record does not support conquest and the claim to construct consent out of the treaties requires feats of hermeneutic juggling. It can only resonate with those who are already convinced that the Crown is sovereign. This means that the ultimate foundation of s. 91(24) – and the entire legislative and administrative regime that is based on it – is the doctrine of discovery.¹⁵

For the last 150 years, Canada has made extensive use of this particular constitutional provision. It has been used as the constitutional basis for the establishment of the *Indian Act* and its associated administrative body. The first version of this legislation collected together a set of preexisting acts (most notably the *Gradual Civilization Act, 1857* and the *Gradual Enfranchisement Act, 1869*) and was passed in 1876. The *Indian Act* is the legislative expression of the sovereign-to-subjects relationship, but even in that regard, it is special. Indians cannot simply be thought of as either British subjects (which all Canadians were prior to 1948) or Canadian citizens as they were subject to a far more coercive system of governance. In my view, the

best way to understand the Indian Act is to see it as a type of emergency legislation without a time limit. I specify that it is a 'type' because it bears the basic hallmarks of emergency legislation (i.e. a high degree of administrative discretion coupled with a suspension of the rights and freedoms that characterize the 'normal' constitutional order), but it is also dissimilar to emergency legislation. The object of the legislation is not an emergency. Its object is 'Indians.' As John Borrows states,

The *Indian Act* makes it easier to control us: where we live, how we choose leaders, how we live under those leaders, how we learn, how we trade, and what happens to our possessions and relations when we die.¹⁶

This control is not just history, but part of the present experience of Indigenous peoples in Canada.

This interpretation of s. 91(24) is the foundation of the framework of 'reconciliation' that the Canadian Courts have used since *Sparrow* for interpreting the meaning of the Aboriginal rights that were 'recognized and affirmed' in s. 35(1). Whether one elects to characterize the relationship between Canada and Aboriginal peoples via an analogy to the common law language of trusts, the vaguely religious overtones of reconciliation or the broader international language of treaties, the relationship must inevitably be qualified by the term '*sui generis*' because, unlike all three of the preceding types of relationships it allows one party to unilaterally subject the other to its terms.¹⁷ The foundation of this relationship (which has been in place for over 150 years now) is the pernicious legal fiction of discovery, which provides the legal alchemy that enables the *mere assertion* of Crown sovereignty to diminish the rights of Indigenous peoples to be recognized as *peoples*. Thanks to this legal fiction Indigenous peoples suddenly become subjects of the Crown whose legislatures and courts then set to work to determine what rights continue to exist and the degree to which they can be infringed via a set of judicially constructed tests whose measures, are, at best, uncertain.

VAN DER PEET AND GLADSTONE

The *Van der Peet* test tightens the test set out in *Sparrow* by holding that the Indigenous claimant must demonstrate that an activity was integral to their distinctive culture *at the time of European contact* in order to ground a contemporary right.¹⁸ This presents us with a rather immediate (and arbitrary) barrier to claims relating to TK or biogenetic resources as such claims would need to be grounded in pre-contact practices that are 'integral to the distinctive culture' of the claimant.¹⁹ This test makes Aboriginal rights litigation into a process that is overburdened with the prohibitively expensive and time-consuming pre-trial process of historical and anthropological fact gathering. Once the evidence is marshalled and the expert witnesses contracted, the outcome then hinges on a test whose precision is, at best, subjective. What standard or measure determines whether or not a given practice

is 'integral' or merely an incidental practice 'piggybacking on integral practices, customs and traditions?'²⁰

We have already covered how the framework in *Van der Peet* is overly restrictive on its specified timeframe and cultural analysis, but we should also note that it has a kind of invisible ceiling built into it. That is, it can accommodate rights that are 'internally limited' (e.g. 'food, social and ceremonial purposes' or the vague standard of 'moderate livelihood') but, it has thus far been unable to accommodate actual commercial rights. Some may point to *Gladstone* as a counter example to this given the fact that the Court recognized and affirmed the Heiltsuk Nation's right to 'to sell herring spawn on kelp commercially,' but Lamer C.J. placed this right within the existing regulatory framework and considerably expanded the applicable standard of the justification for infringement to one that balances the interests of the Aboriginal group against the interests of the 'broader community as a whole.'²¹ This 'public interest' standard for infringement was explicitly rejected by the Court in *Sparrow* as they held that such a standard would be 'so vague as to provide no meaningful guidance and so broad as to be unworkable as a test for the justification of a limitation on constitutional rights.'²² As McLachlin J. (as she was then) rightly put it in her dissent in *Van der Peet* the 'public interest' standard 'is indeterminate and ultimately more political than legal.'²³ Despite these strong and principled objections, the 'public interest' standard in *Gladstone* remains firmly in place within the Canadian case law.²⁴ So, while commercial Aboriginal rights are *theoretically* possible within the current framework the *Gladstone* standard for justifying infringement will amount to a procedural barrier that will make such rights impossible.

The upshot for our purposes is the incisive observations of Barsh and Henderson made over twenty-years ago regarding the hurdles set in place by *Sparrow*, *Van der Peet* and *Gladstone* remain firmly in place. This does not mean that when it comes to the question of ABS implementation the existing domestic legal framework should be ignored. Rather, we should remember that in practice these hurdles tend to cut both ways. Canada may well unilaterally legislate an ABS system, but it conflicts with the rights and interests of Indigenous peoples, it will be subject to s. 35(1) litigation. This process is, as we have seen, weighted against Indigenous litigants, but it has real-world impacts on both the Crown and third parties as the cases are lengthy and their outcomes are uncertain. What this suggests is that there may well be a course of action that can reimagine the limits of the existing domestic framework for s. 35(1).

UNDRIP AND THE NATION-TO-NATION FRAMEWORK

The first step towards finding another way is to remove the doctrine of discovery from Canadian constitutional law. This means rejecting the approach taken by the Court in *Sparrow* and not simply assuming that s. 91(24) grants the Crown unilateral sovereignty over 'Indians, and Lands reserved for the Indians.' By rejecting this

assumption, I do not mean to suggest that the courts should then set off on some quixotic historical inquiry to re-ground the unilateral concept of sovereignty.²⁵ Rather, as Stephen Tierney rightly maintains, they should recognize that their model of a unitary 'nation-state'

has been a central ideological device in legitimizing the dominant, monistic vision with which the plurinational state has masqueraded as *the* nation of the state. This vision has allowed dominant societies to renege upon the union commitments made at the time of the state's formation. The dominant society has been able to crystalize political power at the centre of the state, presenting it in the guise of legal legitimacy, and hence entrenching political hegemony in purportedly objective constitutional form.²⁶

The way out of this is to disaggregate the notions of 'nation' and 'state' so that we can begin to come to grips with the plurinational reality of the Canadian state.²⁷ This means that s. 91(24) must be interpreted in a manner that is consistent with the fact that Indigenous peoples are and have always been *peoples*. This, in turn, means that the only legitimate constitutional order possible in Canada is one that is securely based on the constitutional principle of *quod omnes tangit ab omnibus comprobetur* ('what touches all should be agreed to by all') and includes Indigenous peoples along with the English and the French settlers as founding nations in a plurinational union state.²⁸ In short, we need an interpretation of s. 91(24) that is consistent with the *nation-to-nation* relationship between Indigenous peoples and Canada. Larry Chartrand provides us with one possible version of such a reinterpretation of s. 91(24). In his view, the Court should restrict it to a 'treaty power' that allows Parliament to 'negotiate with nations and peoples who occupy and possess territory that Canadian authority wishe[s] to acquire.'²⁹ Another broader way to characterize this type of interpretation – and sharpen the distinction between it and the current sovereign-to-subjects model – is to use the phrase 'power-with', which is the only way a *nation-to-nation* relationship makes sense.³⁰ This serves as an object of comparison that challenges the foundational claim of the current picture of federalism in Canada and moves towards the kind of democratic constitutionalism that could offer the possibility of a reconciliation based on dialogue and consent.³¹

Some may see this as good in theory but, maintain that it is impractical. Such a reader would likely point to the last 150 years of legislation and jurisprudence as proof that the presumption of the 'nation-state' is irrevocably embedded in Canada's constitutional culture. While it is true that there is a strong and consistent line of legislation and case law that has attempted to maintain the notion that Canada is a unitary 'nation-state', this line has also been subject to constant contestation from both Québec and Indigenous peoples. Canada is, as Peter Russell rightly argues, best thought of as country based on incomplete conquests.³² The attempts to force the many nations composing it into a single mould has resulted in a crisis of

legitimacy. This can be seen in both the Québec sovereignty movement and the struggles of Indigenous peoples to move out from the administrative despotism of the *Indian Act* and towards self-government. Both of these forces began to surface in Canadian national politics in the late 1960s and early 1970s. These are, in many ways, distinct sub-national group movements, but they also have a number of parallels, which extend far beyond this book. But even a cursory examination can show that the *Royal Proclamation of 1763* sets out a system of political and legal relationships that directly affects both Indigenous peoples and Québec. The Canadians actively protested the *Proclamation* and this quickly led to the passing of the *Québec Act of 1774*, which restored the use of the civil law and the free practice of Catholicism among other things. In many ways, the current crisis of legitimacy with its risk of Québec's secession and struggles over Indigenous self-determination can be seen as part of a long wave of contestation against a unitary notion of a Canadian 'nation-state' dominated by the English settlers. This crisis does not need to result in the division of a single state into several smaller ones. Rather, legal pluralism offers them a way to address the troubling history of colonial imperialism and its ongoing legacy without simply declaring a legal vacuum. As Paul Schiff Berman helpfully puts it,

by taking legal pluralism seriously we will more easily see the way in which the contest over norms creates legitimacy over time, and we can put to rest the idea that norms not associated with nation-states necessarily lack significance.³³

The norms that have been neglected here are the legal and political systems of Indigenous peoples as well as the various Western traditions of anti-imperialism. From this pluralistic perspective, it can hardly be surprising that the *Sparrow* framework has only resulted in moving in circles. Only one set of norms have been seen as law, but there is no available narrative to explain how this came to be the case because the narratives of discovery and savagery are spent.³⁴

This brings us to a consideration of Canada's recent policy changes regarding UNDRIP and its relationship with Indigenous peoples as posited by other contributors to this book (e.g. Hodges & Langford, [Chapter 2](#); Perron-Welch & Oguamanam, [Chapter 6](#)). In 2016, the federal government formally endorsed UNDRIP without reservation and indicated that they would implement it. This is a significant change in policy from the preceding government's Statement of Support, which was issued in 2010, and stated that UNDRIP is a 'non-legally binding document that does not reflect customary international law nor change Canadian laws.'³⁵ The actual substance of this change is still an open question. In her speech to the United Nations Permanent Forum on Indigenous Issues, the Minister of Indigenous and Northern Affairs stated that Canada intends 'to adopt and implement the Declaration in accordance with the Canadian Constitution.'³⁶ The substance of this change hinges on what the government means by this. If it means that the existing

jurisprudence on s. 35 will be used to strictly determine the meaning of UNDRIP then the result would be no real changes other than a nominal claim to implementation. On the other hand, the Minister continued, saying that by adopting and implementing UNDRIP 'we are breathing life into section 35 and recognizing it as a full box of rights for Indigenous peoples.'³⁷ This could well signal that the implementation of UNDRIP will change the existing domestic legal framework.

There is a limit to what we can determine from this statement alone as no matter how finely we parse the words of the Minister we will not be able to get any further in determining the actual substance of implementation. We can situate it within a wider context to attempt to gain a little more insight. This naturally has its own challenges because as soon as we adopt a wider angle of focus we are confronted by a host of related facts and events all vying for our attention. I will confine my consideration of the context to a rough sketch of a couple of facts that I see as being key to the shaping the process of implementation.

First, there is the Final Report and the Calls to Action of the TRC, which was released in 2015 and explicitly calls for the federal government to adopt and implement UNDRIP as the framework for reconciliation. While these are the recommendations of a commission and not binding, their persuasive effect on policy-makers should not be underestimated. Second, the case law stemming from the sea-change in *Calder* – which recognized that Aboriginal rights arise from preexisting occupation and not the Crown – the courts have come to explicitly acknowledge that Crown sovereignty is uncertain with respect to 'pre-existing Aboriginal sovereignty.'³⁸ This led them to qualify Crown sovereignty as being based on an assertion and so *de facto* in nature. It is clear that in their view the remedy to this lack of legitimate or *de jure* sovereignty is through the judicially mediated process of reconciliation. As the Court put it in *Haida Nation*, '[t]he purpose of s. 35(1) of the *Constitution Act, 1982* is to facilitate the ultimate reconciliation of prior Aboriginal occupation with *de facto* Crown sovereignty.'³⁹ The problem here, as I noted above, is that the existing framework is predicated on an interpretation of s. 91(24) that begs the question of Crown sovereignty (by implicitly using the doctrine of discovery).⁴⁰ It is difficult to see how the Court can simultaneously qualify the legitimacy of Crown sovereignty and then set out to remedy this via an interpretive framework that is predicated on the undoubted assumption of Crown sovereignty. The circularity is clear. It seems the Court is at risk of transforming the constitution into the very 'straightjacket' they warned against in *Reference re Secession of Québec*.⁴¹ Simply put, the government is faced with the choice of continuing in the well-worn circles of the Court's current approach or actually using the process of implementation to breathe new life into this area of the Canadian Constitution and move forward with a nation-to-nation relationship with Indigenous peoples. Whatever course of action the government decides to take will have direct implications for any possible ABS system.

USING UNDRIP AS A GUIDE TO ABS IMPLEMENTATION

In this section, I move from the preceding constitutional considerations to a more focused examination of how UNDRIP could be used to guide ABS implementation. This is a speculative exercise and so I want to be clear that what I am attempting to do here is not to determine *the* way to use UNDRIP in this area, but rather to simply provide a sketch that could be of some use to policy-makers who are thinking of how this might be possible within the domestic legal architecture of Canada. I realize that I am not alone here. As this volume came together, I was excited to note that Tim Hodges and Jock Langford (Chapter 2) have associated UNDRIP with potential implementation of ABS in Canada.

The main point that I would like to make is that the *nation-to-nation* relationship should be the foundational framework for any ABS system. It is clear that the existing interpretation of s. 91(24) is dependent upon the doctrine of discovery and can no longer serve as the load bearing constitutional proposition. The presumption of unilateral sovereignty in the existing domestic legal framework should be bracketed. This is precisely where the guiding norms of UNDRIP (specifically self-determination and free, prior and informed consent) can be put to use. As Sheryl Lightfoot argues, international Indigenous rights and politics offer a transformational set of norms that hold the potential for ‘a subtle revolution in global politics.’⁴² Within the Canadian domestic architecture, these norms serve as support for removing all of the nineteenth century colonial legal norms that still persist within our jurisprudence. This means that s. 91(24) becomes a ‘treaty power’ that allows the federal government to relate to Indigenous nations and that the treaties can no longer be read as a *sui generis* set of surrender agreements with limited constitutional protections, but rather they are constitutional documents that cannot be unilaterally infringed.⁴³ An immediate concern that is typically voiced in response to this constitutional configuration is that it would grant Indigenous peoples a ‘veto’, but this is a misleading argument that trades on the idea that requiring consent is a violation of the principle of equality. Roger Merino provides us with a clear and direct response to this argument

Self-determination and territoriality support the right of consent, wrongly called ‘right to veto’ because it does not derive from a special power conferred to Indigenous peoples due to their hegemonic position in the democratic system (as is the case with the presidential veto power), but it is an expression of their self-determination as peoples.⁴⁴

It does not offend the principle of equality to recognize this. Rather, it offends the principle of equality to simply presume that Indigenous peoples are a part of *the people* within a settler state without their free, prior and informed consent. As Tierney helpfully puts it, ‘[m]istaken assumptions about the unitary nature of “the people” can generate constitutional models which fail to accommodate the

specific political needs of different *peoples* within the state'.⁴⁵ What this plurinational model of federalism offers us is a meaningful and substantial model of what the *nation-to-nation* relationship and of how UNDRIP can be used to 'breathe new life' into s. 35(1).

This shift to the *nation-to-nation* framework is of key importance when it comes to implementing an ABS system such as the NP. If the existing sovereign-to-subjects s. 35(1) framework is presumed to be *the* domestic legal framework, then, the new ABS system will suffer from all of the circular processes of litigation and political contestation that are all too familiar within the Canadian context. By shifting away from this framework and adopting the *nation-to-nation* model in line with the guiding norms of UNDRIP, it is possible to navigate the fraught legal waters between the sovereign rights of states and those of Indigenous nations.

This shift in framework results in a two-step approach to ABS implementation in Canada. First, we must recognize that respecting the norms of self-determination means that these processes are going to be driven in large part by Indigenous parties and that, as a result, the particular mechanisms through which shared governance and shared management regimes will be implemented will be case specific and depend to a large extent on the needs, capacities, and values of the parties to the agreements. Second, by recognizing that the domestic legal framework is incomplete, we can begin to look at a number of different areas of law and policy to learn by way of analogy and example. This allows policy-makers to turn their attention directly to the articles in UNDRIP and other relevant international Indigenous legal instruments as well as to other legal contexts (both indigenous and state-based) in order to establish an ABS system that respects the legal and political realities of Indigenous nations.

NOTES

- 1 See *Convention on Biological Diversity* (Rio de Janeiro, 14 June 1992) (CBD), Article 15.1.
- 2 Recent examples that comes to mind are *Manitoba Metis Federation Inc. v. Canada (Attorney General)*, [2013] 1 SCR 623 and *Tsilhqot'in Nation v. British Columbia*, [2014] 2 SCR 257, but in *Tsilhqot'in* (as in most cases) the declaration is one remedy that is sought in conjunction with others to shield the claimants from Crown intrusion. The point being that swords are often difficult to distinguish from shields in their function and are often bundled tightly together.
- 3 R. X. L. Barsh and J. Y. Henderson, 'The Supreme Court's *Van der Peet* Trilogy: Naive Imperialism and Ropes of Sand' (1997) 42 *McGill LJ* 993 at 1004.
- 4 Antony Anghie makes this same point in some detail in [Chapter 2](#) of his excellent book *Imperialism, Sovereignty and the Making of International Law*. (Cambridge University Press: Cambridge, 2001).
- 5 *Calder et al. v. Attorney-General of British Columbia*, [1973] SCR 313; *Taku River Tlingit First Nation v. British Columbia (Project Assessment Director)*, 2004 SCC 74, [2004] 3 SCR 550 at para 42.

- 6 Truth and Reconciliation Canada. *Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada*. (Winnipeg: Truth and Reconciliation Commission of Canada, 2015).
- 7 See Principles 1 and 4 in Department of Justice, *Principles Respecting the Government of Canada's Relationship with Indigenous peoples*, online: Government of Canada www.justice.gc.ca/eng/csj-sjc/principles-principes.html.
- 8 Report of the Royal Commission on Aboriginal Peoples. Volume 1: *Looking Forward Looking Back*. Part Two: *False Assumptions and a Failed Relationship*. (Canada Communication Group: Ottawa, Ontario, 1996) at 647.
- 9 The text of s. 1 states that '[t]he Canadian Charter of Rights and Freedoms guarantees the rights and freedoms set out in it subject only to such reasonable limits prescribed by law as can be demonstrably justified in a free and democratic society'. This means the rights set out in the *Charter* (which, extends from ss. 1–34 and so does not include s. 35) are not absolute, but subject to unilateral Crown infringement via a judicially mediated reasonableness test. The test itself is set out by the Court in *R. v. Oakes*, [1986] 1 SCR 103. Section 33 is commonly referred to as the 'notwithstanding clause' and it allows for Parliament or the provincial legislatures to make an exception to ss. 2 or 7–15 of the *Charter*.
- 10 *R v. Sparrow*, [1990] 1 SCR 1075 at 1109 (emphasis added).
- 11 *St Catherine's Milling and Lumber Company v. The Queen*, (1888), 14 App Cas 46.
- 12 It is useful to cite the specific language of s. 91: 'It shall be lawful for the Queen, by and with the Advice and Consent of the Senate and House of Commons, to make Laws for the Peace, Order, and good Government of Canada, *in relation to* all Matters not coming within the Classes of Subjects by this Act assigned exclusively to the Legislatures of the Provinces; and for greater Certainty, but not so as to restrict the Generality of the foregoing Terms of this Section, it is hereby declared that (notwithstanding anything in this Act) the exclusive Legislative Authority of the Parliament of Canada *extends to* all Matters coming within the Classes of Subjects next hereinafter enumerated; that is to say'. It is patently clear that the phrases 'in relation to' and 'extends to' in combination with 'Indians, and Lands reserved for the Indians' cannot simply be read as an unequivocal grant of unilateral power over Indians and their lands. See *The Constitution Act, 1867*, 30 & 31 Vict, c 3 (emphasis added); *St Catharine's Milling*, *supra* note 11.
- 13 *Sparrow*, *supra* note 10, at p. 1103 (emphasis added).
- 14 I do not want to suggest that the Court is unaware of the problems stemming from their interpretation. They explicitly cite an essay by Noel Lyon that indicates that they are aware of the problem posed by their interpretation of federal power. The part of Lyon's essay they cite states that 'the context of 1982 is surely enough to tell us that this is not just a codification of the case law on aboriginal rights that had accumulated by 1982. Section 35 calls for a just settlement for aboriginal peoples. It renounces the old rules of the game under which the Crown established courts of law and denied those courts the authority to question sovereign claims made by the Crown.' Noel Lyon, 'An Essay on Constitutional Interpretation' (1988), 26 *Osgoode Hall LJ* 95at 100 cited in *Sparrow*, *supra* note 10, at p. 1106. Following this citation, the Court states that they will 'sketch the framework for an interpretation of "recognized and affirmed" that, in our opinion, gives appropriate weight to the constitutional nature of these words.' (*ibid.* at 1106). The Court is thus clearly

- attempting to use federal power by a new set of rules, but the problem is that unilateralism (even in a judicially mediated form) cannot hope to resolve constitutional problems stemming from national pluralism. In any pluralistic context, we need to take account of other perspectives and interpretations of the constitution. For a recent interpretation of s. 35 through an Indigenous perspective see Sarah Morales, 'a 'lha'tham: The Re-Transformation of s. 35 through a Coast Salish Legal Methodology' *National Journal of Constitutional Law* 37.2 (Jun 2017):145–76.
- 15 This is, to my mind, what Borrows' has in mind when he refers to the (Ab)originalism that can be seen and moves on to reduce s. 35 to little more than a procedural burden on Crown sovereignty. See chapter 4 in John Borrows, *Freedom and Indigenous Constitution-alism* (Toronto: University of Toronto Press, 2016).
 - 16 John Borrows, 'Seven Generations, Seven Teachings' (2008) Research Paper for the National Centre for First Nations Governance, at 5.
 - 17 For a critique of the Court's use of the analogy to the law of trusts, see Ryan Beaton, 'Aboriginal Title in Recent Supreme Court of Canada Jurisprudence: What Remains of Radical Crown Title?' (2014) 33 *Nat'l J Const L* 61.
 - 18 *R v. Van der Peet*, [1996] 2 SCR 507 at para. 73. There was a wave of critical scholarship that followed the release of the decision: John Borrows, 'The Trickster. Integral to a Distinctive Culture' (1997) 8:2 *Constitutional Forum* 27; Leonard I Rotman, 'Hunting for Answers in a Strange Kettle of Fish: Unilateralism, Paternalism and Fiduciary Rhetoric in *Badger and Van der Peet*' (1997) 8:2 *Constitutional Forum* 40; Bradford W Morse, 'Permafrost Rights: Aboriginal Self-Government and the Supreme Court in *R v. Pamajewon*' (1997) 42 *McGill L J* 1011; Barsh and Henderson, *supra* note 11; and Kent McNeil, 'How Can Infringements of the Constitutional Rights of Aboriginal Peoples Be Justified?' (1997) *Constitutional Forum* 8:2; Michael Asch, 'From "Calder" to "Van der Peet": Aboriginal Rights in Canadian Law, 1973–1996,' In: *Indigenous peoples' Rights in Australia, Canada and New Zealand* (ed.), Paul Havemann (Oxford: Oxford University Press, 1999); and for a more recent comparative analysis of aboriginal rights see Michael Murphy, 'Prisons of Culture: Judicial Constructions of Indigenous Rights in Australia, Canada and New Zealand' (2008) 87 *Can B Rev* 357).
 - 19 *Van der Peet*, *supra* note 18, at para 70.
 - 20 *Ibid.*
 - 21 *R v. Gladstone*, [1996] 2 SCR 723 at paras 57, 73–74.
 - 22 *Sparrow*, *supra* note 10 at p. 1079.
 - 23 *Van der Peet*, *supra* note 18, at para 302.
 - 24 Chief Justice McLachlin recently extended its application to the law on Aboriginal title in *Tsilhqot'in Nation* while simultaneously qualifying it by maintaining that '[i]f a compelling and substantial public purpose is established, the government must go on to show that the proposed incursion on the Aboriginal right is consistent with the Crown's fiduciary duty towards Aboriginal people.' *Tsilhqot'in Nation v. British Columbia*, [2014] SCC 44 at para 84.
 - 25 Robert Hamilton's forthcoming work shows that the unilateral model of sovereignty simply did not apply during the seventeenth and eighteenth centuries. Rather, the model the British employed during this period was both divisible and overlapped with several other

- legal systems. I provide an extended review of how this divisible Imperial model begins to change towards a more absolute and territorial nation-state model in the nineteenth century in my forthcoming book *Reconciliation without Recollection: An Investigation of the Foundations of Aboriginal Law* (Toronto: University of Toronto Press).
- 26 Stephen Tierney, *Constitutional Law and National Pluralism* (Oxford: Oxford University Press, 2004) at 16.
- 27 *Ibid.*, at p. 5.
- 28 James Tully, *Strange Multiplicity: Constitutionalism in an Age of Diversity*. (Cambridge University Press: Cambridge, 1995) at 74; Peter Russel makes a very similar point in his most recent book *Canada's Odyssey: A Country Based on Incomplete Conquests* (Toronto: University of Toronto Press, 2017).
- 29 Larry Chartrand, 'The Failure of the Daniels Case: Blindly Entrenching a Colonial Legacy,' (2013) 50:1 *Alta L Rev* 181 at 185.
- 30 Thanks to James Tully for suggesting adopting this term. He develops this term in two unpublished essays: *Violent Power-Over and Nonviolent Power-With: Hannah Arendt On Violence and Nonviolence* (Paper delivered at Goethe University 7 June 2011) [unpublished]; Richard Gregg and the Power of Nonviolence: The Power of Nonviolence as the unifying animacy of life (J Glenn and Ursula Gray Memorial Lecture, delivered at Colorado College, 1 March 2016) [unpublished].
- 31 Tully, *Strange Multiplicity*, *supra* note 28 at p. 136.
- 32 Russell, *supra* note 28.
- 33 Paul Schiff Berman, 'Federalism and International Law through the Lens of Legal Pluralism' (2008) 73 *Mo L rev* 1149 at 1158.
- 34 Discovery was rejected by International Court of Justice (ICJ) in *Western Sahara: Advisory Opinion of 16 October 1975* (The Hague: ICJ Reports, 1975).
- 35 Government of Canada, *Canada's Statement of Support on the United Nations Declaration on the Rights of Indigenous peoples*, online: Government of Canada www.aadnc-aandc.gc.ca/eng/1309374239861/1309374546142.
- 36 This citation is from the speaking notes for the Minister of Indigenous and Northern Affairs (Carolyn Bennett) for the Announcement of Canada's Support for the United Nations Declaration of Indigenous peoples, which was delivered on 10 May 2016. A copy can be found online: www.metisnation.ca/wp-content/uploads/2016/05/Speech-Minister-Bennett-UNPFII-NEW-YORK-MAY-10-FINAL.pdf.
- 37 *Ibid.*
- 38 In *Calder*, *supra* note 5 all six judges accepted that Aboriginal title was grounded in prior Aboriginal occupation of the land and not only in the Royal Proclamation or other Crown acts or legislation. Also see *Haida Nation v. British Columbia (Minister of Forests)*, [2004] 3 SCR 511 at para 20.
- 39 *Taku River*, *supra* note 5, at para 42. See also, e.g. *Haida*, *supra* note 40, at para 32.
- 40 For an account of how this creates problems in the Court's use of the concept of fiduciary duty see Ryan Beaton, *supra* note 17 and his forthcoming book.
- 41 *Reference re Secession of Quebec*, [1998] 2 SCR 217 at para 150.
- 42 Lightfoot, S. (2016). *Global Indigenous Politics: A Subtle Revolution*. New York, NY: Routledge Press at 19.

- 43 For a detailed account of this possibility with the treaties, see the concept of 'treaty federalism' in Russel Lawrence Barsh and James Youndblood Henderson, *The Road: Indian Tribes and Political Liberty* (Berkeley: University of California Press, 1980) and, more recently, in Michael Asch, *On Being Here to Stay: Treaties and Aboriginal Rights in Canada* (Toronto: University of Toronto Press, 2014).
- 44 Roger Merino, 'Law and Politics of Indigenous Self-Determination: The Meaning of the Right of Prior Consultation' [unpublished] at 22.
- 45 Tierney, *supra* note 26, at p. 13.

Making Room for the Nagoya Protocol in Nunavut

Daniel W. Dylan

Abstract

This chapter focuses on the regulation and governance of genetic and non-genetic resources and the conduct of research in Canada's resource-rich northern territory of Nunavut. It examines the existing and developing legal frameworks in Nunavut, with a focus on the *Nunavut Land Claims Agreement*, the *Nunavut Scientists Act* and the *Nunavut Wildlife Act*, identifying gaps in the operations of the existing legal regimes over ABS and examines the extent to which the implementation of the Nagoya Protocol could complement or enhance a better ABS in Nunavut. It inventories over 300 decisions made by the Nunavut Impact Review Board over the course of 20 years and situates an analysis of these decisions within Nunavut's larger legal framework and within evident climate change patterns – namely melting Arctic sea ice – and the increased opportunities for scientific research in the Arctic amidst Canada's increasing appetite for resource exploitation.

INTRODUCTION

As the world and its inhabitants continue to grapple with climate change and its effects, Arctic sea ice continues to melt at a fast rate.¹ Although the subjects of climate change and melting sea ice demand further scientific and legal attention in their own right, the focus of this chapter is, from a legal point of view, on some of the genetic resource rights challenges that melting sea ice exacerbates in the Canadian Territory of Nunavut – a jurisdiction rich in natural resources and the source of increasing scientific research interest.² That is to say, while the *Nunavut Land Claims Agreement* (NLCA or Agreement)³, a modern-day treaty executed by the Government of Canada and the Inuit of Nunavut, already provides for some land, wildlife, water, natural resources and Inuit Qaujimajatuqangit (Inuit traditional

knowledge) management and protection through a complex web of inter-related administrative processes of its various Institutions of Public Government (IPG), and contemplates impact and benefit-sharing agreements for natural resource extraction under certain conditions, little in the NLCA or in Nunavut statutes is contemplated in the way of providing for extant (and emerging) *genetic* resource management, protection and benefit-sharing. Altogether, the access and benefit-sharing regime with respect to genetic resources in Nunavut is rather inchoate.

The *Scientists Act*, a statute of Nunavut, which unlike the NLCA, does not enjoy constitutional status, only requires scientific researchers to obtain an ‘access licence’ and does not legally mandate any consent requirements or form of benefit-sharing emanating from any research conducted. Other acts, both territorial and federal, provide similarly in terms of licence requirements, but most are silent with respect to consent requirements and benefit-sharing. In the context of melting sea ice, this legislative chasm is therefore a significant concern as extant and hitherto inaccessible and unknown genetic (as well as non-genetic) resources underneath the ice emerge for scientific exploration, research and exploitation.

On the one hand, the administrative processes of these IPGs may provide a paradigm by which to approach this chasm created by the NLCA, but any implementation of the paradigm would require amendment to the NLCA – a sufficiently thorny endeavour. On the other hand, Canada’s ratification of the *Nagoya Protocol*, a supplementary agreement to *Convention on Biological Diversity* (CBD),⁴ would also bridge this chasm created by the NLCA and, if necessary, provide a concrete legal basis for Nunavut to amend its statutes, such as the *Scientists Act*, or to enact new ones, to include consent and benefit-sharing provisions. Thus, while Nunavut has, through the NLCA, a *Nagoya*-like regime in place in respect of mandating and managing access and benefit-sharing with respect to non-genetic, or, simply, natural resources, there is still room for the *Nagoya Protocol* in Nunavut to address access and benefit-sharing with respect to genetic resources without displacing the existing regime that the NLCA has normalized. It is my position that Canada’s ratification of the *Nagoya Protocol* could fit neatly into and complement Nunavut’s constitutional order and is an auspicious step towards ensuring the territory’s sustainable development, management and protection of its genetic resources.

Part I of this chapter summarizes Nunavut’s legal history and framework. Part II more narrowly briefly explains Nunavut’s existing environmental impacts assessment regime and reveals some of its deficiencies in respect of genetic research. Part III reviews how impact benefit agreements with respect to natural resources currently come into being and illustrates why genetic resource (and scientific) research does not conform to these requirements. Part IV summarizes the statutory regime in Nunavut respecting scientific research and further illustrates how this regime leaves consent and access and benefit-sharing unaccounted for. Similarly, Part V reviews how Article 5 of the NLCA also leaves consent and access and benefit-sharing with respect to genetic resources unaccounted for. Finally, in Part VI, over 300 scientific

research projects which have taken place in Nunavut over, approximately, the last 20 years are discussed, revealing that, for the most part, genetic resource research is occurring in Nunavut at a very modest level and that the time to ratify and implement the *Nagoya Protocol* is ripe, before this legislative chasm presents any serious legal problems to the territory.

BRIEF HISTORY OF NUNAVUT

The territory of Nunavut, Canada's newest jurisdiction, carved out of the hitherto then-eastern portion of the Northwest Territories, was created in 1999. The *NLCA*, executed by the Inuit of Nunavut and the Government, was concluded in 1993, and given legal force and effect in 1999.⁵ The *Nunavut Act*, another federal statute, legally created Nunavut and gave it existence as a territory within the Canadian federation of provinces and territories.⁶ The *NLCA* is considered a treaty within the meaning of the section 35 of the *Constitution Act, 1982*, and is therefore constitutionally protected as such. None of these statutes, however, provided to the Inuit of Nunavut a form of ethnic self-government; thus, Nunavut is governed by a public government. This public government operates as a consensus-based one. The vast majority of land in Nunavut is Crown-owned, with the Inuit of Nunavut owning approximately 19 per cent of surface lands and approximately 2 per cent of subsurface rights.⁷ Nunavut is inhabited by approximately 36,000 people or approximately one one-hundredth of the national population, across a territory which constitutes approximately 20 per cent of Canada's total land mass.⁸

NUNAVUT IMPACT ASSESSMENT REGIME

As mentioned earlier, the *NLCA* provides for the majority of land, wildlife, water, natural resources and Inuit *Qaujimagatuqangit* management and protection through the various administrative processes of its various Institutions of Public Government, otherwise known as 'IPGs.' The regime is essentially an environmental impacts assessment regime created by various Articles of the *NLCA*. It is designed mainly with the intention of protecting the environment and maximizing socio-economic opportunities for *NLCA* beneficiaries and Nunavummiut. Assessing the environmental and socio-economic impacts of proposed projects in Nunavut is its pre-occupation. Adding to this regime is the federal *Nunavut Planning and Project Assessment Act*, otherwise known and referred to as 'NUPPAA', which came into force in July 2015.⁹ In the event of an inconsistency between the *NLCA* and NUPPAA, the *NLCA* prevails.¹⁰

In summary, the impacts assessment regime provides that any and all project proposals in Nunavut must first be sent to the Nunavut Planning Commission (NPC) for a conformity review. Conformity reviews conducted by the NPC determine whether the proposed project conforms to an existing regional land use plan of

which there are two currently in Nunavut.¹¹ Proposed projects must conform to a land use plan. The NPC continues to work on a Nunavut-wide land use plan, but has not completed it yet. When it is complete, all proposed projects will be reviewed for conformity under that plan.

If the NPC determines that the proposed project conforms to an existing land use plan, it forwards the project proposal to the Nunavut Impact Review Board (NIRB) for an impact assessment review. If the NPC determines that the proposed project does *not* conform to an existing land use plan, it does *not* forward the project proposal to NIRB. Instead, the proponent may, in order to bring the proposed project into conformity with the land use plan, seek a land use plan amendment, a minor variance, or a Ministerial exemption.¹² Of course, the project proponent may abandon the project as well. If any of the first three options are chosen, and granted by the NPC or the appropriate Minister (whatever the case may be), the project then reaches NIRB for the impact assessment review that would have taken place had the project originally obtained a positive conformity determination from the NPC. The NIRB is then tasked with reviewing the proposed project, as it would in the previous case, and under an NLCA Article 12 Part 5 or 6 review, making recommendations to (most typically) the federal Minister of Indigenous and Northern Affairs Canada (INAC), as to whether the proposed project should or should not proceed. The Minister may accept or reject the NIRB recommendation, whatever the case may be. If rejected by the Minister, the Minister will then provide comments to the NIRB and then the NIRB will review its recommendation and resubmit it to the Minister after considering those comments.

The Minister is again free to accept or reject the subsequent recommendation by NIRB. This process takes place until the proposed project has been approved by the Minister, following which the NIRB then issues to the project proponent a project certificate (which may contain various terms and conditions), or until another event outside of this process terminates the project proposal. Additionally, in some cases, the NIRB may determine that a project does not require an impact assessment review under NLCA Article 12 Part 5 or 6 and simply recommends that the project proceed.¹³ The majority of projects inventoried in this study proceeded in the latter fashion.

Nevertheless, this regime is relevant to understanding how the *Nagoya Protocol* might fit within Nunavut's constitutional order for the reason that every project, ostensibly including scientific research projects, must abide by these requirements explained above. Ostensibly because the NLCA does not define 'project' and instead only defines 'project proposal' – a definition that arguably *excludes* scientific and genetic research projects. Requirements that scientific researchers must adhere to are found elsewhere – mostly in the statutory regime – but either by convention or some undiscoverable law, scientific researchers still seek a project certificate from the NIRB, even though NIRB apparently lacks legal jurisdiction to review *scientific* project proposals. Article 12.2.2 provides that one of the primary functions of NIRB is

to screen *project proposals* in order to determine whether or not a review is required; however, as we will see in Part II, most scientific research projects do not meet the criteria contained in the definition of ‘project proposal.’ Stated another way, it seems that NIRB is generally without jurisdiction to screen, let alone, review *scientific* research project proposals.

Before examining this issue more closely, it is prudent to note that NUUPPA requires the NIRB to ‘take into account any traditional knowledge or community knowledge provided to it’ in the course of preparing a recommendation to the Minister.¹⁴ NUPPAA defines traditional knowledge as the ‘accumulated body of knowledge, observations and understandings about the environment, and about the relationship of living beings with one another and with the environment, that is rooted in the traditional way of life of Inuit of the designated area.’¹⁵ Second, it is important to note that neither the NLCA nor NUPPAA empowers the NIRB with jurisdiction to establish requirements for socio-economic benefits when issuing project certificates and imposing terms and conditions.¹⁶ The latter point is particularly important because it illustrates that within the existing regime, the NIRB has no inherent jurisdiction to impose an access and benefit-sharing plan on a project proponent. The former point is important because unlike many statutes in Canada, NUPPAA provides a definition of the legally amorphous concept of traditional knowledge.

ARTICLE 26 OF THE NLCA: INUIT IMPACT BENEFITS AGREEMENTS

I have not argued in this chapter, or elsewhere, that the NLCA lacks entirely an access and benefit-sharing regime. Rather, it is my purpose in this chapter to illustrate that while the NLCA contemplates access and benefit-sharing with respect to natural resource extraction, little is contemplated by it in the way of providing for *genetic* resource management, protection and benefit-sharing. By reviewing Article 26, which provides what I refer to as a ‘quasi access and benefit-sharing’ regime, this assertion will become clearer.

Article 26 of the NLCA is titled ‘Inuit Impact and Benefit Agreements.’ Inuit Impact and Benefit Agreements are also known and referred to as ‘IIBAs.’ Article 26.2.1 provides that subject to two rare exceptions found in articles 26.11.1 to 26.11.3 ‘no Major Development Project may commence until an IIBA is finalized in accordance with this Article.’¹⁷ Article 26.3.1 provides that ‘[a]n IIBA may include any matter connected with the Major Development Project that could have a detrimental impact on Inuit or that could reasonably confer a benefit on Inuit, on a Nunavut Settlement Area-wide, regional or local basis.’¹⁸ Article 26.3.3 provides, among other things, that negotiation and arbitration of IIBAs shall be guided by principles that ensure benefits are consistent with and promote Inuit cultural goals, and are related to the nature, scale and cost of the project as well as its direct and indirect impacts on Inuit.¹⁹

Article 26 makes it clear, however, that IIBAs are executed only in relation to ‘Major Development Projects.’ ‘Major Development Project’ is defined as ‘any Crown corporation or private sector project that (a) is a water power generation or water exploitation project in the Nunavut Settlement Area, or (b) is a project involving development or exploitation, but not exploration, of resources wholly or partly under Inuit Owned Lands, and either entails, within the Nunavut Settlement Area during any five-year period, more than 200 person years of employment, or entails capital costs in excess of thirty-five million dollars (\$35,000,000), in constant 1986 dollars, including, where Government is the proponent for a portion of a development project or directly-related infrastructure, the capital costs and employment projections for the government portion of the project.’²⁰ This definition must be unpacked to understand the genesis of the legislative chasm which exists in respect of genetic resource research.

First, it should be noted that a ‘Major Development Project’ will only be one where either a Crown corporation or a body from the private sector is the proponent. Second, the project must be a water power generation or a water exploitation project, or, a project involving the exploitation (extraction, not exploration) of resources wholly or partly under Inuit Owned Land (IOL). Inuit own title to 19 per cent of the land in Nunavut, including mineral rights to 2 per cent of Nunavut. Further, that exploitation project must either occur within the Nunavut Settlement Area during any five-year period and contain more than 200 person-years of employment, or entail capital costs in excess of thirty-five million dollars (\$35,000,000). Major Development Projects and the IIBAs associated with them, therefore, tend then to be related to natural resource projects rather than scientific or genetic research or exploration projects. Moreover, Article 26 of the NLCA does not define ‘resources.’ Article 1 does, providing that “‘resources means,” for the purpose of Articles 25 to 27, coal, petroleum, precious and base metals and other naturally occurring substances that can be mined, but does not include specified substances.’²¹ Based on this definition, it seems that the NLCA’s contemplation of ‘resources’ is limited to substances *that can be mined*, and would therefore ostensibly exclude some, if not most, *genetic* resources.

Compounding the problem in this respect is that neither Article 26, Article 11 (Land Use Planning), Article 12 (Development Impact), nor Article 1 (Definitions) provide a definition of ‘project’ as an independent concept or one different from ‘Major Development Project.’ Article 1 does, however, define ‘project proposal’ and provides that it ‘means a physical work that a proponent proposes to construct, operate, modify, decommission, abandon or otherwise carry out, or a physical activity that a proponent proposes to undertake or otherwise carry out, such work or activity being within the Nunavut Settlement Area.’²² It is difficult to conceive of a scientific or genetic resource research project that meets this definition, though one could arguably make the case that such a project might be a ‘physical activity,’ although this would be a tenuous argument given how federal statutes and

regulations understand the term.²³ It seems then that genetic research projects do not comport with the NLCA's understanding and definition of 'projects proposals.' NUPPAA defines 'project' similarly as 'the carrying out, including the construction, operation, modification, decommissioning or abandonment, of a physical work or the undertaking or carrying out of a physical activity that involves the use of land, waters or other resources', but it does not define 'resources', leading us back to where we initially started: almost no contemplation of or clarity as to how – and even if – strictly scientific projects are to be screened in Nunavut.

Ultimately, however, my interpretation of and conclusion with respect to Article 26 and the NLCA, generally, although I shall revisit the NLCA and discuss Article 5 momentarily, is that there is no provision in the NLCA which explicitly provides for access and benefit-sharing with respect to genetic resources in Nunavut, unless the (genetic research) 'project' is a 'Major Development Project' as defined in the NLCA. Our inquiry does not end here, however; we must proceed to an examination of the statutory regime to further understand the legislative chasm which leaves the protection of genetic resources unaccounted for in Nunavut.

STATUTORY REGIME IN NUNAVUT

As mentioned in the introduction to this chapter, the access and benefit-sharing regime with respect to genetic resources in Nunavut is rather inchoate. The *Scientists Act*²⁴ and *Wildlife Act*²⁵ further illustrate why this is the case. Further illustrating this reality is the limited powers and jurisdictions of the Nunavut Research Institute, a scientific research regulatory body amalgamated with the Nunavut Arctic College when Nunavut was created out of the Northwest Territories.²⁶

Nunavut Scientists Act

Section 2 of the *Scientists Act*, a very short statute, provides that '[n]o person shall carry on scientific research in or based on [Nunavut], or collect specimens in [Nunavut] for use in scientific research, unless (a) he or she is the holder of a licence issued under this Act; or (b) the research consists solely of archaeological work for which a permit has been issued.'²⁷ The *Scientists Act* makes no provision to obtain the consent of Inuit or for 'benefit-sharing' of any sort when scientific research is undertaken in Nunavut. In short, it simply mandates that a scientific researcher obtain a licence issued under the Act, and nothing more.

Nunavut Wildlife Act

Similarly, subsection 117(1) of the *Wildlife Act* provides that '[n]o person shall conduct research on wildlife or collect wildlife specimens for research, without a licence authorizing it.'²⁸ The Government of Nunavut, Department of Environment issues

such licences.²⁹ This Act defines ‘wildlife’ as ‘the flora and fauna to which this Act applies under subsections 6(2) and (3), including all parts and products from wildlife’.³⁰ Subsection 6(2) provides that the *Wildlife Act* applies to ‘all terrestrial, aquatic, avian and amphibian flora and fauna that are wild by nature or wild by disposition; all parts and products from wildlife; and all habitat of wildlife.’ Subsection 6(3) provides that the *Wildlife Act* does not apply to ‘a species that is a fish, as defined in section 2 of the *Fisheries Act* (Canada); a marine plant, as defined in section 47 of the *Fisheries Act* (Canada); or a bacterium or virus.’ ‘Product’, however, is also not defined in this Act. Much like the *Scientists Act*, the *Wildlife Act* makes no provision to obtain the consent of Inuit or for ‘benefit-sharing’ of any sort. In short, it too simply mandates that a wildlife or scientific researcher obtain a licence issued under the Act. What is further problematic about these provisions in any event, is that the *CBD* and *Nagoya Protocol* do not apply to ‘commodities’ or ‘products’ as such.

Section 8 of the *Wildlife Act* is worth mentioning at the juncture. It makes provisions for the utilization of Inuit Qaujimajatuqangit principles and concepts under the Act; some key examples in the context of this chapter are: ‘[T]he obligation of guardianship or stewardship that a person may owe in relation to something that does not belong to the person . . . that people must work together in harmony to achieve a common purpose . . . and that people are stewards of the environment and must treat all of nature holistically and with respect, because humans, wildlife and habitat are inter-connected and each person’s actions and intentions towards everything else have consequences, for good or ill.’³¹ While these principles and concepts speak to the spirit and intent of the Act, they also do not mandate the consent of Inuit or provide for ‘benefit-sharing’ of any sort when wildlife research is undertaken in Nunavut.

Nunavut Research Institute

The Nunavut Research Institute (NRI), a body of the Nunavut Arctic College, is responsible for issuing licences under the *Scientists Act* in respect of physical, natural, social and health sciences research, although by virtue of the Act it is arguable whether it has the legal jurisdiction to do so. Notwithstanding, upon receipt of a scientific research licence application, the NRI will forward the application to various other bodies and organizations for review and comment such as, for example, the appropriate Government of Nunavut Department, Nunavut Tunngavik Inc. (NTI), the municipality where the proposed research will take place, and other agencies, if necessary. At a minimum, NTI will generally review every research licence application and provide comments to the NRI. Researchers may privately agree to a benefit-sharing plan with Inuit and NLCA beneficiaries (e.g. NIRB project number 10YN047 in Part VI below), but neither the NRI nor NTI may refuse to issue a licence on the basis that the research licence application or program does not provide any socio-economic benefits to Inuit or NLCA beneficiaries.

The NRI does not, however, hold a monopoly on scientific research in Nunavut. Various statutes and regulations enacted by the Government of Canada also control the issuance of licences, and researchers, based on the nature of their research, are tasked with identifying the appropriate licence issuing body and submitting licence applications to it; for example, under section 51 of the *Fishery (General) Regulations*³² enacted pursuant to the federal *Fisheries Act*, the Department of Fisheries and Oceans (DFO) issues a scientific research licence for studies of marine mammals and aquatic life.³³ Typically, such applications are accompanied by a letter of support from the Hunter and Trappers Organization (HTO) local to the area where the research will take place, although sometimes an NRI research licence permit is accepted by DFO as a substitute. As already noted, under the *Wildlife Act*, the Government of Nunavut, Department of Environment, may issue a research licence in respect of wildlife flora or fauna. Similarly, the Government of Nunavut, Department of Culture and Heritage may issue an Archaeology and Palaeontology research permit under the *Archaeological and Palaeontological Sites Regulations*, enacted pursuant to the *Nunavut Act*.³⁴

Finally, in addition to any statutory licence a scientific or genetic researcher might be required to obtain to conduct scientific or genetic research in Nunavut, NRI advises that researchers may be required to obtain several other clearances including a conformity decision from the NPC as well as land use permits from the Department of Indigenous and Northern Affairs; authorization to enter onto IOL from NTI or a Regional Inuit Association (RIA); development permits to build or install permanent research infrastructure in Nunavut communities, or an impact assessments review by the NIRB. However, as the earlier discussion of the impacts assessment regime revealed, the legal jurisdiction or basis for NIRB to conduct an impacts assessment of scientific projects is questionable. The same may be said of the NPC, given that Article 11 makes no mention of ensuring land use plan conformity for scientific research projects. NUPPAA is silent on these matters as well. Thus, it appears that any order NIRB (or NPC) was to make in respect of a scientific project proposal could be void *ab initio*, or at least, judicially reviewable on the basis of an absence of jurisdiction.

ARTICLE 5 OF THE NCLA: WILDLIFE

The last piece of the complex puzzle that forms the legislative chasm in Nunavut with respect to genetic resource research is Article 5 of the NLCA, which is devoted to wildlife. In reviewing Article 5, it is important to note that it addresses the Inuit of Nunavut and Canada's legal relationship respecting wildlife in Nunavut, not a relationship enforceable by Inuit against the whole world. Article 5.8.7 of the NLCA provides that Designated Inuit Organizations (DIO) (a DIO is essentially NTI or one of the RIAs) 'shall have the right of first refusal to market wildlife, wildlife parts and wildlife products in the Nunavut Settlement Area.'

Article 5.8.9 provides that DIOs ‘shall have the right of first refusal to carry out any venture aimed at the commercial collection or processing of non-edible wildlife parts and wildlife products ... and ... shall extend to non-edible wildlife parts and wildlife products available as a consequence of a kill or as recoverable in an inanimate form.’ Article 1 defines wildlife as ‘all terrestrial, aquatic, avian and amphibian flora and fauna *ferae naturae*, and all parts and products thereof’ and defines ‘flora’ as not including ‘trees suitable for commercial production of lumber or other building materials, but includes materials required by Inuit for local use, land-based activities and handicraft production.’ No distinction between commercial and non-commercial uses is made in Article 5.8.9, however. Unfortunately, neither Article 5 nor Article 1 defines ‘product.’ Moreover, the *Nagoya Protocol* excludes from its contemplated ambit of access and benefit-sharing commodities and so too, as a result, does the international legal community.³⁵ It therefore remains arguable whether ‘non-edible wildlife parts and wildlife products available as a consequence of a kill or as recoverable in an inanimate form’ constitute *genetic resources*.³⁶

Article 5.9.1 of the NLCA, which provides that any ‘legislation implementing an international or domestic interjurisdictional agreement shall be interpreted and administered to treat Inuit on at least as favourable a basis as any other aboriginal people in Canada,’ provides an interesting contrast to Articles 6(2) and 7 of the *Nagoya Protocol*. In short, in the absence of Canada’s ratification of the *Nagoya Protocol*, even a generous reading of these Article 5 provisions would likely leave genetic resources unaccounted for within the Nunavut regime. In totality, it seems very likely that Nunavut is without a regime – at least one grounded on any discernable laws – to govern access, use, and research regarding genetic resources.

NIRB DECISIONS RESPECTING SCIENTIFIC RESEARCH IN NUNAVUT

The absence of a regime to govern access, use, and research on genetic resources in Nunavut is not, however, a dire situation. The research conducted and data gathered for this chapter by reviewing and inventorying NIRB decisions revealed a somewhat startling historical portrait of scientific research since Nunavut’s creation in 1999 (and even as far back as 1997).

The Data and Collection Methodology

There are over 2,000 projects contained within the NIRB’s public registry, a NUPPAA-mandated document depository for project-related documents in project-related NIRB proceedings.³⁷ This registry contains, in many cases, most, if not all, of the documents during the lifecycle of any given project NIRB has screened or

reviewed. Given the very specific focus of this chapter, however, searches of this registry were tailored to identify scientific and genetic resource related research projects and yielded approximately 300 projects meeting this search criterion. These 300-plus projects were then inventoried in a database and coded with variables such as: (a) project name; (b) NIRB file number; (c) project year; (d) whether any project amendments occurred; (e) project type; (f) project description; (g) proponent's name; (h) whether a screening was required; (i) comments and concerns received from respondents and interveners; (j) whether the researcher was required to supply benefits to the community where the research was conducted; (k) key focus of the project; (l) whether the project was climate change related and, finally, (m), whether human subjects were involved in the research. After the database was built, using these variables, the projects were then classified into one of four categories: (1) projects involving traditional knowledge; (2) projects that have a genetic component or a potential for bio-prospecting; (3) projects that involve wildlife and, (4) other.

Findings

The 302 scientific research projects revealed to have taken place in Nunavut from 1997 to 2016 was assembled for the purposes of this study (see Figure 5.1). Nearly all projects were conducted by researchers from a broad section of Canadian, American, and international universities.

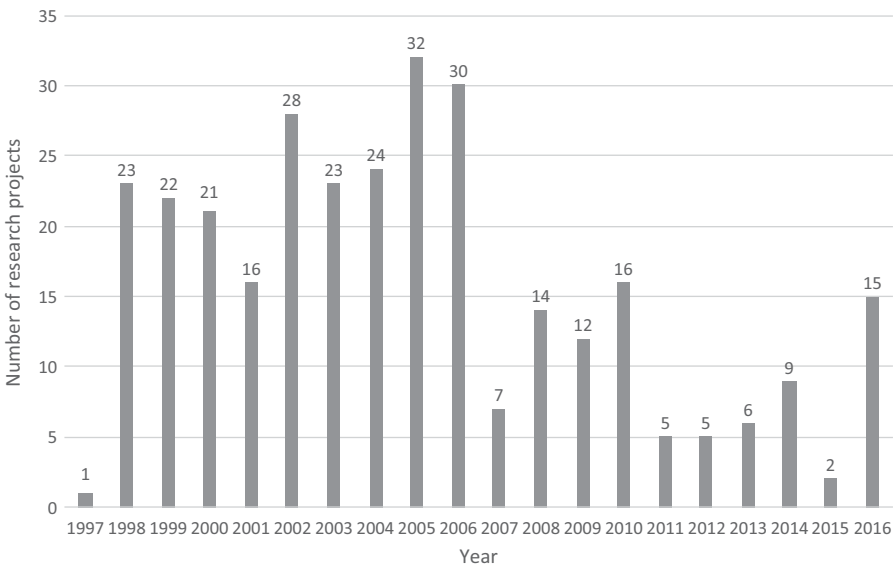


FIGURE 5.1 Scientific Research Projects in Nunavut

Using the 'project type' and 'key focus' variables, the next step in the parsing of this data was to identify trends that occurred within the data and to ultimately provide a coherent snapshot of scientific research which has occurred in Nunavut. In terms of classification outlook, 4 projects are concerned with traditional knowledge; 15 projects with potential for bio-prospecting; 14 projects with a focus on wildlife; 89 projects related to understanding climate change; 202 projects that required screening; 15 projects did not require screening; 33 projects were amended or renewed; 32 projects dealt with pollution and contaminants in the Arctic; 15 projects focused on Arctic vegetation and fungi; 36 projects concerned sampling rocks, minerals/ interest in geology; 14 projects concerned sampling sediment; 38 projects concerned with glaciers and ice; 28 projects dealt with collecting/sampling: algae, microbes, plankton, benthic organisms, insects and, finally, only 5 projects had a readily identifiable 'genetic' research component. 83 projects were missing documents.

Overall, these findings show that much scientific research is occurring in Nunavut amidst little, *genetic* resource research, with only 5 such projects – or 33 when the projects relating to collecting/sampling: algae, microbes, plankton, benthic organisms, insects are included. This number is likely to change, however, as global warming progresses and Arctic sea ice continues to melt.

Notable Examples

Because of space limitations, it is impossible to provide a summary of each of the 302 projects in the inventory of scientific research projects amassed for this study. Instead, a few examples are selected, over the course of the study period, and presented here merely to provide an illustration of the kinds of scientific research projects which occurred in Nunavut, and those which reflect the potential for a genetic component. Despite being able to identify many of the projects, the largest obstacle to overcome in understanding and obtaining the value and potential of this scientific research, however, is to discover the actual or final output of many of these projects. The NIRB registry does not capture this information.

In 2016, for example, the University of Colorado undertook research involving 'lake sediment sampling at three separate study sites for testing of benthic organisms.'³⁸ For the purposes of this chapter, this project was classified as one having a potential for bio-prospecting.

In 2015, Université de Montréal undertook research 'to monitor permafrost degradation on Bylot Island via thermo-erosive processes; to reconstruct past climatic environments of Bylot Island; and to complete vegetation studies of Bylot Island in regards to carrying capacity for herbivores, berry productivity, and environmental change.'³⁹ NIRB recommended that the proponent 'should, to the extent possible, hire local people and to consult with local residents regarding their activities in the region.'⁴⁰ For the purposes of this chapter, this project was classified as one related to climate change.

In 2014, Université Laval undertook research aimed at improving ‘understanding of the processes that control the Arctic phytoplankton spring bloom as it expands northward and to determine its fate in the food web by investigating related carbon fluxes.’⁴¹ NIRB recommended that the proponent ‘should, to the extent possible, hire local people and to consult with local residents regarding their activities in the region.’⁴²

Also in 2014, Wilfrid Laurier University undertook research to ‘assess the biological and limnological characteristics of Arctic lakes and streams in Nunavut.’⁴³ The NIRB again recommended that the proponent ‘should, to the extent possible, hire local people and consult with local residents regarding their activities in the region.’⁴⁴

In 2013, Memorial University of Newfoundland undertook research involving ‘clam habitat and submerged shoreline features along the Broughton Channel coast through bathymetric surveys and benthic sampling between August and September 2013.’⁴⁵ On this file, which illustrates the various jurisdictional problems I described in [Part II](#) of this chapter, NIRB determined that a project screening was not required. Noting that a conformity determination from the NPC was not required, as the proposed project was located within a region that does not currently have an approved land use plan in place (South Baffin Region), the project proposal was received by the NIRB from the NRI on 22 May 2013 and was screened by the Board in accordance with Part 4, Article 12 of the NLCA.⁴⁶ On 25 June 2013 the NIRB issued an NLCA 12.4.4(a) screening decision to the Minister Responsible for Nunavut Arctic College, Government of Nunavut, which indicated that the proposed project could proceed subject to the NIRB’s recommended project-specific terms and conditions.⁴⁷ Again, as discussed earlier, NIRB may lack the jurisdiction to impose any such terms and conditions on scientific projects.

In 2008, York University undertook research involving the sampling of soft sediments and collecting of water quality data, moss, algal, and aquatic insect samples from ponds, lakes and rivers.⁴⁸ According to the proponent, ‘the intent of this research [was] to contribute valuable new information on recent changes in water flow, pond chemistry and the status of aquatic insect populations changes that may be occurring due to recent climate warming.’⁴⁹ NIRB again concluded that the proposal would be processed without a review under NLCA Part 5 or 6, and recommended that the proponent ‘should, to the extent possible, hire local people and to consult with local residents regarding their activities in the region’ and encouraged the proponent ‘to present the results of their research to the local community once . . . complete.’⁵⁰

In 2006, the University of New Brunswick undertook research studying ‘the effect of sea-run char on contaminant concentrations in Arctic lakes.’⁵¹ The aim of the research was to ‘investigate whether sea-run Arctic char transport pollutants from the ocean into lakes through their annual migrations . . . Sample fish and insects that represent whole food webs. Pollutants in fish [were] to be compared between

systems that do and do not support sea-run char. The results [were expected to] help . . . understand how levels of pollutants vary among fishing locations and [to] be useful for predicting how pollutant levels respond to climate change.' Again, the project proposal was processed without a Part 5 or 6 review.

In 2005, Bishop's University undertook research involving the collection of 'insects to study their biodiversity and biogeography, focusing on insects around water as well as those associated with flowering plants.'⁵² NIRB encouraged the 'Permittee' to 'hire local people and to consult with local residents regarding their activities in the region' and encouraged the 'Permittee' to 'provide the local community with a reference collection of insects for educational purposes, as mentioned in the NRI permit application.'⁵³

In 2005, the University of Newfoundland, St. John's, undertook research involving changes 'in snow and ice conditions [that] can limit Inuit access to marine resources.' The proponent also stated that '[c]hanges in ocean conditions may also affect the viability and sustainability of the marine ecosystems and the resources Inuit depend on. Having used the land for thousands of years, the Inuit have generated a unique knowledge that can be used to understand, respond, and monitor changing environmental conditions. Inuit knowledge can also be used to identify baseline conditions (i.e. the presence or absence of certain species over time) that will enable more informed management decisions to be made. Recognizing the value of Inuit knowledge, [the proponent proposed to] develop and implement a marine monitoring programme for Auyuittuq National Park. Building on Inuit environmental knowledge, [the proponent] set out to learn about marine and coastal ecosystems, identify valued ecosystem components, and develop, test and implement monitoring protocols.'⁵⁴ Again, NIRB encouraged the 'Permittee' to 'hire local people and to consult with local residents regarding their activities in the region [and to] present the results of their research to the local communities once . . . complete[d].'⁵⁵ For the purposes of this chapter, this project was also classified as one having a potential for bio-prospecting but it could have been also classified as one involving traditional knowledge.

In 2004, the University of Quebec undertook research on 'how vegetation changes in the Arctic in relation to the climatic conditions as well as to activities of animals (including geese and lemmings) . . . how biotic interactions, both positive (e.g. mutualism, facilitation) and negative (e.g. competition, herbivory), influence the vegetation.'⁵⁶ NIRB here also encouraged the proponent 'to hire local people and services, to the extent possible' and 'strongly advise[d]' the proponent to 'consult with local residents regarding their activities in the region and that the results of the research be presented to the community in the community's preferred language.'⁵⁷ For the purposes of this chapter, this project was also classified as one having a potential for bio-prospecting.

In 2003, Duke University undertook research on 'Diversity and Evolution of Fungal Endophytes in Plants and Lichens.'⁵⁸ Here, NIRB encouraged the proponent to

'hire local people and services, to the extent possible' and 'strongly advise[d]' the proponent to 'consult with local residents regarding their activities in the region . . . that the results of the research be presented to the community in the community's preferred language, as well as, a written report submitted to NIRB.'⁵⁹ For the purposes of this chapter, this project was also classified as one having a potential for bio-prospecting.

In 2001, Université Laval undertook research understanding how 'microbial communities are structured, and how key microbial processes will respond to global change.'⁶⁰ NIRB encouraged 'the proponent to hire local people and services, to the extent possible' and 'strongly advise[d]' the proponent to 'consult with local residents regarding their activities in the region and that the results of the research be presented to the community in the community's preferred language.'⁶¹

Despite these general snapshots that stray from engaging access and benefit-sharing principles and consultation with traditional knowledge holders, there are two particular projects that stand apart from the rest because of their adherence to access and benefit-sharing principles. First, in 2001, a Queen's University Master's student undertook research investigating 'tundra vegetation health, diversity, and distribution as indicators of climate change' and intended to 'relate field studies and measurements to satellite images of the Lord Lindsay River watershed, Boothia Peninsula, and [to] discuss issues of tundra ecology with community members of Taloyoak.'⁶² In this project, the researcher noted that a 'combination of scientific investigations and [traditional ecological knowledge (TEK)] may be important to increase scientific efficiency, while also bridging cross-cultural boundaries,' that consent would be obtained and confidentiality given in the TEK compilation. The researcher also stated that 'it will be clearly stated in any release of TEK information that this is strictly the intellectual property of the Inuit individual(s) who shared this knowledge.'⁶³

Encouragingly, in a 2010 project, conducted by Dr. Russell Kerr of the University of Prince Edward Island, which focused on collecting 'marine sediment samples, isolate and culture microbes, and assess the microbial community of Baffin Island in the current pristine condition to provide a baseline for future comparison of potential climate change impacts,' was a partnership among NTI, the NRI and UPEI in which the partners voluntarily 'entered into a Access and Benefit Sharing arrangement with Dr. Russell Kerr.'⁶⁴

CONCLUSION

Overall, this modest study conducted of scientific research projects occurring in Nunavut for the purposes of supplementing the argument for the ratification of the *Nagoya Protocol* in Canada revealed that there are few specific examples of genetic resource research projects in Nunavut, and that some projects would not be captured within the *Nagoya Protocol's* scope. A proper legal regime respecting scientific and genetic resource research has not quite fully crystallized in Nunavut,

vis-à-vis the NLCA or its statutory regime. As I have attempted to illustrate in this chapter, the extant regime is generally an inchoate patchwork. Interestingly, while the federal and other governments in Canada continue to undertake policy research respecting ratification of the *Nagoya Protocol*, it appears that the Government of Nunavut has not.

The *Nagoya Protocol*, if ratified/implemented by Canada, could and would complement existing regimes within Nunavut via the NLCA, as it would for all jurisdictions in Canada. But implementing the Protocol could be legally problematic given the complexity of the NLCA and existing regime, and the difficulty of enforcing compliance in existing natural resource projects. The *Nagoya Protocol* would perhaps be beneficial to the Inuit of Nunavut because it would promote the obtaining of free, prior and informed consent of Inuit in respect of genetic resource research in Nunavut and ensure benefit-sharing in respect of the way the existing regime promotes access to natural resources. But it remains questionable whether there are many genetic resource benefit-sharing opportunities in the immediate short-term, given the low quantum of such projects currently being undertaken in Nunavut. It seems inevitable that as climate change and Arctic melting progress, new genetic resources research opportunities will emerge and perhaps simply make ratification of the *Nagoya Protocol* necessary in the long-term (Oguamanam & Koziol, Chapter 7).

The objective of the *Nagoya Protocol* is to provide for ‘the fair and equitable sharing of the benefits arising from the utilization of genetic resources.’⁶⁵ It seems that Canada’s ratification of the *Nagoya Protocol* would at least set the basis for the ‘fair and equitable sharing of the benefits arising from the utilization of genetic resources’ in Nunavut without threatening or diluting the regime which Nunavut has already normalized in other areas. Also, Canada’s accession to the Protocol would provide Nunavut with a definitive legal regime to protect its extant and emerging genetic resources and associated traditional knowledge, which the NRIB continues to endorse through the recommendations provided for several project proposals to ‘hire local people and to consult with local residents regarding their activities in the region.’

NOTES

- 1 Joel Berger, ‘How is rapid warming in the Arctic affecting animals adapted to cold? Scientists track muskoxen to find out’ 20 February 2017, *Salon* online: Salon www.salon.com/2017/02/20/scientist-at-work-tracking-muskoxen-in-a-warming-arctic_partner/.
- 2 Thomas Au et al., ‘The Arctic Ice Melt: Emerging Resources, Emerging Issues’ (2013) 38 *Can-US LJ* 195.
- 3 *Agreement between the Inuit of the Nunavut Settlement Area and Her Majesty the Queen in Right of Canada*, 25 May 1993, online: www.collectionscanada.gc.ca/confederation/023001-7143-e.html [NLCA].
- 4 *The Convention on Biological Diversity*, 1760 UNTS 79; 31 ILM 818 (1992) online www.cbd.int/convention/text/.

- 5 *Nunavut Land Claims Agreement Act*, SC 1993, c 29.
- 6 *Nunavut Act*, SC 1993, c 28.
- 7 See Daniel W Dylan, 'The Complicated Intersection of Politics, Administrative and Constitutional Law in Nunavut's Environmental Impacts Assessment Regime' (2017) 68 *UNBLJ* 202 at 205 [Dylan].
- 8 *Ibid.*
- 9 *Nunavut Planning and Project Assessment Act*, SC 2013, c 14, s 2 [NUPPAA].
- 10 *Ibid.*, s 2(3)(1).
- 11 See Nunavut Planning Commission, 'Approved Plans,' (August 2017), Nunavut Planning Commission (blog), NPC online, www.nunavut.ca/en/approved_plans.
- 12 See Dylan, *supra* note 7.
- 13 *NLCA*, *supra* note 5, art 12.4.4(a).
- 14 NUPPAA, *supra* note 9, s 103(3).
- 15 *Ibid.*, s 73(1).
- 16 *NLCA*, *supra* note 5, art 12.2.3; NUPPAA, *supra* note 9, s 24.
- 17 *NLCA*, *supra* note 5, art 26.2.1.
- 18 *Ibid.*, art 26.3.1.
- 19 *Ibid.*, art 26.3.3.
- 20 *Ibid.*, art 26.1.1.
- 21 *Ibid.*, art 1.
- 22 *Ibid.*
- 23 See *Canadian Environmental Assessment Act*, 2012, SC 2012, c19, s 52; *Regulations Designating Physical Activities*, SOR/2012-147.
- 24 *Scientists Act*, RSNWT 1988, c S-4.
- 25 *Wildlife Act*, SNU 2003, c 26.
- 26 See Nunavut Arctic College, online: NAC www.arcticcollege.ca/locations/item/5096-about-nunavut-research-institute.
- 27 *Scientists Act*, *supra* note 24, s 2.
- 28 *Wildlife Act*, *supra* note 25, s 117(1).
- 29 The Government of Nunavut has very little discretion to incorporate its own terms and conditions in the issuance of a license.
- 30 *Wildlife Act*, *supra* note 25, s 2.
- 31 *Ibid.*, s 8.
- 32 See *Fishery (General) Regulations*, SOR/93-53.
- 33 See Fisheries and Oceans Canada, online: www.pac.dfo-mpo.gc.ca/fm-gp/licence-permis/sci/index-eng.html.
- 34 *Nunavut Archaeological and Paleontological Sites Regulations*, SOR/2001-220.
- 35 See Union for Ethical BioTrade, *Frequently Asked Questions*, online: http://ethicalbiotrade.org/dl/benefit-sharing/ABS_FAQ.pdf.
- 36 Article 3 *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization (ABS) to the Convention on Biological Diversity*, 29 October 2010, online, www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf (I say arguable because the Nagoya Protocol 'also covers traditional knowledge associated with genetic resources within the scope of the [CBD] and to the benefits arising from its utilization.')

- 37 NUPPAA, *supra* note 9, s 202(1).
- 38 Nunavut Impact Review Board, Project Certificate, Project No 16YN010, online: NIRB Public Registry, www.nirb.ca/application?strP=r.
- 39 *Ibid.*, Project No 15YN017.
- 40 *Ibid.*
- 41 *Ibid.*, Project No 14YN040.
- 42 *Ibid.*
- 43 *Ibid.*, Project No 14YN002.
- 44 *Ibid.*
- 45 *Ibid.*, Project No 13YN018.
- 46 *Ibid.*
- 47 *Ibid.*
- 48 *Ibid.*, Project No 08YN023.
- 49 *Ibid.*
- 50 *Ibid.*
- 51 *Ibid.*, Project No 06YN045.
- 52 *Ibid.*, Project No 05YN083.
- 53 *Ibid.*
- 54 *Ibid.*
- 55 *Ibid.*, Project No 05YN042.
- 56 *Ibid.*, Project No 04YN057.
- 57 *Ibid.*
- 58 *Ibid.*, Project No 03YN087.
- 59 *Ibid.*
- 60 *Ibid.*, Project No 01YN073.
- 61 *Ibid.*
- 62 *Ibid.*, Project No 01YN013.
- 63 *Ibid.*
- 64 *Ibid.*, Project No 10YN047.
- 65 NP, *supra* note 36, art 1.

Implications of the Evolution of Canada's Three Orders of Government for ABS Implementation

Frédéric Perron-Welch and Chidi Oguamanam

Abstract

This chapter evaluates the potential for the governance of access and benefit-sharing in Canada through the lens of different layers of government: federal, provincial, territorial and Indigenous. The emphasis of the chapter is on how the nation-to-nation approach could be an effective way to integrate Indigenous peoples' claim to genetic resources (GR) and their traditional knowledge (TK) as aspects of their self-determination. A nation-to-nation approach recognizes Indigenous peoples as stakeholders in access and benefit-sharing (ABS) in ways that advance the pursuit of justice and reconciliation in Canada. With the backdrop of ongoing policy initiatives and multifaceted attempts at renewing Canadian-Indigenous relations, the chapter underscores the federal government's role in driving the charge. It will also require a commitment on the part of provincial governments, and overall political will across Canada, to draw in Indigenous peoples as genuine partners in order to fully integrate their legal traditions. Before Canada can implement the Nagoya Protocol, and any other ABS vision for that matter, all governments need to take the nation-to-nation mantra seriously and to articulate the legal status of GR and TK in Canada.

INTRODUCTION

After 150 years of Confederation, 35 years since the repatriation of the Constitution, and 20 years after the Report of the Royal Commission on Aboriginal Peoples (RCAP), the relationship between Canada's three orders of government – federal, provincial and territorial, and Indigenous – continues to evolve. This has largely occurred through the actions of the judiciary when called upon to adjudicate on the protection of existing Aboriginal and Treaty rights under Section 35 of the

Constitution Act, 1982 (Nichols, [Chapter 4](#)). Yet, it has recently become one of the main issues in the political realm as well. In the 2015 Mandate Letter for the Minister of Indigenous and Northern Affairs Canada (INAC) (now divided into the Department of Crown-Indigenous Relations and Northern Affairs, and the Department of Indigenous Services) the Prime Minister called for 'a renewed, nation-to-nation relationship with Indigenous peoples, based on recognition of rights, respect, co-operation, and partnership' (Prime Minister's Office, 2015). In 2016, the Minister announced to the United Nations (UN) that Canada is now an unqualified supporter of the UN Declaration on the Rights of Indigenous peoples (UNDRIP), affirming Canada's commitment to adopt and implement UNDRIP in accordance with the Canadian Constitution. This was followed in 2017 by a second statement at the UN Permanent Forum on Indigenous Issues retracting reservations to the 2014 Outcome Document of the World Conference on Indigenous peoples on free, prior and informed consent (FPIC) (INAC, 2017). On 22 February 2017, the Prime Minister announced the creation of a Working Group of Ministers responsible for the review of relevant federal laws, policies and operational practices to ensure that the Crown is meeting its constitutional obligations with respect to Aboriginal and treaty rights; adhering to international human rights standards, including UNDRIP; and supporting the implementation of the Calls to Action of the Truth and Reconciliation Commission (TRC) (Prime Minister's Office, 2017).

Yet, despite these statements and the celebratory atmosphere surrounding the 150th anniversary of Confederation, Indigenous leaders and intellectuals provide a different narrative of the past 150 years. Perry Bellegarde, the national chief of the Assembly of First Nations (AFN), reminded Canadians that treaties were based on the premise that 'peaceful coexistence and mutual respect would and should guide our relationship forward.' First Nations conceive of the treaty-making process as 'a meeting of two equals, who both negotiate within their own legal systems and traditions. The treaty was not meant to extinguish First Nation rights, but to recognize that First Nations' ways of life, including our legal systems and ways of governance, were protected' (Bellegarde, 2017). Professor John Borrows recounts: 'For us, the history of Canada is one of dispossession, disruption, and coercion. First Peoples have suffered greatly since Confederation, and it is worth asking whether the same will be true of the next 150 years. The [TRC] raises the promise of a new beginning, but what kind of beginning will that be? What would Canada look like if it truly respected Indigenous peoples?' (Borrows, 2017). In Roberta Jamieson's lecture at Ryerson University, 'Canada's Original Promise: Still Waiting to be Realized,' broadcast on CBC Ideas on 30 June 2017, she asserted that 'until Canada decides to be a country in which Indigenous peoples are able to thrive ... in sustainable communities ... the current challenges we've come to associate with Indigenous peoples will not only continue, they will grow, they will complicate, and they will become much more difficult and costly to address' (Jamieson, 2017).

In mid-2017, the Department of Justice (DOJ) released ten principles governing Canada's relationship with Indigenous peoples. Principle 1 states that relations must be based on the recognition and implementation of the right to self-determination, including the inherent right of self-government. Principle 2 notes reconciliation is a fundamental purpose of s. 35 of the Constitution. Principle 3 indicates the honour of the Crown guides the conduct of the Crown in all of its dealings with Indigenous peoples. Principle 4 recognizes that Indigenous self-government is part of Canada's evolving system of cooperative federalism and distinct orders of government. Principle 5 states that treaties, agreements and other constructive arrangements between Indigenous peoples and the Crown have been and are intended to be acts of reconciliation based on mutual recognition and respect. Principle 6 elaborates that meaningful engagement with Indigenous peoples aims to secure FPIC when Canada proposes to take actions which impact them and their rights on their lands, territories and resources. Principle 7 asserts that respecting and implementing rights is essential, and any infringement of s. 35 rights must meet a high legal threshold of justification which includes Indigenous perspectives and satisfies the Crown's fiduciary obligations. Principle 8 acknowledges that reconciliation and self-government require a renewed fiscal relationship, developed in collaboration with Indigenous nations, which promotes a mutually supportive climate for economic partnership and resource development. Principle 9 recognizes that reconciliation is an ongoing process that occurs in the context of evolving Indigenous-Crown relationships. Principle 10 concludes by recognizing that a distinctions-based approach is needed to ensure that the unique rights, interests and circumstances of the First Nations, the Métis Nation and Inuit are acknowledged, affirmed, and implemented (Department of Justice, 2017).

The Minister of Justice wrote an editorial indicating that 'the principles establish a clear, transparent foundation for reconciliation based on recognition – something Indigenous leadership have been asking successive governments to do for decades and has been recommended in numerous reports and studies. We took this step so that the future, unlike the past, can be written together. The principles bring a new direction and standard to how government officials must work and act in partnership with Indigenous peoples to respect Indigenous rights and to implement [UNDRIP]' (Wilson-Raybould, 2017). However, it has been observed that they unilaterally modify the language of the UNDRIP relating to FPIC, setting a lower standard by altering text from 'in order to obtain their [FPIC]' to 'with the aim of securing their [FPIC]' (Newman, 2017).

As the Government of Canada moves decisively beyond the status quo, it will be important to openly address imbalances pertaining to ownership of biodiversity, genetic resources (GR) and traditional knowledge (TK). Prior to colonization, North America was not *terra nullius*, it was an actively managed environment in which ecological conditions were shaped by Indigenous management of land and resources according to norms established through Indigenous legal traditions and

worldviews that helped shape the complex ecosystems and biodiversity. The colonial imposition of foreign laws permitted the exploitation of the wealth of the land without regard to the inherent title and authority of these nations (Clogg et al., 2016; *Tsilhqot'in Nation v British Columbia*, 2014). To date, the Government's response to the development and adoption of global norms on access and benefit-sharing (ABS) has built on this colonial mentality, alienating its Indigenous peoples and failing to account for the significance of their knowledge systems (Oguamanam, 2011; Dagne, 2017).

A new approach to ABS under the Convention on Biological Diversity (CBD) could help build confidence, as fair and equitable ABS requires structural changes in relations between the three different orders of government based on establishing a fair and honourable relationship between Indigenous and non-Indigenous peoples in Canada. For many Indigenous peoples, their relationship with biodiversity is a fundamental reality of their lived experience and is a site for the exploration of community knowledge and innovation systems and practical translations of the community's worldview and cultural expressions (Oguamanam, 2011). Political and legal space has opened up for the recognition and exercise of Indigenous governance and environmental management rights (Clogg et al., 2016).

THE CONVENTION ON BIOLOGICAL DIVERSITY AND NAGOYA PROTOCOL

The CBD opened for signature at the Earth Summit in Rio de Janeiro in June 1992 and entered into force in December 1993. It addresses environmental, social and economic aspects of biodiversity. Its objectives are the conservation of biodiversity, the sustainable use of its components, and the fair and equitable sharing of the benefits arising out of the utilization of GR. Despite recognizing biodiversity as a common concern of humankind, the CBD situates these objectives in the context of the sovereign right of States to exploit their own resources pursuant to their own environmental policies, while being responsible for conserving their biodiversity and using their biological resources in a sustainable manner. This places much responsibility for biodiversity conservation in the hands of States, which have differing views on the ownership of biological resources and the role of the State in their regulation. The exercise of property rights is central to the reach and effectiveness of implementing measures, but the CBD does not dictate how States should exercise that control in relation to biodiversity, GR, or TK. It leaves considerable space for States to construct different approaches to implementation (Ferreira de Souza Dias and Garforth, 2017; Willmore, 2017; Burelli, Chapter 13).

In Article 8(j), the CBD makes provision relating to the traditional knowledge, innovations and practices (TKIP) of Indigenous peoples and local communities relevant to *in situ* conservation. It requires Parties to, as far as possible and as appropriate, and subject to national legislation, 'respect, preserve and maintain

knowledge, innovations and practices of indigenous and local communities (ILC) embodying traditional lifestyles relevant for the conservation and sustainable use of [biodiversity] and promote their wider application with the approval and involvement of the holders of [TKIP] and encourage the equitable sharing of the benefits arising from the utilization of [TKIP].’ Article 10(c) further provides for sustainable use, requiring Parties to, as far as possible and appropriate, ‘protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements.’ Article 15 lays the foundation for ABS by providing some direction for implementing fair and equitable access to GR and the sharing of benefits resulting from their use (Oguamanam, 2011; Greiber et al., 2012).

The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (NP) entered into force in 2014. It has 111 ratifications as the date of writing, and it is becoming a global standard. It aims to facilitate the implementation of ABS by providing a strong basis for greater legal certainty and transparency in arrangements for access to GR, in exchange for benefit-sharing derived from their use. Unlike most environmental treaties, the NP has a number of provisions that are directly relevant to Indigenous peoples. The most important are found in Articles 5, 6, 7 and 12. Article 6(2) requires Parties to take measures, in accordance with domestic law, and as appropriate, with the aim of ensuring that the prior informed consent (PIC) or approval and involvement of ILCs is obtained for access to GR where they have the established right to grant access. Article 7 requires Parties to take measures in accordance with domestic law and as appropriate, with the aim of ensuring that TK associated with GR that is held by ILCs is accessed with their PIC or approval and involvement, and that mutually agreed terms (MAT) have been established. Article 5(2) obliges Parties to take legislative, administrative or policy measures, as appropriate, with the aim of ensuring that benefits arising from the utilization of GR that are held by ILCs, in accordance with domestic legislation regarding the established rights of these ILCs over these GR, are shared in a fair and equitable way, based on MAT. Article 5(5) requires Parties to take legislative, administrative or policy measures, as appropriate, so that the benefits arising from the utilization of TK associated with GR are shared in a fair and equitable way with ILCs based on MAT. Lastly, Article 12 directs Parties to take the customary laws, community protocols and procedures of ILC into consideration in the ABS process.

Clearly, there are significant implications for Indigenous peoples in the adoption of a domestic ABS regime in Canada. Given the expanded scope of the NP and the significant developments in Aboriginal rights jurisprudence over the past decade, existing policies and prior consultations on ABS have lost much of their relevance. Earlier discussions largely focused on the roles of the federal, provincial and territorial governments. Given the content of the NP, the importance of Aboriginal

rights and role of Aboriginal self-government must be considered on the path forward to Canada's ratification and implementation of the NP or the adoption of any other ABS regime. The ongoing consideration of ABS measures in Canada under the CBD, and possible ratification of the NP, affirm the pressing need to reconstitute and support Indigenous legal and organizational structures to effectively participate in ABS as a matter of capacity building and capacity development (Oguamanam & Hunka, Chapter 3).

The federal, provincial and territorial governments designed a Canadian Biodiversity Strategy and Outcomes Framework with goals and targets in 2016. The aspirational goals and targets recognize that CBD implementation will rely on meaningful, full and effective participation of Aboriginal peoples, and that the TKIP of Aboriginal communities are relevant for implementing the goals and targets, as is protecting and encouraging customary use of biological resources. In the context of Goal B on direct and indirect pressures on biodiversity/sustainable production and consumption, Target 12 is that 'By 2020, customary use of Aboriginal peoples of biological resources is maintained, compatible with their conservation and sustainable use.' In the context of Goal C on information about biodiversity and ecosystem services, Target 15 is that 'By 2020, Aboriginal [TK] is promoted and, where made available by Aboriginal peoples, regularly, meaningfully and effectively informing biodiversity conservation and management decision-making' (Environment and Climate Change Canada, 2016). Yet, no targets are set on ABS, protection of TK associated with GR, or the ratification of the NP. Similarly, the 2016 initiative of the federal government to review Canada's environment assessment and regulatory processes¹ is silent on integration of ABS considerations into environmental impact assessments (EIA) (Oguamanam, Koziol, Lesperance & Morales, 2017).

CANADA'S CONSTITUTIONAL FRAMEWORK:
CONSTITUTION ACT, 1867 AND CONSTITUTION ACT, 1982

Under Section 91(24) of the *Constitution Act, 1867* (formerly BNA), Parliament has exclusive authority to make laws in relation to "Indians, and lands reserved for the Indians" (Wilkins, 2013). This authority comprises the power to deal with matters unique to and characteristic of Canada's First Nations, non-status Indians, the Métis and the Inuit, as such (Wilkins, 2013). The *Indian Act* was adopted under this head of power, but with Section 35(1) of the *Constitution Act, 1982* as a guide, it is open to more democratic interpretations that do not justify domination (Borrows, 2016). In *Campbell v. British Columbia*, 2000 BCSC 1123, at para 81 Williamson J found that '[A]boriginal rights, and in particular a right to self-government akin to a legislative power to make laws, survived as one of the unwritten 'underlying values' of the Constitution outside of the powers distributed to Parliament and the legislatures in 1867. The federal-provincial division of powers in 1867 was aimed at a different issue

and was a division internal to the Crown' (*Campbell v. BC*, 2000). For the RCAP, cited with approval by Binnie J at paras 129–130 in his concurring opinion in *Mitchell v. Minister of National Revenue*, 2001 SCC 33, '[Aboriginal] governments are sovereign within their respective spheres and hold their powers by virtue of their constitutional status rather than by delegation. Nevertheless, many of their powers are shared in practice and may be exercised by more than one order of government' (RCAP, 1996, 240–1; *Mitchell v. MNR*, 2001).

Section 35 of the *Constitution Act*, 1982 recognizes and affirms existing Aboriginal rights and rights preserved or conferred in treaties between the Crown and Indigenous peoples or communities, including land claims agreements (Wilkins, 2013; *Daniels v. Canada*, 2016). The word 'existing' indicates that these are only those that were not extinguished prior to the adoption of the *Constitution Act*, 1982. These rights do not depend on formal legal recognition by Canada for their existence (Nichols, Chapter 4). In the majority opinion in *R v. Adams*, [1996] 3 SCR 101, at para 33 Lamer C.J.C. noted that 'Section 35(1) would fail to achieve its noble purpose . . . if it only protected those rights which were fortunate enough to have received the legal approval of British and French colonizers' (*R v. Adams*, 1996). In *R v. Van der Peet*, [1996] 2 SCR 507, at para 31 Lamer CJ further indicated that s. 35 provides 'the constitutional framework through which the fact that Aboriginals lived on the land in distinctive societies, with their own practices, traditions and cultures, is acknowledged and reconciled with the sovereignty of the Crown. The substantive rights which fall within the provision must be defined in light of this purpose . . . the reconciliation of the pre-existence of Aboriginal societies with the sovereignty of the Crown' (*R v. Van der Peet*, 1996). As Binnie J held at para 1 in *Mikisew Cree First Nation v. Canada (Minister of Canadian Heritage)*, 2005 SCC 69, the fundamental objective of the modern law of Aboriginal and treaty rights is the reconciliation of Aboriginal peoples and non-Aboriginal peoples and their respective claims, interests and ambitions (*Mikisew Cree Nation v. Canada*, 2005). The phrase 'existing Aboriginal rights' must thus be interpreted flexibly so as to permit their evolution over time (Wilkins, 2013).

Furthermore, the burden of proving that a treaty or Aboriginal right has been extinguished lies upon the Crown or on the party alleging extinguishment (Wilkins, 2013), while rights claimants, where necessary, may seek the affirmation of the rights via a declaratory order (Nichols, Chapter 4). These rights do not only pertain to titled lands. In the concurring opinion of L'Heureux-Dubé J in *R v. Adams*, at paras 64–65 she notes that '[t]he doctrine of aboriginal rights . . . covers all aboriginal interests arising out of the native peoples' historic occupation and use of ancestral lands. Aboriginal rights can be incidental to title but need not be: they are severable from and can exist independently of aboriginal title' (*R v. Adams*, 1996). But, as Joshua Nichols (Chapter 4) observes, the pathway to realizing this interpretation has proven burdensome for Aboriginal peoples.

ROYAL COMMISSION ON ABORIGINAL PEOPLES (RCAP)

The RCAP found that, apart from s. 35, international legal norms impose positive obligations on governments to recognize and protect the rights of Aboriginal peoples with respect to lands and resources and self-governance. Under this approach, the right to self-government is not merely grounded in s. 35, but also in the emerging rights under international law of self-determination and of the cultural and political autonomy of Indigenous peoples. Parliament and the legislatures could take significant guidance from RCAP and see Indigenous peoples as nations that have a right to pursue objectives that may differ (Borrows, 2001). The RCAP recognized that the principle of sharing is central to the treaties signed between the Crown and Aboriginal peoples, and is central to establishing real equality among the peoples of Canada in the future. In *Mitchell v. MNR*, Binnie J confirms at para 129 that the RCAP recommendations regarding self-government and shared sovereignty are gaining acceptance with time. In a concurring judgment, he reflected on the nature of Aboriginal sovereignty, remarking that:

The modern embodiment of the “two-row” wampum concept, modified to reflect some of the realities of a modern state, is the idea of a “merged” or “shared” sovereignty”, recognizing that First Nations were not wholly subordinated to non-aboriginal sovereignty but over time became merger partners . . . If the principle of merged sovereignty is to have any true meaning, it must include at least the idea that aboriginal and non-aboriginal Canadians together form a sovereign entity with a measure of common purpose and united effort. It is this new entity, as inheritor of the historical attributes of sovereignty, with which existing aboriginal and treaty rights must be reconciled.

THE TRUTH AND RECONCILIATION COMMISSION

In order to redress the legacy of residential schools and advance the process of Canadian reconciliation, the TRC issued 94 Calls to Action. Five are of particular relevance to the issue of ABS. First, in Recommendation 43, the TRC calls on upon federal, provincial, territorial, and municipal governments to fully adopt and implement the UNDRIP as the framework for reconciliation (Truth and Reconciliation Commission of Canada, 2015). The TRC then calls upon the Government of Canada to develop a national action plan, strategies, and other concrete measures to achieve the goals of the UNDRIP in Recommendation 44 (Ibid.). In Recommendation 45, the TRC calls for a renewal of the relationship between the Government of Canada and Aboriginal peoples, on behalf of all Canadians, by jointly developing a Royal Proclamation of Reconciliation, issued by the Crown, to build on the Royal Proclamation of 1763 and the Treaty of Niagara of 1764 and reaffirm the nation-to-nation relationship. The content would include, but not be limited to, four

commitments: '(i) Repudiate concepts used to justify European sovereignty over indigenous lands and peoples such as the Doctrine of Discovery and *terra nullius*; (ii) Adopt and implement UNDRIP as the framework for reconciliation; (iii) Renew or establish Treaty relationships based on principles of mutual recognition, mutual respect, and shared responsibility for maintaining those relationships into the future and (iv) Reconcile Aboriginal and Crown constitutional and legal orders to ensure that Aboriginal peoples are full partners in Confederation, including the recognition and integration of Indigenous laws and legal traditions in negotiation and implementation processes involving Treaties, land claims, and other constructive agreements' (Ibid.). Challenging the basis of the sovereignty of the Canadian State over Indigenous lands and resources, Recommendation 47 calls upon 'federal, provincial, territorial, and municipal governments to repudiate concepts used to justify European sovereignty over Indigenous peoples and lands, such as the Doctrine of Discovery and *terra nullius*, and to reform those laws, government policies, and litigation strategies that continue to rely on such concepts' (Ibid.). Engaging the private sector directly, Recommendation 92 calls upon 'the corporate sector in Canada to adopt the UNDRIP as a reconciliation framework and to apply its principles, norms, and standards to corporate policy and core operational activities involving Indigenous peoples and their lands and resources' (Ibid.).

A NATION-TO-NATION ROADMAP FOR INDIGENOUS PEOPLES' INTERESTS IN ABS

Some Indigenous participants in the ABS Canada-organized focus groups queried the basis for prioritization of ABS amidst significant socio-economic challenges that bedevil Indigenous peoples in Canada (Oguamanam, [Chapter 1](#)). Other participants were quick to counter that the need for ABS over GR and associated TK is an integral component of Indigenous peoples' holistic and historic struggle for equity, fairness and justice. There is a consensus that the current momentum for ABS is opportune, to the extent that it opens a critical new opportunity for strategic policy making that would address the problematic federating order in Canada that pays lip service to Indigenous nations through a nation-to-nation relationship.

In the current constitutional order, the provinces and territories have the lion's share of jurisdiction over natural resources, while the federal government has near exclusive jurisdiction over Aboriginal peoples. Historically, this federating order was rooted in colonial visions of Eurocentric capture, subjugation, and assimilation of Aboriginal peoples and their worldviews, as eloquently recalled in the TRC Report. Even though attempts by Aboriginal peoples to assert their 'existing rights' and 'treaty rights' have received significant judicial sanction, there is a glaring failure to translate those rights in a manner that enables the nation-to-nation relationship between Indigenous peoples and Canada in a fashion that fully recognizes

Indigenous political and legal traditions as a component federating order of government in Canada. That form of recognition, and its operationalization, is key to further empowering of the Indigenous epistemic order, jurisprudence, worldviews and, ultimately, Indigenous peoples as stakeholders in the management of their natural resources, specifically, in this case, GR and associated TK.

The coalescence of various developments within Canada and internationally clears the pathway towards Indigenous peoples' right to self-determination, which is a foundational basis for a nation-to-nation relationship. It also provides the impetus for Indigenous peoples to exercise other kinds of rights, including the right to GR and associated TK. Firstly; we have mentioned the progressive Canadian jurisprudence on s. 35 of the Charter and ensuing case law. The second development is the new architecture of international law on Indigenous peoples, Indigenous rights, including their rights to TK, pursuant to a number of international legal initiatives and regimes including the ILO Convention 169 of 1989 (a precursor to UNDRIP), the WIPO Development Agenda, the UNESCO cultural heritage regime, the FAO *International Treaty on Plant Genetic Resources for Food and Agriculture* (IT), and the CBD and its NP (which are key drivers of ABS). These provide a strong basis for active participation of Indigenous peoples in decision-making, while recognizing Indigenous peoples' rights to their natural resources and cultural heritage.

Third, and deserving of separate mention, is the UNDRIP – which has been buttressed by the *American Declaration on the Rights of Indigenous peoples* of the Organization of American States (OAS). Fourth is the TRC Report, which was instrumental to the fifth factor, namely, Canada's endorsement of UNDRIP after a decade of opposition. Sixth is Canada's acceptance of the necessity for FPIC. Seventh is the Canadian Biodiversity Strategy, its goals and targets. Eighth are the various recent and ongoing policy initiatives in Canada that have made reconciliation with Indigenous peoples official government policy, and the resultant programs of work and statements of principles and policies. In that regard, for example, we have mentioned the Federal government's ten principles of engagement with Indigenous peoples and the Ministers' Working Group that are putting into effect Canada's commitment to Aboriginal treaty rights and other international obligations relating to Indigenous peoples. Ninth are the progressive developments in the research ethics landscape in Canada and internationally in which Indigenous peoples' attention and active participation in research concerning them and their interest in data sovereignty is affirmed (Oguamanam, [Chapter 11](#); Burelli, [Chapter 13](#)). Tenth, the UN Committee on the Elimination of Racial Discrimination is ramping up pressure on Canada to live up to its many commitments to Indigenous peoples and notably on the need for the adoption of a legislative framework to implement the International Convention on Elimination of Racial Discrimination (CERD) (CERD, 2017).

Appraising the real and potential impacts of the outlined initiatives at implementation levels from the perspective of enhancing Indigenous peoples' nation-to-nation relationship with federal and provincial and territorial governments is necessary. Such an outlook requires departing from the colonial approach that considers Indigenous peoples as occupiers as opposed to owners of their lands and natural resources. As well, the new thinking should reflect a further and deliberate shift from the colonial mindset in which Indigenous worldviews and epistemic orientations are regarded as outside the fringes of 'civilization' (Oguamanam, 2008). These and similar colonial predispositions have been the foundation of cultural genocide via assimilation and other destructive tactics as symbolized in the legacy and tragedy of the Canadian residential school system. Rather, stronger autonomy for Indigenous peoples as an aspect of self-determination and self-government is required to propel the integration of their legal systems and traditions and worldviews in matters relating to their natural resources, including GR and associated TK.

ABS BEYOND AN ECONOMIC FOCUS

One of the important issues that a nation-to-nation framework for the participation of Indigenous peoples in the control and governance of GR would unravel is the economic focus of ABS in the NP, which is the extension of the market economic orientation of the CBD. As mentioned earlier, global norms on ABS reflect aspects of the colonial legacy of fixation on the economic value of raw materials, with the risk of alienating Indigenous peoples who are historically perceived as mere suppliers of natural resources with no credible sense of innovation or knowledge systems (Oguamanam, 2008, 2011). It bears recalling that ABS is essentially an economic incentivizing policy aimed at encouraging the use and protection of traditional knowledge innovation and practices that are conservation friendly, and that there is neither a direct reference to TK nor to Indigenous peoples or to local communities in Article 1 of the Protocol which articulates its core objective.

Strong Indigenous participation on nation-to-nation basis would equally place on the same, if not an even higher pedestal, several culturally significant considerations touching on a wide range of factors in which Indigenous peoples' relationship with the land, various natural resources, their knowledge systems, ecological worldviews, etc. constitute a universe of factors for self-determination beyond the economic purview of ABS. In a nation-to-nation relationship, Indigenous people are better able to elaborate alternative and complementary epistemic valorizations of their complex relationship with natural resources, including GR and TK, which was part of the target of colonial suppression. Therefore, as mentioned by Bannister (Chapter 12) and Burelli (Chapter 13) in this volume, the NP provides an option or framework, albeit a limited one, amidst other possibilities, for Indigenous peoples to pursue justice and equity, which constitutes the fulcrum of reconciliation.

ADVANCING ABORIGINAL SELF-DETERMINATION THROUGH ABS

To its credit, the NP represents an important step forward for the concrete integration of IPLCs as practical stakeholders in the control and governance of GR in ways that open doors for further exploration or realization of Aboriginal rights to self-governance and self-determination. From Article 8(j) of the parent Convention, the CBD, down to the preamble of the NP² and its substantive provisions, including but not limited to Articles 5, 6, 7, 11, 12, 16 and 21, the Protocol makes references to ILCs and diverse categories of rights in relation to: GR and associated TK; FPIC; involvement in decision-making; etc. The NP also recognizes the transboundary nature of both GR and TK, a fact that indirectly recognizes natural or internal differentiation among nations of Indigenous peoples, as well as the arbitrary colonial balkanization of historically unified and cohesive Indigenous peoples across colonial boundaries.

Perhaps most significantly, in Article 12, the NP strongly mandates Parties³ to take into consideration customary laws, community protocols and procedures applicable to TK and associated GR when implementing related obligations. Furthermore, Protocol Parties are required to support the development of community protocols, involve ILCs, including women, and to support the development of model contractual templates on ABS. As mentioned by Oguamanam (Chapter 11) flexible use of contractual instruments such as proposed by the Geomatic and Cartographic Research Centre (GCRC) research group pursuant to the open licensing scheme for TK enables Indigenous peoples to specify and negotiate their expectations and other sensitivities with users of their GR and associated TK in ways that reflect Indigenous cultural values. The association or juxtaposition of Parties' domestic laws with the customary laws, community protocols and procedures of ILC is instructive of the expected role of Aboriginal self-determination and self-government within an Aboriginal empowered and recognized order of government for equitable ABS and other issues that touch on Aboriginal justice in the Canadian federation. Aboriginal participants in the ABS Canada focus groups insist that that negotiation of Canadian federation has yet to crystallize as it remains a work in progress for as long as the 73 Aboriginal nations have yet to assume their rightful place in Canada on nation-to-nation basis as envisaged by their Aboriginal forbearers during the colonial encounter (ABS Canada Focus Group, 2015).

As we have demonstrated, so far, there is no dearth of vision or policy statements and proclaimed pathways in Canada for recognition of Aboriginal nation-to-nation relationship. A broad political space has been opened up, or so it appears, for Indigenous exercise of self-governance in environmental and kindred matters which are the sites for entrenching and understanding Indigenous peoples' ways of life, the preservation of which is at the core of nation-to-nation relationship as symbolized in the treaties. The federal government through the Department of Justice is now unequivocal about the legitimacy of Indigenous peoples' right to self-determination,

their inherent right to self-government, and the importance of partnership in resource development. Recently these initiatives encompass renewed activism in extractive industries and other new frontiers of opportunities made possible by climate change (Dylan, [Chapter 5](#); Oguamanam & Koziol, [Chapter 7](#)).

Collectively, these progressive dispositions are an exercise in self-interest and self-preservation on the part of Canada. As mentioned earlier in the chapter, pre-colonial North America's environmental profile was enviable. It reflected historically sustainable ecological conditions and robust biodiversity thanks to millennia of Indigenous and ecological legal traditions and knowledge systems. Today, amidst global biodiversity loss and overall environmental crisis and climate change, the federal, provincial and territorial, and municipal governments have stated their resolve to promote and support TK and Aboriginal customary use of biological resources as part of Canada's Biodiversity Strategy. An important cultural practice or principle that animates Aboriginal peoples' relationship with the environment and nature's abundant resources, which also underlies the treaties, is the principle of sharing. The RCAP is unmistakable on the centrality of the principle of sharing in treaty-making and in the future of organizing relationships in Canada. In essence, sharing and exchange of insights in various ways including natural resources, lands, knowledge, technology and worldviews are recognized as the basis for equity among the component peoples of Canada (Larry Chartrand et al., [Chapter 8](#)). ABS represents a very important context for giving that vision a practical effect.

OVERCOMING THE TRUST DEFICIT AND PUSHING THE SELF-GOVERNMENT ENVELOPE

Most Indigenous peoples, including those who participated in the ABS Canada focus groups, have taken a welcome but suspicious notice of these progressive statements, especially on the part of the federal government. The deficit of trust in the troubled historical relationship continues to drive palpable but justifiable skepticism. The Final Report of the TRC captures the sentiments in this way:

Many Aboriginal people have a deep and abiding distrust of Canada's political and legal systems because of the damage they have caused. They often see Canada's legal system as being an arm of a Canadian governing structure that has been diametrically opposed to their interests . . . This is the case despite the recognition that courts have begun to show that justice has historically been denied and that such denial should not continue. Given these circumstances, it should come as no surprise that formal Canadian law and Canada's legal institutions are still viewed with suspicion within many Aboriginal communities.

(TRC Report, 2015, 202)

Not many would disagree that the cumulative weight or potential of these reforms to retract, retrace, reverse and recompense for centuries of 'cultural genocide,' as the

TRC calls it, that resulted from the acts and omissions of colonial Canada would be the measure of their success. Areas of redress, and anticipated impact, include the historical prohibition of cultural practices, especially native languages, protocols and rituals. Others are forced relocations that have resulted in loss of TK related to land, plants, foods and medicines, animals and the management of GR and other life forms. In that list, we must highlight the *Indian Act* system which ruptured First Nations socio-political relations and aimed to forcibly absorb individual nation members within broader Canadian society by narrowly defining and heavily regulating Indigenous peoples' citizenship, land rights, succession rules, political organization, economic opportunities, fiscal management, educational patterns and attainment, and subjecting Indigenous peoples to provincial legislation and regulation without their consent (Borrows, 2016). First Nations were separated from their ancestral lands and controlled under a reserve regime that resulted in racial discrimination, a low quality of life, the loss of cultural heritage, the disruption of social associations and family ties, and a racialized educational system typified by residential schools. These policies have done immense damage to the sustainability and vibrancy of Indigenous worldviews, ways of life and robust curation of GR and associated TK.

Without necessarily depending on the government, many Indigenous peoples recognize that they must be proactively involved in the changes they seek (Jamieson, 2017; Burelli, Chapter 13). For example, in what Professor Kirsten Anker described as 'pushing the self-government envelope,' in 2016 the Mohawk Band Council of Akwesasne, which lies within the borders of the two Canadian Provinces of Quebec and Ontario and New York State in the United States, launched the first Indigenous legal system in Canada outside of the *Indian Act*. With all the accoutrements of prosecution, advocacy and adjudication, but rooted in Mohawk values and principles, the new community-initiated court system is an admixture of Canadian judicial system and the Mohawk traditional scheme of justice designed to administer 32 laws on civil causes ranging from sanitation, property, tobacco regulations and elections, to the conservation of wildlife (Valiante, 2016). While other Indigenous peoples are inspired by the Akwesasne initiative, it is hoped that as the federal government reviews the program it will find it to be consistent with all the recent proclamations and policies on Indigenous peoples' rights to self-determination and self-government within the framework of reconciliation and nation-to-nation relations. The TRC Report supports this with its call for a revitalization of Indigenous law and legal traditions as an element of reconciliation (Anker, 2016).

In addition to the practical recognition of Aboriginal legal thoughts and legal systems into Canadian jurisprudence, another aspect of the anticipated cumulative effect of the progressive policies and proclamations on Aboriginal relations is reflected in Aboriginal unity of purpose in insisting that, in view of the residential school legacy, culturally sensitive and restorative education is important for both Indigenous peoples and other Canadians. In multiple ordinary and not so ordinary

encounters, the degree of ignorance of other Canadians regarding Aboriginal history and experience with colonial Canada is simply astonishing. With such a great degree of national ignorance, the TRC's observation that 'New policies can easily be based on a lack of understanding of Aboriginal people, similar to that which motivated the [residential] schools' is instructive (TRC Report, 2015 at 137).

In sum, political and legal empowerment of Indigenous self-determination through self-government in furtherance of a nation-to-nation relationship within the Canadian federation is necessary for Indigenous peoples to effectively participate in initiating and implementing this litany of changes and realizing the enumerated expectations. Beyond recent policy statements and proclamations, all tiers of government need to push for more legal and political action in the direction of self-determination. We recall yet again Jamieson's remark that Aboriginal peoples should take charge and act and not wait for the government to fail in its promises again and then complain in a historically cyclic fashion. In that vision, ABS – like all other things concerning the interests of Indigenous peoples – would be fully expressed and integrated into the holistic framework of Indigenous peoples' historic struggle for fairness, equity and justice.

PROVINCIAL GOVERNMENTS: CRUCIAL BUT UNFELT PARTNERS

Perhaps the most troubling dimension of the expected nation-to-nation Aboriginal engagement is the not-so-proactive involvement of provincial and territorial governments in comparison to federal government's visibility on the Aboriginal and, by vicarious and potential extension, the ABS file. While the federal government's initiative has an inspirational significance on all other tiers of government, it is important to note that the bulk of its jurisdictional leverage on Aboriginal matters is political and is radically constrained by the *Indian Act*. In relation to control and ownership of natural resources, the provinces and territories wield stronger jurisdictional influence due to s. 92A of the *Constitution Act, 1867* and thus constitute the strongest site for heavy lifting on an Aboriginal-sensitive ABS policy.

Until the provinces come on board, the evolution of ABS policy across Canada's three orders of government in a way that concretely recognizes Indigenous peoples as actors on a nation-to-nation basis will remain a mirage. Moreover, as a dualist state, the federal government will require unequivocal buy-in by provincial and territorial governments to breathe life to the UNDRIP and other relevant international instruments, including the NP, that promote integral elements or aspects of Indigenous self-determination to varying degrees. Since some of these agreements involve GR and, of course, other natural resources, provincial and territorial governments have significant stakes which are not highlighted in recent policy statements and proclamations.

On an adjacent note, even the federal government's leadership in opening up the legal and policy space for Indigenous self-determination does not seem to go far

enough into critical areas of its jurisdictional leverage. For example, it has yet to identify the gaps or gulf between Canada's colonial intellectual property (IP) regime, which is largely under federal jurisdiction pursuant to s. 91 of the Constitution (de Beer, 2011; Paterson, 2017), and Indigenous TK. As in many colonial states, under Canada's IP laws, there is little or no recognition for TK. The latter, as we have seen, is a serious aspect of the NP and many international instruments crucial to ABS and Indigenous self-determination, not least of which is the UNDRIP. ABS presents a clear opportunity to respond to the clarion calls for recalibration of the philosophy and architecture of Canada's IP system to accommodate Aboriginal creativity and knowledge production (Dagne, 2017; Oguamanam, 2017).

CONCLUSION

Many challenges exist for multi-level governance of ABS in Canada. These include a profound lack of trust on the part of Indigenous peoples (TRC Report, 2015); the *Indian Act*, which was designed to reconstitute Indigenous governance in subordination to others and usurps Indigenous authority and responsibility to deal with their own problems in an effective way (Borrows, 2016); continued reliance on the Doctrine of Discovery to support Crown sovereignty and perpetuate the current colonial order (Gunn, 2007; Hoehn, 2016; Nichols, Chapter 4); the lack of provincial and territorial engagement with Indigenous peoples on a nation-to-nation basis, including FPIC for natural resource use; and lack of legal clarity on the status of GR and TK. TRC Recommendation 47 speaks directly to many of these issues, calling upon federal, provincial, territorial and municipal governments to repudiate concepts used to justify European sovereignty over Indigenous peoples and lands, and to reform the laws, government policies and litigation strategies that rely on such concepts.

The federal government enunciated principles provide a constructive starting point for dialogue with the Indigenous peoples on an ABS framework for Canada. As argued in this chapter, a just ABS arrangement must be based on the recognition and implementation of the right to self-determination and inherent right of self-government, as well as recognizing self-government as part of cooperative federalism and distinct orders of government. Reconciliation must be at the heart of any such dialogue, as a fundamental purpose of s. 35, the basis for treaties, agreements and other constructive arrangements, and as an ongoing process in the context of evolving Indigenous-Crown relationships, based on the honour of the Crown. Respecting and implementing s. 35 rights requires meeting a high legal threshold for infringement, ensuring FPIC for actions that impact rights over lands, territories and resources, and recognizing distinctions to ensure that the unique rights, interests and circumstances of the First Nations, Métis and Inuit are acknowledged, affirmed and implemented. With adequate consultation, ABS can help create the renewed fiscal relationship needed to promote a mutually supportive climate for

economic partnership and resource development. Developing Aboriginal-sensitive ABS in Canada will be an arduous and lengthy task, but it can help set an important precedent that moves Canada concretely past its colonial legacy and advance the high demands required of reconciliation and a true nation-to-nation relationship with its Indigenous peoples.

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NOTES

- 1 The Liberal Government of Justin Trudeau embarked on a review of environmental assessment and regulatory process in response to the perceived impression that over 10 years of extremely business-friendly Conservative Government liberalized the process at the expense of striking a required balance across competing interests.
- 2 Preamble, at paras 22–25.
- 3 The Language of the Protocol is 'Parties shall.'

Biopiracy Flashpoints and Increasing Tensions over ABS in Canada

Chidi Oguamanam and Christopher Koziol

Abstract

This chapter uses selected Canadian case studies to explore the use and exploitation of genetic resources and associated Indigenous or traditional knowledge in Canada; first, to demonstrate that biopiracy is a felt and increasing reality in Canada, and second, to interrogate the potentials and pitfalls of existing Canadian access and benefit-sharing (ABS) policy, especially with regard to its failure to incorporate Indigenous peoples. It argues that a combination of progressive research and entrepreneurship on the one hand, and the opening up of Canada's Arctic region and its bounty of marine genetic resources on the other, will only produce new tensions over ABS. This wealth of genetic resources, the policy imperative of reconciliation with Canada's Indigenous peoples, and the urgent need to sustain biodiversity and combat climate change will heighten existing tensions between Indigenous peoples and local communities and other potential ABS stakeholders in the Canadian context. Canada's position as both a producer and user of genetic resources will therefore become more pronounced. Consequently, the dynamic between researchers, industry and Indigenous peoples will become increasingly fraught and problematic unless urgent steps are taken to implement an Indigenous-sensitive ABS policy in close partnership with Indigenous peoples across Canada.

INTRODUCTION

Canada is the second largest country on Earth, spanning the continent of North America and encompassing some 10 million square kilometres of varied terrain, ecosystems and geo-ecological regions. These include a large number of distinct forest biomes – boreal, mountain, temperate – and parklands; freshwater lakes, and

diverse tundra ecosystems (arctic coastal, foothills and Baffin coastal, to name just a few). With the world's longest coastline – nearly 250,000 kilometres – Canada touches three oceans; the Pacific Ocean on its west coast, the Atlantic Ocean on its east, and the Arctic ocean in the north.

Due to its size and latitudinal breadth, Canada's forests, prairies, wetlands, tundra, freshwaters and marine areas are rich in biological diversity, and house plant and animal genetic resources (GR) with novel applications in commercial, industrial, pharmacological, cosmetic and conservation contexts (Environment Canada [1], 2010). Canada's incredibly rich and varied repository of GR across its complex ecological regions makes it a key player in the growing international marketplace for the supply of GR. In addition, Canada's diverse Indigenous peoples and their equally diverse traditional knowledge systems makes the country a key repository of not only GR but also of associated traditional knowledge (Oguamanam, 2011). Canada is already one of the world's leading biotechnology countries (CBAC, 2002; Biotech around the World, 2008), a situation that underscores its status as both user and provider of important GR.

Through much of the literature on access and benefit-sharing (ABS), countries tend to be categorized as either 'providers' or 'users' of genetic resources. This simplistic binary actually enjoys little or no empirical justification (Hodges & Langford, Chapter 2) and obscures the status of biodiverse countries like Canada which ought to naturally act as *both* provider and user of GR and associated traditional knowledge (Oguamanam, 2011). Like Indonesia, Brazil, Australia, South Africa, India and several other biodiverse countries, Canada's reality as both user and provider of GR demands particular legal and policy responses to the challenge of sustainable management and use of GR and associated traditional knowledge. By positioning itself as only a user, Canada ignores these realities and undermines the need for a balanced and urgent policy decision on domestic ABS implementation (*ibid.*).

Canada's inclination to cast itself solely as a *user* rather than a provider of GR means Canada fails to consider its own vulnerabilities when it comes to biopiracy. By ignoring this possibility, Canada also conveniently ignores the very real and growing problem of biopiracy across Indigenous lands which involves associated traditional knowledge in the quest for new drugs, cosmetics, natural products and other R&D applications and opportunities. Acknowledging this truth is a critical first step; as indicated by Oguamanam and Hunka in Chapter 3 of this volume, Indigenous peoples in Canada have much in common with their counterparts in the global South, where biopiracy of genetic resources is widespread and well documented. (Oguamanam, 2004). Canada seems willing to acknowledge this reality so long as it is occurring somewhere else, investing substantial sums of money in capacity-building and development assistance in the global south, while ignoring the similar plights and development deficits of Indigenous peoples within its own borders (Oguamanam & Hunka, Chapter 3).

This attitude, which reflects Canada's colonial relationship with its Indigenous peoples, is currently relevant courtesy of the Justin Trudeau administration, which has committed to reconciliation and the renewal of a nation-to-nation relationship with Indigenous peoples based on their inherent rights of self-governance and self-determination. Canada now finds itself at an inflection point; will it recast itself as both a user and provider of GR, and truly grapple with the problem of biopiracy as it applies to its Indigenous peoples and their traditional knowledge? Is Canada truly ready to implement a domestic ABS regime, and support the grass-roots efforts of Indigenous communities in Canada to exchange knowledge and best practices with their counterpart communities in the global south (Oguamanam & Hunka, [Chapter 3](#))? Can all of these be accomplished before melting sea ice and other manifestations of a warming climate open Canada's Arctic to further exploitation?

This chapter maps out this important conversation, exploring the lacklustre efforts in Canada over biopiracy and ABS and current realities on the subject and suggests possible routes the country might take in implementing ABS in a manner consistent with reconciliation. Through a selection of recent examples, we examine where biopiracy is currently taking place in Canada, where it is likely to take place in the near future, and how the uncertain legal environment is exacerbating these trends. In doing so, we observe that while research ethics may play a role in constraining instances of biopiracy, they alone are insufficient to combat this phenomenon in Canada; rather, along with other practical policy measures, including Indigenous self-governance premised on truly nation-to-nation relationships, Canada can and must pursue an Indigenous-friendly ABS policy as a way of enhancing biodiversity conservation and stemming abuses of Indigenous knowledge in Canada.

Throughout the chapter, we illustrate how the continuing failure to work with Indigenous communities could undermine Canada's efficacy in fostering biodiversity conservation and combatting climate change, while also undermining the prospect of reconciliation with Indigenous peoples. Relying on the outcome of recent ABS Canada field work, we briefly sketch out a possible path forward should Canada decide to accede to the Nagoya Protocol and implement ABS into domestic law in a manner consistent with reconciliation.

CANADA'S CONTEMPORARY REALITY: FLASHPOINTS OF BIOPIRACY AND THE MITIGATING ROLE OF RESEARCH ETHICS

In the absence of a pan-Canadian ABS regime and federal and provincial laws that incorporate Indigenous sensitivities or Indigenous community protocols on ABS, it is unsurprising that biopiracy is occurring on Indigenous lands across Canada. Spruce gum, long used as a medicine and considered sacred by many Canadian Indigenous communities (Kuhnlein & Turner, 1996; Johnson, 2008) like the Dene, has become a mass-produced consumer product that sells online for as little as five

dollars per jar (CBC, 2017). Companies like Laughing Lichen Wildcrafted Herb & Tea and Canadian Outdoor Equipment retail various salves and ointments made from spruce pitch that, at best, offer cursory acknowledgements of its traditional uses amongst Indigenous communities. In Thunder Bay, Ontario, two hunters started a company called Gruntz which manufactures lozenges made using balsam fir – an ingredient long used by Indigenous healers for its antiseptic properties (Kuhnlein & Turner, 1996). Gruntz appears to harvest the materials for this product from the traditional territory of the Fort William First Nation south of Thunder Bay and makes no mention of balsam fir's traditional uses in their marketing materials (CBC, 2016).

Aside from raising the alarm through media, it appears that the only force at work constraining biopiracy are researchers who approach bioprospecting in an ethical and transparent way. In Northern Quebec, researchers have long been interested in the antidiabetic properties of a few medicinal plants traditionally used by the James Bay Cree. In 2003, a group called the Canadian Institutes of Health Research Team in Antidiabetic Medicines (TAAM) was formed in an effort to unite university researchers and local communities to confront a double-edged epidemic: extremely high rates of diabetes, and Indigenous patients whose physiology rendered conventional medical interventions less effective (Currie et al., 2012). The lead researchers involved in the project were aware of the CBD and Canada's obligations to ensure 'the fair and equitable sharing of benefits arising out of the utilization of genetic resources.' Given the lack of any regulatory framework or policy guidance, these researchers took it upon themselves to develop a comprehensive research agreement, including an ABS component. As explained by several contributors to this volume (Burelli, Chapter 13; Dylan, Chapter 5; Oguamanam, Chapter 11), there is no shortage of initiatives on the part of Indigenous peoples to hold researchers and bioprospectors accountable in their dealings with GR and associated traditional knowledge. For example, researchers like TAAM have essentially developed them on an ad-hoc basis, as is often the situation in other cases.

Pursuant to TAAM's agreement with the Cree, the Cree Board of Health would help identify participant communities, and Cree elders would assist researchers in identifying and locating samples of the plant material with antidiabetic properties. The agreement also included an extensive review process, allowing Cree participants to screen research findings prior to publication. The agreement also allows for the withdrawal of any Cree participants from the research process at any time and specified that no pharmaceutical companies could be involved in the research (Currie et al., 2012). In addition, the entire project would not be profit driven, but oriented around the goal of culturally relevant therapeutic interventions for Cree suffering from diabetes. The Cree would retain ultimate control over how their TK would be presented to the public at the conclusion of the project, in a manner consistent with the OCAP¹ principles (Oguamanam & Jain, 2017). Finally, if the researchers developed any novel therapy through use of Cree TK, the Cree Board of

Health (via monitoring teams made up of traditional Cree healers and Western physicians) would share responsibility for administering the therapy to members of the community.

The TAAM team was wary of accusations of biopiracy and had a strong understanding of the level of mistrust felt in many Indigenous communities towards outside researchers claiming to act in their best interests. These fears are not misplaced – it is well documented that research conducted with Indigenous peoples has historically failed to benefit them (Canadian National Collaborating Centre for Aboriginal Health, 2012). In fact, research has often been ‘harmful or . . . counter-productive to improving health, and [is] insensitive, intrusive, and exploitative’ to Indigenous participants (Geary et al., 2013, 1; Oguamanam, Chapter 11). Accordingly, TAAM placed trust at the very centre of their interactions with the Cree. Researchers made a point of personally interacting with community members in order to build familiarity and a sense of common purpose. Skepticism expressed by Cree elders that their traditional medicines would be stolen or misused was addressed directly, including explicit oral promises by the project leaders to the elders to respect their traditional knowledge. After elders had identified 17 promising plant species and helped the researchers to locate viable samples for clinical study, researchers collected them in accordance with Cree customs and traditions, including the performance of tobacco rituals and the saying of prayers to thank the Creator.

Another issue encountered and addressed effectively by TAAM was the fundamental difference in worldview between Cree healers and Western scientists, a divide echoed in other Canadian ABS literature and the field work conducted by ABS Canada (ABS Canada Focus Group Report, Moncton, 2015; Ottawa, 2016; Saskatoon, 2017). For the Cree, all knowledge is considered a gift from the Creator, which imbues it with a sacred quality that requires the Cree to act as its fiduciary guardians. The notion that their traditional medicines could ever be turned into commercial products directly challenged this worldview, and acknowledgement of the Cree understanding of the origins, value, and purpose of knowledge had to be central to any arrangement with the TAAM researchers.

To address these concerns, an ABS agreement was concluded. It acknowledged the Cree as the guardians of knowledge gifted from the Creator; pursuant to which there is an express ban on any non-authorized commercialization of research and derivative innovations, including a prohibition against commercializing any resulting intellectual property associated with the project. No intellectual property protection could be sought without the express prior and informed consent of the Cree participants. All Cree traditional knowledge was kept confidential by default, with disclosure limited to that which was expressly authorized by participating Cree communities, and only after those communities had received approval from their Elders.

The benefit-sharing arrangement between TAAM and the Cree included the creation of a not-for-profit corporation to be run by the Cree that would administer

any potential monetary benefits derived from the research project. A commitment was made that a portion of any monetary benefits would be set aside to fund scholarships to train Cree youth to learn about TK from their elders, and to create and distribute educational materials promoting the benefits of preserving TK. In addition, the reanimation of the Cree language through the use of Cree terminology for medicinal plants used in the study was seen by all parties as an important non-monetary benefit derived from the research, as it led Cree youth and Western researchers to adopt traditional Cree vocabulary (Currie et al., 2012).

ARCTIC AND MARINE AREAS: EMERGING BIOPROSPECTING HOTSPOT AND ABS FLASHPOINTS

Canada's expansive Arctic territory is perhaps one of the largest 'untapped' sources of GR in North America. Its low population density (the north is home to approximately 120,000 people spread over 40% of Canada's entire landmass) and extreme weather is contrasted with the region's incredible biodiversity, which includes 140,000 unidentified plant and animal species, and over 68,000 species that have been identified but not described in the scientific literature (Environment Canada [2], 2006). In addition to the sheer number of species in this diverse biome, it is the inherent resilience of these plants and animals that is drawing increasing scientific curiosity and attention. Life able to withstand the harsh weather in the North will naturally possess interesting genetic characteristics with wide-ranging commercial applications (Geary et al., 2013).

Marine GR have attracted considerable attention and are a growing focus of corporate research investment in Arctic jurisdictions such as Greenland, Russia and the Nordic countries (UNU-IAS, 2008). Over 40 companies are currently engaged in research, development and sale of products derived from GR sourced in the Arctic and surrounding waters. (UNU-IAS, 2008). This large-scale bioprospecting has not been similarly documented in Canada's Arctic, where little is presently known about the pharmacological potential of Arctic plants and animals. This is due, in large part, to the lack of tracking and monitoring in Canada, which has been done in other jurisdictions to gain a sense of the scale of bioprospecting, biotechnology development and research into possible GR (UNU-IAS, 2008). As of this writing, no patents have been issued for any product or process derived from Arctic GR in Canada.

This lack of patent activity belies the rapidly growing interest in GR in Canada's North. Arctic seaweed species have recently generated significant research activity both because of their relative abundance along Arctic shorelines and because of the diversity of possible commercial applications, ranging from food products to pharmaceuticals (Environment Canada [2], 2006). Over 2,000 species of seaweed have been identified in Canada's North alone, of which 184 are used by the local Inuit peoples for food and medicine. *Rhodiola rosea*, known locally by its Inuit

names *Tullirunaq* or *Utsuqammat*, has been used for thousands of years as a tonic. This is just one example of seaweed that is drawing increasing interest from the biotechnology and pharmaceutical industries interested in refining and commercializing *Rhodiola rosea* into an easy-to-produce consumer product (Environment Canada [2], 2006).

The limited reporting that is available suggest that *in situ* bioprospecting in the Canadian Arctic is currently narrow in scope. For example, the University of Prince Edward Island's Marine Natural Products Lab recently conducted small-scale research projects examining marine mud in search of microbes with commercial applications for the pharmaceutical and cosmetics industries (Kerr, 2012). Some other examples include Neuronascent Inc., an American biotechnology company that is seeking to develop therapeutic products for Alzheimer's patients through research conducted on the Arctic ground squirrel (*Spermophilus parryii*), a species whose habitat range includes the Yukon, Northern BC, and portions of the Northwest Territories. Also active in Canada is A/F Protein Canada Inc., another American firm with a processing facility in Newfoundland and Labrador that is developing advanced anti-freeze proteins for use in the food processing industry that were developed from a variety of Arctic fish (UNU-IAS, 2008).

Intense research interest in GR in other Arctic jurisdictions, and the anecdotal reporting on current bioprospecting projects in Canada's north show that bioprospecting is a policy problem that is already here, and growing more pressing with time (Dylan, Chapter 5). As climate change contributes to melting permafrost and sea ice, Canada's Arctic will only become a more inviting and accessible environment for bioprospecting in the coming years, particularly if *in situ* GR collected in other Arctic jurisdictions continue to be successfully commercialized and protected through intellectual property rights (IPRs). While this is occurring, the Government of Canada remains equivocal on the Nagoya Protocol and the legal status of these resources; the regimes governing their access remain unclear (ibid.).

As noted, a paucity of information regarding the scale of ongoing bioprospecting in Canada's Arctic region is one possible factor contributing to our limited understanding of the scope of GR and research involving the region. Another factor is the nascent but nonetheless fairly sophisticated, albeit inchoate, access regimes that have been developed in parts of some of the northern territories, particularly Nunavut (ibid.). While Canada lacks an overarching ABS policy for the entire country, Nunavut has a framework of sorts already in place that is derived from that territory's constitutive document, the 1993 *Nunavut Land Claims Agreement* (NCLA) and other laws. Unfortunately, as Daniel Dylan (Chapter 5) has noted, the Nunavut regime neither includes benefit-sharing nor cover genetic resources-related research.

Nonetheless, the landmark agreement between the Government of Canada, the Government of the Northwest Territories and the Tunngavik Federation of Nunavut (an organization representing the interests of the Inuit) recognized Inuit control

of a large swath of eastern Northwest Territories as their own self-governing territory. This represents the largest single land claims agreement between Canada and Indigenous peoples in Canada's history. Nunavut, which formally came into existence on 1 April 1999, includes over 1.8 million square kilometres of land and more than 160,000 square kilometres of the Arctic ocean, a combined area larger than Western Europe and comprising 21% of Canada's total land mass.

The NLCA grants the Inuit a right of first refusal on the commercial use of wildlife, which includes organisms like microbes (1993). The NCLA further prioritizes Inuit access to fish stocks and Inuit ownership interest in harvested marine resources (Greer & Harvey, 2004). The Government of Nunavut has also established the Nunavut Research Institute, which operates a permitting system for researchers hoping to conduct field work in the territory and which requires licences for studies involving terrestrial and marine mammals, birds, and vegetation. The Institute also requires researchers to apply for permits to collect samples of any aquatic organisms (including plants, fish and marine mammals) for scientific purposes, and under certain circumstances, requires research to undergo environmental impact screening (Nunavut Research Institute, 2017). This access regime, described in greater detail by Dylan in [Chapter 5](#) is the reason the Inuit were able to effectively deny a major research company access to Inuit fish stocks for the purposes of genetic research in 2001.

After the NCLA came into force, Canada's federal Department of Fisheries and Oceans (DFO) issued new restrictions requiring the consent of local communities before it would issue any fishing, harvesting, or farming permits. In response to these new restrictions, a major char fishing company called Icy Waters Ltd. partnered with local Inuit communities and an Ontario university (Greer & Harvey, 2004) to take advantage of the increasing popularity of Arctic char in the diets of southern Canadians and create an enhanced revenue stream for local Inuit fishers. In the resulting joint venture, each of the 7 participating Inuit communities were given a 5% equity stake, and in exchange Icy Waters Inc. would gain access to the reproductive material of male Arctic char found in nearby waters. While each Inuit community would retain 'ownership' over the fish contributed to the research, the joint venture would be the exclusive owner of any intellectual property in the hybrid lines developed from their proprietary cross-breeding technique. In addition, the participating Inuit communities would be permitted to use the 'genetically improved' final product and would ostensibly enjoy non-monetary benefits in the form of experience and transfer of technology in 'modern' fish farming techniques (Greer & Harvey, 2004).

Ultimately, the Inuit communities involved in the joint venture withdrew their consent; they felt that Icy Waters' approach to the project showed a major lack of respect for the Arctic char, and expressed their belief that the spirit of the fish would return to take revenge on the local Inuit people for allowing the char to be taken from its home and subject to genetic experimentation and manipulation (Greer & Harvey, 2004). In addition, the particular genetic subpopulation of Arctic char

that interested Icy Waters happens to grow extremely slowly and is highly susceptible to overfishing, another significant concern to the local community that relied in part on the Arctic char for sustenance. The fact that the local Indigenous community had a substantial degree of control over their resources, and a say in how the GR on their traditional territory could be accessed and used – including the legal authority to deny their consent to Icy Waters – provides an essential case study in the story of ABS implementation in Canada (Greer & Harvey, 2004).

Nunavut is not alone in having developed nascent access regimes that *de facto* regulate bioprospecting for *in situ* GR. In Canada's Yukon territory, for example, settlement agreements with local Indigenous nations emphasize Indigenous peoples' primary control over settlement lands, which has typically been construed to include rights to legislate for themselves in areas related to culture and resource management (Environment Canada [2], 2006). Laws passed by Indigenous communities therefore take precedent over territorial laws, ensuring that *de jure* legislative competence in these areas is manifested concretely in the day-to-day management of natural resources. The territorial Government of Yukon also requires any non-resident researchers to apply for access permits before conducting any research in the territory. The government's practice is to consult with Indigenous communities whenever out-of-jurisdiction researchers wish to obtain permits that encroach on Indigenous settlement lands (Environment Canada [2], 2006).

An example of an Indigenous community in the Yukon effectively exercising their jurisdictional competence in the areas of resource management are the Gwich'in people, whose traditional lands span approximately 20,000 square kilometres in the northern portions of the Yukon and Northwest Territories. According to the terms of the 1992 *Gwich'in Comprehensive Land Claims Agreement*, the Gwich'in were granted preferential hunting and fishing rights across the whole of the settlement area, and an extensive say in land use planning (Gwich'in Tribal Council, 2017). In 1998, the Gwich'in annual assembly passed a motion authorizing the Gwich'in Tribal Council to develop an official policy on traditional knowledge, both to clarify the Gwich'in peoples' role as guardians of that knowledge and to spell out precisely how outside parties would be able to access and use their TK in the future.

The policy specifies that anyone seeking to use or access Gwich'in traditional knowledge may only do so with the full, prior, and informed consent of the community. The policy also spells out, in granular detail, the processes to be followed in seeking out consent, conducting research, reviewing findings and providing compensation to TK holders and Elders in the community (Gwich'in Social and Cultural Institute, 2004). The Gwich'in mandate that their social and cultural bodies be given an opportunity to examine data before it is published, and to comment and make corrections before any findings are made public. The Gwich'in TK policy also includes template agreements, and a 17-point guide on what elements must be incorporated in an informed consent statement, including clauses allowing Gwich'in traditional knowledge holders to opt out of research at

any time, and a requirement that agreements be concluded in the traditional Gwich'in language where the use of English may generate misunderstanding (Gwich'in Social and Cultural Institute, 2004).

The Gwich'in in the Yukon and Northwest Territories remain one of the few Canadian Indigenous communities that have developed complete or substantially complete guidelines for ABS in relation to genetic resources and associated Indigenous TK in Canada. As Daniel Dylan (Chapter 5) has demonstrated, the extent to which the Inuit in Nunavut could be included in that category is tenuous. The common thread linking these communities is the relatively advanced status of their comprehensive land claims and self-governance agreements with the territorial governments and the Government of Canada. Indigenous self-governance and fully settled land claims remain the exception rather than the rule throughout the remainder of the country.

CANADA'S OFFICIAL APPROACH TO ABS IMPLEMENTATION: A CRITICAL ASSESSMENT

Canada's record on ABS is decidedly mixed and can be characterized by an early period of proactive movement followed by a decline in federal activity over time (Hodges & Longford, Chapter 2; Mason & Brodeur, 2013). Canada was an early ratifier of the 1992 CBD and was actively involved in the negotiation of the subsequent Nagoya Protocol. However, it then failed to build on this critical early momentum after the Nagoya Protocol was concluded, creating a policy vacuum as bureaucratic resources were shifted elsewhere (Hodges & Langford, Chapter 2). The fieldwork conducted by ABS Canada has revealed that many Indigenous communities across Canada have never even heard of ABS, the CBD, and the Nagoya Protocol. (ABS Canada Focus Group Report, Moncton, 2015; Ottawa, 2016; Saskatoon, 2017). This is not to suggest that Indigenous communities need to develop specific expertise in order to protect their lands and their knowledge. Rather, it suggests a compelling case for capacity-building and capacity development that the federal or any other cadre of government has so far failed to facilitate or deliver (Oguamanam & Hunka, Chapter 3).

The Trudeau government's commitments to combatting climate change, preserving biodiversity and rebuilding Canada's relationship with Indigenous peoples on a nation-to-nation basis pursuant to national reconciliation will not succeed unless it revisits the ABS file especially through the lens of reconciliation and nation-to-nation relationships. This will require a fundamental policy rethink. Canada's current policy guidance on domestic ABS implementation makes it clear that its overriding objective is to position itself as a global player in biotechnology (Environment Canada [3], 2009; Government of Canada [2], 2010). While the importance of biodiversity conservation and preservation of Indigenous TK are acknowledged, the underlying policy objectives make clear that these are seen as obstacles to be

managed rather than foundational principles to be encouraged. Indigenous knowledge is essential to biodiversity conservation, and biotechnology growth will be stunted without access to Indigenous traditional knowledge of plants and animals (Oguamanam, 2005, 2006a, 2012; Gillespie, 2011).

Given the lack of ABS policies across the country, the relative disinterest (at best) of some provincial government stakeholders, the absence of broad corporate awareness, and the lack of knowledge and capacity among many Indigenous communities, the federal government stands to play a central role. Yet Canada's proposals for domestic implementation reflect a disconcerting tendency to ignore or marginalize Indigenous perspectives or the role to be played by Indigenous orders of government (Perron-Welch & Oguamanam, Chapter 6).

As of this writing, Canada proposes three possible ABS implementation strategies. The first involves developing a national ABS regime built upon 'common principles and core elements.' Implementation would be jurisdiction specific, but the focus would be on creating as much clarity and consistency across the country as possible – this is similar to the Australian approach (Wright, 2017; Phillips, Chapter 9).

The benefits of a harmonized national regime are fairly obvious. It will create a consistent regulatory environment, facilitating access for out-of-country interests, and thus help drive the twin goals of promoting Canadian competitiveness in the bio-based economy and supporting scientific research and development. Second, a national approach would provide some clarity with regards to transboundary GR, which as their name implies straddle or transcend the legal and political entities that regulate them. Third, this approach would help fill in some of the gaps in the Canadian landscape by helping jurisdictions that currently lack their own ABS policy or whose policies are currently underdeveloped. In this formulation, the Gwich'in and other communities or nations that have already developed licensing regimes or ABS-like regulatory schema would be able to maintain their existing systems provided they meet or exceed national criteria and a set of common standards.

A significant drawback of this approach is that it fundamentally underestimates the challenges of negotiating a harmonized set of standards amongst over a dozen different jurisdictions with very different economies, resource profiles, and political cultures. The notable failure to include Indigenous perspectives in this approach will also create fundamental issues of mistrust and suspicion. Indigenous communities will (rightly) perceive a national framework as an 'imposition' of federal standards in contravention of their own inherent rights to control the GR on their traditional lands (ABS Canada Focus Group Report, Moncton, 2015; Ottawa, 2016; Saskatoon, 2017). While striving for a national or unified framework, the incredible diversity of Indigenous nations (73 in all) in Canada and their varied perspectives on sharing traditional knowledge requires the balancing of such a framework with local sensitivities. Any approach developed by Ottawa and the provinces that excludes Indigenous orders of government fails to do so.

The second approach explored by the Government would accept the challenges of differing interests and perspectives by forgoing a national set of standards altogether in favour of an independent approach in each jurisdiction (again, here narrowly construed as provincial and territorial governments only). This would allow each province and territory to develop ABS policies that accord with their particular contexts and needs, which has the obvious benefit of accelerating implementation. However, it could result in a widely divergent patchwork of policies, creating an uncertain regulatory environment that would be costly and time consuming for researchers to understand and navigate, and it also fails to respond to the challenge posed by transboundary GR.

The final approach considered is by far the most centralized: a single, unified federal policy equally applicable in all Canadian provinces and territories. The federal government would do all of the heavy lifting in terms of policy scoping and development, which would accelerate the implementation process and create the greatest certainty for researchers and other stakeholders seeking to extract or use *in situ* GR on Canadian territory. Given the constitutional division of powers in the Canadian federation, however, this policy would necessarily be incomplete – conceivably, federal jurisdiction over GR only extends to those found on federal Crown lands or stored at federal research, recreational or conservation facilities, whereas provinces and territories have jurisdiction over GR on provincial/territorial Crown lands, in addition to their constitutional competence over property law and natural resources writ large. Since these lands (federal, provincial and territorial) have actually been Indigenous lands from time immemorial, *in situ* GR on those lands that are associated with Indigenous TK also engage an exclusive Indigenous claim to jurisdiction and control, and current proposals simply do not contemplate these complex legal issues.

Perhaps aware of these jurisdictional and legal hurdles, Environment Canada has concluded that *not including* Indigenous TK in a Canadian ABS policy would ‘simplify the development and implementation’ of such a policy (2009, 15). While technically true, this would surely undermine whatever trust is left between Indigenous peoples and the federal government, compromising other good faith efforts to reconcile Crown sovereignty with pre-existing Indigenous cultural and legal orders. The federal government has already driven a rift between itself and Indigenous communities by consulting so poorly on ABS to date, and by failing to meaningfully include Indigenous perspectives and worldviews as it participated or participates in the negotiation of international instruments like the CBD, Nagoya Protocol and ongoing WIPO-IGC.² Given the centrality of Indigenous traditional knowledge to the policy debate on ABS over GRs, this approach is frankly a non-starter in the debate over the appropriate method of implementing ABS into domestic law.

If the government is truly committed to a process of equity, justice and reconciliation with Indigenous peoples, the inclusion of their perspectives on ABS must be

one of the starting points. This will require deep and meaningful consultation, and perhaps a much broader reconceptualization of the way intellectual property, traditional knowledge, biodiversity conservation and Canada's goal of economic opportunity through biotechnology innovation meet and interact in law, justice and social policy. Such is, however, the promise of reconciliation – a rethinking of the relationship and an even deeper critiquing of the social and legal arrangements that animate, constrain and perpetuate it.

At a practical level, inclusion of Indigenous perspectives and involving Indigenous orders of government mean that domestic implementation of ABS will resemble a national set of minimum standards governed by best practices and extensive consultation. This policy must be implemented in accordance with jurisdiction-specific realities – including, especially, the reality of Indigenous rights as guaranteed under s.35 of the *Constitution Act, 1867* at the minimum and true self-governance in the context of reconciliation and meaningful nation-to-nation relationship. The choice is Canada's to make, but the bioprospecting drive in the Arctic, in marine ecosystems, and in other biodiverse parts of the country illustrate the imperative of embarking on this conversation sooner rather than later.

THE SELF-GOVERNANCE IMPERATIVE FOR ABS

In conducting the field work in advance of this volume, ABS Canada has extensively documented the extent to which Indigenous communities believe the threshold issues in Canadian conversation on ABS is the *conclusion* of land claims agreements, the faithful execution of historical treaties, formal recognition of their inherent rights as guaranteed under Section 35 of the *Constitution Act, 1982*, and the overarching reconciliation of Crown sovereignty with the Indigenous occupation of Canada prior to European contact (ABS Canada Focus Group Report, Moncton, 2015; Ottawa, 2016; Saskatoon, 2017). Without Indigenous control over resources and a say in how external stakeholders access these resources, the notion of an ABS policy that is sensitive to Indigenous interests remains a hollow promise.

Since control over resources necessarily flows from recognition of Indigenous 'title' (although Indigenous worldviews categorically reject this framing of their relationship with the land in terms of ownership and control)³ – Canada must uphold the original treaties, complete the comprehensive land claims process, and recast its interactions with Indigenous peoples as truly nation-to-nation conversations (Perron-Welch & Oguamanam, [Chapter 6](#); Nichols, [Chapter 4](#)). Given the obvious financial, legal and logistical hurdles implicated in this urgent national project, Canada is under a heightened obligation to seek out Indigenous perspectives on what ABS should look like in the domestic context, and to provide meaningful support for the kinds of capacity building required at the community level (Oguamanam & Hunka, [Chapter 3](#)). Such organizational and governance preparedness as an incidence of self-governance would enable the Indigenous peoples of

Canada to establish the culturally relevant ABS regimes essential to preserving TK and ways of life, while balancing the economic ramifications of ABS (ABS Canada Focus Group Report, Moncton, 2015; Ottawa, 2016; Saskatoon, 2017).

There has been some early recognition of the importance of Indigenous self-governance over traditional lands and marine areas. The federal government recently announced an ambitious cooperative marine-management agenda under which the Inuit of Labrador will ‘use their traditional knowledge to develop a marine-management plan that would cover 380,000 square kilometers of coastal waters on the far eastern end of the Northwest Passage’ (Galloway, 2017). This scheme would see the Inuit play a key role in regulating ‘shipping, resource extraction, water quality, species management, conservation of historical sites, and other matters of [local] importance . . . as climate change and the decline of Arctic sea [opens] the passage to an increasing amount of ship traffic’ (ibid.). This cooperative marine-management plan is timely and symbolic in several different ways. First, it is an agreement between the federal government and the Nunatsiavut; the first Inuit self-governing region recognized by the Government of Canada. This reflects the importance of self-determination as a framework for ABS, reconciliation and justice. Second, the cooperative management plan highlights the disruptive effect of climate change on Indigenous lifestyles and the need for a proactive policy response in partnership with the Indigenous peoples who are directly impacted. Third, the arrangement recognizes that Indigenous knowledge provides key insights for climate change adaption and mitigations strategies, and in regard to cognate areas including, for example, the development of polar data infrastructure (Scassa & Taylor, 2017) and for resulting economic opportunities.

DRAWBACKS OF NON-RECOGNITION OF INDIGENOUS SELF-GOVERNANCE

Through the current situation in which, save for few cases, there is no robust Indigenous self-governance agreements, Indigenous communities have remained pragmatic, forging different forms of ABS-related arrangements and protocols in partnership with researchers (Burelli, Chapter 13). However, since there is no extant ABS regime, (in particular, one sensitive to Indigenous interests) Indigenous communities remain at the mercy of Canada and the provinces and territories to protect their rights over traditional knowledge. This situation urgently requires those levels of government to enact ABS regimes, as well as environmental laws and regulations that embody and reflect Indigenous interests and perspectives.

Unfortunately, Canada has failed to meet this obligation to enact environmental laws and regulations that reflect Indigenous perspectives and further Indigenous interests (McDermott & Wilson, 2010). One example is the federal Species at Risk Act (SARA). SARA was legislated to meet Canada’s commitments to the Convention on Biological Diversity by providing protection for endangered organisms and their

habitat within federal jurisdiction. Section 8.1 of SARA called for the creation of the National Aboriginal Council on Species at Risk (NACOSAR) to advise the federal Minister of the Environment and Climate Change on the implementation of the Act and provide advice and recommendations to the Canadian Endangered Species Conservation Council (CESCC), a federal/provincial/territorial Ministerial body (Government of Canada, 2017). The advisory status of the NACOSAR, despite the vast and expansive TK held by Indigenous peoples who have lived sustainably on the land throughout Canada for millennia, is suggestive of the low esteem the government actually attaches to Indigenous TK. The failure to rely on Indigenous perspectives in conservation and species at risk protection does not bode well for the development of a Canadian ABS regime.

Environmental assessments, to cite another example, are one of the few legal means Canada's Indigenous peoples have to effect environmental policy through formal processes. However, the *Canadian Environmental Assessment Act* does not currently require the consideration of Indigenous traditional knowledge in the assessment process (McDermott & Wilson, 2010). CEAA, 2012 merely gives responsible authorities the discretion to consider 'Aboriginal traditional knowledge' in any EA (Government of Canada, 2016). The Trudeau government's review of the environmental assessment and regulation-making process suggests some recognition of this problem, with proposals for requiring more Indigenous input in future assessments (Government of Canada, 2017). However, even this fairly comprehensive review is totally silent on the incorporation of ABS as an environmental assessment and regulatory consideration (Oguamanam, Koziol, Lesperance & Morales, 2017). Presently, Indigenous knowledge, practices and associated customary laws over sustainable living in and with the natural world have yet to factor into Canadian policymaking. Without self-governance, self-determination and respect for the sanctity of constitutionally affirmed treaty rights, it will remain challenging to integrate traditional knowledge and practices of Indigenous peoples into Canada's colonial legal regime.

Arguably, Canada's web of statutory and regulatory protections for the environment would be strengthened and better able to accomplish their conservation goals by meaningfully considering Indigenous perspectives. For most Indigenous communities, the relationship between human beings and the natural world is one of interconnectivity and mutual interdependence. The Algonquin people of Eastern Ontario use the term *Ginawaydaganuk* to describe this worldview. More than merely a descriptive phrase, *Ginawaydaganuk* is a principle of Algonquin law which outlines the responsibilities of human beings to one another and to the Earth; similar to the African philosophy of interdependence and interconnectedness, *Ubuntu*.⁴ It stresses the importance of considering the cumulative impact of actions on the entire web of life, and reflects an Algonquin understanding of 'sustainability' that sees human beings and nature as a singular whole (McDermott & Wilson, 2010).

This perspective on humanity's relationship with the natural order can be found across Indigenous cultures, not only in Canada, but around the world, and was repeatedly emphasized to researchers from ABS Canada throughout our focus groups in Moncton (home of the Maliseet & Mi'kmaq), Ottawa (home of the Algonquin), and Saskatoon (home of the Cree and homeland of the Métis peoples) (Oguamanam, 2010; ABS Canada Focus Group Report, Moncton, 2015; Ottawa, 2016; Saskatoon, 2017).

Not only are Indigenous perspectives, customs, laws and protocols generally not reflected in Canadian law, Canada has failed to follow through on its (laudable) initial efforts to engage Indigenous peoples on the subject of ABS (Hodges & Langford, *Chapter 2*). Canada has not held any formal ABS consultations with Indigenous peoples since 2010, and those limited, ad-hoc consultations were generally considered inadequate by many of those communities who were able to participate (ABS Canada Focus Group Report, Moncton, 2015; Ottawa, 2016; Saskatoon, 2017). Canada does not support the attendance of Indigenous participants to global fora engaged in negotiating international legal instruments on the subject of TK and IPRs and has refused to ratify the Nagoya Protocol and implement any form of ABS into domestic law (Mason & Brodeur, 2013), ironically citing its own lack of appropriate and meaningful consultation with Indigenous peoples.

The result is untenable for Indigenous peoples. Canada has failed in its obligations to protect Indigenous rights over their traditional knowledge through implementation of ABS into domestic law, and/or the reconciliation of its own laws (e.g. environmental assessment regimes, IPR framework, and climate change initiatives) with Indigenous worldviews and customary laws. Since many Indigenous communities have yet to develop their own ABS frameworks, the end result is that Canada's Indigenous peoples have little influence and limited or tenuous legal recourse when confronted with the rising tide of bioprospecting on their ancestral lands.

The real tool available for Indigenous communities hoping to mitigate biopiracy is to work with one another, collectively building and reinforcing their own capacity with the help of NGOs such as the ABS Capacity Development Initiative, the ETC Group, the Union for Ethical Biotrade and related others to drum up public outrage and condemnation. The faint hope is that negative media attention will constrain researchers and corporate interests from unduly exploiting Indigenous peoples' GR and associated traditional knowledge in the interim.⁵ Unfortunately, the value of genetic resources is little-known to most of the public, and ABS remains a complex issue that is difficult to explain in media-friendly or easily accessible terms. The rise of digital DNA and digital sequencing information and their role in the de-linking of genetic resources from their natural sources and origins (Oguamanam, *Chapter 11*; Oguamanam & Jain, 2017), and the marginalization of Indigenous TK in Western scientific, legal and cultural paradigms only increase the scope of this public relations or public awareness challenge.

THE PATH FORWARD: CULTIVATING INDIGENOUS
PARTNERSHIP FOR RECONCILIATION

A number of lessons can be distilled from the Canadian context and the cases examined in this chapter. Canada is without question both a provider and user of GR. Climate change represents a new dynamic with both challenges and opportunities that exacerbate the urgency of tackling the biopiracy problem. The intersection of climate change, biopiracy and ABS will become an increasingly fraught space as new GR are identified through increased bioprospecting activity in Canada's Arctic, and in the rich and diverse marine ecosystems along Canada's extensive coastlines.

Even though there are pragmatic initiatives between Indigenous peoples and researchers or bioprospecting entities to ensure just and fair practices, biopiracy is best prevented where deliberate ABS laws are in place. ABS regimes that are culturally sensitive and developed in accordance with Indigenous customary law, traditions and worldviews enhance the goals of biodiversity conservation and the preservation of traditional knowledge more than arrangements that ignore or marginalize Indigenous perspectives.

The examples of existing practices in Nunavut or in the Gwich'in settlement area in the Yukon and Northwest Territories, and the James Bay Cree in Northern Quebec (who live under the first comprehensive land claims settlement in Canadian history) suggest that Indigenous communities with legal control over their resources and the internal capacity to dictate access terms to outside interests are the most effective bulwarks against biopiracy. In addition, such an arrangement is one of the best ways to ensure the preservation and promotion of the Indigenous traditional knowledge which is the springboard for the utility and applications of those GR in the first place.

As affirmed by Bannister (Chapter 12) and Burelli (Chapter 13) in this volume, our analysis here reinforces the fact that many researchers are already sensitive to concerns about biopiracy and the importance of conducting research in line with the Tri-Council guidelines that specify the importance of doing research by and with Indigenous peoples (Tri-Council Policy Statement, 2010). Developing constructive partnerships that allow Indigenous communities to retain control over their GR and associated traditional knowledge rather than merely *studying* them in a way that undermines their sense of identity, inherent dignity, innovation and intellectual contributions is a clear pathway for Indigenous-friendly ABS policy.

The stage is now set for government to make a choice. When given the correct tools, Indigenous communities are capable of developing sophisticated and robust protocols to govern access to their traditional knowledge and associated GR on their lands (Oguamanam & Hunka, Chapter 3). The optimal pre-condition is Indigenous self-governance, but whatever the status of the particular community – whether

under an original treaty, a self-governance arrangement, or a modern comprehensive land claim – Indigenous communities generally know what they wish to share and how they wish to share it (Oguamanam, 2018). They are also the best authorities on how to preserve the traditional knowledge that is essential to our understanding of the natural world and the ways to sustain its diversity and inherent balance (ABS Canada Focus Group Report, Moncton, 2015; Ottawa, 2016; Saskatoon, 2017). Some communities already have these tools, with *de jure* control over their own lands and resources (Burelli, Chapter 13). Others have access to useful proxies, like government statutory and regulatory frameworks that prioritizes Indigenous rights to land and resources (Dylan, Chapter 5) accounting for and reflecting Indigenous worldviews, and requiring consultation when Indigenous interests and rights are engaged.

However, many more Indigenous communities lack either their own tools or the levers to affect relevant government processes. It is these communities that will be the sites of biopiracy in a future of increased bioprospecting activity and continued growth in the biotechnology industry. The scope and impact of this problem is therefore entirely contingent on *how* Canada opts to proceed on the ABS file. One option is to embrace what is proven to work and by so doing mitigate the worst effects of the coming bioprospecting boom (Phillips, Chapter 9). A turn towards the promotion of unfettered access and the unbalanced privileging of the biotechnology industrial complex will compound rather than mitigate the problem.

CONCLUSION

In this chapter, we have highlighted Canada's unique status as both a provider *and* user country regarding GR and associated Indigenous or traditional knowledge. We have also charted the real and potential biopiracy flashpoints in Canada and their implications for Indigenous communities, especially in the context of Arctic and marine areas. We then reviewed Canada's policy guidance on domestic ABS implementation and critiqued its failure to include Indigenous voices and perspectives and pointed out how it marginalizes Indigenous laws and orders of government. But as many other contributions in this volume affirm, the inchoate state of treaty interpretations and inconclusive comprehensive land claims and self-governance agreements constitute ongoing meaningful hurdles to the full involvement of Indigenous peoples as key partners in ABS. Notwithstanding these obstacles, Canada is under both a moral and legal duty to facilitate a regime of access to GR and associated Indigenous knowledge in a manner that is consistent with Indigenous customary laws, protocols and worldviews. This is not just the most effective pathway to biodiversity conservation, but a way forward that ensures equity, justice and reconciliation.

We argue that the most effective means of mitigating biopiracy over GR and associated knowledge of Indigenous peoples is by having Indigenous communities craft their own policies and access regimes, reflecting the overwhelming consensus

of Indigenous voices in ABS Canada's regional focus groups. Ultimately, an ABS policy for Canada can only truly succeed at reaching the lofty goals set out in the CBD when Canada develops that policy in cooperation with Indigenous peoples, on the basis of a nation-to-nation relationship grounded in the principles of trust, good faith, understanding and mutual respect.

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NOTES

- 1 Ownership, Control, Access and Possession.
- 2 Canada's position on the ongoing negotiations at this specialist WIPO body charged to propose text of legal instruments for the protection of TK, GRs and TCEs is at odds with the position of indigenous people as articulated by the Indigenous Caucus of the forum.
- 3 These are settler legal constructs useful only so as far as they are required to advance Indigenous interests under Canadian law
- 4 'I am because you are; you are because I am'.
- 5 The 'Captain Hook Award' is a project of the Coalition Against Biopiracy; it is awarded to companies and governments engaged in particularly obvious or egregious examples of biopiracy or for furthering policies that contribute to biopiracy. See www.synbiowatch.org/captain-hook-awards-2016/?lores.

Applying Dene Law to Genetic Resources Access and Knowledge Issues

Larry Chartrand

Abstract

In this chapter, we attempt to interpret Dene stories to extract legal principles and apply them to access and benefit-sharing (ABS) so that Dene peoples and researchers may create ABS agreements consistent with Dene law. This approach to ABS may apply to other Indigenous peoples as they prepare for this new era of nation-to-nation relations and the creation of a domestic ABS regime. The stories outlined in this chapter indicate that three major principles of Dene law that apply to ABS are: (1) equality, (2) sharing and (3) reciprocity, focusing on its application as between humans and non-human life forces (genetic resources). It should be noted that this chapter is an exercise in legal interpretation from the perspective of non-Dene scholars. Our assertions have not been screened by Dene knowledge keepers or Dene elders. Our intention is to provide but one interpretation of Dene law and its possible application to ABS, which may assist Dene peoples and inspire others as they inwardly develop their own legal frameworks and capacity building towards ABS preparedness in theory and practice.

INTRODUCTION

Indigenous nations and peoples in what is now called Canada have always had their own laws and legal orders.¹ Even though the colonial process and contemporary policies of the Government of Canada have had negative impacts on Indigenous societies, governance and legal orders, Indigenous laws and legal orders never vanished. With the bolstering of Indigenous rights on the international stage and the increased awareness of Indigenous issues throughout Canada, the Government of Canada has committed to reconciliation with Indigenous peoples on a nation-to-nation basis. To engage in a true nation-to-nation relationship, the Government of

Canada must recognize Indigenous law as a legitimate source of law in Canada. This applies to the domestic implementation of the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization.

This chapter undertakes the exercise of interpreting Dene stories to extract legal principles and apply them to access and benefit-sharing (ABS) so that Dene peoples and researchers may create ABS agreements consistent with Dene law. This approach to ABS may apply to other Indigenous peoples as they prepare for this new era of nation-to-nation relations and the creation of a domestic ABS regime. The stories outlined in this chapter indicate that three major principles of Dene law that apply to ABS are: (1) equality, (2) sharing and (3) reciprocity, focusing on its application as between humans and non-human life forces (genetic resources). It should be noted that this chapter is an exercise in legal interpretation from the perspective of non-Dene scholars. Our assertions have not been screened by Dene knowledge keepers or Dene elders. Our intention is to provide but one interpretation of Dene law and its possible application to ABS, which may assist Dene peoples and inspire others as they develop their own legal frameworks in response to ABS and other issues.

The first section of this chapter provides background information on the Dene and their homeland; Denendeh. The next section explains Indigenous laws and legal orders and how these may be interpreted by legal scholars to apply to ABS issues. This section warns against filtering Indigenous stories through the common law lens and over-intellectualizing the stories. The third section explains the laws that the Dene were given by ‘The Great Lawmaker,’ Yamoria, which they have subsequently published. The fourth section sets out Dene stories, selected from works of George Blondin, a Dene elder. Next, an interpretation of the selected stories outlines the legal principles of equality, sharing and reciprocity in Dene law. Finally, guidance is provided on the integration of these legal principles into ABS agreements so that Dene peoples may engage in ABS agreements in a Dene-lawful way.

BACKGROUND AND CONCEPTUAL ORIENTATION

Dene Peoples

The Dene are a people who belong to the Athabaskan linguistic family and come from Denendeh, which means ‘the Land of the People.’² According to Dene estimates, Denendeh stretches an area of one million square kilometres from the Deh Cho (Mackenzie River) to around the Sahtu (Great Bear Lake) in the western part of what is now referred to as the Northwest Territories.³ Dene believe that Denendeh is a living person, often calling their land ‘Mother.’⁴ In the context of a Statement of the Mackenzie Valley Pipeline Inquiry (circa 1975), Rene Lamothe of

Fort Simpson described the Dene's love of their land and implied that this love demands a certain respectful relationship:

The love of the Dene for the land is in their tone of voice, a touch, the care for plants, the life of the people, and their knowledge that life as a people stems directly from the land. The land is seen as a mother because she gives life, because she is the provider, the protector, the comforter. She is constant in a changing world, yet changing in regular cycles. She is a story-teller, a listener, a traveller, yet she is still, and when she suffers we all suffer with her; and very often in many parts of the world, whether they believe this or not, many people suffer because they have abused their land. She is a teacher, a teacher who punishes swiftly when we err, yet a benefactress who blesses abundantly when we live with integrity, respect her, and love the life she gives. We cannot stand on her with integrity and respect and claim to love the life she gives and allow her to be ravaged.⁵

Dene Land Claims Agreements

Geographic conditions have led to the division of Dene into distinct Nations: Denesoline (Chipewyan), Thcho (Dogrib), Dene Gah Got'ine (Slavey), K'ashot'ine (Hareskin) and Dijii Zhuh (Loucheux).⁶ Some Dene Nations have expressed a desire for economic independence by creating alternative community-based economic development under their control.⁷ To further this objective, some have negotiated regional land claims agreements with the Federal and Territorial governments, while others in the southern part of the Deh Cho and around Great Slave Lake are in various stages in the land claims agreement process.⁸

The 1993 *Sahtu Dene and Metis Comprehensive Land Claims Agreement* is typical of the four regional Dene land claims agreements. Of relevance to the issue of access benefit and sharing (ABS) agreements, chapter 13 of the *Sahtu Dene and Metis Comprehensive Land Claims Agreement* provides an 'exclusive' right to harvest wildlife to the Dene beneficiaries of the agreement. Additionally, chapter 26 deals with 'Sahtu heritage resources,' defined as 'heritage resources which relate to the history and culture of the participants.'⁹ Importantly, there are provisions that deal with the granting of permits and permissions to access renewable resources by non-Dene persons.¹⁰ Thus, it is important to recognize that in terms of access to 'genetic resources'¹¹ there are detailed provisions in the various land claims agreements that are relevant and may need to be followed in the context of a domestic ABS regime in Canada.

INDIGENOUS LEGAL TRADITIONS AS VALID SOURCES OF LAW IN CANADA

Understanding Dene law as it applies to the beneficial use of non-human entities is a necessary and important exercise, which raises broader questions regarding the recognition and application of Indigenous legal traditions within Canada. These

questions involve complex issues related to the scope of Indigenous governance and jurisdiction and the constitutional relationship between the laws of the Canadian state and Indigenous law (Nichols, [Chapter 4](#)).¹²

Indigenous Legal Traditions

All legal traditions, including Indigenous legal traditions, are the set of historically conditioned attitudes about the nature of law, the role of law in society, proper organization of a legal system and the way law should be made, applied, studied and taught.¹³ Indigenous legal traditions throughout Canada differ depending on the stories, history, ceremony and worldview of each community. They have been shaped by Indigenous worldviews which are largely concerned with maintaining balance with the non-human world. Broad principles emerge from Indigenous worldviews and these principles may be applied to specific incidents or come to define specific legal customs, regulations and rules.¹⁴ Indigenous laws are often unwritten, and tend to be anchored in ceremonies, songs, dances and oral narratives, passed on from generation to generation.¹⁵ As people listen to the stories they are encouraged to come up with their own conclusions based on the principles identified in the stories in ways that help resolve current problems.¹⁶

Indigenous legal orders are in precarious positions as a result of a long history of colonial contempt for Indigenous peoples' governance authority and the destructive impact of past governments' racist policies aimed at eradication and assimilation. Yet, today, there is a growing movement composed of Indigenous and non-Indigenous peoples, communities and institutions, which has committed to revitalizing Indigenous governance authority and Indigenous legal traditions.¹⁷ For many, the revitalization of Indigenous governance authority and Indigenous laws is an essential part of Indigenous – Canadian reconciliation.¹⁸ It has now become clear that Canada can no longer ignore Indigenous law as valid sources of law in Canada (John Burrows, 2006; Perron-Welch & Oguamanam, [Chapter 6](#)). Thus, to further the goals of reconciliation, those interested in working with 'genetic resources' and traditional knowledge associated with those resources must recognize the multi-juridical nature of the Canadian legal landscape and respect Indigenous legal authority over aspects of the natural environment and its non-human entities.

ISSUES INVOLVED IN INTERPRETING INDIGENOUS LAWS AND LEGAL ORDERS

The authors remain concerned that unsophisticated attempts to recognize Indigenous legal traditions may result in poorly understood characterizations or descriptions of Dene law due to a lack of grounding in Dene culture. Aaron Mills has argued that it is important for those learning Indigenous law in law schools to have a grounding in the 'lifeworlds' of the people they are studying, so that they may appreciate the constitutional distinctiveness of Indigenous societies rooted in ways of living that

value and recognize interdependence between human and non-human entities.¹⁹ Val Napoleon has described this cultural grounding as the ‘primer’ needed to appreciate the cultural place of Indigenous legal principles.²⁰ It is uncertain how much exposure to Indigenous lifeworlds, values and beliefs is required to ensure that legal analysis does not unduly appropriate and compromise Indigenous knowledge and ways of knowing, which would damage the very integrity of the learning project as a result.

Indeed, as Hannah Askew has noted, certain scholars such as Gordon Christie are not at all confident that scholars will not filter Indigenous teachings through common law eyes, over-intellectualizing Indigenous legal resources and distorting the message of Indigenous stories.²¹ The fear here is that stories interpreted into legal principles by non-Indigenous legal scholars and lawyers trained in the Canadian common law tradition may become so distorted by interpretation that community members no longer recognize them or find them useful.²²

The authors chose to undertake the exercise of interpreting Dene stories to discern legal principles which may guide ABS frameworks because of the persuasive reasoning and helpful guidance provided by Val Napoleon and Hadley Friedland in *Gathering the Threads: Developing a Methodology for Researching and Rebuilding Indigenous Legal Traditions*.²³ There, Friedland and Napoleon argue that legal synthesis is important because ‘taking Indigenous legal research to this level is precisely what will enable us to move beyond external descriptive, historical or sociological accounts of Indigenous legal traditions.’²⁴

Following models created by Friedland and Napoleon, the authors identified common themes and patterns which emerged from Dene stories and synthesized relevant stories into categories to discern legal principles applicable to a focused area of law. This method is meant to ensure both reliability and validity.²⁵ The goal of this methodology is to synthesize concise legal principles capable of being applied to contemporary legal and sociological issues.

The exercise undertaken in this chapter builds on the important and impressive work by George Blondin.²⁶ The stories interpreted here were recorded and produced by Dene elder George Blondin and published for public knowledge. Blondin published books recording Dene stories because he and other Dene elders had a duty prescribed by Dene law to pass laws and stories onto future generations and they feared the stories would be lost otherwise.²⁷

The authors are aware that some Dene teachings/stories are not to be disclosed publicly because of their sacred content. We assumed that relying on published stories by a Dene elder who obtained permission from the storytellers that gifted the stories to him could and indeed should be used and relied on; as to do so would fulfill George Blondin’s wishes as supported by the many Dene communities, Band Chiefs and Council members from the communities he visited. However, we did not test our conclusions regarding the legal principles that were identified from the stories with any of the Dene communities discussed in George Blondin’s books. Thus, any errors of interpretation are ours alone.

We hope that this chapter may assist Indigenous communities in Canada to grapple with ABS preparedness, self-assessment and capacity building and capacity development (Oguamanam & Hunka, [Chapter 3](#)). Our methodology may offer a model for Indigenous communities to examine their own legal traditions, to see if engaging with extractive industries generally or genetic resource prospectors specifically is compatible with those laws and traditions.

THE DENE LAWS

An important figure in the Dene legal order is Yamoria, ‘The Great Lawmaker,’ a powerful medicine person who brought the Dene people their laws and taught them how to live a good life.²⁸ The Dene have published the list of laws handed to them by Yamoria to educate youth and provide a list of principles non-Dene people should understand as a precursor to interaction with Dene peoples, culture or law.

The first law, ‘share everything you have’ is the ‘umbrella law.’²⁹ Blondin’s explanation of this law, outlined in the book *Medicine Power*, directs Dene to share big game and fish, help elders get firewood and with other heavy work, help sick people to do their work, share in the sorrow of relatives when someone dies, help widows and their children with everything they need, look after orphaned kin, and help travellers who are far from their homeland.³⁰ This umbrella law presumably originated from the scarcity of bush resources and need to share for the good of the community:

It would appear that within local groups bush resources were distributed on the basis of reciprocity or mutual sharing. Generally speaking all participated equally in the good fortune of the hunters and all suffered equally when their luck turned bad. Although the distribution system was basically informal, there was apparently some formality concerning the way in which certain animals were shared in that specific parts were reserved for the hunter and persons closely related to his or her immediate family. In this way, individual ability could be recognized, but not at the expense of the collective good. Thus, it was the whole membership of the local group and not each family or individual that defined the self-sufficient unit.³¹

Some principles prescribed by Dene law are accessible through stories, which have been passed through the generations in an oral tradition. Legal principles discerned from Dene stories and applicable to relationships with the natural world illustrate the interdependence between humans and non-human genetic life forces. Through this exercise, we focus on other related legal principles: (1) equality, (2) sharing and (3) reciprocity. These principles may be applied in contemporary contexts, perhaps with slight modification, to prescribe the characteristics of good relationships between Indigenous nations and peoples, governments, researchers and biotech industries to facilitate access to and use of traditional knowledge and non-human entities, including ‘genetic resources.’ These two legal principles guide Dene decision-making processes related to non-human genetic forces and may be employed to guide ABS arrangements.

SELECTED STORIES

Yamoria

A girl was wandering in the woods when she came across a sapling swaying rhythmically from side to side amongst motionless trees. The girl, who was taken aback by the small swaying tree, returned home and explained to her parents what she saw. Her parents advised her to ask the tree if it had something to tell her. The next day she revisited the swaying tree but before she could speak to it, the tree fell over and amongst its roots she found two babies, Yamoria and Yagamah.³²

Cheely Brings the Caribou to K'ahbamtue

Cheely was a great caribou leader. He was preparing to leave his caribou body and die. Before he left he called his caribou people together. 'I want to make a deal with you', he told them. 'Even if I become a human being in my next life, I want us to agree that we will always help each other.' All of the caribou agreed to the arrangement.

Soon after he died as a caribou, Cheely entered the body of a pregnant woman to be born again as a human. But he still kept all of his caribou medicine powers. Throughout his human life, when people were starving, all Cheely had to do was talk to the head caribou spirit; even if the herds were hundreds of kilometres away, they would travel to the people. Once there, they allowed themselves to be killed for food.

When Cheely grew old and was dying, he made a promise to his people. 'I want to leave something on this earth for you to remember me by. I feel like I didn't do enough for you during my life. I'm going to talk to my caribou people and make another deal with them. I want to cut out a big portion of the Barren Land herd and establish a new birthing ground for them. This new herd will always come back to have their calves at a certain place close to K'ahbamtue, where I am buried. The caribou will always come pay their respects at my grave and will have their calves around here too. For hundreds of years they will come back here. I'll show you a sign. When the first snow comes, visit my grave and if two small caribou are running around it, you will know that what I have said will come true.'

Sure enough, when the snow fell, the people saw two small caribou moving around Cheely's grave. When the ice froze, a herd of caribou migrated to K'ahbamtue. Cheely died more than sixty years ago and the people are still glad to see the caribou return to his grave each spring for their calving.³³

*The Challenges of Living with Medicine Power*³⁴

It was 1937 and a group of Dene was camped beside an inland fish lake. One day, caribou and moose that had just been shot were brought home for a girl to clean and make ready to cook. As the girl worked on one of the dead animals, she

eventually had to clean the sex parts of the moose. This started her thinking about the moose and caribou in a sexual way, which is not a natural thing when you are a human being. This went over and over in her mind in all kinds of crazy ways. It became like a sickness with her. After some time, the medicine spirit of both the Caribou and the Moose became aware of her obsessive thoughts and were offended by them. They sent the sickness to her as punishment.

When it was announced that that a young girl was very sick, the family was extremely concerned and asked her brother, a medicine man, to perform a ceremony to discover the source of her illness. The source of the girl's illness was revealed through the ceremony. The brother announced that the spirits showed him that the only way to help his sister was to change the part of her body that contains her sexual power so she comes into balance. This method would stop her 'Moon time' each month. Afterwards, she must be taught to control her thoughts and to only entertain respectful thoughts towards animals.

The Meeting between Humans and Animals

When the world was new, a conference took place between humans and animals where they determined how they would relate to each other. During this conference, Yamoria used his medicine powers to control everyone's minds to arrive at a fair resolution. It was agreed that humans may use animals, birds, and fish for food, provided that humans killed only what they need to survive and that they treat the animals with great respect. This respect included using the whole animal, thinking well of the animals, and thanking the Creator for putting them on earth.³⁵



ILLUSTRATION 1: The Meeting between Humans and Animals

© Kelly Duquette, 2017

Summer in a Bag

The harsh conditions of a double winter negatively affected both the Dene and the animals. The caribou and moose had difficulty moving around and eating due to the deep snow. Although this made hunting the animals easier, the Dene refused to take advantage of the situation. Instead, they put out food for the animals in order for them to survive. Later, Dene called a meeting to try and 'steal back the spring.' The plan succeeded when a squirrel brought back the warmth to the benefit of everyone.³⁶

Animals Save a Baby

A number of animals played a role in rescuing a stranded baby after a family's canoe crash. Two beavers and a few wolves attended to the health needs of the cold and hungry baby. After being rescued, the baby eventually grew up to become a famous medicine man who loved and respected animals and taught children to do so as well.³⁷

Taming a Beaver

A family of travellers noticed an injured beaver stranded in an icy lake and immediately went to rescue it without hesitation. After caring for the beaver until it was healed, the family simply carried on with their journey. The beaver was the only one who benefitted from the family's actions upon the conclusion of this story.³⁸

Caribou Help

The leader of a herd of caribou spotted a man who was looking to hunt a couple of caribou from his herd. While a non-Dene person might expect the caribou leader



ILLUSTRATION 2: Caribou Medicine

© Kelly Duquette, 2017

to become infuriated, the caribou leader simply confronted the hunter and proceeded to give him medicine power to use when he is in need of serious help. He also told the hunter to proceed with his plan of killing the last two caribou from the herd. Ultimately, the hunter not only got exactly what he wanted (i.e. hunting two caribou) but he also received medicine power that he could use when he was in need.³⁹

Bear Medicine Heals All

In the Barren Lands years ago, a Dene shot five caribou and as he hurried to butcher them, he cut his hand on a sharp rib bone. His hand bled and he wrapped it, not thinking too much about the cut since his hand didn't really hurt. The next morning, his hand had swollen with blood poisoning and he was in great pain. He and his group started the three-day canoe trip home to find someone who could heal his hand, but the next night as they camped in the bush, the swelling had spread up his arm.

The next morning, they spied a bear on the hill. In agony, the sick hunter begged his friends to shoot the bear and bring him the bladder. When they did so, he boiled the animal part in his tea kettle to make a bitter, black juice. He rubbed some of the juice on his swollen arm and then wrapped it in a clean cloth.

As he poured some into a cup, he started to pray, 'Grandfather, please help me. I am in trouble. I am sick with pain, Grandfather, you helped people in the past and we believe you still do help the people.' The hunter drank the bear brew and tried to sleep.

The next morning, he told his friends, 'I feel good. There's no pain anymore, none at all.' He took the bandage off his arm and it was back to normal.⁴⁰

INTERPRETATION

Equality and Interdependency

A review of related Dene stories reveals the legal principle of equality and interdependency between humans and their non-human relatives. In Dene society and law, humans exist alongside animals and the environment as equal parts of the natural world. Blondin's conceptualization of the Dene as people who 'see [themselves] as no different than the trees, the caribou, and the raven [...]' is reflective of this notion of equality.⁴¹ Therefore, humans must always treat animals and the environment with respect and take them into consideration when making decisions.

A dominant theme within the Dene stories outlined above is equality amongst people, animals and other natural elements. Yamoria and Yagamah's origin story shows the circular relationship between nature and people.⁴² This story illustrates the notion that there is no hierarchy between people and the environment as they are one and the same. Similarly, the story of Cheely, the caribou leader,

demonstrates the flexibility between the human and animal world, and supports the assertion that there is no hierarchy involved in the distinction between human and non-human entities.

The *Challenges of Medicine Power* story demonstrates the theme of equality between animals and humans because it shows that animals can exert significant power and control over humans, thus placing them on an equal footing with one another. This story shows that animals can have medicine powers just like humans and therefore animals can influence people's lives both positively or negatively. It is critical that humans recognize the power that animals have and treat them with respect and honour just as they would other human beings. Indeed, others have observed that the relationship between animals is fundamentally spiritual. Dene spirituality 'lay, not in defining and controlling interpersonal human behaviour, but rather in attempting to placate and influence the animals and elements.'⁴³

The story of *Challenges of Living with Medicine Power* also demonstrates that animals should be respected and treated with the same dignity as other humans because of their capacity to give and receive medicine power. Depending on the medicine person, the Creator will send a messenger – either in the form of an animal, a human apparition, or a natural element – to deliver medicine power to the person. That both humans and the natural environment can act as vessels to deliver medicine power to humans suggests that the Creator views all these things as equal. As a result, all people, with or without medicine power, must have good thoughts, and be respectful towards both animals and humans.⁴⁴ People have found themselves in trouble for even thinking wicked thoughts about animals because animals can have medicine power.⁴⁵ Here, medicine power again equalizes the relationship between animals and humans.

This fundamentally egalitarian view influences decision-making processes amongst the Dene. Blondin states that the Dene are good stewards of the Earth because they are aware that they 'have a relationship to all creation.'⁴⁶ This awareness stems from an appreciation that people and nature are interdependent and therefore must look after the natural world for their own self-preservation. This idea of a duty is reinforced by Blondin's statement that the Creator made the Dene in order to 'live with and look after the animals and plants on Mother Earth.'⁴⁷

Sharing, Reciprocity and Mutual Aide

The Dene often work together with animals and other non-human genetic forces to solve problems and to help each other when needed. In many of Blondin's stories, it is evident that the Dene benefit greatly in a variety of ways from nature, especially animals. Likewise, the animals benefit from the Dene people. Whenever there is an issue or conflict that needs to be resolved, the Dene therefore look to nature to help find a solution.

In addition to equality, a theme of reciprocity echoes throughout the Dene stories included in this chapter. In many of them, we see instances of genuine care being shown by human to animals or other natural elements (and vice versa). For example, in the *Summer in a Bag* story, the Dene and the animals work together to find a mutually beneficial solution to the desolation and scarcity of a harsh double winter; their collective efforts ensure each other's survival. Although the benefit for both parties is not always as immediate or clear like *Summer in a Bag*, the stories show that the giving party is often helped in some way. Understanding the centrality of reciprocity with the natural world and all living things is essential to appreciating how the Dene community approaches decision-making.

From the *Meeting between Humans and Animals* story, we learn that humans and animals have entered into a foundational agreement – a treaty of sorts – which places mutual obligations on them. Animals have agreed to give up their lives while humans have agreed to show great respect, including conservation and gratitude. The obligations that emerged from this conference were fair and equitable for all; Yamoria used his powers to ensure this specific outcome.

The reciprocity demonstrated through the *Animal Saves a Baby* story functions in a more indirect way.⁴⁸ The baby, now a famous medicine man, grows older and begins to teach children to show respect for all animals because of his own experiences following the canoe crash. By passing this teachings to new generations, advising appreciation and respect for all animals, the medicine man repays their kindness many years later.

Generally, the transfer of medicine power within many of the stories also illustrates a mutually beneficial exchange. People can receive medicine power in several ways.⁴⁹ It is possible for a messenger from the Creator to bring powerful gifts.⁵⁰ A messenger can come in the form of an animal, or old man/old woman depending on the medicine person. For example, messengers have come in the form of a moose, caribou, and/or bear.⁵¹ The caribou spirit may communicate to the medicine person by saying something like, 'I am here representing the caribou. I give to you medicine power from my nation so that we can work together to help all the nations on Mother Earth.'

While it is true that there are Dene stories that show only one party benefiting from the other, both animals and humans reap the sole reward from the other's kind acts from story to story. Thus, the reciprocal nature of the relationship between animals and humans remains true. For example, to a non-Dene person, the actions taken in the *Caribou Help* story perhaps would seem an unusual response from the caribou leader, however the caribou leader's actions in this story are consistent with the genuine care and respect animals have for humans in Dene stories. The *Caribou Help* story demonstrates the theme of sharing and reciprocity because when the caribou spirit bestows medicine power to a person, the caribou spirit clearly states that the medicine power should be used to help *all* the nations on Mother Earth,

animal and human alike. Thus, although it is the human in this case that is being given the medicine power, there exists a level of reciprocity between humans and animals that is evidenced by the caribou spirit's statement that the medicine power should be used to help 'all' nations.

Other stories depicting humans as the beneficiary of animal kindness demonstrate a level of reciprocity between humans and animals but also demonstrate positive qualities to guide these reciprocal relationships. The value of selflessness and obligation to all beings is promoted through the *Bear Medicine Heals All* story. This story demonstrates that the bear is generally a good friend and will treat you in accordance with how it is treated. However, the bear has the power to read thoughts and know your actions so if you get into trouble with it, it is your own fault.⁵²

Reciprocity in Dene stories is often communal and selfless, reflecting the importance of maintaining a harmonious relationship between people and the environment. This is a far cry from common law conceptions of reciprocity, which are rooted in responsibilities as between individuals and their private property. The emphasis in colonial/Canadian legal traditions on personal rights over things (largely construed in terms of the ability to exclude others from their possession and use) have slowly eroded alternative Indigenous legal discourses of mutual interdependence, harmony, and balance; in the context of respecting the natural world and our place within it. The Dene have much to teach us and we have much to learn. As Canada struggles to reconcile with its Indigenous peoples, and seeks out ways of sustaining its natural wealth amid the growing storm clouds of climate change, ABS has emerged as an important site for assessing the relative value of competing legal traditions in dealing with these related challenges. Below, we set out some of the advantages in using Dene law to develop ABS regimes over living resources and associated traditional knowledge in a manner consistent with equality, sharing and reciprocity.

IMPLICATIONS FOR ACCESS TO GENETIC RESOURCES/KNOWLEDGE AND BENEFIT-SHARING AGREEMENTS

Many Indigenous communities are now part of a larger society that values the accumulation of wealth without limit. Many Indigenous peoples are active participants in capitalism and the larger economy of Canada. Many Dene have expressed a desire to foster economic activity in their region that does not undermine their rights to control Denendeh. If the Dene wish to grant access to their genetic resources for profit via ABS agreements, then Dene law impose obligations in terms of how those agreements are to be crafted and understood. Researchers, industry and other stakeholders must equip themselves to meaningfully engage with Indigenous legal traditions that govern how genetic gifts are to be harvested, used, and disposed of in a manner that demonstrates proper respect and ensures sustainability. The legal

principles distilled from Dene stories in this chapter give a useful example of the kinds of principles that must be incorporated into the ABS agreements such that they are consistent with Dene law.

An important preliminary consideration is whether the principles of equality between humans and non-human genetic forces and the obligation to engage in reciprocal relationships is *a priori* inconsistent with the characteristic of ABS. It is the authors' understanding that the right to access the gifts of animals for healing purposes is not at all inconsistent with Dene laws. Indeed, based on the original treaty between animals and humans, described through the story, *The Meeting between Humans and Animals*, (and related stories) animals have an obligation to share their gifts with humans. It is unclear, based on the Dene stories available to the authors, whether this reciprocal relationship extends to plants. However, the importance of respect for the Earth (which includes plants) and the land more generally is consistent with the idea of interdependence and equality being extended beyond animals alone.

ABS agreements provide an opportunity to mandate compliance with Dene law through contractual obligations. Where the Dene nation or individual communities have chosen to grant access to their genetic resources and associated traditional knowledge, they may write into ABS agreement certain provisions which bind researchers to Dene law. For instance, the Dene could negotiate non-monetary benefits on behalf of the non-human genetic resources affected by the ABS agreement. The benefit-sharing provisions in an ABS agreement are intended as a means of equitably sharing the benefits that flow from commercial use of genetic forces from Denendeh. Dene law principles indicate that non-human genetic forces are equal to humans and that as such, relationships between humans and non-human genetic forces must be reciprocal in nature. Therefore, it follows that an ABS agreement would be in violation of Dene law if humans profited from the exploitation of non-human genetic forces without any sort of reciprocal exchange or sharing of benefits. This is consistent with the undergirding rationale for ABS especially as it relates ultimately to the conservation of biological diversity.

To ensure that researchers engage in a (Dene) lawful relationship with the non-human entities of Denendeh, the Dene could write into the ABS agreement non-monetary benefits such as habitat protection or other conservation initiatives. It must be understood that to rely on such plants and animals within a Dene cultural perspective means that individuals or corporations are obligated to respect the original treaty relationship between Dene and animals and to affirm that animals and other aspects of the earth have agency. If a Dene community enters into an agreement with a researcher or biotech firm to share medicinal knowledge about plants or animals, then the researcher or biotech firm will similarly be bound by Dene law. Thus, a firm will be responsible for complying with two agreements: one with the Dene community and one with the Earth (i.e. the animals, plants and natural elements). Moreover, because the life forces of the Earth and humans made

a sacred pact long ago, it arguably would not be possible for the Dene to waive such obligations for a biotech firm without breaching their own constitution.

For the purposes of ABS agreements, it is important to note that the reciprocal relationship between humans and non-human entities, prescribed by Dene law, does not extend to exploitation. Conservation is an integral part of the relationship between the Dene and non-human genetic forces. The stories affirm that there is a duty for humans to only use animals or plants only according to need. It is unlikely that this duty would be respected by corporations looking to commodify 'genetic resources' for the purposes of simply generating profit. As such, ABS agreements adopted by the Dene could put limits on the amount of genetic material flowing from the region – it could be within the scope of the agreement to mandate a certain amount of genetic material remain within Deneneh.

For example, the Dene may agree to provide researchers with no more than a certain percentage of an animal population so that the population is not degraded. Similarly, the ABS agreement may only allow removal of plant samples at certain times of the year, when populations are high, to limit alteration of plant growth cycles. In addition, any agreements with researchers regarding the use of genetic forces must ensure monitoring and authoritative oversight by the Dene communities involved. As the stewards of their lands, this is not an obligation that the Dene can easily contract out of without breaching their own sacred laws. There are also distinct obligations in Dene law for disposing of animals. If parts of animals and plants are not needed, there are obligations as to how to dispose of such parts in a manner consistent with the Dene's sacred obligations to all living things. These obligations may be included in provisions intended to address 'Rights in and Dealings with Samples and Products.'⁵³

CONCLUSION

The Dene are heavily influenced by the natural environment in their decision-making processes. Notions of equality, sharing and reciprocity are key to understanding how Dene communities functioned in some of Blondin's stories. Medicine people and leaders always take into consideration their surrounding environment, which they value and view as interdependent and integral parts of their own communities.

A goal of this chapter is to start a broader conversation about the principles that can be distilled from Indigenous legal traditions, and how those principles might be applied to areas of law that engage Indigenous rights. Although we do not claim that our interpretation of any of these principles is correct or the only interpretation possible, we believe it is still important to include them in this volume and make them accessible to members of the Dene nation and non-Dene individuals. We believe that Blondin published these stories to preserve the importance of Dene understandings of legal principles and to remind people of the prominence of medicine power within the Dene community.

Recognizing Indigenous legal traditions has important implications for the biotechnology industry and Canada's national conversation about ABS over plant and animal genetic resources and associated Indigenous traditional knowledge. The biotechnology industry and research communities must be cognizant of the differing legal and cultural orders their work may engage (Oguamanam & Koziol, Chapter 7). If operating within Dene territory or with regard to Dene knowledge, biotechnology firms and researchers must pay due regard to the principles of Dene law, especially if ABS agreements are negotiated in order to access Dene resources. This also holds true more broadly; if ABS agreements are to be equitable in any meaningful sense, they must engage with, and be shaped by, the laws, traditions, and customs of the people whom they are meant to protect and benefit.

Here, our task was simply to demonstrate that this is not an impossible task, and that distinct, well-defined, and discernable legal principles exist not only in Dene society but in all Indigenous societies. These principles are accessible and can be applied, with occasional modification, in contemporary contexts, including the salient discussion of access to 'life elements,' including 'genetic resources' and associated Indigenous traditional knowledge.

NOTES

- 1 The authors employed Dene law for this exercise due to Professor Larry Chartrand's experience with Dene peoples and law, particularly those from the Sahtu region of the Northwest Territories. As an arbitrator appointed under the *Sahtu Dene and Metis Comprehensive Land Claim Agreement*, Professor Chartrand has spent considerable time in Dene communities in the region. The arbitration panel strongly believed that any dispute which arose under land claims should be resolved in a balanced way, relying on relevant Dene law, as well as on Canadian common law. To learn about Dene peoples and culture, Chartrand and other arbitration panel members often stayed on the land in various hunting and fishing camps and met with various groups of elders from the communities they visited. As background for the arbitration panel, he prepared a paper on Dene law, which was largely based on the work of Joan Ryan in her study of Dogrib Dene law. In addition, as part of the panel's obligation to learn and understand Dene law, the panel undertook Dene culture and training workshops to prepare for any disputes which might arise under a land claim. The author is grateful for the assistance of Harman Khosa, Rebecca De Sanctis, Vick Balkaran and Emily Bonnell for the preparation of this chapter.
- 2 Denendeh (The Dene Nation, Yellowknife, 1984) at p. 7.
- 3 *Ibid* at p. 7.
- 4 *Ibid*
- 5 Mel Watkins (ed.). *Dene Nation: The Colony Within* (University of Toronto Press, Toronto, 1977), at p. 11.
- 6 *Ibid* at p. 9.
- 7 *Ibid* at p. 85.
- 8 Four regional land claims agreements have been completed. They include the Inuvialuit (1992), the Gwich'in (1992), the Sahtu Dene and Metis (1993) and the Tilcho (2003) agreements.

- 9 Sahtu Dene and Metis Comprehensive Land Claims Agreement at s. 26.1.1
- 10 *Ibid* at 21.1.
- 11 It should be noted at the outset of this exercise that there are important distinctions between Dene and Western understandings of the nature of ‘genetic resources.’ From an Indigenous epistemology, to describe animals and plants as ‘resources’ tends to imply they are available for human use at the unilateral discretion of human beings to fulfill human needs. Dene societies would not characterize these non-human entities as mere ‘resources’ to be owned and used by humans. Rather, according to Dene society and law, animals and plants are characterized as life forces which possess their own independent agency and are organized into their own ‘nations.’ Dene conceptualization of life forces as possessing agency, including their own spirit medicine powers, has fundamental implications for the biotechnology sector and the obligations that attach to the use of such life forces. For example, Dene law, arguably, does not allow the unfettered commercialization and exploitation of non-human entities.
- 12 John Borrows, *Canada’s Indigenous Constitution* (Toronto: University of Toronto Press, 2010) at chapter 6.
- 13 John Henry Merryman & Rogelio Perez-Perdomo, *The Civil Law Tradition: An Introduction to the Legal Systems of Europe and Latin America* (Stanford, CA: Stanford University Press, 2007).
- 14 Indigenous Canada: Looking Forward/Looking Back, Module 4: New Rules, New Game, Course Notes: New Game, New Rules (Faculty of Native Studies, University of Alberta, 2017) at p. 4.
- 15 *Ibid* at p. 3.
- 16 *Ibid* at p. 9.
- 17 Royal Proclamation 1763; Larry Chartrand, ‘Indigenizing the Legal Academy from a Decolonizing Perspective’ (2015) Ottawa Faculty of Law Working Paper No 2015–22, online: papers.ssrn.com/sol3/papers.cfm?abstract_id=2631163.
- 18 John Burrows, 2006, Justice within Indigenous Legal Traditions: Discussion Paper. Ottawa, ON: Law Commission of Canada; The Right Honourable Harry Laforme, ‘Section 25 of the Charter; Section 35 of the Constitution Act, 1982: Aboriginal and Treaty Rights – 30 Years of Recognition and Affirmation’ in Errol Mendes, *Canadian Charter of Rights and Freedoms, 5th Ed.*, (LexisNexis, 2013); Aaron Mills, ‘The Lifeworlds of Law: On Revitalizing Indigenous Legal Orders Today’ (2016) 61 *McGill Law Journal* 847; Val Napoleon and Hadley Friedland, ‘An Inside Job: Engaging with Indigenous Legal Traditions through Stories’ (2016) 61 *McGill Law Journal* 725; Larry Chartrand, ‘Eagle Soaring on the Emergent Winds of Indigenous Legal Authority’ (2013) 18 *Review of Constitutional Studies* 49. See also the Law Reform Commission of Canada, *Justice Within: Indigenous Legal Traditions* (Ottawa: Her Majesty the Queen in Right of Canada, 2006).
- 19 The Lifeworlds of Law, *supra* note 18 at p. 862; A similar point on the need for mutual capacity building and capacity development has been put forth in Oguamanam & Hunka, this volume.
- 20 Hadley Friedland and Val Napoleon, ‘Gathering the Threads: Developing a Methodology for Researching and Rebuilding Indigenous Legal Traditions’ (2015–2016) 1 *Lakehead Law Journal* 16 at 27.

- 21 Hannah Askew, Indigenous Legal Traditions and the Challenge of Intercultural Legal Education in Canadian Law Schools, at p. 24, online: www.oba.org/CBAMediaLibrary/cba_on/pdf/Foundation/StudiesFellowshipHannaAskew.pdf, citing Gordon Christie, presentation on 'Inuit Legal Traditions' delivered at the Indigenous Bar Association conference in Winnipeg in October 2012. Recording available on the 'Accessing Justice and Reconciliation' website at www.indigenousbar.ca/indigenoulaw/audiovideo/#conference (Accessed October 28, 2014).
- 22 Hannah Askew, *Learning from Bear-Walker: Indigenous Legal Orders and Intercultural Legal Education in Canadian Law Schools* (2016) 33 *Windsor Yearbook of Access to Justice* 29 at 44.
- 23 *Gathering the Threads*, *supra* note 18.
- 24 *Ibid* at p. 27.
- 25 *Ibid* at p. 28.
- 26 George Blondin, *Yamoria the Lawmaker: Stories of the Dene* (Edmonton: NeWest Press, 1997); George Blondin, *Trail of the Spirit: The Mysteries of Medicine Power Revealed* (Edmonton: NeWest Press, 2006).
- 27 The Acknowledgements page from *Yamoria the Lawmaker*, for example, does thank and acknowledge the various storytellers that contributed stories to the collection and the authors would also like to express our thanks as well.
- 28 *Trail of the Spirit*, *supra* note 26 at p. 24; *Yamoria*, *supra* note 26 at p. 71 & 83.
- 29 George Blondin, *Medicine Power* (Dene Cultural Institute, 1996) at p. 8–10.
- 30 *Ibid* at p. 8.
- 31 *Dene Nation: The Colony Within*, *supra* note 5 at p. 48.
- 32 *Trail of the Spirit*, *supra* note 26 at p. 23; *Yamoria*, *supra* note 26 at p. 78; *Medicine Power*, *supra* note 29 at p. 1.
- 33 *Yamoria*, *supra* note 26 at p. 116.
- 34 *Trail of the Spirit*, *supra* note 26 at p. 92.
- 35 *Yamoria*, *supra* note 26 at p. 48.
- 36 *Ibid* at p. 175.
- 37 *Ibid* at p. 176.
- 38 *Yamoria*, *supra* note 26 at p. 182.
- 39 *Ibid* at 186.
- 40 *Yamoria*, *supra* note 26 at p. 170–2.
- 41 *Ibid* at p. 18.
- 42 *Ibid* at p. 81.
- 43 Miggs Wynne Morris, *Return to the Drum: Teaching among the Dene in Canada's North* (Edmonton: NeWest Press, 2000) at 74.
- 44 *Trail of the Spirit*, *supra* note 26 at p. 93.
- 45 *Ibid*.
- 46 *Trail of the Spirit*, *supra* note 26 at p. 41–2.
- 47 *Yamoria*, *supra* note 26 at p. 18.
- 48 This kind of reciprocity as discussed by Mills is distinct from liberal understandings of mutual obligations being more of a mandatory direct exchange. See Mills, *supra* note 21 at 867. Reciprocity is understood as capable of being experienced positively indirectly as well as directly. Moreover, Mills discusses how the cultural context of a society influences

how law functions or is understood within the society. Mills describes Indigenous constitutions as rooted because such societies are so connected quite literally to the earth and interdependent with other life forces. This insight he says has ‘significant implications for the structure of law. Under a rooted vision of freedom, order isn’t secured through rule of law; law isn’t the formal obligation to respect rules (i.e. rights and correlative duties). Rather, law consists in the informal responsibility to coordinate mutual aid (i.e. gifts and needs) within particular forms of relationship: law is a framework for proper judgment.’ at 865–6.

49 *Ibid* at p. 54.

50 *Ibid*.

51 *Ibid*.

52 *Yamoria*, *supra* note 29 at p. 170.

53 Ann Kathrin Buchs & Jorg Jasper, For Whose Benefit? Benefit-Sharing within Contractual ABS-Agreements from an Economic Perspective – the Example of Pharmaceutical Bioprospection, (2007) [unpublished, Diskussionsbeitrag] online: www.uni-goettingen.de/. . ./Diskussionspapier_Buchs_%20Jasper_200701.pdf.

Access and Benefit-Sharing in Canada

Glimpses from the National Experiences of Brazil, Namibia and Australia to Inform Indigenous-Sensitive Policy

Freedom-Kai Phillips

Abstract

Through a review of international obligations under the *Convention on Biological Diversity* (CBD), the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization* (NP) and with reference to other instruments, this chapter surveys national measures related to access and benefit-sharing (ABS) in Brazil, Namibia and Australia. It identifies insights from those experiences as the basis of policy recommendations to shape the existing and evolving ABS framework in Canada. Operationalization of ABS in Canada requires the effective involvement of Indigenous peoples grounded in mutual respect. Empowerment of Indigenous governance of genetic resources (GR) and traditional knowledge (TK), integration of adequate administrative review to evaluate and monitor utilization, facilitation of fair and equitable benefit-sharing and the inclusion of a disclosure of origin requirement in the patent framework provide areas of opportunity to support the implementation of the NP and reconciliation with Indigenous peoples in Canada.

INTRODUCTION

The intersection of biotechnology and access and benefit-sharing (ABS) has wide ramifications for fairness, equity, justice, reconciliation, ethics and power relations with regard to Indigenous peoples in Canada. This chapter explores legal measures and trends on ABS both internationally and nationally and their insights toward a Canadian ABS regime. First, the chapter briefly outlines relevant international

obligations including the *Convention on Biological Diversity* (CBD), and the *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization* (NP), alongside a highlight of related instruments. Second, it surveys legal measures from comparatively experienced jurisdictions on ABS including Brazil, Namibia and Australia to identify points of convergence and divergence in relation to the Canadian context. Finally, the chapter makes recommendations on how to integrate ABS into the Canadian legal landscape in a way that is sensitive to Indigenous peoples.

OBLIGATIONS UNDER INTERNATIONAL INSTRUMENTS

The global ABS framework is made up of interconnected mutually supportive obligations established by the CBD. Those obligations were further refined through the NP. Other relevant ABS-related instruments include the *International Treaty on Plant Genetic Resources for Food and Agriculture* (ITPGRFA), the *Agreement on Trade-Related Aspects of Intellectual Property Rights* (TRIPS) and the work of the World Intellectual Property Organization Intergovernmental Committee (WIPO-IGC) on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore on the Draft Articles on TK and related developments on the interface of intellectual property rights (IPRs) and GRs.

Convention on Biological Diversity (CBD)

The CBD is the preeminent international legal instrument on biodiversity. Its threefold objectives are: promoting conservation and sustainable use of biodiversity; ensuring fair and equitable benefit-sharing arising out of the utilization of GRs and advance through granting sovereignty to States over biodiversity and reciprocal obligations (both substantive and procedural) incidental to the obligations (CBD, Article 1, 3; Glowka et al., 1994: 15). Relating to ABS, Parties are obliged to implement legal measures which: (i) preserve and protect TK defined as ‘knowledge, innovations and practices’ of ILCs (CBD, Article 8(j); Glowka et al., 1994: 47–8), (ii) facilitate access to GRs for environmentally sound uses (CBD, Article 15(1–2); Glowka et al., 1994: 76) based on prior informed consent (PIC) and mutually agreed terms (MAT) (CBD, Article 15(4–5); Glowka et al., 1994: 80–1), which includes the equitable sharing of benefits derived from utilization of GRs (CBD, Article 15(7); Glowka et al., 1994: 82–3), (iii) provide for transfer of technology associated with the use of the provided GRs (CBD, Article 16(3); Glowka et al., 1994: 89–90) and (iv) allow for participation of provider countries in biotechnological research (CBD, Article 19(1)) and priority access to the research results and biotechnology products based on GRs provided (CBD, Article 19(2)).

The Nagoya Protocol on ABS (Nagoya Protocol)

The NP's objective is to implement the ABS provisions of the CBD (Nagoya Protocol, Article 1). Pursuant to Article 2 (c) and (e), the operative scope of the NP governs 'utilization of GRs' defined to include research and development (R&D) on the biochemical composition directly or through biotechnology, as well as 'derivatives' which encompasses biochemical compounds including gene expression and metabolites (Oguamanam, [Chapter 11](#)). Article 3 establishes a framework for ABS relating to utilization of GRs and associated TK (Glowka & Normand in Morgera et al., [2013](#): 28). Article 4(1–4) states the implementation of the NP intends to be mutually supportive of obligations established under other instruments (Glowka et al., [1994](#): 77–80), with deference given to specialized ABS instruments such as the ITPGRFA (Cabrera et al., [2013](#)).

In exercising sovereignty over GRs, Parties to the NP are obliged to establish appropriate measures to ensure: (i) access to GRs is based on the PIC or approval and involvement of ILCs (NP, Article 6), (ii) access to TK, which is associated with GRs and held by ILCs, is based on PIC (NP, Article 7) and (iii) utilization of GRs and TK provides for equitable sharing of benefits with providers, in particular ILCs, based on established MAT (NP, Article 5). Article 12 provides that Parties to NP are to take into account the customary laws of ILCs, cooperate with ILCs in establishing community protocols on access to GRs and TK, develop mechanisms to inform users of ABS obligations, and not restrict the customary use of GRs and TK in and among ILCs (Morgera et al., [2014](#): 217–28). Pursuant to Article 13, each Party must designate a National Focal Point (NFP) as a governmental liaison, as well as at least one Competent National Authority (CNA) to provide regulatory oversight and processing of applications relating to GRs and TK (Greiber et al., [2012](#): 144–8). Additionally, in accordance with Articles 15–17, Parties must take measures to monitor utilization of GRs and TK to ensure that access and utilization in that jurisdiction are grounded in PIC and MAT, with appropriate compliance measures established, including checkpoints to validate the legality of access by users.

Other Relevant International Instruments

There is a range of parallel international instruments at the nexus of ABS and TK of ILCs. First, the ITPGRFA provides a framework for conservation and sustainable use of global plant genetic resources for food and agriculture, facilitating access under the multilateral system of access and benefit-sharing (MLS) based on a standard material transfer agreement (SMTA) (ITPGRFA, *Preamble*; Moore & Tymowski, [2005](#): 19–31). Farmers' rights, which recognize the contribution of ILCs to global crop diversity, are affirmed with deference given to national legislation in implementing protections for TK associated with a PGRFA, and the facilitation of

equitable benefit-sharing (ITPGRFA, Article 9; Moore & Tymowski, 2004: 67–78). Both non-monetary and monetary benefit-sharing is provided for under the MLS and are administered through a trust fund for farmers, especially those in developing countries (ITPGRFA, Article 11–13, 19f; SMTA 2006). Samples obtained from the MLS are governed by the ITPGRFA, as opposed to associated TK which remains governed by the domestic ABS framework if one is in place.

Second, TRIPS provides minimum international standards pertaining to IP under the World Trade Organization (WTO). Patents are particularly relevant to the ABS discussion and were a key consideration in the NP negotiations (Glowka & Normand in Morgera et al., 2013: 46). Under Article 27(1) of TRIPS, patents are applicable to inventions, both products and processes, in ‘all fields of technology’ provided they satisfy the criteria of being ‘new,’ ‘involve an inventive step,’ and have an ‘industrial application,’ and apply without discrimination to the place of invention or production, or the type of technology (Taubman et al., 2012: 98–100). Article 29 provides that applicants must provide sufficiently ‘clear and complete’ disclosure to allow a person skilled in the art to complete the invention, including the ‘best mode’ of operation and information regarding foreign corresponding applications. Where TK is used in an innovation, there is currently no explicit requirement under TRIPS to disclose the origin of the TK used in the resulting patent application.

Finally, the WIPO-IGC has been the principal forum for negotiations relating to the development of (a) binding international instrument(s) for the protection of TK, and to explore modalities to further clarify the interface of IPRs and GRs. While still under negotiation, the Draft Articles on TK favours creating a *sui generis* instrument which provides adequate recognition, respect, and protections to TK held by ILCs, promotes conservation and sustainable use of both biodiversity and TK, prevents misappropriation, and facilitates access based on fair and equitable benefit-sharing (Draft TK, Annex at 2–4). Reconciling the divergence between the current TRIPS obligations and the rights of ILCs to ‘maintain, control, protect and develop’ their TK, including related intellectual property, affirmed under the *United Nations Declarations on the Rights of Indigenous peoples* (UNDRIP) (UNGA Res 61/295, Article 31), the Draft TK Articles aim to provide minimum protections. Key aspects under negotiation include: (i) the establishment of key criteria to define TK (Draft TK, Article 3, Annex at 9), (ii) creation of a tiered system which recognizes ILCs as holders of TK and provides substantive protections based on the level of cultural significance, including secrecy and extent of diffusion, (iii) procedural requirements of PIC, MAT, and a right to control access (Draft TK, Article 4–5, Annex at 10–12), (iv) development of digital TK databases (Draft TK, Article 5BIS, Annex at 13) and (v) addition of a mandatory disclosure of country of origin for inventions relating to or using TK in applications for intellectual property rights (Draft TK, Article 7, Annex at 16–17).

The IGC is negotiating legal measures to clarify the intersection of IPRs relating to GRs and TK with two distinct approaches emerging. The first provides for a clear disclosure of origin requirement, and the other contains no disclosure

requirement, opting instead for a due diligence approach (WIPO IP & GRs, Article 3, ALT 3, 6).

Under the first approach, where an application for IP protection ‘includes utilization of [is directly based on] GRs and/or TK,’ the applicant must: disclose the provider, the country of origin, and supplier of GRs and TK and demonstrate compliance with domestic ABS legislation or provide a declaration where the source or origin is unknown (WIPO IP & GRs, Article 3.1). The alternative takes a defensive approach which includes no new disclosure requirement unless the location of the sample is necessary for a person skilled in the art to actualize the invention (WIPO IP & GRs, Article ALT 3.1). A due diligence system is proposed whereby a review would be conducted to determine whether applicants are in compliance with domestic ABS requirements (WIPO IP & GRs, Article 6), and a database system employed facilitating communication across patent offices to prevent the granting of erroneous patents (WIPO IP & GRs, Article 6–7). Even though the IGC negotiation is a work in progress the nature of those negotiations and issues being canvassed can inform and enrich domestic policy at the nexus of ABS and IP rights. Part of IGC’s mandate is to remain cognizant of the relationship between its work and related international regimes and instruments which directly include the CBD and the NP on ABS.

NATIONAL LEGAL MEASURES

The following brief survey of ABS frameworks aims to illuminate available approaches. These jurisdictions were specifically selected based on their domestic drivers and experiences. Both Brazil and Australia are federal states which have significant Indigenous populations and a colonial history. Both view themselves as users and providers of genetic resources. Namibia provides an example of decentralized governance options based on empowerment of local communities. These experiences can inform Canada’s options.

Brazil

Brazil signed on early to the CBD, yet it is currently not a NP Party. It adopted *Provisional Measure n. 2.186–16/2001(MP)* in 2001 as an interim approach to implementation of Article 15 of the CBD and to address fears over misappropriation of GRs (Cabrera et al., 2014: 18–23). The Genetic Heritage Management Council (*Conselho de Gestão do Patrimônio Genético – CGEN*) was tasked as the Competent National Authority (CAN). Over its tenure, CGEN has issued 41 resolutions to refine operational aspects and address challenges with the administration of the domestic ABS framework (ABS Initiative, 2014: 8–9). Early experience with ABS in Brazil illustrated that challenges posed by overly bureaucratic requirements inhibited R&D, highlighted the need for clear procedures for obtaining legal access to GRs/TK, as well as mechanisms for effective monitoring and enforcement in

cases of non-compliance (ABS Initiative, 2014: 26). In 2014, progress began on the development of a new domestic ABS framework with the introduction of *Bill 7735-2014 (Draft)*, resulting in the adoption of *Law No. 13,123 (2015)* and *Decree No. 8,772 (2016)* which made significant modifications to the pre-existing framework. The new framework applies to GRs found both *in-situ* and *ex-situ*, as well as to TK and derivatives (Law No. 13123, Article 1). It targets all forms of access to GRs and TK, including their remittance abroad and economic exploitation of final products or genetic material accessed under both the previous and the new systems (Decree 8,772, Article 2(I–III), Article 2(§1–3), Chapter VIII). CGEN remains the CNA, with thematic and sectoral chambers and an interdisciplinary plenary comprised of 60% public officials while the remaining 40% are from the private sector, ILCs, and academia (Law No. 13123, Article 6; Decree 8,772, Article 4–7, 8–19).

Access to GRs or TK for commercial exploration or economic exploitation of a finished product is restricted to domestic entities (Law No. 13123, Article 11(§1)). The rights of traditional farmers and ILCs to protection from misappropriation of their TK, their right to participation in national decision making relating to GRs and TK, and the free exchange of such resources and knowledge in and among ILCs are explicitly enshrined, with a database managed by CGEN established to collect forms of TK as a component of Brazilian cultural heritage (Law No. 13123, Article 8, 10). Where TK has an identifiable source, access to it requires PIC of the holder (Law No. 13123, Article 9(§1)); however, even in the case of an individual holder, TK is viewed as collective in nature (Law No. 13123, Article 10(§2)). An online registration system called the National System of Management of Genetic Heritage and Associated Traditional Knowledge (*Sistema Nacional de Gestão do Patrimônio Genético e do Conhecimento Tradicional Associado – SisGen*) is used rather than a permit scheme to simplify the process. Domestic applicants submit the required information to facilitate access to GRs and TK without the need for the prior approval of CGEN (Law No. 13123, Article 12; Decree 8,772, Article 20). Where access to a traditional or previously unknown plant varieties occurs, a deposit of reproductive material is to be made into an *in-situ* or *ex-situ* collection, with the ILC retaining ownership, and access to TK governed by the broader ABS framework (Decree 8,772, Article 18 (§3–4)). Remittance abroad of samples to foreign institutions must first receive the prior approval of CGEN based explicitly on the proposed use, and the establishment of MAT (Law No. 13123, Article 11(§2), 13(§1–2), 15; Decree 8,772, Article 27–9). Registration with CGEN is a prerequisite to the granting of intellectual property rights on the finished product or genetic material relating to GRs and TK. Documentation demonstrating legal access and utilization of GRs or TK is a mandatory requirement (Law No. 13123, Article 12(§2), 47; Decree 8,772, Article 20(§1)).

Utilization for commercial purposes requires notification of intention to CGEN, and negotiation of a benefit-sharing agreement (BSA) which includes both monetary and non-monetary benefits, within one year of notification (Law No. 13123, Article 16, 19; Decree 8,772, Article 55). Requirements for fair and equitable

benefit-sharing apply to economic exploitation of finished products or reproductive material from GRs and associated TK regardless of the place of production. Additionally, benefit-sharing obligations apply across the value chain inclusive of: the manufacturer of the end product, intermediary producers, and the transferees of IP rights or licensees of final products regardless of who obtained prior access (Law No. 13123, Article 17(§1–4)). Small businesses, cooperatives, and traditional farmers are exempted from the benefit-sharing obligation (Law No. 13123, Article 17(§5)). Where TK is accessed from ILCs, resulting contractual benefit-sharing is administered through the National Fund for Benefit-sharing (*Fundo Nacional para a Repartição de Benefícios* – FNRB) (Law No. 13123, Article 17(§6), 30–3; Decree 8,772, Article 96–102). Importantly, where the final product is produced abroad, domestically situated subsidiaries, affiliates, and intermediaries involved in the value chain are held jointly liable for the benefit-sharing requirements, with benefit-sharing calculations based on the best available information (Law No. 13123, Article 17(§7–8)).

Where monetary benefits are employed, a fixed minimum rate of 1% of annual net revenue is applied, with the Ministry of the Environment able to reduce that percentage to ensure competitiveness (Law No. 13123, Article 20–1; Decree 8,772, Article 48–9). Breaches of the benefit-sharing arrangements attract broad consequences. These include significant discriminatory fines that apply separately to individuals or legal entities (Law No. 13123, Article 27(§5); Decree 8,772, Article 78–91), and seizure of instruments, materials, samples, and products derived from GRs and TK (Law No. 13123, Article 27). Fines triple or double if the sample is an endangered species (Decree 8,772, Article 79), and can be as high as R\$ 10,000,000 (Reais) for corporate misappropriation of GRs or TK through the granting of IPR domestically or internationally (Brazil, Decree 8,772, Article 80).

Brazil illustrates the evolving understanding of ABS at the domestic level in parallel with the development of the NP. It is grounded in the unique domestic drivers, circumstances, and priorities of the country as a pioneering megadiverse jurisdiction. Early concerns were raised by the scientific community over the first ABS framework with regard to the complexity of maintaining compliance within the framework, the high transaction costs, and the slow speed of administration (ABS Initiative 2014: 26). Iterative refinements made by CEGN allowed the system to progress and function, but the lack of clarity on core operational aspects – in particular, a defined scope, access procedures, administration of benefit-sharing, and compliance mechanisms – continued to undermine operationalization. The passage and entry into force of the NP further influenced domestic developments, with Brazil positioning itself confidently as both a user and provider of GRs. The new 2015 ABS framework responded to concerns identified by the research and industry stakeholders stripping away the administrative complexities, making clear requirements for access, and emphasizing key checkpoints to ensure compliance. With longstanding experience and a newly-developed ABS framework, Brazil has

attempted to adopt a measured approach balancing the interest of ILCs and those of industry and researchers in preparation for ratification of the NP.

Namibia

Beginning in 1999 Namibia initiated policies governing access to GRs and TK under the Ministry of Environment and Trade and the Ministry of Agriculture, Water and Forestry. Prioritizing the creation of a dedicated ABS instrument in the 2001 National Biodiversity Strategy and Action Plan (NBSAP), Namibia held consultations through national and regional workshops resulting in the *Draft ABS Bill* in 2006 (Namibia, 2010; Shikongo 2011; Schroder 2014). An Interim Bio-Prospecting Committee (IBPC) was created in 2007 to facilitate equitable access to GRs/TK while a national legislative framework was underway (Suleman 2017: 15). Following the signing of the Nagoya Protocol, Namibia began a process of redrafting the 2006 *Draft ABS Bill* to align with the Protocol, which it acceded to in 2014. In 2017, the *Access to Biological and Genetic Resources and Associated Traditional Knowledge Act* was introduced to the Namibian National Council for consideration.

Pursuant to the Act, 'Access' encompasses both direct or indirect acquisition of marine or terrestrial GRs found *in-situ* or *ex-situ*, derivatives, or synthetic products, as well as associated TK for research on the biological, genetic or biochemical composition, technological development, or bioprospecting which is aimed at commercial or biotechnical applications (GRTK Act 2017, Article 1). The Act pre-empts applications of synthetic biology to R&D in GRs and TK which is one of the grey areas of the NP (Bagely, 2016; Oguamanam, Chapter 11; Smyth, Phillips & De Beer, Chapter 10). 'Commercialization' is broadly defined as a collection of activities relating to GR, including: (a) filing for IPRs anywhere, (b) obtaining or transferring intellectual property rights, (c) commercial trials and product development including market research or premarket approval, (d) multiplication of GR through cultivation, propagation, and cloning or any other means to produce products, (e) any other process aimed at realizing commercial value from GR and/or TK and (f) transfer of research results based on GR or TK (GRTK Act 2017, Article 1).

The Directorate of Biological and Genetic Resources and Associated Traditional Knowledge governs access and utilization of GR and TK, ensures fair and equitable sharing of benefits, promotes capacity building and technology transfer, and monitors compliance (GRTK Act 2017, Article 5(4), (6)). Such monitoring includes the application of scientific indicators to determine if utilization of GR has transitioned from the discovery phase into the preliminary or advanced phases of commercialization to impose appropriate conditions (GRTK Act 2017, Article 6(q)). Rights relating to GR found in the land and associated TK vest in ILCs regardless of the source. TK is recognized as being collectively held by ILCs who are natural users of such knowledge (GRTK Act 2017, Article 5(1–3)). Access, utilization, or export of GR and/or TK requires a permit to be procured subject to PIC of and MAT with

rights holders including equitable benefit-sharing provisions (GRTK Act 2017, Article 8–11). Right holders can refuse access (GRTK Act 2017, Article 9(4)). Equitable benefit-sharing is grounded in the collective and inalienable rights of ILCs to protect and utilize TK under customary law. Benefit-sharing can include monetary options such as royalties, or licensing of products and process, and non-monetary options such as technology transfer, joint IP rights, and capacity building (GRTK Act 2017, Article 10, 12–13).

A special Environmental Investment Fund was created to receive funds by way of grants, loans, or benefit-sharing contributions to strengthen conservation and sustainable use of biodiversity through the financing of projects led by ILCs relating to GRs or TK (GRTK Act 2017, Article 7). Illegal access to GRs or TK, failure to comply with the terms of access, or unpermitted GRs export are punishable by a fine, and/or a term of imprisonment (GRTK Act 2017, Article 14(1)). Lesser offences such as making false declarations for a permit, or obstruction of an investigation, are punishable by a lesser fine, and/or a shorter term of imprisonment (GRTK Act 2017, Article 14(5)). Where the act occurs as a result of the negligence of directors, members of the board or senior leadership of an organization, all individuals involved are subject to a fine, and/or a term of imprisonment. Namibia further asserts principal jurisdiction to hear cases and apply a judicial remedy regardless of where the offending individual or organization is situated (GRTK Act 2017, Article 21). Courts may also impose a declaration of forfeiture relating to any property, samples, equipment, or documents used in the commission of an offence.

Under Section 3 of the 1996 *Nature Conservation Amendments Act*, people living on communal land, especially ILCs, can apply to the relevant Minister for approval to establish conservancies. The *Promulgation of Forest Act* (2001) (*PMFA*) established the Forestry Council, which is charged with consolidating the framework for management and use of forest resources. The *PMFA* provides for measures relating to community management and use of forest-based biodiversity. Pursuant to Sections 15 and 31 of the *PMFA*, traditional authorities are authorized to designate communal land as a 'Community Forest' and they have statutory rights to establish management plans, appoint a management body, and provide for access via permit and equitable distribution of benefits from forest resources. Through the 2007 interim ABS measure, Namibia laid the administrative groundwork for the empowerment of ILCs through a decentralized approach to ABS and thus positions itself for the eventual ratification of the NP.

Australia

Australia is a federation of six states and two territories each with relative levels of sovereignty under the national government (Prip et al., 2014: 8). It passed the *Environment Protection and Biodiversity Conservation Act* (EPBC Act) in 1999 and the *Environment Protection and Biodiversity Conservation Regulations* (EPBC

Regulations) in 2000 to govern 'Commonwealth areas,' including Commonwealth land, the Australian Territorial Seas, and the Exclusive Economic Zone (EEZ) (EPBC, 1999, Section 525). In 2002, a nationally consistent approach to ABS was endorsed by the Natural Resource Management Ministerial Council (comprising Federal, State and Territory ministers for land and water) (Natural Resource Management Ministerial Council, 2002), with the EPBC Regulations amended in 2005 to include a new Part 8A (EPBC Amendment Regulations 2005). Section 301 of the EPBC Act enables the creation of regulations governing access and utilization of biological resources, including administration of access permits and facilitation of benefit-sharing. Section 528 of the EPBC, defines biological resources to include GRs, organisms or parts thereof, or any biotic component of an ecosystem with perceived or actual value.

Under the EPBC Regulations, access to biological resources is defined to include the taking of native species or any component thereof for R&D. Users are deemed to access a resource where there is a 'reasonable prospect' the resource will be subject to research (EPBC Regulations, Section 8A.03(1)). In sections 8A.07–8A.08, (h–j), 8A.10, 8A.12 of the EPBC regulations, commercial applicants are required to enter into a benefit-sharing agreement with each relevant provider, based on PIC, to obtain a permit for access to GRs or TK. Commercial applicants for access to GRs must obtain written permission from each Access Provider to (a) enter the area, (b) take samples of biological resources and (c) to remove these samples (EPBC Regulations, Section 8A.12(1)). PIC is required for access to GRs on the territories of ILCs in compliance with the *Native Title Act 1993* (Native Title Act 1993, 24EB), with access to TK treated ostensibly as commercial in nature requiring a declaration of the knowledge obtained, MAT, and a benefit-sharing agreement (EPBC Regulations, Section 8A.08(h–j); Hawke, 2009: para 17.12–14). A model benefit-sharing agreement was developed by Australia in 2012 and includes: (i) a 2 year renewable term, (ii) benefit-sharing strata based on investment thresholds, (iii) a grant of IP rights relating to research with restrictions on transfers of IPRs without a benefit-sharing agreement, (iv) varied consequences for default including termination, reassignment of remuneration rights of third parties for samples back to the Commonwealth, (v) reporting and recordkeeping requirements and (vi) mandatory dispute settlement provisions (Australia, Model BSA 2012, Section, 3.2.1, 3.2.4, 5.1; Schedule 3–4, Section 6.1, 7.1–2, 11–12, 15–17). Nonetheless, the disclosure requirements during the patent process are inadequate to sufficiently protect against misappropriation under the Australian IP system (Australia, Patents Act 1990, Section 40, 43AA).

According to section 8A.15 of the EPBC regulations, authority over GRs of the Commonwealth is centralized at the National Ministry of Environment under the Department of Sustainability, Environment, Water, Population and Communities (SEWPC), which reviews all access permits. A decentralized approach to administration, processing, and monitoring is adopted with specialized governmental divisions and regional organizations empowered to administer access to GRs within

their region or protected area. Organizations such as the Great Barrier Reef Marine Park Authority (GBRMPA), (*Great Barrier Reef Marine Park Act* 1975, Section 6–7; *Great Barrier Reef Marine Park Regulations* 1983, Section 2A.7–2A.8), and the Australian Government Antarctic Division (AGAD) (*EPBC Act*, Section 197(p)), facilitate access, leveraging specialized technical expertise about the biological resource under their management. In practice, the access provider is often the Genetic Resource Management Section in the Department of Environment on behalf of the Commonwealth.

Resources found outside of ‘Commonwealth areas’ are subject to the jurisdiction of the relevant State or Territory, with some having developed specialized ABS frameworks. Queensland established the *Biodiscovery Act 2004* which provides a permit scheme for biodiscovery research or commercialization of native biodiversity (*Biodiscovery Act 2004*, Section 3, Schedule Section 5). Applicants wishing to conduct biodiscovery activities on land publicly owned or managed must apply to receive ‘collection authority’ and include a benefit-sharing agreement and a biodiscovery plan (*Biodiscovery Act 2004*, Section 3, 10–14, 17). Biodiscovery on lands of ILCs, or utilizing TK is omitted from the Act, but supplemented by the Queensland Biotechnology Code of Ethics which provides for negotiation of fair and equitable benefit-sharing where TK of ILCs is utilized (Queensland Biotechnology Code of Ethics, 2014: para 10: Prip et al., 13–14). The Northern Territory of Australia passed the *Biological Resources Act 2006* (NT) to facilitate and regulate bioprospecting activities, implement a framework of benefit-sharing for biological resources, and recognize the ‘special knowledge’ held by ILCs relating to these resources (Northern Territory of Australia, *Biological Resources Act 2006*, Section 3). Included under the framework are freehold land, Crown land, Territorial waters, Aboriginal land, Aboriginal community living area, and areas subject to ‘Native Title’ (*Biological Resources Act*, Section 6.1). Bioprospecting requires approval by the Territory, including establishing PIC and MAT through a benefit-sharing agreement with each provider (*Biological Resources Act*, Section 27). Where ILCs are the provider, the CNA must be satisfied that PIC and MAT are established, including a statement detailing the TK obtained and the specific benefits agreed (*Biological Resources Act*, Section 28–9(1)(h–i), 29(2)).

Empowered under the domestic framework, the Aboriginal and Torres Strait Islander people working with various organizations have developed and published protocols for ABS. One example covers research with Ninti One and highlights that Aboriginal and Torres Strait Islander people may wish to share various aspects of TK under clear terms including: PIC, participation in all stages of R&D, culturally sensitive and transparent partnership, and employment of Aboriginal and Torres Strait Islander people (Ninti One, *Engagement Protocol 2012*, Section 1–3). Benefit-sharing is established on a per project bases, based on MAT and must respect the IPRs of the community (Ninti One, *Engagement Protocol 2012*, Section 4–5). Aboriginal and Torres Strait Islander peoples employed in the project are required

to be paid fairly with a set payment schedule adopted for transparency (Ninti One, Engagement Protocol 2012, Section 4.3; Ninti One, Schedule of Rates of Pay 2013). Where TK is accessed in research, specific terms and a knowledge management and protection strategy must be established (Ninti One Engagement Protocol, Section 5.5). Oxfam Australia has also developed a Cultural Protocol with the Aboriginal and Torres Strait Islander peoples aimed at the protection of their cultural and IPRs. Enshrined in the Cultural Protocol are principles of respect, Indigenous control of cultural heritage, PIC, maintenance of the integrity and confidentiality of sacred information and practices, attribution, legal recognition, and equitable sharing of benefits based on MAT (Oxfam Australia, Aboriginal and Torres Strait Islander Cultural Protocols 2013: 1–6). Despite this experience and fairly robust legislative progress, Australia has yet to ratify the NP. The Australian experience illustrates the complexity of establishing an ABS regime within a federal system of a colonial state with a significant population of Indigenous peoples and the need to protect their cultural heritage.

RECOMMENDATIONS FOR INDIGENOUS-SENSITIVE ABS IN CANADA

Experiences from jurisdictions with ABS regimes can assist in establishing a robust ABS framework in Canada. The recommendations offered are drawn from legal approaches adopted in the profiled jurisdictions and contextualized to the Canadian legal landscape to illustrate practical modalities and possible ways forward. These recommendations emphasize the importance of respectful engagement with Indigenous peoples, and are meant to ensure the protection, preservation, and sustainable use of GRs and associated TK in Canada.

Establish an Interim Body

There are sub-national ABS-like schemes governing research activities in the Yukon (Scientists and Explorers Act, 2002), Nunavut, and the Northwest Territories (NWT) (Oguamanam & Koziol, Chapter 7; Scientists Act, 1988; Dylan, Chapter 5). There are national systems regulating collection in national parks and conservation areas (Parks Canada, Research and Collection Permit System), and import, export, or interprovincial transportation of listed endangered species (*Wild Animal and Plant Protection and Regulation of International and Interprovincial Trade Act*, 1992; Wild Animal and Plant Trade Regulations, 1996). However, significant gaps remain regarding an ABS regime (Dylan, Chapter 5; Oguamanam & Koziol, Chapter 7), the adequacy of PIC, the fairness of existing benefit-sharing arrangements, and ability to monitor compliance with both foreign and domestic access terms to effectively prevent misappropriation. Interim approaches were employed in both Brazil and Namibia to provide immediate institutional oversight to prevent

misappropriation while final ABS legislation was being developed. In passing *Provisional Measure n. 2.186–16/2001*, Brazil was pragmatic in recognizing that a long-term ABS solution would require more time and experience. Nonetheless, the empowerment of the CEGN to refine operational modalities in response to identified challenges allowed for the framework to evolve rather than crumble leading to the development of broader legislation and regulations in 2015 and 2016 respectively.

Similarly, Namibia created the interim IBPC to enable ABS development (Nghitila, 2010: 12–14). The IBPC reviewed applications and established private benefit-sharing contracts with bio-prospectors, including The Body Shop for marula oil (Nghitila, 2010: 10). Founded in 2000, the Eudafano Women's Co-Operative (EWC), a collective of over 5,000 women who harvest marula nuts at the household level, provide refined marula products for The Body Shop among others, and has, through the Southern African Natural Products Trade Association, partnered with Aldivia S.A. to jointly own *Maruline* – a patented isolated natural marula compound. PhytoTrade membership supports compliance with fair trade pricing, and fair and equitable benefit-sharing for TK (Schreckenber, 2003: 22–24; Suthersanen 2014).

Both CEGN and the IBPC continue to play a vital role in the ongoing evolution of ABS in each respective jurisdiction and illustrate how interim measures empower long-term legal and institutional development. The development of a comprehensive ABS system in Canada presently seems elusive. This is a challenge given the increasing vulnerability of the Arctic and Sub-Arctic region and their progressive unravelling (under the weight of climate change) as an unprecedented domain of GRs (Dylan, Chapter 5; Oguamanam & Koziol, Chapter 7). Canada may borrow from Australia and Namibia by considering an interim approach to ABS to prevent misappropriation and contribute to charting informed technical capacity at all levels.

Harmonized National Framework with Decentralized Administration

As a federation, Canada must establish an ABS framework which respects the Constitutional separation of powers. Australia established a comprehensive ABS system which governs Commonwealth territory and a significant portion of marine and terrestrial ecosystems and passed a harmonized framework with the respective states and territories (Australia 2002; Australia 2005; EPBC 1999, Section 525). While divergence remains at the state level in Australia, common substantive pillars allow for a nationally harmonized approach to the extent possible to succeed in a Federal system (see Chapter 7). A decentralized governance approach is utilized, with regional or specialized institutions empowered to process permit applications based on their technical expertise regarding the biodiversity under the purview of the organization involved (Australia EPBC Act, Section 197(p); Great Barrier Reef Marine Park Act, 1975). Indigenous communities such as the Aboriginal and Torres Strait Islander people constitute a third tier within the Australian ABS regime. They are empowered to grant access to their GRs and TK through the establishment of

PIC and MAT with oversight provided by the CNA to ensure equity (EPBC Regulation, Section 8A.08(h–j)). Should Australia accede to the NP, Indigenous communities could be further entrenching their capacity as localized CNA based on self-assessment of needs (Oguamanam & Hunka, [Chapter 3](#)) and their increased experience and strength of governance.

Namibia, as well, provides for localized governance of GRs and TK by ILCs through conservancies under a national framework. A harmonized national approach with decentralized administration allows for the utilization of localized or region-specific technical knowledge in the negotiation of MAT. Empowerment of ILCs to govern access gives deference to the community, allows for a denial of access due to cultural concerns, and reinforces self-governance. Broader consideration should be given to localized governance allowing, for example, Indigenous peoples to constitute their own focal points and CNA on access to their traditional GRs and TK in accordance with their culturally rooted protocols and practices (ABS Canada 2015, 2016, 2017).

Deferential Permit Types

The determination of a single versus multi-permit approach has important implications on the ABS efficiency. Australia has a two-permit system with a less onerous track for research activities, and a more onerous review for commercially-focused bioprospecting (EPBC Regulations, Section 8A.03(1)). All access to TK is practically treated as commercial in nature requiring the establishment of PIC and MAT with ILCs (EPBC Regulations, Section 8A.08(h–j)). Benefit-sharing based on investment strata and 2-year review cycles provide responsiveness to changes in intent (Model BSA, Section, 3.2.1, 3.2.4, 5.1; Schedule 3–4, Section 6.1, 7.1–2, 11–12, 15–17). In contrast, Brazil has a single registration system, aiming to reduce administrative hurdles to bioprospecting (Law No. 13123, Article 12; Decree 8,772, Article 20). The focus is on encouraging biodiscovery rather than providing an overly cumbersome institutional review in the early stages of research. Through restricting the conduct of biodiscovery activities to nationals and extending liability across the value chain, the registration system found in Brazil intends to foster both research and compliance. Given Canada's robust and unravelling biodiversity, a simplified access procedure for strictly non-commercial research conducted by nationals would be beneficial to incentivize biodiscovery (as in the example of the James Bay Cree and the antidiabetic health research team provided by Oguamanam & Koziol, [Chapter 7](#)). In the Canadian context, participation in any simplified procedure would still need to pass an Indigenous confidence threshold as most researchers are non-Indigenous (Bannister, [Chapter 12](#); Oguamanam, [Chapter 11](#)). Access to TK, commercial access to GRs, or research access by foreigners should require the establishment of PIC and MAT along with robust iterative oversight to monitor compliance and transformations from non-commercial to commercial applications or utilizations.

Administration of Benefit-Sharing through a National Fund

Creation of a fund to facilitate collection and dissemination of monetary benefit-sharing to support conservation and sustainable use of biodiversity, or to support dispersal of benefits broadly to ILCs in the case of transboundary, trans-jurisdictional, or trans-community GRs and TK provides flexible modalities to support systemic equity. Brazil utilizes the National Fund for Benefit-sharing (FNRB) to administer benefit-sharing. Namibia uses the Environmental Investment Fund to receive benefit-sharing contributions among other income streams for use in supporting projects relating to the conservation and sustainable use of GRs and TK which are directed by ILCs. Both of these approaches mimic the ITPGRA's multilateral system discussed above. Utilization of a specialized fund in each jurisdiction illustrates the importance of integrating flexible mechanisms to support administration, oversight, and governance of benefit-sharing. Broadening potential benefit-sharing income streams outside of simply a percentage of IPR royalty to include grants, loans, and voluntary payments, as seen in Namibia, enhances the potential scope and scale of conservation and sustainable use programs. Use of a similar approach could provide Canada a practical modality to address transboundary or broadly held TK and GRs (Oguamanam & Jain, 2017) as well as facilitating dissemination of benefit-sharing across Indigenous nations.

Recognition and Protection of the Collective Rights of ILCs Over TK

Rights over TK, as enshrined in Article 31 of UNDRIP, require adequate domestic protections, with rights often recognized to be both individual and collective in nature. Brazil classifies TK as collective in nature, with PIC required where there is an identifiable holder, and benefit-sharing flowing both individually and collectively through the FNRB – the domestic benefit-sharing fund. The CNA leverages a TK database to chronicle forms and holders of TK to preserve the characteristics, and protect rights of ILCs (Law No. 13123, Article 8, 10). Namibia explicitly recognizes the collective and inalienable rights of ILCs relating to TK, provides protections under both the ABS and IP systems, and outlines a range of both monetary and non-monetary benefit-sharing options (GRTK Act 2017, Article 5(1–3), 10, 12–13).

A broad group of jurisdictions can also be identified which have integrated disclosure measures as a safeguard against misappropriation including, regionally, the Andean Community and the African Union; and, nationally, in Belgium, Bolivia, Brazil, China, Costa Rica, Cuba, Denmark, Ecuador, Egypt, the EU, Germany, India, Italy, Kyrgyzstan, Norway, Panama, Peru, Philippines, Romania, Samoa, South Africa, Sweden, Switzerland, Vanuatu and Vietnam (Henninger, in Werth & Reyes-Knoche, eds, 2010: 293–8; WIPO, Table 2016). Disclosure of the country of origin of the biological material, and increasingly TK, used in a patent at the time of applications is becoming more widely used (UNCTAD, 2014: 49–51).

Although a contentious subject, this requirement, as indicated above, features in the WIPO-IGC Draft Articles on TK and is provided as an option in the Consolidated Document on GR and IP. Unfortunately, Canada has consistently opposed these disclosure obligations in international negotiations. Innovators in Canada would gain enhanced legal certainty from the establishment of checkpoints in line with evolving international practice integrating disclosure of origin in patent applications and requiring proof of compliance with country of origin ABS legislation (Hodges & Langford, [Chapter 2](#); Oguamanam, [Chapter 14](#)). Although there is no consensus among Indigenous peoples on the subject, development of a TK database under the care and control of Indigenous peoples of Canada could further strengthen their interests in ABS and equitable control of their TK, GRs and cultural heritage.

CONCLUSION

In its highly limited practice, the Canadian approach to ABS is lagging behind international norms, creating an environment of legal uncertainty, and providing inadequate protections for the rights of Indigenous peoples of Canada (Oguamanam & Koziol, [Chapter 7](#); Oguamanam & Phillips, 2015). Jurisdictions such as Brazil, Namibia and Australia provide useful approaches to inform ABS practices in Canada. Establishment of an interim body to evaluate access applications, review access terms, and prevent misappropriation is a worthy prerequisite. Harmonizing the ABS framework across Canada while balancing jurisdictional powers – Federal, Provincial, Territorial and Indigenous – will be a time consuming but important long-term initiative. Under this emerging framework, differentiated permit types and ongoing review to monitor changes in intent from research to commercialization are important.

Utilization of a specialized benefit-sharing fund provides a flexible mechanism to support conservation and sustainable use by Indigenous nations broadly and dissemination of benefit-sharing for transboundary or widely held TK. Finally, recognition and protection of rights of ILCs as they relate to TK, including refinement of patent disclosure standards, and development of Indigenous controlled TK databases, is vital to prevent erosion or misappropriation of GRs and associated TK. Active progress should be made on acceding to the NP in Canada to bring the domestic approach in line with international norms, including procedural mechanisms for the establishment of PIC and MAT, integration of a formal disclosure of origin requirement in patent applications relating to GRs or TK, and a supplemental due diligence requirement on users. Integration of ABS in Canada provides an area of opportunity to overcome previous missteps in Crown-Indigenous relations, establish a framework which practically balances innovation with equity, and provides functional modalities for the sustainable development of Indigenous peoples of Canada (Oguamanam, [Chapter 14](#)). Urgent action is needed, and the experiences distilled from other jurisdictions provide useful insights into the modalities for phased implementation of ABS in Canada prior to its formal accession to the NP.

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PART III

New Technological Dynamics
and Research Ethics

Implications for ABS Governance

Access and Benefit-Sharing in the Age of Digital Biology

Peter W. B. Phillips, Stuart J. Smyth and Jeremy de Beer

Abstract

This chapter explores whether and how genomic resources can be protected by the communities from, or countries in which they are accessed. Specifically, it asks whether the Nagoya Protocol on Access and Benefit-Sharing can be an effective mechanism to reassure communities about the sharing of gene sequencing data. These questions are of particular importance to Indigenous peoples and local communities, as many have troubling historical experiences with colonization and associated natural resource exploitation. Many Indigenous and local communities (ILCs) live in developing countries, which are particularly sensitive to access and benefit-sharing (ABS) issues. Different but equally serious challenges exist for Indigenous peoples in developed countries like Canada, Australia, New Zealand and elsewhere. Until outcomes of implementation of the Nagoya Protocol are captured, Indigenous peoples and Local Communities (IPLCs) remain in a quandary as to how to protect digitized genetic resources within their territories or under their jurisdiction. To advance our understanding of legal and regulatory options, this chapter integrates normative and positive perspectives on the mechanisms for access and benefit-sharing in the age of digital biology.

INTRODUCTION

It is often said that science is ahead of regulation. This truism is exemplified in the science relating to genomic sequence information, digital biology and the instantaneous global transfer of electronic information. The tsunami of genomic information being generated in research laboratories the world over has the potential to be shared with any other laboratory in real time. The challenge this creates is how to

viably ensure that value generated from the sharing of genomic information is identified and ethically allocated.

For decades, normative, legal and political discourse around access and benefit-sharing has been around 'genetic' resources. Science, however, has advanced far beyond genetics (the study of heredity) into genomics (the study of genes, their functions, and their interrelationships). While it took a full decade, from 1990 to 2000, to sequence the human genome, today genomes can be sequenced in mere days, if not hours. The cost, both fiscally and in time, to sequence the human genome is staggering. While occupying the time of an estimated 2,000 research scientists for a full decade, the entire project cost in the range of US\$1 billion. By comparison, today any individual can have their genome sequenced in less than 24 hours, by one person, for less than US\$1,000. With advancements in genomic knowledge growing exponentially from year to year, the task of trying to ensure that some modicum of regulation governs this field is a gargantuan one.

Such scientific advances are particularly challenging for those interested in the nature, value, use, preservation and ownership of a wide range of genetic resources – the inputs to genomics – that are embodied in populations of microbes, plants, animals and humans. These resources can be found *in situ* in organisms in all climates and cultures on land, in the sea and in the air or *ex situ* in botanical gardens, gene banks and public and private research collections. Genetic resources are inextricably intertwined with the environment (including human populations as hosts and users) and the knowledge and practices of their custodians. However, genetic resources' underlying meaning and utility are becoming disembodied from their hosts and severed from their custodians due to the advance of genomic and phenomic methods, the development of computational capacity to simulate design, growth and function, and emerging gene editing and synthetic biological techniques. Each innovation in some way works to disconnect the utility and function of organisms from their base of traditional knowledge and related biological assets.

At the same time, our understanding on Indigenous peoples' knowledge governance systems is evolving. No longer is Indigenous knowledge governance necessarily seen as 'traditional.' Indigenous peoples' knowledge-based practices are highly innovative; but focused on maintaining sustainable systems rather than creating economic artefacts (Drahos & Frankel, 2012). The cross-cultural reconciliation of Indigenous and Western approaches to biological knowledge is, however, a work-in-progress (Oguamanam, 2015)

So, the science of genomic sequence information has advanced so rapidly that the international agreement that was drafted to govern this issue was out of date by the time it came into force. The Nagoya Protocol negotiations concluded in October 2010 and the instrument came into force four years later. However, advancements have, to a large extent, arguably rendered the Nagoya Protocol essentially an ineffective governance mechanism as it does not deal with the pressing issue of digital technology transfer (*but see* Oguamanam, Chapter 11). The key question that

remains unresolved, and which we explore, is whether digitized data about innovation-related practices that involve genetic resources are ‘knowledge’ about or ‘derivatives’ of those genetic resources.¹

In these evolving contexts, the governance task is a complex one that has been generating discussion for at least a decade. Commentaries, contributions and insights have been advanced by individual scholars, groups of scholars, intellectual think tanks, and national governments over this period of time. Each contribution enhances the vast pool of knowledge that will be needed to ensure that access and benefit-sharing (ABS) over genetic resources and their associated traditional knowledge is managed in an economically efficient and ethical manner.

There is a large body of scholarly work on this topic (for example, see Phillips and Onwuekwe, 2007; Oguamanam, 2010; Oguamanam, 2011; Gold and Bubela, 2012; Koutouki et al., 2012; de Beer and Dylan, 2015). Interestingly, much of the work to date has a strong normative framing, as the scholars involved are both committed to and motivated by a desire to find a more equitable regime for traditional knowledge (TK), in an effort to support the advancement of the rights of Indigenous peoples. While this work is valuable, it does tend to be more aspirational and exhortatory than analytical and descriptive. Similarly, think tanks, international organizations and many countries have grappled with ABS, its application, regulation and governance. This chapter moves beyond the normative to examine how the various governance systems fit with the new reality and offers some strategic options.

BACKGROUND

There is quite an extensive body of literature that examines the definition of rights for TK and the framing of claims to benefits from those accessing those rights. The root of this debate was the 1983 International Undertaking on Plant Genetic Resources (IUPGR), which strove ‘to ensure that plant genetic resources of present or potential economic and/or social importance, particularly for agriculture, will be explored, preserved, evaluated and made available for plant breeding and other research purposes’ (IUPGR, 1983). Its fundamental assumption was ‘that plant genetic resources are a common heritage of mankind and consequently should be available without restriction’ (ibid). Many developing nations and quite a few scholars were concerned about that blanket appropriation of the TK embodied in seeds (Sullivan, 2004). In 1996, the United Nations Environmental Program in the context of the Convention on Biological Diversity (CBD) developed a set of guidelines on appropriate roles and structures for ABS. In addition to 8(j) (*in situ* conservation) of the CBD, a number of other articles offer direction and advice, including: 16 (provisions on access to and transfer of technology), 17 (exchange of information), 18 (technical and scientific cooperation), 19 (the handling and distribution of the benefits of biotechnology) and 20 and 21 (financial resources and mechanisms). These provisions suggest benefits that could involve: monetary

compensation in the forms of fees, research support, royalties and salaries; or non-monetary benefits, such as in-kind support for institutions and communities, information, transfer of equipment, software and knowhow, training, joint R&D, capacity building and local employment.

Recently, there has been significant debate and effort invested in negotiating a range of international conventions or treaties to delimit and protect Indigenous rights to genetic resources, involving the International Labour Organization, the UN and InterAmerican Draft Declarations on Rights of Indigenous peoples, the UNDP/UNCTAD and the European, Asian and African Development Banks. In the context of plant genetic resources, in particular, there are a number of special institutions involved in delimiting rights and facilitating ABS. These include the CBD (1992), the Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of the Benefits Arising out of the Their Utilization (2002), Agenda 21 and the Cartagena Protocol on Biosafety (2000), the IUPGR (1983) and ITPGR (2001), the CGIAR centres and related gene banks and various national programs (e.g. CIDA and SEDA). The Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization (ABS) is a supplementary agreement to the CBD. The Protocol entered into force in 2014. The main task of the Protocol members is to advance the policy and practice of accessing and utilizing genetic resources (GR) and associated traditional knowledge (ATK) in research and development activities. The Protocol created a clearing house mechanism to facilitate the collection and sharing of information on the national implementation of ABS, inducing legislative and other measures, permits, relevant authorities and institutions as well as codes of conduct and best practices.

The challenge facing all the systems is that the explicit link between TK and GR in modern scientific knowledge varies widely. Even without the scientific advancements we are focused on, many *ex situ* GR have become disconnected from their roots. New bibliometric and biometric tools and methods are helping to reveal some of the roots of some accessions to establish a chain of custody through ethnographic and scientific explorers' reports. The International Barcoding of Life Project (iBOL), which has barcoded and sequenced more than two million species, has discovered some challenges in the way we think about the environment we live in. Their analysis has determined that (a) taxonomists have mis-assigned about 10% of genetic material as distinct species, (b) we underestimated the number of species by at least a scalar, (c) our understanding of diffusion of species is too narrow and (d) the food chain for many species is far more complex and subtle than the macro-diets suggest. Ultimately, the concordance between species, source and utility is breaking down, which poses hitherto unknown and unforeseen challenges.

The recent revolutions in digital and *omics* spheres are further disconnecting utility from provenance. As we move further from genetics to genomics, automated phenotyping and digital plants, animals and microbes, we are less reliant on the underlying genetic material to undertake discovery research. This is combined with

new breeding tools that supplement traditional plant breeding with transgenic modification and now gene editing (e.g. CRISPR/Cas9) that reduce the need for access to genetic materials (Oguamanam & Jain, 2017). The end game for some is synthetic biology, where the genetic design is built directly from the component nucleic acids with no use of pre-existing organisms.

ABS MECHANISMS IN USE

Even while new genetic engineering techniques that can potentially improve the precision of DNA transformations are being developed, countries continue facing challenges implementing the legal instruments intended to manage the ownership, control and exploitation of new innovations. Even when countries have signed, ratified and elaborated a host of legal instruments (domestic, regional, international or some combination) intended to define TK and facilitate ABS, a series of barriers persist.

Crookshanks and Phillips (2012) undertook a comparative analysis of the ABS/TK landscape, offering a typology that differentiated systems based on whether they align more with the narrow commercial goals of the TRIPS agreement of the WTO or the broader socio-economic-ethical objectives of the CBD. Similarly, different countries would pursue their goals either through legal and regulatory mechanisms or via a broader range of institutions and partnerships. When this typology was applied to a range of biodiverse countries, the authors observed that many Latin American countries tended to use legal and regulatory mechanism first to pursue commercial benefits and then other non-pecuniary benefits while African and Asian nations have a more diverse set of goals and approaches.

Peru (a megadiverse country) serves as a useful illustrative example. In an effort to safeguard its biological diversity, Peru has signed and ratified the Nagoya Protocol. Peru's ABS regime is detailed in two laws and four decrees (UEBT, 2016). The two main legal instruments detailing Peruvian ABS requirements and procedures are the Rules on Access to GR and Law N° 27811. Article 7 of the Rules on Access to GR, indicates that the Peruvian state prioritizes the transfer and implementation of technologies that employ the country's GR. While Article 20 states that – when appropriate – a contract enabling access to GR, must contain, *inter alia*, provisions that contemplate the just and equitable distribution of benefits. Article 27 of Law N° 27811, indicates the minimum clauses a contract to access GR is to contain. According to clause (c), in case TK is employed, compensation will be an initial monetary or equivalent payment, and no less than five per cent of gross sales resulting from the commercialization of goods developed either directly or indirectly from having employed TK.

According to the Union for Ethical Bio Trade (UEBT), Peru has granted over 80 authorizations to access GR. From these authorizations, benefits have been limited, and for the most part have focused on the sharing of research results and

developing national capacities (non-pecuniary benefits). However, the country has not been able to overcome: (1) a weak legal and institutional framework to manage ABS in congruence with the Protocol; (2) lack of knowledge of relevant stakeholders on the access and utilization of genetic resources and 'Fair Benefit-Sharing;' (3) and limited experience in applying ABS mechanisms to access and management of genetic resources associated with TK (GEF, 2017). In an effort to address these barriers, relevant Peruvian authorities in conjunction with the Global Environment Facility (GEF) have resubmitted a project aimed at strengthening local capacity in harmonizing domestic legal instruments with the Nagoya Protocol.

ABS systems vary widely. Canada, for example, is party to the CBD but not the Nagoya Protocol. Canada does not possess a comprehensive framework that governs GR associated with Indigenous TK, but does have a robust set of IP laws. According to Aboriginal participants in the Canada-wide Focus Group on ABS organized by ABS Canada (ABS Canada Focus Group Report, Moncton, 2015; Ottawa, 2016; Saskatoon, 2017), the very idea of discussing plants and animals as 'resources' is not compatible with Aboriginal views, and any legal system or policy that starts with this premise will generate confusion and resistance. Any action in this direction is likely to be rejected by the communities those policies are meant to protect (ABS Canada, 2017). Thus, the very discourse used when discussing TK and ABS can be a barrier to implementation. ABS Canada undertook a series of focus groups and symposiums aimed at educating, training, and network-building on ABS with Indigenous peoples and other stakeholders as parties whose interests are critically engaged in ABS. The meetings have yielded mixed results, but a consistent feature has been the resurgence of historical tensions between Indigenous peoples and Canada's colonial administration. Phillips et al. (2012) surveyed Canadian First Nations about their practices for handling TK and ABS and discovered that few had structured and fully functioning systems.

Realities in each country will vary widely depending on the realities of specific Indigenous peoples or local communities and their cultures. While some countries may have an ABS system in place, this alone does not guarantee compliance or that benefits will manifest themselves. Other countries are in the process of developing ABS systems, but maintaining sustained interest in such a complex and at times seemingly abstract issue, might prove difficult. The digitization of genetic information, which is often associated with traditional knowledge, is likely to complicate, if not overwhelm, the already lagging institutions in charge of managing ABS and TK.

NEW ETHICAL AND/OR MORAL ISSUES CREATED

Most of the work to date on ABS and TK has a strong normative framing, as the scholars involved are both committed to and motivated by a desire to find a more equitable regime for TK, in an effort to support the advancement of the rights of

Indigenous peoples. Dutfield (2004) offers the clearest and most succinct set of reasons to protect TK and organize ABS:

- to fulfil moral obligations towards Indigenous and local communities;
- to comply with legal requirements embodied in international treaties and emerging norms (e.g. the CBD) and
- for more utilitarian goals such as local, national and global economic and welfare benefits and for improved sustainable management of biodiversity and conservation.

Each of these reasons is based on an underlying moral principle: intrinsic value based in moral absolutism; procedural compliance based in legal positivism and economic liberty based in the theory of utility.

It is important to note up front that while this work is necessary and extremely valuable, it does tend to be more aspirational and exhortatory than analytical and operational. This poses a significant challenge to those tasked with managing and adjudicating systems related to ABS over genetic resources and associated TK, as the prescriptive perspective has not offered much in the way of confirmed and validated models, methods and metrics that can be relied upon to deal with claims and disputes about TK and related ABS. With the digitization of biology, this gap between aspirations and actions may prove to inhibit partnerships and further isolate Indigenous peoples from the bioscience enterprise.

Moral Obligations and Definitions

Many of those engaged in the study and governance of TK accept that there is an intrinsic value in Indigenous community structures and their embodied TK. This is an absolute moral bedrock of the field and not open to external verification. Nevertheless, it is hard to translate that into action because the causal story (Stone, 1989) is fuzzy. The policy issues around TK remain loosely framed, as there is no universally accepted definition that offers hard boundaries for what it is and how one might work with it. Phillips and Onwuekwe (2007) note that neither the CBD, the source of the international agenda related to TK and ABS, nor the Rio Declaration or Agenda 21 define the term, even though they use it in various forms. Article 8(j) of the CBD goes the furthest, identifying a range of definitions, rights and obligations related to 'traditional knowledge, innovations and practices.' Article 8(j) asserts that the parties concur that this involves 'knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity' (CBD, 1992: 8). As with any definition, the devil is in the details. The provision, in and of itself, does not define 'indigenous and local communities,' 'traditional lifestyles' or 'conservation and sustainable use.'

Dutfield (2001) contends that TK exists notwithstanding its definitional dilemma. He adopts Martha Johnson's definition of traditional ecological knowledge, as a

starting point: '[a] body of knowledge built by a group of people through generations living in close contact with nature. It includes a system of classification, a set of empirical observations about the local environment, and a system of self-management that governs resource use.' Having said that, TK remains problematic as it exhibits an array of dichotomies: it can be both explicit and implicit; it can be local or global; and it can, as a proprietary matter, be individual or collective (Jensen et al., 2007). This array of attributes means the functional space encompassed by the term is wide and variable, and is ultimately highly fluid as new technologies work to disembodify knowledge claims from specific organisms found in or gathered from specific regions and peoples even as they render more sophisticated uses to which such organisms and their derivatives are applied.

Arguably, a literal reading of the Nagoya Protocol makes it hard to suggest that digitized biological data is a 'derivative' (expressly defined by Article 2(e) as 'a naturally occurring biochemical compound').² A better argument might be that the lines between knowledge, information, and data are blurry or non-existent in the worldview of many Indigenous peoples. Of course, the implications of each argument may not be the same.

Legal and Institutional Approaches

Much of the legal scholarship and most of the international negotiations, while grounded on the notion of an intrinsic moral value vested in Indigenous peoples and their unique TK related to plants, animals and microbes, smacks of legal positivism. Procedural norms and practices, irrespective of the intrinsic moral value, are proposed as the right and just way to proceed. For the most part, this style of scholarship has generated a range of valid and informative arguments in favour of extending and affirming collective rights to TK and options for managing an ABS regime. While much of this is focused on the formal intellectual property rights (IPRs) system – embodied in national patent and plant breeders' laws and in international treaties such as the WIPO and the TRIPS Agreement of the WTO – a complementary approach has been to examine the institutions and mechanisms that give effect to policies that relate to TK and ABS (e.g. CGIAR material transfers agreement system).

Against this institutional backdrop, scholars have attempted to refine how TK might be managed internationally and what rights, if any, claims of TK might have on benefit-sharing. At one extreme, Craig (2007) examines the international law and policy relating to human rights to determine if it could provide the basis for a *sui generis* system for protecting the knowledge of Indigenous people (Hodges & Langford, Chapter 2). She asserts that it is becoming increasingly clear that this type of system accords closely with a growing body of international law and policy specifically relating to the aspirations of Indigenous peoples for self-determination (Perron-Welch & Oguamanam, Chapter 6). Much work remains to be done to

understand the interplay of human, environmental and specific Indigenous rights; the often-strained relationship between environmental and Indigenous rights raises fundamental moral and procedural issues that could come to play in any dispute.

At the other extreme, Mgbeoji (2007) argues that misappropriation of Indigenous peoples' knowledge is rooted in the long-standing and ongoing 'colonial assault' on Indigenous and TK systems. He sees the emergence of Indigenous knowledge systems, including jurisprudence, as legitimate parts of modern international law, but he acknowledges that in the final analysis effective protection requires significant work at the domestic level. He asserts one will first need to explore the juridical resources already recognized by Indigenous peoples in their daily production, use, sharing and propagation of knowledge (Chartrand et al., *Chapter 8*). Somewhere in the middle, Castle and Gold (2007) used a set of legal and philosophical arguments to assess claims for compensatory benefits, concluding that 'justifications for benefit sharing cannot be derived from claims to property rights in traditional knowledge, if not because natural property rights are themselves problematic, then because property is normally considered free unless there is a normative justification for restricting access, particularly in the case of knowledge assets.' In essence, legal assignments of rights are purposeful rather than simply a default setting.

Dutfield (2004) bridges to a more positive approach, asserting that the moral and legal obligations embodied in our legal structure intertwine in an array of regimes and instruments, including customary law, IPR vehicles (such as patents, trade secrets, copyrights and plant variety rights), contracts law (including provisions related to trade secrets, licenses and material transfer agreements) and concepts in civil and common law related to unfair competition, privacy, breach of confidence and passing off.

In the context of digital biology that is differentially undertaken by scientists operating in formal institutions in advanced industrial economies, the complexity of modern legal structures occupies a prime position. Finding a place for TK and ABS in the context of digital biology will be complicated.

Economic Utility

Economists waded into the normative discussion of TK and ABS by using models of economic liberty and individual choice to model and estimate the impacts of various choice sets. Welfare economics offer valuable insights into the scale of any benefits related to TK. They also provide perspectives on the effects of unaided distribution and directed programs of benefit-sharing. Most of the economic argumentation and analysis related to TK and ABS has focused on two primary issues. First, many economists are vitally concerned with innovation. They are most interested in the impact of incentives and institutional factors on the rate of investment in R&D and subsequent improvements in our productive capacity. In that sense, economists tend to focus on strategies aimed at optimizing (in terms of efficiency

and effectiveness) the use of knowledge from all available sources and not explicitly about protecting and preserving special types of property. Second, a number of economists, either directly or by inference, have attempted to measure the economic value of TK, which is an important input into policy debate, specific commercial ventures and adjudicating disputes. While philosophers and lawyers assert that their concern is for moral and legal justice, they are not indifferent to the prospect of assisting Indigenous communities to gain a greater share of the economic value of their TK. The monetary value is in many ways a competing moral perspective.

Ultimately, the diversity of life on earth is based on the protein-generating capacity of plants – the main question is what value one assigns to the TK that underpins that system. Richards (2008) argues it is very difficult to accurately estimate the economic value of TK because: (i) it is often an essential component in developing other products; (ii) most TK-derived products never enter modern markets and (iii) most TK has cultural or spiritual value that cannot be quantified in monetary terms.

Nevertheless, a number of groups and individuals have made attempts to estimate the gross value. The World Bank reports that agriculture comprises 31% of the GDP of low-income economies and the combined annual market of plant life forms (in pharmaceuticals, crop production, botanicals and natural care) was estimated at up to US\$800 billion in 2007 (Mgbeoji, 2007; Wynberg and Laird, 2007). A 1992 UNCTAD-ICTSD Project on IPRs and sustainable development put the value of plant-based medicines in the pharmaceutical industry at US\$61 billion annually, or about 10% of the annual value of production (Richards, 2008). Farnsworth (1988) asserts the link to TK was obvious in that they found 119 plant-based compounds used in medicine worldwide, 74% which had the same or related uses as the medicinal plants from which they were derived. The World Health Organization (WHO) also estimated that the global market for traditional therapies, including but going beyond medicinal compounds, at more than US\$70 billion annually. As just one illustration of the scale of the issue, the Indian Government has estimated that worldwide more than 2,000 patents are issued annually based on traditional Indian medicines. More recently, a UNDP study reported that developing countries are losing as much as \$300 million a year in unpaid royalties from farmers' seeds and over \$5 billion a year in unpaid royalties for medicinal plants (based on a 2% royalty for material and knowledge transfers) (Shiva, 2001). As explored by Oguamanam and Koziol in *Chapter 7* of this volume, it is possible for Indigenous peoples to lay down the preliminary building blocks for that kind of evaluation (no matter how elusive) in the Canadian context.

If one uses a simple model to calculate the net present value of even the most conservative transfers of TK embodied in medicinal plants and recently accessed landraces (at a discount rate of 5%, for example), the base value of these accessions is in the range of US\$65 billion. Some advocates use these kinds of numbers to justify compensation claims for misappropriated value. The contrary view is that few,

if any, of the transfers of TK were exploited to their fullest economic potential without further invention and adaptation, and that most of the economic value being assigned to TK is actually more appropriately assigned to the subsequent investments in making this genetic material function in a new setting or new use. Posey (1999) also notes that economists at one level miss the core issue, in that they hesitate to assign any estimates to the intrinsic cultural or spiritual value of TK and related GR (Oguamanam, 2010). It is clear that money talks.

POLICY ISSUES AND IMPLICATIONS

In light of the reality (or at least our hypothesis) that the Nagoya Protocol will be able to offer little in the way that is practically useful to the management of digital (or synthetic) biology knowledge let alone the governance of this vital 21st century issue, the root of the issue would seem to be, how can (or will) international research development and collaborations take place in a world of digital biology? While any multitude of questions, implications and concerns can be raised in regard to this issue, it would seem that there are three basic, or fundamental considerations that can provide structure for moving forward.³

First, clearer distinction and definition of what is 'knowledge' is crucial. As has been the case for nearly the past decade, the identification of a gene's function is no longer patentable, as patent offices have determined that this is equivalent to discovery and is not an innovation by definition. In the context of digital biology, is the sequencing of a plant's genome knowledge or is it simply a set of data that requires analysis, assessment and the application of additional scientific techniques, prior to the generation of knowledge? As is identified above, the ability to sequence plant genomes at ever faster rates, is state-of-the-art within genomics research. The result will be vast resources of genomic data. Determining if these pools of data are knowledge will provide clarity to those involved at the public and private research levels as to what specifications may be applied to these resources at this point in the research spectrum. As a normative default, it is conceivable that both the physical GR and related knowledge should be equally subject to ABS given that generations of human conservation and curatorial efforts have been invested in their development and survival (Oguamanam, Chapter 11).

Second, should these pools of genomic data (if they are indeed determined to be knowledge) be classified as 'traditional knowledge?' The above observations establish that TK exists when there is application. Conceivably, the sequencing of a plant species that has never been used for food, medicine or any other cultural application, would suggest that this is not subject to TK protocols. While it may raise concerns about the potential for biopiracy, that is a separate argument from what is examined in the context of this chapter. The discipline of bioinformatics involves using mathematical algorithms to search through genomic databases to identify unique genes in a particular plant species. Once a unique gene is identified, digital

biology applications could be applied to develop an innovative product that is based upon, but not identical to, that which exists in the genomic database. The relationship between TK and digital biology needs to be governed by some parameters. Although some analysts and Indigenous peoples may not be so inclined,⁴ it cannot remain a wide open and broadly interpreted issue, but a middle ground is possible. Defining the scope and scale of what is, and what is not, TK as it pertains to digital biology will greatly aid all researchers. It is possible that this knowledge may not need to be classified as TK to be subject to ABS. The ABS mechanisms could be made to work if a chain of custody could be constructed.

Third, what is the relationship between TK and national, sub-national and community-based governance structures? It would be expected that what is believed to be TK by one community, while an inherent and inalienable right, might not be respected or supported as TK by a national, provincial, or municipal government, let alone non-Indigenous actors in the private sector. This would cause big problems: operationally, it presumes that TK protection requires some kind of validation by a government external to the Indigenous community itself. That attitude is symptomatic of the asymmetrical power relations that have historically subjected TK to validation by entities that have no authority in Indigenous cultural circles (Oguamanam, 2018). At the same time, unfortunately, this is the practical reality from the perspective of some (hopefully not most), non-Indigenous stakeholders. Those non-Indigenous stakeholders may not feel bound by, and in practice may not be forced (i.e. by judicial orders, police powers, or other state actions) to comply with Indigenous legal traditions. That is simply the sad fact of the matter. On the bright side, these governance challenges are not only a matter of policy coordination; they also implicate fundamental constitutional and human rights, raising the stakes for all concerned (de Beer and Dylan, 2015; Nichols, Chapter 4). This issue of 'who decides' is vital, particularly at the local community level as the potential to involve legal injunctions to bring research collaborations to a stand-still, is a substantial issue of concern.

The core of digital biology advancement ultimately must address, if not resolve, these three issues and translate them into the legal and institutional structures that operate both within and beyond nation states. These issues are interwoven into international institutional research collaborations (i.e. CGIAR), philanthropic research efforts (i.e. Gates Foundation) and private sector investments into agriculture R&D that will have important future impacts on crop production and food security. The review of the existing landscape assessed by Crookshanks and Phillips (2012) suggests that no single model has emerged nor is any model showing particular efficacy – instead of being a problem, one might see the diversity of models as an opportunity for trialling and experimenting with new and better approaches.

The lack of consensus regarding a model or functioning framework is having a market effect. Given this general lack of clarity, private firms may be hesitant to fully engage in public-private partnership agreements regarding innovative agricultural

research, in some instances. Simply put, the absence of a defined path, could cause some firms to step back and evaluate their participation in some development projects. A slight nudge towards a decline in R&D agriculture investments could lead to fewer new crop varieties being commercialized, with opportunity costs for example in the fight against climate change or for food security. Clarity in this contentious issue is vital, given the spill over impacts of technology innovation designed to improve food security in those countries that most desperately need it.

CONCLUSION

We have identified gaps between normative and positivist research on ABS that spans across disciplines of economics, law, political science and others. This research gap is among the factors contributing to the inadequacies of institutional governance mechanisms for the era of digital biology. The topic of ABS and digital biology had been on the table during Nagoya negotiations, but was deprioritized given the desire to achieve at least some deal before talks collapsed. As such, the underlying issues are still simmering even though there is some possibility to work within the extant Nagoya and other adjunct frameworks as demonstrated in the contributions to this volume (Oguamanam, Chapters 11, 14). Yet as we move further into the twenty-first century, rapid technological developments will continue to make physical materials transfers less relevant for scientific research collaborations. Digital data are supplanting biological samples as the mode of conveyance of GR and associate TK. Industry and Indigenous community partners must, therefore, urgently address issues of data ownership, sovereignty, and stewardship.

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NOTES

- 1 The problem has caught the attention of the Convention on Biological Diversity which in 2016 set up an Ad Hoc Technical Expert Working Group on Digital Sequence Information on Genetic Resources. See further discussion of that initiative by Chidi Oguamanam in [Chapter 14](#).
- 2 However, as explained by Oguamanam in [Chapter 14](#), members of the CBD Expert Working Group on Digital Sequence Information are split in their interpretation and understating of this matter.
- 3 See also Oguamanam's preferred solutions in [Chapter 1](#) of this volume; these are anchored in the International Plant Treaty multilateral model of ABS and the Nagoya protocol approach to transboundary genetic resources.
- 4 From the outcome of the ABS Canada Focus Groups and the contribution from Oguamanam & Koziol in [Chapter 7](#) of this volume, it is abundantly clear that this relationship invokes suspicion in Indigenous circles. It is seen as a site for power relations that would result in the use of technologies to foster biopiracy and the ongoing exploitation of Indigenous TK.

ABS: Big Data, Data Sovereignty and Digitization

A New Indigenous Research Landscape

Chidi Oguamanam

Abstract

This chapter focuses on the increasing sophistication of research practices through the applications of digitization and other aspects of information and communication technology (ICT). Multiple factors, including advances in biotechnology and the production, utilization and malleability of valuable research data through the use of digital technology tools have resulted in the transformation of data or genetic information into widely accessible virtual resources that are practically de-linked from their origins. Given the orientation of the Nagoya Protocol towards the physical transfer of genetic resources, the virtualization of Indigenous research data makes the latter part of the big and open data grab threatening the realization of ABS. However, despite the potential to de-link genetic resources (GRs) and associated traditional knowledge (aTK), including other aspects of Indigenous research data from their sources, conceivably, there are significant bases in the texts of CBD and the Nagoya Protocol for the inclusion of digitally sequenced data as part of ABS. Further, the interface of Indigenous peoples and local communities' (IPLCs) nascent interest in data sovereignty and the big and open data phenomena provide an opportunity to apply critical data analytics to mainstream data equity as an integral aspect of Indigenous-sensitive ABS in an increasingly sophisticated and technology-driven research environment.

INTRODUCTION

Article 1 of the Nagoya Protocol states, '[t]he objective of this Protocol is the fair and equitable sharing of the benefits arising from the utilization of genetic resources, including by appropriate access to genetic resources ...'. This provision partially

repeats Article 1 of the CBD. The essential focus of the Nagoya Protocol (NP) is GR, defined in its parent convention as ‘genetic material of actual and potential value’ (CBD, 1993, Art 2). In order to trigger claims for equitable benefit sharing, there must be in effect ‘utilization of genetic resources.’ The NP, as opposed to the CBD, defines utilization of GR as the ‘conduct of research and development on the genetic and/or biochemical composition of genetic resources, including through the application of biotechnology as defined in Article 2 of the Convention’ (NP, Art 2(c)). The CBD defines biotechnology as ‘any technological application that uses biological applications, living organisms and derivatives thereof, to make or modify products or processes for specific use’ (NP, 2010, Art 2(d); CBD, 1993, Art 2). The protocol defines derivatives as ‘naturally occurring biochemical compound[s] resulting from the genetic expression or metabolism of biological or genetic resources, even if [they do] not contain functional units of heredity’¹ (NP, 2010, Art 2(e)). Also, as at June 3, 2016 the WIPO-IGC consolidated document to IP and GRs adopts that same definition of derivatives.²

In the structure of the both the CBD and the NP, the focus is essentially on GR. No mention is made of TK until Article 8(j), in the case of the CBD, and Articles 7, 10, 11, 12, 13 etc., in the case of NP, which make reference to ‘traditional knowledge associated with genetic resources.’ There is no definition of that concept in either the CBD or the NP (see Phillips, Smyth & de Beer, [Chapter 10](#)). WIPO-IGC’s attempt to define TK and TK associated with GR remains inchoate. From the above perspective on utilization, it is logical to assume that any research³ that involves TK associated with GRs or vice versa, as the case may be, amounts to the utilization of the TK and the GRs and, consequently, triggers equitable ABS claims. As tripartite concepts, research, TK and GRs inherently derive their relevance not only as blurry forms of datasets or information in and of themselves, but also in the production and utilization of datasets and information.

Both the CBD and the NP are silent on ‘derivatives’ as they apply to TK. But a strict textual appraisal of the language of the NP would suggest that it does not discount the notion of derivatives in relation to TK. First, it appears that the moment TK is associated with GRs, the latter becomes susceptible to the provision on derivatives as outlined above. Second, even if the first proposition is shaky, which is not conceded, the NP is consistent in its text to the effect that, TK associated with GR held by IPLC must be accessed ‘with their prior informed consent’ (PIC) or with their approval and involvement pursuant to mutually agreed terms (MAT) (NP, 2010, Art 7, 11, 12, 13, 16, 18, etc.). The NP leaves wide discretion for parties regarding how the involvement, approval and prior informed consent of the IPLCs could be secured and with regard to the constitution of MAT.

Though these mutually reinforcing provisions are within the ambit of progressive evolution of international law on Indigenous peoples as echoed in the NP preamble, IPLCs are free to articulate and ensure that the derivatives of TK are subjected to equitable ABS in ways that go beyond the narrow confines of the definition of

derivatives proffered above. The CBD preamble recognizes the malleability of the applications and manifestations of TK beyond the scientific reference to derivatives as genetic expression or metabolism of naturally occurring biochemical compounds. Specifically, the CBD recognizes ‘the unique circumstances where TK associated with GRs is held in countries, which may be oral, documented or in other forms, reflecting a rich cultural heritage for conservation and sustainable use of biological diversity’ (CBD, 1993, Art 23).⁴ Simply put, when GRs are associated with TK or when TK is associated with GRs, the manifestations of that TK may not necessarily be linked to *physical* representations. Rather, it may involve nuanced forms that go beyond the emphasis of the texts of both the NP and the CBD on physical transfer of GRs and, as the case may be, associated TK.

Despite the recognition of the character of TK in the CBD, the latter and its NP focus essentially on the corporal notion of GRs. For example, both recognize the sovereign rights of nations to exploit their own natural resources (CBD, 1993, Arts 3, 15; NP, 2010, Art 6). As well, GRs are designated in *ex-situ* and *in-situ* terms. The provisions on practical implementation of the NP make references to transboundary GRs and transboundary collaboration as well as to checkpoints for monitoring of compliance (NP, 2010, Arts 10, 11, 14, 17). Logically, these are references to recourses in their physical forms. For the most part, some of these provisions reflect a bias for the physical character and expectations for the physical movement or transfer of GRs under the ABS system.

However, technological reality has forced the CBD to grapple with digital sequence technologies as they apply to genetic resources. This is as a consequence of the fact that the utilizations of GRs and/or TK associated with GRs are happening in contexts devoid of their physical transfer or movement. In the information age, research is essentially a data-driven initiative, animated by open-ended possibilities for the generation, manipulation, diffusion, anonymization and various innumerable forms of data aggregations (see Phillips, Smyth & de Beer, [Chapter 10](#)). On a positive side, digital technology has lowered the cost of data; enhanced the accessibility and exchange of vital information in ways that facilitate research and promotes its objectives of advancing knowledge, proffering solutions to problems, and ultimately improving human capacity and quality of life. The prevalence of technology in the generation and management of data therefore creates both opportunities and dilemmas for stakeholders in the context of the interface between GRs and TK, with significant implications for ABS.

In a recently commissioned study by the CBD on digital sequence information on GR, experts point out that the interaction of these phenomena represents a profound area that shapes contemporary research. It constitutes a significant challenge to the implementation of the NP ABS scheme especially with regard to the identification of contributors or users of GR and associated traditional knowledge and provenance of sequences. This chapter explores that important dynamic – the understanding and mitigation of which is critical for an Indigenous-sensitive ABS in Canada and around the world.

THE BIG DATA PHENOMENON

Over the last two decades, there has been an explosion of interest in the concept of 'big data,' initially by technology companies and data-based giants such as Google, Facebook, Twitter, Instagram, eBay, Amazon and Wikipedia, to name just a few. Big data designates the phenomenon of massive and complex data sets at a scale at which it is not possible for conventional data processing applications to handle. Because of their richness in information, these massive datasets have been turned into goldmines for the application of predictive analytics, user behaviour analytics and other sophisticated data analytical methods in order to harvest or extract insights and optimize the unprecedented value in the novel data ecosystem. Big data has since been of significant interest across many areas of human endeavour, including social behaviours, environment, marketing, manufacturing, healthcare, DNA mapping or sequencing and profiling (Oguamanam, [Chapter 14](#); Phillips, Smyth & de Beer, [Chapter 10](#)) education, and governance, to mention a few. Public and private sectors in the United States, Canada, United Kingdom, the European Union, China and India have continued to invest in big data as a part of their intense competition to leverage the information and communication technologies in virtually all sectors of human endeavour.

One of the most profound applications of big data is in the realm of research. Big data rapidly generates vital research information that is usable in a variety of disciplines. For example, it took ten years for the Human Genome Project (HGP) to decode the human genome; with big data, the same feat now takes just a single day. Big data reduces the cost of research. Again, in regard to decoding the human genome, using big data, the cost has been reduced by over 100 times. Big data enhances the generation and storage of information across distance and time, including those relating to genetics, genomics, biomes, biological properties, environment, climate and geology, consumer behaviours, historic patterns or phenomenon, etc. to rapidly advance social, commercial, and health experiments and interventions. It facilitates and entrenches a culture of open repository of vital research information through multiple information pulling applications (wireless devices, networked sensors, aerial sensors, cloud computing, RFIDs, etc.) to be easily accessed by researchers at minimal or no costs.

BIG DATA, OPEN DATA AND OPENNESS

As an adjunct of the new information technology era, big data is an important catalytic and incentivizing factor to openness, open innovation and open source and open data. Like the concept of openness, big data is not necessarily antithetical to proprietary use of data or information. In fact, private sector corporations largely drive the big data phenomenon for their firms' needs as a competition and survival strategy. Both big data and open data or the open source phenomena generally are constructive and modified forms of proprietary use of data in self-interested ways that

strategically encourages targeted forms of sharing via licencing or related schemes to optimize value (de Beer, 2016; Phillips, Smyth & de Beer, 2017). Notwithstanding the corporate proprietary interests that have been pivotal in the evolution of big data, the latter have significant effects in promoting access and democratising the use and advancement of the impact of large scale information on the society. As such, big data has a nuanced relationship with open data and open source. In Canada, the University of Waterloo runs the Canadian Open Data Experience (CODE). The program demonstrates the relationship between open and big data, including the role of open data (specifically data visualization) in the advancement of big data.

‘DATAMANIA’ AND RESEARCH INVOLVING INDIGENOUS PEOPLE

As with other sectors, research involving Indigenous peoples is not immune from the effects of digital technology, big data and open data and their applications in the processing of sensitive data like genetic/genomic, ecological information, or even patterns, demography or the mapping and various nuances of traditional cultural practices. We called attention to this tendency in an earlier work where we observed as follows:

Multidisciplinary researchers ranging from cartographers, ethnographers, anthropologists, economists, social scientists, critical data studies experts to lawyers doing traditional knowledge-related research by and with Indigenous communities ‘have witnessed the emergence of numerous issues regarding the collection, dissemination and management of data based on Traditional Knowledge.’⁷⁵ Not only do such issues implicate the problematic relationship between intellectual property and traditional knowledge, they also touch on the subject of access and equitable sharing of benefits arising from such research.

(Oguamanam & Jain, 2017, 95)

Nowadays, research involving Indigenous peoples invariably results in a significant digital footprint or digital output, including through online data resources of various forms such as text, images, audio, video, data versioning mapping, etc. Researchers, including those involved with Indigenous peoples commonly establish dedicated webpages for their projects. These web platforms are proven sources of significant, publicly accessible data which can be mined and interpreted as part of the global universe of big data without the knowledge nor the guarantee of compliance with the terms of engagement between Indigenous peoples and researchers. Despite any stated conditions and caveats, which are mostly unenforceable, any such independent access of often vital Indigenous research-related data is open to further de-contextualization and (mis)interpretation without recourse to Indigenous peoples.

The continued pre-eminence of the big data and open data movements results in availability of an unprecedented scale of Indigenous research-related data that are conceivably inseparable from TK, for the most part, at virtually all levels of the use of GRs in traditional knowledge innovation and practices (TKIP) including but not limited to health, traditional medicine, agriculture, cultural expressions, sacred and secret rituals, food, genomics, culture, social behaviour, demographics, ethnography, climate management, hunting, special environments such as the polar region (Scassa & Taylor, 2017), etc. Not only are these kinds of information easily de-linked from their sources and origins in ILC. In their transformations, they may or may not result from direct physical dealings with GRs. But because they are parts of research and consequently constitute utilizations of GRs and, as may be applicable, aTK, they are, arguably, subjects of ABS obligations in accordance with the specific provisions of the NP and the CBD examined in the earlier section of the chapter and elaborated further below in the discussion on derivatives.

In Canada, the Geomatics and Cartographic Research Centre (GCRC) at Ottawa's Carleton University presents a variant form of approach and a new form of experience over the increasing web presence and digital footprints of data arising in the context of Indigenous research. The GCRC works in partnership with Northern Canadian Indigenous communities deploying geographic processing and management skills as predicative and other tools of analysis 'for a range of socio-economic issues of interests with a focus on specific local and international contexts.'⁶ The project is partly driven by an online interactive atlas on geographic, geomatics, cartographic, environmental and TK practices [of Indigenous peoples] developed by the Centre. Other related Indigenous research endeavours that directly and indirectly project TK and associated data into cyberspace in furtherance of the intersection between open and big data are prevalent in Canada and elsewhere (e.g. Mapping in Indigenous Communities Project). Scassa and Taylor (2017) have recently broached the issue of ethical challenges for the inclusion of TK as part of the Arctic data infrastructure.

GCRC researchers recognize that third parties who seek access to TK are often driven by commercial and intellectual property needs. Given the reductionist nature of those prisms in relation to the 'communal and other unique features of traditional knowledge' (Oguamanam & Jain, 2017, 95) they proposed an *open* licencing scheme for TK with the objective of assisting 'traditional knowledge holders communicate their expectations for appropriate use of their knowledge to all end users – a development that potentially contributes to the letter and spirit of ABS and to other non-economic aspects of traditional knowledge' (Oguamanam & Jain, 2017, 95). While a licencing scheme for TK, as a contractual matter, has potential to accommodate Indigenous peoples' ABS sensitivities and more, its viability may be contingent on several contextual variables, including the nature of the TK or GRs, where applicable, and the dynamics of a given Indigenous community as well as the envisaged use for the GRs and TK. One can confidently suggest that the GCRC TK licencing scheme is truly an 'open' proposition in both a literal and figurative sense.

The GCRC's research model reflects an attempt to temper the big and open data imperative with a sensitivity that is historically demanded by Indigenous peoples over dealings with their TK and associated GRs. But that is only one research initiative. A more systematic engagement is required to square up the open and big data phenomena with Indigenous peoples' expectations over the sourcing and use of their data in the new research environment in ways that address equity deficits in the use of TK (de Beer, 2016). That very imperative, which is captured by Indigenous peoples' interest in data sovereignty, explored below, is critical to the development of an Indigenous-sensitive domestic ABS policy in Canada. In addition to University of Waterloo's CODE mentioned earlier, in Canada, the Open North initiative is another open data program and part of the global big data movement that promotes the use of civic technology tools at both domestic and global levels to foster the public goods and democratic benefits of big data. With its focus on the First Nations of Canada's North, the Open North initiative inevitably engages Indigenous peoples' inclination toward data sovereignty with its commitment to open data (Lauriault, 2017; Oguamanam & Jain, 2017).

CASE FOR DIGITAL DNA

Before turning to the meaning and rationale for Indigenous peoples' quest for data sovereignty, an important but obvious point deserves a brief mention. The global big data and open data phenomena's role in the virtualization, malleability and democratization of data access for complex objectives is a factor or spinoff of information communication technology. But beyond ICTs, advances in biotechnologies constitute interrelated but additional site for the generation of critical research data in forms that de-link them from naturally occurring GRs, blurring, distancing or complicating authentic claims to their origin or source, not to mention their association with TK of Indigenous and local communities (Phillips, Smyth & de Beer, Chapter 10). For example, through multidisciplinary insights ranging from engineering, molecular and synthetic biology, chemistry to genomics, genetic epidemiology, biotechnological insights are augmented to generate various kinds of information and data relating to GRs. In some cases, the undergirding research is inspired by Indigenous knowledge of the uses of plants, animal and other genetic materials for medicinal, therapeutic, pharmacological, food and agricultural practices and innovations. In other cases, such as the Human Genome Diversity Project (Coombe & Amani, 2005) or the *map-my-gut* initiative (Spector, 2017), Indigenous peoples themselves are the sources of vital genetic material. In yet others, their traditional dietary practices are foundations of vital information and insights for understanding health-improving life practices and positive but complex human-nature interactions, for example, pursuant to the gut biomes research.⁷

Biotechnology facilitates the generation of genetic data or information including, for example, through DNA sequencing with results digitally stored in the form of digital DNA. The latter is critical for the conduct of synthetic biology research. As a

cognate of genetic engineering, synthetic biologists are able to construct new DNA components that are not naturally occurring. They are also able to re-design existing biological forms or their properties with modular DNA parts, re-arranging and combining them in new ways that result in new and complex biological systems in predictable and well characterised manners. All of these feats of ingenuity in the interface of biotechnology and digital technology translate into outcomes that solve practical problems in innumerable range of fields. Again, in an earlier project we surmised as follows:

Digital DNA makes it easier to conduct research. Rather than sourcing genetic sequences in nature, researchers can use online databases to download DNA sequences for free with a click of a button. These sequences can be customized and then ordered from commercial laboratories to conduct research, allowing entire genomes or genes to be constructed from scratch. As DNA synthesis and sequencing technologies become cheaper, it may be faster to synthesize certain DNA sequences than to find them in nature . . . Despite the obvious advantages of using digital DNA for research, it raises concerns for biopiracy. Users can benefit from genetic resources or local knowledge available on the web without necessarily being obliged to share the benefits derived from using the online data.

(Oguamanam & Jain, 2017, 106, 107)

The point here is that a combination of ICTs' preeminent role in fuelling the big and open data phenomena, and continuing advances in biotechnology in various directions de-emphasizes the physical transfer of GRs as fundamental triggers of ABS. In order to leverage the possibilities under emerging ABS regimes whether within or without the Nagoya framework, there is need for strategic vigilance, expertise, capacity building and awareness-raising in the complex forms in which GRs and associated TK are being generated, used or transferred in biotechnological applications (Oguamanam & Hunka, Chapter 3). But the key question is whether the apparent de-linking or blurring of the sources or origins of GRs under these complex and hi-tech forms for their use and transformations compromises their status as derivatives or not. Even though the foregoing analysis and from the specific reference to derivatives in the text of the NP suggests an affirmative response. But such an inclination is not absolute. It must be mindful that the CBD Ad Hoc Technical Working Group on Digital Sequence Information (DSI) is divided on the question of whether DSI is included in the definition of GR or not (Oguamanam, Chapter 14). That dissonance among experts is related to the existing controversy surrounding the scope of derivatives among stakeholders in ABS.

DERIVATIVES AND ABS

To further buttress the case for applicability of ABS in the context of migrations of Indigenous research-driven information or data in GRs and TK to the realms of big and open data, we call attention to a 2017 World Intellectual Property Organization

(WIPO) study, *Key Questions on Patent Disclosure Requirements for Genetic Resources and Traditional Knowledge* (WIPO, 2017). The study was conducted at the instance of WIPO's specialist Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions (IGC), tasked to develop texted-based instruments for the protection of those subject matters for WIPO member states. An issue at the IGC deliberations, and certainly in all cognate fora is whether and to what degree could GRs or materials and TK be an integral part of an invention to warrant the disclosure of their sources or origins in patent applications. As a practical matter, this kind of disclosure would foster accountability and transparency over the uses of GRs, enhance ABS, while ensuring that the patent system ceases to serve as a conduit for unlawful appropriation of GRs and TK.

The above-mentioned WIPO study focuses on the degree of linkage or relationship between GRs and, where applicable, TK with a claimed patent invention that could trigger disclosure of source or origin and consequently an Indigenous and local community claim for ABS. This is important because not every casual or inconsequential nexus or association between a claimed invention and GRs or TK of ILCs could be subject of ABS and disclosure claims. The identified links provide further insight for understanding and supporting the position that a generous interpretation of derivatives or process of derivation is necessary for an Indigenous-sensitive ABS policy. As well, it is already noted that the text of the NP accommodates the dynamic character of GRs and, conceivably, TK to account for the malleability and migrations of research data based on them. A 2010 Norwegian Fridtjof Nansen Institute report endorsed a 'broad' definition of GRs that reflects the 'dynamic' understanding of the concept (Fridtjof Nansen Institute, 2010; Oguamanam & Jain, 2017).⁸ As well, members of the Indigenous caucuses to negotiations in cognate fora to the IGC featuring patent disclosure, protection of TK and ABS as part of the broader law and policy discourse on intellectual property and development strongly expressed a similar inclination on the issue of derivatives of GRs and TK (Bagely & Rai, 2014).

The WIPO study identified three contexts or degrees in which an invention may be linked to GRs and TK in order to warrant patent disclosure of source or origin. First, when the invention directly claims to have *utilized* GRs or TK. This is straightforward on its face. It calls attention to the definition of utilization of GRs under the NP reproduced earlier in this chapter. Second, where the invention is *derived* from GRs or TK. The third relates to where the invention is *based* directly on GRs or TK. While the third context recognizes situations of obvious and perhaps unequivocal nexus, on evidentiary bases, between an invention and GRs and TK, the second one makes reference to when an invention results as a derivative of GR and TK. It leaves open considerations for the quantity, content and quality of the role or effect of GRs and TK of Indigenous and local communities on the innovation or invention for which a patent claim is made. It is conceivable that in these three sites, the nexus between claimed invention and GRs or TK may overlap. They

are not exclusive. An invention may be based on GRs and may as well have been derived from it and in which case it inherently utilizes GRs. All of these are matter of degree and analytical disaggregation. Detailing of legal specificities and their consequences, it is argued, ought to be a domestic matter that requires Indigenous peoples' participation at policy making and implementation levels.

In making such an evaluation, it is suggested that the utilization or presence of GRs and TK be appraised on account not only of their physical transfer or physical contact with the user but also on the basis of the latter's sourcing of valuable data or information on the GRs through big and open data and other publicly accessible, including digital and web-based, platforms that have the tendency to de-link GRs and TK from their origin. Nonetheless, it is recognized that depending on the level or extent to which the accessible information constitutes the resulting invention, establishing the novelty of the invention may be problematic. This interpretive pathway is consistent with a combined reading of the NP's definitions of utilization of GR, biotechnology and derivative reproduced earlier in this chapter. Objection may be taken to the narrowness of the definition of derivative, which bears repeating: 'naturally occurring biochemical compound resulting from genetic expression or metabolism of biochemical or genetic resources even it does not contain functional units of heredity' (NP, 2010, Art 2(e)). Despite the fact that in many IPLCs' worldviews TK and GRs are part of symbiotic holism of the natural order, this definition limits derivatives to 'naturally occurring biochemical compounds' which is the dominant context for application and uses of some but not all forms of TK in association with GRs. It may be argued that the reference to naturally occurring compounds is specific to a physical object. But true as that may be, its 'utilization' broadly construed could include any and other forms in which these naturally occurring are utilized or applied, which will include how they are expressed as abstract datasets or sequences in biotechnology research.

Besides, other aspects of TK and practices based, for example, on rituals, ceremonies, protocols, etc. which are not captured in the NP are often documented in open and publicly accessible big data platforms. Their appropriations for insights by researchers and users of GRs conceivably fall well within the notion of derivatives especially when those insights are obtained through a universe of big data that elaborate the transformations or practical metamorphoses of GRs into naturally occurring biochemical compounds. That it does not matter whether or not the naturally occurring biochemical compounds have functional units of heredity is instructive. At the very least, it opens the way for sanctioning Indigenous peoples' claims for ABS over their GRs and associated TK in the realm of synthetic biology.

The NP specifies that 'utilization' of GR happens essentially in the conduct of R&D on GRs through the applications of biotechnology. There is no question that open and big data phenomena today constitute part of the most resourceful infrastructures for the conduct of research. And to the extent that GRs and aTK are increasingly becoming part of the global big data infrastructure, despite their

tendency to de-link GRs and aTK from their sources and origins in ILCs, it does not disentitle Indigenous stakeholders from making legitimate claims for ABS. Finally, biotechnology is characterized in the NP as technological application in the use of 'biological systems, living organisms or derivatives thereof to make or modify products or processes for specific use' (2011, Article 2(d)). Again, it has been noted that the interface of digital technology and continuing advances in biotechnology have boosted the uptake of big data, especially in life sciences R&D. Through interdisciplinary concerts in genetic engineering, molecular and synthetic biology, bioinformatics, genomics, genetic epidemiology, etc. research data relating to Indigenous peoples and in some cases their knowledge systems, their GRs, genetic profiles and their 'derivatives,' can readily be generated, modified or adapted to accomplish R&D objectives. We have made reference to such outcome in our discourse of digital DNA above and elsewhere (Oguamanam & Jain, 2017).

Notwithstanding the tendency of these technologies to de-link or conflate ensuing critical research data or information from their origins, the proposition for building new biological systems (with or without functional units of heredity) from scratch is dubious. This is even more so when such a system is claimed to have an absolute disconnect from natural sources or absent some form of inspiration even in regard to pattern, characteristic or predictability from those said to be 'naturally occurring,' a term that is problematic on its face. In sum, contrary to the apprehension that the migrations, malleability, dilutions and de-linking of crucial research data and information from IPLC over GRs and TK into the universe of open and big data, there is still a solid and legally sustainable case for ABS in those contexts. Yet, the overall inequitable effect of big and open data on IPLCs should neither be undermined in their entirety, nor should the flaw in the NP to directly pre-empt or accommodate the ABS implications of digital technology or, more technically, 'digital sequence information' for TK be downplayed. A more rigorous philosophical and yet pragmatic response to big data is required. It is a response that attempts to capture Indigenous peoples and, as may be applicable, other local communities' complex interests in ABS. As indicated earlier, such interests transcend the mere commercial and market value of GRs and TK. They are captured under the nascent or emergent concept of data sovereignty as it applies to Indigenous peoples in research contexts, which is the focus of the next section.

DATA SOVEREIGNTY

Despite all the benefits claimed for big and open data, there are significant degrees of skepticism around them. Such reservations are the preoccupation of a comparatively nascent field known as critical data studies; they are not of direct interest to this chapter. However, from the above analysis, it is clear the big data phenomenon is a significant factor in the de-linking, de-contextualization and virtualization of data. In relation to data arising from research dealing with GRs and TK, it has been argued

that a combination of big data and advances in biotechnology as symbolized, for example, by digital DNA and synthetic biology applications is capable of complicating claims for ABS on a practical level. As the effects of big data on all stakeholders, especially the most vulnerable, such as Indigenous peoples, attract interest of policy makers and critical data analysts, some have called for mediating such effects through some form of social contract-oriented intervention to protect vulnerable interest or values such as individual or civil liberties and privacy rights, etc. (Al-Rodhan, 2014). Indigenous peoples have articulated such interventions in the form of data sovereignty. While the social contract model and sovereignty approach are not necessarily synonymous, both could advance the course of justice, fairness and equity. Data sovereignty is arguably not a strict counterpoise to big data, but it could serve to moderate its negative effects and help explore and contextualize Indigenous vulnerabilities over big and open data phenomena and, in the presence case, with regard to safeguarding the progress made around ABS.

In its general construct, data sovereignty designates the right of States in relation to others States to govern the collection and ownership, including access and use of data that is domiciled within their jurisdiction. As well, data sovereignty denotes the sanctity or integrity of data. It is therefore an incidence of the sovereign right of States as it extends and applies to data governance. The capacity of ICTs to digitize information and strip it of any jurisdictional affiliation, for example, through cloud computing, does not fully deprive data of standing especially with regard to the locus of its storage or generation. It is only logical that the States that have the highest aggregation of contact with specific data assert sovereignty, especially pursuant, analogously, to conflict of laws principles, but subject, of course, to any contractual obligations and principles of collaboration that are critical for law and order in cyberspace.

Another aspect of data sovereignty that is relevant relates to the application of the elements of its logic onto the milieu of Indigenous peoples, with specific regard to the research context. On a more serious rendition, assertion of data sovereignty by Indigenous peoples is an aspect of their fundamental right to self-determination and their claim to shared sovereignty within collaborative federalism. In 2017, a group called the International Indigenous Data Sovereignty issued the Indigenous Charter Statement. The Group comprises three networks of Indigenous peoples organized at national levels, namely the Te Mana Raraunga - Maori Data Sovereignty Network, the United States Indigenous Data Sovereignty Network (USIDSN), and the Maiamnayri Wingara Aboriginal and Torres Strait Islander Data Sovereignty Group in Australia. Increasingly, these initiatives are promoting international Indigenous consciousness on data sovereignty reaching out to Hawaii, Lapland and other Indigenous peoples with commitment to fashioning policies on how best to collaborate in the control, sharing and application of information or data relating to research involving Indigenous peoples. As its overarching objective, Indigenous Data Sovereignty (ID-Sov for short) aspires toward 'a more robust and coherent

international collaboration to achieve impactful outcomes at the intersection of Indigenous data sovereignty, Indigenous data governance and research' (International Indigenous Data Sovereignty IG Charter Statement, 2017). Indigenous data sovereignty concerns the rights of Indigenous peoples or nations to govern the collection and ownership, including access and use of Indigenous-related data in research and other contexts.

The movement, which is now known as the International Indigenous Data Sovereignty Interest Group (IDSIG) is committed to fostering data-driven research, promoting the use of data, building capacity in data generation within and outside the academic research contexts prioritizing benefitting Indigenous communities. The IDSIG captures the relevance of data sovereignty for Indigenous peoples in the context of big data and the role of data in changing research dynamic in the 21st century in the following statements culled from its Charter Statement. It merits significant attention:

Like other nation states, Indigenous nations need data about their citizens and communities to make informed decisions. However, the information that Indigenous nations have access to is often unreliable, inaccurate, and irrelevant. Federal, state, and local governments have primarily collected these data for their own use. Indigenous nations' reliance on external data that do not reflect the community's needs, priorities, and self-conceptions is a threat to self-determination. The demand for Indigenous data is increasing as Indigenous nations and communities engage in economic, social, and cultural development on an unprecedented level. Given the billions of dollars in research funding spent each year and the increasing momentum of the international big data and open data movements, Indigenous nations and communities are uniquely positioned to claim a seat at the table to ensure Indigenous peoples are directly involved in efforts to promote data equity in Indigenous communities.

The Canadian situation is no different from the international context that the IDSIG articulated above. As far back as the 1999 *Royal Commission on Aboriginal Peoples*, Indigenous peoples decried the historically inequitable relationship between them and researchers. Part of the struggle to release their status as stakeholders in research involving them was the establishment of the First Nations Information Governance Centre (FNIGC) which exercises custody and control over First Nations Regional Health Surveys (RHS) data. To its credit, the FNIGC developed an RHS code of ethics, which outlines guiding principles, ethical practices and protocols for the use of data generated pursuant to the RHS. These principles link Indigenous peoples' interests in research data to their self-determination rights, which are enhanced when they benefit from the result of such research and are empowered to take control of their health and are able to receive research funds and be proactively involved in participating in research about their own peoples.

In addition to the undergirding *raison d'être* for the RHS, in 1998, the FNIGC initiative developed what, in retrospect, amounts to the first major Indigenous data

sovereignty initiative in Canada titled the OCAP principles. The acronym stands for Ownership, Control, Access and Possession. As a typology of data sovereignty, OCAP expresses the core framework for ensuring that Indigenous peoples have control over the various dealings in research data relating to them from their collection, uses or applications, dissemination, sharing (perhaps including, arguably, interpretation). All of these are supposed to happen under an ethical consciousness to protect and practically translate or give effect to those key words. We have noted, in an earlier work, that both the RHS and the OCAP principles are limited in two respects. First is in terms of the research context and the second is with regard to the category of Indigenous peoples to which they apply. Historically, they arose in the context of health-related Indigenous research data and they apply to First Nations and Inuit as opposed to other Aboriginal categories.

Those limitations are no longer valid. Both the RHS and OCAP support development of research partnerships with all researchers without limitation to any discipline or field of research. There is now in Canada an elaborate research ethics framework focused on doing various forms of research relating to Indigenous peoples as a whole (Tri-Council Policy Statement 2, 2014, Chapter 9). In allowing for the proactive engagement of Indigenous peoples in research, every element of these protocols and principles sanctioned under the RHS and OCAP incorporate aspects of data sovereignty to some degree (Napoleon, 2015). Some of the protocols are initiated by Indigenous peoples on their own as well as by the research funding agencies themselves or professional associations as a matter of best practices (Banister, Chapter 12; Burelli, Chapter 13). As the drive for big and open data continues to define the future of research, IPLCs' push for data sovereignty will find stronger and wider traction for critical data analysis to mainstream the imperative for data equity as a moderating principle despite all the benefits canvassed for big and open data phenomena.

CONCLUSION

Fueled by ICTs, big and open data phenomena constitute one of the most progressive infrastructures for the advancement of research in the 21st century. Big and open data reduce costs, enhance the democratization of vital research data and related information, including those involving GRs, aTK and, broadly, research relating to IPLCs. Yet the convergence of bio-digital technologies and more broadly the paraphernalia of the ICTs in GRs and aTK contexts practically results in the de-linking of critical Indigenous related research data from their origins and sources in Indigenous and local communities and their knowledge systems. These technological realities are real grey areas exposing gaps in the legal and policy framework for ABS under the NP, CBD and cognate regimes. They also remain a significant source of present and future challenge to implementation of ABS. As argued by Phillips, Smyth and de Beer (Chapter 10), not only did the NP fail to 'deal with the pressing issue of digital

technology transfer,' the Protocol was already rendered obsolete by technological developments before it came into effect. Counterintuitively, however, a critical analysis of aspects of the relevant provisions of the Protocol and cognate texts of relevant international instruments on the utilization of GRs, aTKs and the concept of derivatives support the *continued* relevance and accommodation for equitable ABS in era of technology's tendency to conflate sources and origins of GRs and aTK. Even if that is not enough, a critical appraisal of progressive developments on the rights of IPLC generally reinforce the relevance of ABS implementation through ongoing technology transformations as a matter of justice and equity.

Rather than undermine ABS, overall, the current state of affairs energizes momentum for pragmatic and responsive incorporation of critical data studies and data equity to big and open data phenomena as an important site for progressive policy making toward an Indigenous-sensitive ABS. Using critical data analytical approaches and constructive deployment of data sovereignty, IPLCs are better able to sustain their demand for equitable ABS in the wake of new technologies. To this end, the novel concept of data sovereignty is one that should command attention for policy elaboration and for balancing converging interest in Indigenous research, ABS and the big data and open data phenomena. As Oguamanam and Hunka pointed out in [Chapter 3](#), the use of technologies in ABS-related contexts is one of the priority areas of Indigenous capacity building and capacity development for equitable ABS in the Canadian context.

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NOTES

- 1 Emphasis added.
- 2 WIPO/GRTKF/IC/35/4.
- 3 There is no definition of research in any of the instruments, NP and the CBD.
- 4 Arguably, this is a basis to suggest that the CBD is not oblivious of digital sequence information (DSI) in relation to TK associated with GRs.
- 5 Carleton University, Geomatics and Cartographic Research Centre and Canadian Internet Policy and Public Interest Clinic (CIPPIC), *A Proposal: An Open Licensing Scheme for Traditional Knowledge* (2016), online: https://cippic.ca/sites/default/files/file/CIPPIC_GCRC-TK_License_Proposal-July_2016.pdf.
- 6 University of Victoria.
- 7 (www.thememo.com/2017/07/12/hadza-gut-health-improvement-microbe-diversity/) Microbiome project with Hadza Indigenous Hunter Gatherers of Tanzania who are linked to 50,000 generations of human ancestry ... linked to cradle of humanity in Africa ...).
- 8 Fridtjof Nansen Institute, 'The Concept of "Genetic Resources" in the Convention on Biological Diversity and How it Relates to a Functional International Regime on Access and Benefit Sharing' (2010), online: www.cbd.int/doc/meetings/abs/abs-sw-g-09/information-abs-sw-g-09-inf-01-en.pdf.

Ethical Guidance for Access and Benefit-Sharing

Implications for Reconciliation

Kelly Bannister

Abstract

This chapter offers an ethical grounding for reframing access and benefit-sharing (ABS) as a tool for a more just social, economic, ecological and cultural order in Canada. The chapter complements and expands legal and regulatory approaches to ABS by examining how the established Canadian context for research ethics can inform the national and international framework for ABS, particularly as related to the rights, responsibilities and interests of Aboriginal peoples, their traditional ecological resources and their knowledge systems, amid a phase of national reconciliation in Canada. Examination of ethical codes and guidelines that are founded in a relational approach shed light on how responsibilities are interlinked with rights to knowledge and genetic resources. The chapter suggests an Aboriginal-sensitive ABS regime in Canada is a logical tool for facilitating right relationships through shared understandings between different worldviews and the modes of ethical reasoning that they embody.

Modern science's great strength, its ability to focus on a part of nature and apply analytical tools and techniques, is also its fatal weakness. By being focused, science routinely shatters and fragments, thereby obliterating context, connections and interactions... Knowledge without spirit is soulless, lacking in love, humility and responsibility that must guide and constrain its application. Knowledge embedded in Indigenous languages and cultures will never be duplicated by science, so like endangered plants and animals, must be protected and encouraged to flourish.

– Turtle Lodge Declaration, 2017

INTRODUCTION: RATIONALE AND GOALS

The discourse on access and benefit-sharing (ABS) over biological/genetic resources and associated Indigenous traditional knowledge in Canada has largely focused on legal and policy solutions to address a myriad of jurisdictional and cross-cultural issues. Rights, consent, fairness and equity are dominant themes in ownership, access and fair use discussions. All of these themes have ethical dimensions, but ethics has been more implicit than explicit in much of the ABS discourse to date (Oguamanam, Chapter 11).

When explicit, ethics often has surfaced in morally-judgemental and politically potent ways that elicit defensive reactions, further polarizing the parties and diminishing the principles in question. Wikipedia's entry on 'bioprospecting' provides examples of 'famous cases' over the last two decades where bioprospecting proponents have been accused of biopiracy, cultural misappropriation or unauthorized commodification of Indigenous cultural knowledge and traditional resources (e.g. ICBG-Maya project in Mexico, Rosy periwinkle in Madagascar, the Neem tree in India, Hoodia in South Africa and more).¹

Spotlighting bioprospecting and biopiracy dilemmas has dramatically increased global public awareness, and catalyzed tremendous opportunity for debate, reflection and response at individual, institutional and systemic levels, from local communities to international fora. A case in point is the International Cooperative Biodiversity Group (ICBG-Maya) project initiated by Drs. Brent and Elois Ann Berlin at University of Georgia in 1998–2001 (Berlin & Berlin, 2004; Feinholz-Klip et al. 2009). ICBG-Maya research involved documenting Chiapas biodiversity and the ethnobotanical knowledge of the Mayan Indigenous peoples of Mexico as a basis for exploring drug discovery. The project provoked vehement international controversy around issues of consent and was eventually cancelled by the funder, sending waves of unrest throughout the ethnobiology community. However, as the ICBG-Maya experience illustrated, applying a predominantly Eurocentric rights-based approach to resolving nuanced ethical dilemmas encourages a social and political mindset of 'blaming and shaming' and sets the stage for 'winners and losers' depending on whose rights prevail. The full potential of considering and responding in concrete and constructive ways to the ethical dimensions of the dilemmas posed by cases such as the ICBG-Maya project has yet to be realized.

A more explicit consideration of ethics that is predicated on *relationships* and acknowledges an inextricable connection of rights to *responsibilities* offers a different opportunity – one that is particularly timely and relevant to ABS within Canada, amid a national commitment by the federal government to 'reconciliation.' This commitment was articulated in Prime Minister Justin Trudeau's 2015 statement on the report and recommendations of the Truth and Reconciliation Commission

(TRC). Trudeau remarked that, ‘it is time to act, without delay, to advance the process of reconciliation, and rebuild Canada’s relationship with First Nations, Inuit, and Métis Peoples based on rights, respect, cooperation, and the standards of the United Nations Declaration on the Rights of Indigenous peoples’ (Liberal Party of Canada, 2015).

As highlighted by Perron-Welch and Oguamanam in Chapter 6 of this volume, the federal government recently issued ‘Principles Respecting the Government of Canada’s Relationship with Indigenous peoples’ (Department of Justice, 2017). These ten principles are described as a ‘significant move away from the status quo to a fundamental change in the relationship with Indigenous peoples’, and ‘a step to building meaning into a renewed relationship.’

The sentiments and intentions expressed are unquestionably vital to a conciliatory way forward between Indigenous peoples and federal, provincial and territorial governments in Canada. However, what these sentiments really mean has yet to be seen and felt. According to Professor Mark Selman, reconciliation has been treated by both government and business as mainly a legal, political and economic challenge, with community protocols regarded as important relational ‘hoops to jump through’ to meet ‘strategic objectives.’ He argues for attention to the ‘significant ethical dimension’ which requires ‘both sides learning to see each other’s reasons for coming to judgement about what is good, right, wise or equitable’ (Selman, 2016).

There are similar gaps in ABS efforts to sufficiently recognize ethical dimensions beyond legal, political and economic systems when Indigenous cultural knowledge and genetic resources are associated. This chapter attempts to respond to those gaps by taking an applied ethics approach to ABS, drawing on contemporary theory and practice from both descriptive ethics (e.g. ethical codes) and relational ethics (i.e. an emphasis on the nature and significance of relationship).

The goal is to offer timely and relevant contributions to ‘Aboriginal-sensitive ABS’ in a reconciliation framework within Canada. This is achieved through selectively highlighting established ethical codes and guidelines for research involving Indigenous peoples that are founded in a *relational* approach. In particular, this chapter examines two relevant domains for ABS: (i) national ethics policy for academic research involving Indigenous peoples in Canada and (ii) international ethical standards in the discipline of Ethnobiology. It also describes past efforts to inform the national ABS context through the development of voluntary ABS guidance for accessing traditional knowledge associated with biological/genetic resources (Bannister, 2008).

The commentary herein is intended to complement and expand – not replace – legal and regulatory approaches to ABS. Grounding ABS more explicitly in applied ethics not only builds on a legacy of learning and ethics policy development in Canada, it increases the potential for ABS to become a tool for a more just social, economic, ecological and cultural order in Canada (Hodges & Langford, Chapter 2).

RESEARCH ETHICS IN CANADA: CIHR GUIDELINES AND TCPS2

Trudeau's 2015 statement and the 2017 Principles mentioned above are not just about rights; they are about *right relationships*, which is the heart of the ethical approach offered in this chapter. In general, ethics can be understood as how we treat one another, or how we relate to one another. Ethics derives from the ancient Greek *ethos* referring to character or disposition. It has many meanings today, from social uses as a synonym for morality, to formal fields of inquiry within philosophy, to many practical applications of ethical codes and guidelines.

Ethics emerged as an applied academic discipline in the 1960–70s. This was largely catalyzed by unsettling questions raised among scholars and professionals regarding the controversial involvement of their disciplines in technology, sustainable development, human and environmental health, and violations of human rights (Hardison & Bannister, 2011). The institutionalization of ethics as formal research policy based on ethical guidelines is also a relatively recent phenomenon. In Canadian universities, the earliest policies for governing research involving humans date back to the 1970s for social sciences and humanities (SSHRC, 1977) and the 1980s for medical research (MRC, 1987). However, these early guidelines were seen to have little influence, and most researchers did not even know the guidelines existed (Rocher, 1999).

In 1994, focused efforts were initiated to develop a single unified policy for all Canadian research involving humans. There was notable tension in the policy-making process as a fine balance was attempted between meeting the demands of a diverse spectrum of research while ensuring the protection of human participants in research and avoiding paternalism (McDonald, 2009). The first version was established in 1998 as the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS) (Oguamanam, Chapter 11). However, the section on research involving Indigenous peoples was left in abeyance with explicit recognition that the section was based largely on publicly-available information and insufficient discussions had taken place with representatives of Indigenous peoples or researchers involved in such work (McDonald, 2009).

To address the pressing need for guidance, the Canadian Institutes for Health Research (CIHR) established a working group and process to consult with Indigenous peoples and researchers in Canada and to inform development of the CIHR Guidelines for Health Research Involving Aboriginal People (2007).² The CIHR Guidelines marked a turn in Canada, offering the first national policy with detailed philosophical grounding and practical guidance for academic researchers working in an Indigenous context. The CIHR Guidelines remained in place until 2010 when they were superseded by a new version of the TCPS (i.e. TCPS2) that contained a twenty-eight-page chapter on 'Research Involving the First Nations, Inuit and Métis Peoples of Canada.' A revised version of the TCPS2 was adopted in 2014 with no changes to this chapter.³

Ethics policy expert, Dr. Marlene Brant-Castellano (Mohawk of the Bay of Quinte Band), who chaired the technical advisory committee for TCPS2 Chapter 9, acknowledged tensions inherent in the colonial nature of the TCPS2 language used to codify Indigenous ethical principles. Based on her involvement with the policy-making process, she reframed key terminology to help bridge the policy language used with applications in an Indigenous context. For example, where the TCPS2 uses ‘respect for human dignity,’ Indigenous articulations may include ‘spiritual responsibilities to maintain right relationships’ (Brant-Castellano, 2008, 23). She also shared a more elaborate translation offered by Anishinabek Elder George Courchene, in the context of relationships between researchers and Aboriginal participants in research (Brant-Castellano, 2008, 23):

- **Kindness** implies respect for the dignity of the others involved, not dominating or pressing our own agenda at the others’ expense;
- **Honesty** involves communicating our principles and intentions as the basis for relationship and ensuring free, informed consent for actions taken;
- **Sharing** recognizes that the common good requires give and take by all, with respect for the different gifts that each party brings; and
- **Strength** is courage to stand firm for our principles; in some cases, strength is resilience, as in the capacity to bend to circumstance while holding on to important values.

Brant-Castellano (2008, 23) concluded: ‘[t]ogether, these virtues balance one another to maintain respect for self and others. All parties to a relationship are responsible for maintaining this ethical balance. While words to describe relationships differ, it is possible to see the harmony between the ethics of ‘respect for human dignity’ endorsed by researchers and the ethics of ‘right relationships’ embodied in First Nation, Inuit and Métis traditional teachings’.

Both CIHR Guidelines and TCPS2 contain explicit support for cultural protocols, customs, and community level guidelines and codes of practice. It is considered the researcher’s responsibility to be informed, and to respect these. Article 9.8 of the TCPS2 requires that any inconsistencies between the TCPS2 and community custom are to be identified and addressed in advance of initiating the research, or as they arise. Moreover, Article 9.8 states that the ‘absence, or perceived absence,’ of formally articulated community research codes or guidelines ‘does not relieve the researcher of the obligation to seek community engagement in order to identify local customs and codes of research practice’ (Burelli, Chapter 13). It is in everyone’s best interest to deepen our individual and collective understandings of how to appropriately engage with communities and clarify cultural expectations in research.

The CIHR Guidelines and TCPS2 were both indirectly influenced by a concurrent international process to develop a code of ethics in ethnobiology, led by the International Society of Ethnobiology (ISE). For transparency, the connection

between these three policy initiatives is through participation of the author as a member of the respective working groups and advisory committees for each process, namely: as a member of the Aboriginal Ethics Working Group (AEWG) from 2004–07 which developed the CIHR Guidelines; a member of the Panel on Research Ethics-Technical Advisory Committee on Aboriginal Research (PRE-TACAR) from 2005–08 which advised on TCPS2 *Chapter 9* (2008); and as Chair of the ISE Ethics Program from 2004–present and facilitator of the ISE Code of Ethics development process. A brief history of the ISE Code of Ethics is provided below.

ETHICS IN ETHNOBIOLOGY: ISE CODE OF ETHICS

Ethnobiologists often act as intermediaries between Indigenous and local communities on the one hand, and the apparatus of biocultural diversity research, conservation and development, on the other. As a discipline, ethnobiology is considered over a century old, but in the last couple of decades public interest in Indigenous cultures and plant-based resources has put ethnobiology under a brighter light.

A corollary of their prominent role in biocultural brokering is that ethnobiologists are often in the precarious position of unwittingly facilitating cultural appropriation. The Maya-ICGB provides a case in point. It was with the intention of facing this double-edged role with eyes wide open that the late Dr. Darrell Posey led a charge in the early 1990s to create a Code of Ethics for ethnobiologists worldwide through the International Society of Ethnobiology, (ISE), which he co-founded.

The Code of Ethics for ethnobiologists was ten years in the making. It was rooted in the Declaration of Belem (1998), which resulted from the ISE's first international congress and is considered the first international declaration to explicitly recognize the expertise of Indigenous knowledge holders and call for fair compensation for use of their cultural knowledge and biological resources (Posey & Dutfield, 1996). Posey envisioned subsequent congresses as the vehicle to complete the code of ethics and formalize a position in support of Indigenous intellectual property rights (IPRs) and just compensation of Indigenous knowledge holders (Posey, 1990). He called on ethnobiologists to 'take the intellectual lead' and appropriate actions 'toward the development of a new ethic that serves as a model for other disciplines' (Posey, 1990: 97–8).

Until his death in 2001, Posey led an extensive international process involving hundreds of people of diverse cultural and professional backgrounds from across the world to create the ISE Code of Ethics. It was unanimously adopted by ISE members in 2006, with additions in 2008. It remains in place to this day, available in eight languages, and with a commitment to compliance as a condition of ISE membership.⁴ A number of other ethnobiology societies and environmental organizations around the world have formally adopted the ISE Code of Ethics or used it as a model to develop their own.

The ISE Code of Ethics offers both aspirational and concrete guidance through 17 principles and 12 practical guidelines and compels us to interpret and implement these *in relationship with* those with whom we are working. What sets the ISE Code of Ethics apart from other guidance is explicit emphasis on Indigenous proprietary rights, cultural responsibilities and interrelationships within a framework of *mindfulness* – a framework offered by an Indigenous elder from Aotearoa (New Zealand) well before mindfulness became a popularized social and educational phenomenon in North America. Mindfulness is described in the ISE Code of Ethics (2016) as invoking ‘an obligation to be fully aware of one’s knowing and unknowing, doing and undoing, action and inaction.’

The 17 principles underscore a range of deeper considerations needed to give expression to both *rights* of self-determination and *responsibilities* of care to past, present and future ancestors and to other sentient beings through stewardship of lands, airways, and waterways. It is in this twinning of rights with responsibilities that are derived from Indigenous worldviews and Indigenous articulations of natural law (Borrows 2002, 2010; Napoleon, 2012; Battiste, 2016; Borrows and Coyle, 2017) that the understanding of a relational biocultural ethic more fully emerges.⁵

As noted in Bannister and Solomon (2009: 158), the ISE Code of Ethics underscores ‘layers of duty in research that compel researchers to be concerned about the dignity and autonomy not only of *individuals*, but also of *collectives* or *groups*.’ It extends the concept of research ethics ‘beyond just humans to the surrounding environment upon which human well-being depends and includes rights and responsibilities to the living and non-living, and extends into past, present and future.’ Researchers are obliged to consider larger temporal scales (years, decades or generations) for projects and more comprehensive resources (time, funds) to be able to put in place what is needed to understand and meet mutual expectations around the research – such as defining goals, obtaining consent, sharing outcomes and benefits in meaningful and useful forms, and adequately protecting community knowledge and property from misrepresentation or misappropriation.

Some examples of elements in the ISE Code of Ethics that encourage a relational biocultural ethic include:

- Explicit acknowledgement of Indigenous prior proprietary rights and cultural responsibilities;
- Encouragement and commitment to supporting active community participation in all stages of research from inception to implementation;
- Promotion of the concept of ‘educated prior informed consent,’ which recognizes informed consent as an ongoing process requiring an educative component that employs bilingual and intercultural education methods and tools to ensure understanding by all parties involved;
- Support for the precautionary principle through promoting proactive, anticipatory action to identify and to prevent biological or cultural harms

- resulting from research activities or outcomes, including publications that facilitate cultural knowledge appropriation;
- An expectation that researchers incorporate reciprocity, mutual benefit and equitable sharing in ways that are culturally appropriate and consistent with the wishes of the community involved;
 - Conceptualizing research as a cycle of continuous and ongoing communication and interaction, which should not be initiated unless there is reasonable assurance that all stages can be completed;
 - Support to Indigenous communities in undertaking their own research based on their own epistemologies and methodologies is a priority;
 - Underscoring the importance of acknowledgement and due credit in accordance with community preferences for all agreed outcomes (e.g. publications, educational materials, images) including co-authorship when appropriate. This extends equally to secondary or downstream uses and applications, requiring researchers to ensure the connections to original sources of knowledge and resources are maintained in the public record;
 - An expectation to conduct research in the local language to the degree possible, which may involve language fluency or employment of interpreters;
 - An expectation that researchers have a working understanding of the local context prior to entering into research relationships with a community, which includes knowledge of, and willingness to comply with, local governance systems, cultural laws and protocols, social customs and etiquette.

ETHICAL GUIDANCE FOR ACCESS AND BENEFIT-SHARING IN CANADA

Inspired in part by the ISE Code of Ethics, the creation of a national code of conduct to provide voluntary ABS guidance regarding best practices for researchers was proposed several years ago. In a report commissioned by Environment Canada prior to the Nagoya Protocol, Bannister and Haddad (2006) mapped out the policy landscape and recommended how to navigate and complement existing research ethics policies and structures with a national ABS code of conduct in mind. As described in Bannister (2009), such an endeavour would build upon existing research ethics policies related to Indigenous research, institutional structures and research ethics review processes, and an established compliance mechanism within Canadian research institutions that receive funding from the federal granting agencies (i.e. institutional research ethics review of all research involving humans is required before release of research funds).

In 2008, Environment Canada invested in initial efforts to develop comprehensive voluntary national ABS guidance that was consistent with the Convention on

Biological Diversity, Bonn Guidelines (2002), former CIHR Guidelines (2007–10), former TCPS (1998) and ISE Code of Ethics (2006). The resulting ‘Draft Access and Benefit-Sharing (ABS) Guidance to Access Traditional Knowledge Associated with Genetic Resources in Canada’ was intended to promote conduct consistent with Canadian values and ethics described in policies and research practices related to Aboriginal peoples in Canada, and in keeping with Aboriginal cultural protocols and Canada’s international obligations (Bannister 2008; Koziol & Oguamanam, Chapter 7; Langford & Hodges, Chapter 2).

The draft ABS guidance was comprised of ‘voluntary recommendations to facilitate appropriate access to traditional knowledge associated with biological/genetic resources,’ noting that ‘appropriate access is not simply facilitated access’ (Bannister, 2008: 11). The draft ABS guidance also sought to promote wider understanding on the nature of traditional knowledge, how it is evolved and held by Indigenous peoples, issues arising from use of traditional knowledge associated with biological/genetic resources, and existing codes, guidelines and protocols that are relevant to ABS. It was intended to help both users and providers establish effective participation and the relationships necessary for a degree of trust, confidence, transparency and legal certainty in the negotiation and implementation of access, and fair and equitable benefit-sharing agreements/arrangements for traditional knowledge associated with biological/genetic resources (Bannister, 2008).

The draft ABS guidance contained ten principles and specific practical guidance on implementation of the principles. The principles included:

- **Mindfulness** (evaluation of one’s understandings, actions and responsibilities to others);
- **Self-determination** (recognition of existing Aboriginal rights under the Constitution of Canada, treaties and common law);
- **Reconciliation** (learning from the past as an impetus for establishing productive and mutually beneficial relationships with Aboriginal peoples for present and future);
- **Respect for Aboriginal relationships to biodiversity** (including responsibilities stemming from being granted access to traditional knowledge);
- **Respect for and valuation of traditional knowledge** (including inherent and extrinsic values and different meanings based on different world-views and intentions);
- **Meaningful relationships** (transparency, communication, participation and reciprocity);
- **Confidentiality** (obligations to maintain confidentiality to protect the integrity of traditional knowledge and prevent harms from culturally inappropriate access and use);
- **Consent** (establishing that prior informed consent has been obtained from each community and individual who provides traditional knowledge);

- **Fairness and equity** (equitable sharing of benefits derived from use of traditional knowledge, including legal concepts of fairness, distributive justice, and balance);
- **Diligence** (a prior understanding of the local community context and broader Canadian legal context when entering into a research relationship with a community).

Specific guidance for **implementation of the principles** was provided for three phases of research or development activities:

- **Pre-planning and preparation** (including initiating community contact, and acquiring necessary background information);
- **Access to traditional knowledge** (including community and institutional approvals, and community and individual prior informed consent) and
- **Use of traditional knowledge** (including negotiation of mutually agreed terms, equitable sharing of benefits, and reciprocal capacity building).

The draft ABS guidance did not progress through to policy, presumably due to a change in government priorities (Hodges & Langford, [Chapter 2](#)). However, the investment in the development process was evidence of recognition within Environment Canada that much research and development based on biodiversity and associated traditional knowledge had been undertaken without the awareness or consent of the traditional knowledge holders, raising significant ethical and legal issues. Moreover, awareness was increasing that real and perceived adverse impacts had resulted, generating suspicion and lack of trust, and sometimes interfering with customary rights and responsibilities related to conservation of biodiversity as part of Indigenous heritage.

The draft ABS guidance responded to an urgent need to understand how traditional knowledge associated with genetic resources could be accessed and used in culturally appropriate and environmentally sustainable ways by those seeking to explore and benefit from biodiversity. The draft ABS guidance aspired to meet this need at the national level, as part of Canada's domestic and international commitments under the CBD, and as a part of fiduciary responsibilities of the Crown to Indigenous peoples that are affirmed in Canada's constitution (Bannister, 2008).

The draft ABS guidance (2008), ISE Code of Ethics (2006), [Chapter 9](#) of the TCPS2 (2014) and CHIR Guidelines (2007–10) all attempt to balance the ongoing need for clearly articulating expectations of researchers in 'how to do research right' while also promoting and supporting relational dimensions that will create 'right relationships' within the research endeavour. All build on 'best practice' standards at the time for ethical and equitable collaborative research with Indigenous peoples, with the intention of democratizing and decolonizing the research enterprise. Likewise, all involved extensive time, process, and contributions from Indigenous scholars, researchers and community members. The substance, process and spirit of

these endeavours as a whole offer invaluable guidance towards informing a future ABS regime for Canadians within a reconciliation framework – especially when taken alongside other landmark accomplishments and benchmarks for ethical conduct within Canada, such as the work of the Royal Commission on Aboriginal Peoples (1996) and the Truth and Reconciliation Commission (2015) (Perron-Welch & Oguamanam, [Chapter 6](#)).

FROM ETHICS POLICY TO ETHICAL PRACTICE TO ETHICAL SPACE

As established, an extensive foundation of relevant research ethics policy developed through robust processes exists and can be used to inform ABS in Canada. However, negotiating the right words to put into policy is one thing; bringing the words to life amid the complexities and challenges of real world ethical practice is another. Increasingly, researchers and Indigenous practitioners collaborating in research have shared their successes, innovations and lessons learned (Burelli, [Chapter 13](#)) over the last decade as a result of genuine commitments to understand and implement the spirit and intentions of the guidance discussed. The ‘Working Better Together Conference on Indigenous Research Ethics,’ is an example of a unique national forum in 2015 that critically explored the dynamic intersection of policies, procedures, practices, and philosophies of contemporary Indigenous research ethics.⁶

A focal point was to delve into the concept of ‘ethical space,’ introduced to Canadian research ethics by Cree philosopher and educator, Willie Ermine (2000). Ermine referred to ethical space, as a place *between* worldviews, an ‘abstract space’ created when the intentions of Indigenous and Western worldviews confront each other. These different intentions are ‘guided by a past that includes memory, values, interests, and . . . actions’ (Ermine, 2000, 18–19). He proposed that ethical space gives us ‘the opportunity to be reflective about personal convictions and how these formed perceptions influence our intentions about the ‘other.’ This confrontation of worldviews sets up the conditions by which negotiation is necessary in order to arrive at ethical interaction.’ Ermine suggests that ethical space offers possibilities for new models of research and knowledge production that are co-developed through respectful negotiation in this cross-cultural interaction.

Ermine’s subsequent elaboration on ethical space (Ermine et al., 2004) significantly informed development of both the CIHR Guidelines and TCPS2 [Chapter 9](#). Ethical space is used as an underlying organizing framework in the CIHR Guidelines to encourage respect for the totality and validity of an Indigenous community’s principles, values and beliefs (Canadian Institutes of Health Research, 2007:17). The CIHR Guidelines underscore the need for ‘a series of stages of dialogue’ about ‘intentions, values and assumptions’ and a ‘continual questioning of “is this ethical?”’ that begins with the conversations prior to designing the research and

continues past the point of dissemination of results (Canadian Institutes of Health Research, 2007, 17).

Brant-Castellano and Reading (2010, 14) note that both the CIHR Guidelines and TCPS2 Chapter 9 'seek to create 'ethical space' at the place where communities and researchers meet.' They go on to say: '[d]ifferent worldviews, needs, and expectations between the parties can be expected to present challenges. Dialogue undertaken with an ethical commitment to mutual benefit and good relations can be a powerful instrument to prevent violations of human dignity.'

Ermine (2015) has since described ethical space as ultimately an encounter of spiritual magnitude:

[E]thics has to do with the human spirit – which is unseen, and the unseen is the unknown. . . . so we have a hard time working with it. Nevertheless, when we look at the spiritual level, a spirit inside each and every one of you can see the spirit of another person. These are the teachings that we go through with our old people, our spiritualists. . . . if we can do this [relate to one another] at that level, then we have a different paradigm or a different formulation that we can work with. . . . When we're talking about the ethics, it's at this level that things really start to happen, that the critical mass of energies, of spiritual people working together, can produce profound results.

Similarly, Dr. Leroy Little Bear (Small Robes Band, Blood Indian Tribe, Blackfoot Confederacy) explained that 'existence consists of energy' in Aboriginal philosophy. He goes on: 'All things are animate, imbued with spirit, and in constant motion. In this realm of energy and spirit, interrelationships between all entities are of paramount importance, and space is a more important referent than time' (Little Bear, 2000, 77).

It may be daunting or confusing for many researchers, practitioners and policy-makers to understand or embrace Indigenous philosophies and the existence of spiritual dimensions of ethical space within their research. However, these notions are embedded in the CIHR Guidelines, which refer to 'sacred space' as an important concept in understanding Aboriginal world views. Sacred space is defined as

the relationships between the individual and a recognized spiritual entity, the Land, kinship networks (including all plant and animal life) and Ancestors. This relationship is both spatial (where the individual is inclusive of the family and the community) and temporal (where the present generation is inclusive of past and future generations). In this sacred space, there is an interconnectedness founded on purity, clarity, peace, generosity and responsibility between the recognized spiritual entity, the Land and the Ancestors. The notion of sacred space is also key to understanding accountability in the production and transmission of traditional knowledge.

(CIHR Guidelines, 2007, 17–18)

Similar sentiments have been articulated by many Indigenous scholars, elders and traditional knowledge holders and practitioners across the country. For example,

Anishnabe Elder and spiritual leader, Dave Courchene (Sagkeeng First Nation), founder of Turtle Lodge (Manitoba), underscores the role and relevance of spirituality from his perspective: '[n]atural law is the first rule of spirituality.' Elder Courchene teaches that 'natural laws are not negotiable' and there is a duty and responsibility of guardianship, not ownership because no one owns the land (Courchene as quoted in Bannister, 2017, 22–3). Little Bear (2000) articulates his perspective on the ethical-legal connection: 'Aboriginal traditions, laws and customs are the practical application of the philosophy and values of the group,' and 'the philosophy, the values and the customs in Aboriginal societies are also the law. Law is not something that is separate and unto itself. Law is the culture, and culture is the law' (Little Bear, 2000, 83). Elder Courchene teaches that spirituality and ceremony are part of the principles and values that need to underlie our biocultural endeavours. At a recent gathering on Indigenous Protected and Conserved Areas,⁷ Elder Courchene explained that 'spirituality is involved in everything, and there is ceremony for everything,' urging us to begin with prayer as 'an important part of ceremony to evoke spirit and to proceed with respect for one another as human beings.' He continued: '[t]he values and principles found in ceremony are what are missing from the world today. Answers lie in ceremony. A way of life that connects to ceremony accesses a higher intelligence. Ceremony is needed to heal the world and the self. . . . Solutions come from this place of hope and joy and love. Giving thanks is the first ceremony' (Courchene as quoted in Bannister, 2017, 22–3). Elder Courchene teaches about what he calls 'going back to the beginning.' He explains: '[t]he beginning is all about spirituality, acknowledging the great mystery that we call the Creator. Spirituality begins with each one of us. It means understanding the importance and influence that spirit can have in our lives. We need to first do our own work in ourselves, to make peace in our own life' (Courchene as quoted in Bannister, 2017, 22–3).

Some deep challenges emerge from the provocative ideas, teachings and perspectives shared by Posey, Ermine, Little Bear and Courchene. An ecocentric perspective that seamlessly integrates law, ethics and spirituality provides a stark contrast to the distinctive ways that all of these notions are understood and practised from the anthropocentric perspective underlying most Western ethical, legal and spiritual traditions and institutions. And while the conceptual shift is significant, putting this conceptual understanding into practice presents further challenges. However, it is through openness and courage to ask and explore these questions that relational and descriptive ethics can offer more to ABS than just inspiration through aspirational guidance on paper.

ETHICAL SPACE IN PRACTICE

A concrete example of ethical space in practice is found in the work of Elder Dr. Reg Crowshoe (Piikani Nation), a well-known Blackfoot ceremonialist. Elder

Crowshoe facilitates ethical space by guiding organizations and projects through new ways of collaborating and decision-making that equally acknowledge distinct, complementary worldviews. A specific and profound example is detailed in a report by the Alberta Energy Regulator (AER, 2017) and described below.

Elder Crowshoe and his wife Rose led an internal corporate process to help AER increase empathy and inclusivity in its regulatory mandate. The goals of the process were to examine decision-making models and create ethical spaces for Indigenous communities and the AER to work together. The process was referred to as a ‘story of two groups divided by a wall.’ One participant explained how, rather than allowing the wall to alienate, the process revealed an equal opportunity for each group to look through a window to better comprehend the other’s customs and worldviews. Only after building this understanding of *how to be with* one another could the groups walk through a door to meet in an ethical space and to make shared decisions. ‘So often, we think we can charge ahead. To not run to the door takes mindfulness, respect, and discipline. This journey reminded us to not assume, but to listen’ (AER, 2017, vi).

The report concluded that a transformative ethical space is created ‘when we work to understand a perspective that is different from our own, and then examine that understanding with an eye to finding connections with our own perspective, or our own worldview’ (AER, 2017, xvi). It also underscores the importance of *linking* (rather than *merging*) worldviews, where linking means joining in ways that do not diminish either, and honour both. ‘This doesn’t mean we take pieces of western cultures and parts of Indigenous cultures and try to blend them together. Rather, we consider both cultures, and when we have enough understanding to see the connections, we are able to create a new, ethical space where we can tell a new shared story that links two systems’ (AER, 2017, 3).

In reference to linking worldviews, Elder Crowshoe warns that ‘incorporation’ and ‘integration’ of Indigenous knowledge and processes with those of mainstream institutions have created ‘cultural confusion.’ He explains that the confusion arises through mixing oral stories with written documents. Written documentation is from the western concept of collecting data, information, and knowledge. The parallel for an oral culture is the information stored in stories – these are the data, knowledge, and understanding of what is happening in the environment (AER, 2017, 45).

Elder Crowshoe explains that the systems need to remain parallel to retain their integrity; the challenge is to find ways to authentically link these parallel systems. He offers concrete step-wise suggestions that involve asking questions to enable linking through ‘cultural translation’ and ‘cultural interpretation.’ A simple example related to meeting protocols and spaces is asking the questions: How is a meeting called together? What is the appropriate gathering place when important decisions need to be made? What protocols are associated with these places? (AER, 2017, 14).

Referring to the window and door analogue, Elder Crowshoe explains: ‘The window is an analogy for the cultural interpretation and translation necessary to

know how things work on the other side of the wall, for the other culture. . . . The door is providing the ethical space for the two sides to have the discussion' (AER, 2017, 44). One participant concluded 'what we're used to is working on the western side and tossing something over the wall every now and then, and then wondering why it didn't work. . . . what I see now is that we're not trying to develop a process with this document . . . but an opening. We're trying to open a window on that wall so that we can see and understand the process that is going on. And maybe we can even get to the stage where we can make a door that we can walk through' (AER, 2017, 44).

The process clearly had a transformative effect at individual and organizational levels. The AER became aware of and accepted the Indigenous oral system of decision-making. AER staff understood that to reach mutually acceptable decisions, they needed to first look through 'the window' and observe the ways that decisions are made in Indigenous communities and in a western regulatory framework. Passing through 'the door' was an eventual act of bridge-building, linking the two decision-making processes in a respectful way to create a new, ethical space (AER, 2017, 45). Simply put, ethical space is not 'yours' or 'mine', and not even the commonality we share. Rather, it is the distance *between* us that Ermine et al. (2004, 20) call a 'space of possibility.' It is a space in which no one has the edge, one that we intentionally choose (or not) to step into, and one in which we can co-create something new and shared together, while retaining our respective autonomy.

REVISITING ETHICAL GUIDANCE FOR ACCESS AND BENEFIT-SHARING IN CANADA

A decade has passed since a national ethical guidance for ABS was under consideration in Canada (Bannister, 2008). Since then, much has evolved in terms of Canadian ethics policy and practice in research involving Indigenous peoples, and Canada has become one of the global leaders in this regard. The relevance of ethics to ABS in Canada has increased exponentially, and there is an obvious opportunity for any ABS regime of the future to draw upon this extensive foundation, some of which has been summarized here.

The opportunity does not just lie in the ethical guidance that is already policy, or in making use of the institutional structures, such as research ethics review systems. There is also an invitation to learn from a decade of intercultural experiences and examples of putting ethics into practice on the ground under these national policies (Burelli, Chapter 13). Increasingly, there is also an opportunity to understand new ethical frameworks such as 'ethical space,' as well as new conceptual frameworks, such as 'integrative science' and 'two-eyed seeing' (as described in Bartlett et al., 2012 but not discussed here) for rethinking the intentions, values and practices that could, and perhaps should, underlie ABS in an age of reconciliation.

A deep examination of what is ‘appropriate facilitated access’ to traditional knowledge associated with biological/genetic resources would reveal something different today than it did a decade ago (Bannister, 2008). This is true not only because government policy and legal precedents have evolved, but because mainstream society’s reference points are shifting as a more accurate account of Canadian historical events is unveiled, Indigenous experts provide new articulations of Indigenous and natural laws, and Indigenous knowledge keepers help us to understand what it means to have responsibilities interlinked with rights to knowledge and genetic resources. In this light, an Aboriginal-sensitive ABS regime in Canada is a logical tool for facilitating ‘right relationships’ based not on facilitating access but on the need to enable shared understandings between different worldviews and the modes of ethical reasoning that they embody.

BEYOND ETHICS AND ABS

This chapter has attempted to build a case for more explicitly infusing ethics into the legal, economic and policy discourses associated with ABS. But the ethical considerations at stake cannot wait for, and will not be resolved by, an ABS regime. The opening quote included in this chapter from the Turtle Lodge Declaration (2017) emerged from a recent gathering of Indigenous knowledge keepers and scientists that took place at Turtle Lodge, Manitoba. The document underscores the destructive trajectory for the earth as a result of our human legacy of anthropocentrism and dominance over the natural world. But, unlike many declarations, this one does not usher an urgent call to the scientific or wider global community to halt or change what we are doing before it is too late.

The Turtle Lodge Declaration is short and clear. It is a *personal* pledge made by those present, to keep five commitments. These are: to honour past ancestors, take responsibility for future generations, care for all humanity, love and respect all non-human species, and support all youth in learning about stewardship based in natural laws. The summary report of the Truth and Reconciliation Commission says that ‘reconciliation must become a way of life’ (TRC, 2015, 184) and that ‘reconciliation begins with each and every one of us’ (TRC, 2015, 185). If these statements hold true, then like the signatories to the Turtle Lodge Declaration, let’s take them personally.

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NOTES

- 1 See <https://en.wikipedia.org/wiki/Bioprospecting>.
- 2 See www.cihir-irsc.gc.ca/e/29134.html.
- 3 See <http://pre.ethics.gc.ca/eng/policy-politique/initiatives/tcps2-eptc2/Default/>.
- 4 See www.ethnobiology.net/what-we-do/core-programs/ise-ethics-program/code-of-ethics/brief-history/.
- 5 I acknowledge Rozzi's (2013) definition of the term 'biocultural ethics.' My use of the 'relational biocultural ethic' is somewhat related but was coined independently.
- 6 <https://indigenousesearchethics2015.wordpress.com/>.
- 7 The gathering on Indigenous Protected and Conserved Areas was part of a national Indigenous experts-led initiative sponsored by Parks Canada as part of the Pathway to Canada Target 1 initiative to meet Aichi Target 11 conservation commitments of 17% lands and inland waters in conservation status by 2020. See www.conservation2020canada.ca/home/.

Mapping the Patterns of Underestimated Researcher-Indigenous Collaboration

Towards Independent Implementation of ABS Principles

Thomas Burelli

Abstract

This chapter focuses on the role and the contributions of Indigenous peoples and researchers towards the implementation of access and benefit-sharing (ABS). While States are often defined as the most competent authorities for the adoption of ABS implementation measures, the role and responsibilities of providers and users are often underestimated. As this chapter will show, the expectations imposed on states are exaggerated. They are not consistent with many sources, including relevant international instruments, research ethics, and the claims, experiences and practices of Indigenous and local communities themselves. Researchers and Indigenous peoples share common objectives when they are jointly and directly involved in research projects on genetic resources and traditional knowledge. They are interested and involved in regulating the circulation of genetic resources and traditional knowledge. As this chapter will illustrate, in countries like Canada researchers and Indigenous people have seized the opportunity to improve their relationships and work together. In fact, they have developed and mobilized several types of tools such as code of ethics and contracts to try to move towards more respectful and equitable relationships, including ABS.

As social researchers affiliated with mainstream institutions – and irrespective of our personal commitments and intentions – we are located at a nexus of power in the dominant society. Thus, our methodological approach should not expand the power and knowledge of the dominant society at the expense of the colonized and the excluded. This is especially important in research involving First Nations.

(Menzies, 2001: 22)

How can researchers become allies with Aboriginal Peoples who are advancing their interests? Certainly, they have a responsibility as researchers to challenge their own racism, biases and assumptions. They also must respect a communities' right to determine for itself how or if it is going to use TEK, Indigenous Knowledge and western science.

(Leanne Simpson, 1999: 95)

INTRODUCTION

In the 2000s, researchers from the French National Research Institute for Sustainable Development (IRD)¹ started a research project on the traditional remedies used by Indigenous and local communities in French Guyana to treat malaria (Bourdy and Deharo, 2008: 38). Inspired by other research projects that led to ‘improved traditional remedies’² (Ibid., 38–9), the researchers from the IRD undertook research in French Guyana hoping to develop a new malaria treatment for which they could obtain a patent (Ibid.).

One hundred and seventeen people from the Indigenous and local communities of French Guyana (Members of the Kali’na and Palikur Indigenous communities, but also Creole people, one Hmong, Brazilians and European people) were interviewed to gather information about traditional recipes (Bertani et al., 2006: 155–7). Amongst the information collected were vernacular names of plants, the parts of the plant used, recipes and methods of preparation and administration, dosage, and contraindications (Vigneron, 2003).

Traditional remedies led to the identification of 27 different plant species used in 45 healing recipes (Vigneron, 2003). Among the plants identified, the most widely used is *Quassia Amara* (Vigneron et al., 2005). The researchers decided to analyze this plant more thoroughly by reproducing the traditional recipes in a laboratory setting (Bertani et al., 2005; 2006).

The laboratory study of *Quassia Amara* led to the identification and the extraction of an active molecule that combats malaria; Simalikalactone E (Cachet et al., 2009). In 2010, the IRD filed an application for a patent on Simalikalactone E as a malaria treatment. In 2015, the patent was granted by the European Patent Office (EPO).

This could have been the story of a very successful collaboration between researchers and Indigenous and local communities, and an example of a fruitful encounter between scientific and traditional knowledge. In fact, some of the researchers involved in the project went on to win the ‘Innovation-Sud’ award from the IRD in 2013 (Institut de Recherche pour le Développement (IRD), 2013).

However, opposition has been filed with the EPO against the patent (France Libertés, Burelli, Costes, 2015). This opposition is based on concerns regarding biopiracy and the failure for the IRD to meet the patentability criteria of novelty and inventiveness.

According to Vandana Shiva, biopiracy can be defined as:

the use of intellectual property systems to legitimize the exclusive ownership and control over biological resources and biological products and processes that have been used over centuries in non-industrialized cultures. Patent claims over biodiversity and indigenous knowledge that are based on innovation, creativity and genius of the people of the Third World are acts of 'biopiracy.' Since a 'patent' is given for innovation, a biopiracy patent denies the innovation embodied in indigenous knowledge.

(Shiva, 2001: 49)

In this case, when the researchers from the IRD collected the traditional recipes and the plant samples from Indigenous and local communities in French Guyana, they did not obtain the free, prior, and informed consent of the participants themselves, or from the authorities in French Guyana. Nor did they negotiate mutually agreed terms for the use of the plants and associated traditional knowledge, including equitable sharing of any benefits resulting from subsequent commercialization (Chantal Berthelot et Antoine Karam, 2016; Organisation des Nations Autochtones de Guyane, 2016; Rodolphe Alexandre, 2016).

By failing to do any of these things, the researchers and the IRD neglected international law, especially the access and benefit-sharing (ABS) principles defined in the Convention on Biological Diversity, the Nagoya Protocol and in the United Nations Declaration on the Rights of Indigenous peoples (UNDRIP). They also failed to uphold core ethical principles undergirding research involving Indigenous people(s), as will be discussed later in this chapter.

There was a large media campaign in response to the situation pursuant to which an Indigenous association, the local authorities of French Guyana, the deputy and the senator from French Guyana gave their support to the patent opposition (Chantal Berthelot et Antoine Karam, 2016; Organisation des Nations Autochtones de Guyane, 2016; Rodolphe Alexandre, 2016). As a result, the IRD's CEO admitted some 'blunders' and 'errors' (Institut de Recherche pour le Développement (IRD) 2016c). He also announced the adoption of a benefit-sharing agreement with the authorities of French Guyana (Institut de Recherche pour le Développement (IRD), 2016a, 2016b and 2016c). However, the CEO failed to comment on the adoption of an ABS agreement with the Indigenous and local populations themselves.

At the same time, IRD replied to the opposition filed against the patent. First, the IRD acknowledged the importance of prior informed consent: 'failure [to respect the prior informed consent of the population] is not consistent with good research practices with local populations' (Institut de Recherche pour le Développement (IRD), 2016d: 2–3). However, according to the IRD, respect of prior informed consent is conditional: 'consequently, the absence of PIC *when this is required* [by State law] will have to be considered contrary to public order or morality . . . On the other

hand ... the patent owner maintains that there was no legal requirement for its researchers to undertake the PIC' protocol. (Ibid., 3).

Regarding the fair and equitable sharing of benefits, the IRD affirmed that 'the incentives about benefit-sharing in international law are addressed to States. States' nationals, and particularly their researchers, are only able to apply these recommendations to the extent that national legislation recognize them' (Ibid., 5).

In other words, IRD claimed that researchers only have to obtain prior informed consent when state law requires them to do so; without a state-sanctioned legal requirement, the IRD was under no obligation to ensure PIC was obtained. Considering the practices described in the *Quassia Amara* case, this position implies that researchers would have to wait for national legislation to implement ABS principles – that it would actually be *dangerous* or *hazardous* for researchers and their institutions to try to implement and to respect the ABS principles of their own accord.

The position adopted by the IRD raises several questions that we would like to explore in this chapter:

1. Are researchers (among other actors from civil society) right to believe that they have no role to play in the implementation of ABS principles? Is that approach consistent with international law?
2. Is it dangerous, risky and difficult for researchers (among other actors from civil society) to take actions to implement ABS principles in the course of their projects?
 - a. Is the approach adopted by the IRD widely shared among the scientific research community?
 - b. Are there examples of differing approaches which can be observed from elsewhere?

The *Quassia Amara* case provides us the opportunity to draw more attention to emerging contributions from Indigenous people(s) and researchers to regulate the circulation of traditional knowledge and genetic resources.

WHO IS RESPONSIBLE FOR THE IMPLEMENTATION OF ABS PRINCIPLES?

In this section, I will analyse the role and responsibilities of States, providers and users of genetic resources and traditional knowledge for the implementation of the ABS principles. While States are often seen as the most competent (if not the only) authorities to act, the role and responsibilities of community providers and users are often underestimated. As we will see, this interpretation of states as the appropriate authorities is exaggerated and is not consistent with many approaches such as issuing from international texts, research ethics and the claims formulated by Indigenous and local communities.

The Role and Responsibilities of States

The CBD and the Nagoya Protocol are international texts that bind the signatory States rather than the users and providers of genetic resources and traditional knowledge. But what precisely are the obligations of States under the CBD and the Nagoya Protocol? Both the CDB and the Nagoya protocol can be described as ‘framework-conventions;’ ‘[w]ithout any enforceable legal obligation, the CBD requires additional implementation measures to have a specific and mandatory content’ (Hermitte, 2006: 351; Burelli, 2012: 58).

According to the CBD, the Parties are not required to adopt and to manage a comprehensive ABS regime. For example, Article 15 (5) of the CBD states: ‘[a]ccess to genetic resources shall be subject to prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that Party.’

A similar approach is adopted with regard to the issue of fair and equitable benefit-sharing in Article 15 (7): ‘[e]ach Contracting Party shall take legislative, administrative or policy measures, as appropriate, (...) with the aim of sharing in a fair and equitable way the results of research and development and the benefits arising from the commercial and other utilization of genetic resources with the Contracting Party providing such resources.’

With regard to traditional knowledge, ‘[e]ach 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 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.’

As these articles show, States are bound by objectives rather than by the implementation of specific measures. The adoption and the management of an ABS regime by a State is only one option among others. While this option may appear to some governments to be necessary or even impossible to circumvent, it could seem disproportionate, inappropriate and costly for others.

The strategy adopted by the Nagoya Protocol is to let each State to decide what are ‘the necessary legislative, administrative or policy measures’ to ensure the implementation of ABS principles. The Nagoya protocol is very clear on States’ obligations, for instance Article 5(2) states:

[e]ach Party shall take legislative, administrative or policy measures, as appropriate, with the aim of ensuring that benefits arising from the utilization of genetic resources that are held by indigenous and local communities, in accordance with domestic legislation regarding the established rights of these indigenous and local communities over these genetic resources, are shared in a fair and equitable way with the communities concerned, based on mutually agreed terms.

A similar wording is employed in Articles 5 (5) and 7 of the Nagoya Protocol.

Therefore, the obligations of State parties are primarily to ensure compliance with the principles set out in the CBD and further developed in the Nagoya Protocol. States can decide to simply adopt control mechanisms. For instance, it could be an obligation for users to prove that they implemented and respected ABS principles. This is the choice made by the European Union, which has focused so far only on the control of users (Burelli, 2015c). In fact, to date, very few States in the world have decided to adopt specific legislation on ABS.

In this context, does the absence of a national ABS legislation mean that users are not required to obtain prior and informed consent of genetic resources and traditional knowledge providers, or that they should not take any action to respect it? Does that mean that users are not required to share equitably the benefits resulting from the projects?

THE UNDERESTIMATED ROLE AND RESPONSIBILITIES OF PROVIDERS AND USERS

In my opinion, the role and the responsibility of users (including academic researchers) and providers (especially Indigenous peoples and local communities) of genetic resources and traditional knowledge are largely underestimated. A widespread interpretation is that users and providers only have to comply with national legislation and are therefore not obliged to respect ABS principles if there is no specific regime implemented by a State. It is also not uncommon to hear various actors (government officials, environmental managers, researchers, representatives or members of Indigenous communities, etc.) defending the idea that users and providers do not have the power or are incapable of implementing effective ABS measures independently. In my view, this interpretation is erroneous, counterproductive and dangerous, particularly for users.

For instance, while the Nagoya Protocol only binds Parties that have signed and ratified it, the text explicitly suggests the role that users and providers can play in the implementation of ABS.

Article 12.3 of the Protocol requires Parties to endeavour to support the development by Indigenous and local communities of community protocols on ABS (Article 12.3 (a)), minimum requirements for mutually agreed terms (Article 12.3 (b)), and model contractual clauses for benefit-sharing arising from the utilization of traditional knowledge associated with genetic resources (Article 12.3 (c)).

More generally, Article 20 of the Nagoya Protocol provides that '[e]ach Party shall encourage, as appropriate, the development, update and use of voluntary codes of conduct, guidelines and best practices and/or standards in relation to access and benefit-sharing.' Thus, the role and responsibility of users and providers are explained and encouraged in the Nagoya Protocol.

In addition to international conventions, non-binding tools have been adopted in order to guide ABS stakeholders, such as (1) the Bonn Guidelines on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Use (Secretariat of the Convention on Biological Diversity, 2002), (2) the Tkarihwaïéri Code of Ethical Conduct to ensure respect for the cultural and intellectual heritage of Indigenous peoples relevant to the conservation and sustainable use of biological diversity (Secretariat of the Convention on Biological Diversity, 2012) or more recently (3) the Mo'otz Kuxtal voluntary guidelines (Décision XIII/18). These three instruments stress the importance of the role of both users and providers in the proper implementation of ABS principles.

Adopted in 2002, the Bonn Guidelines 'are expected to assist Parties, Governments and other stakeholders in developing overall access and benefit-sharing strategies, and in identifying the steps involved in the process of obtaining access to genetic resources and benefit-sharing' (Secretariat of the Convention on Biological Diversity, 2002: IV).

According to the Tkarihwaïéri Code of Ethical Conduct: '[t]hose working with indigenous and local communities and in particular researchers are invited to take the Code into consideration in their daily work.' (Secretariat of the Convention on Biological Diversity, 2012: 4).

As explained by the CBD Secretariat, the Mo'otz Kuxtal voluntary guidelines are:

intended to provide guidance for the development of mechanisms, legislation, administrative and policy measures or other appropriate initiatives to ensure that potential users of knowledge, innovations and practices that are held by indigenous peoples and local communities, embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity (hereinafter 'traditional knowledge'), obtain the 'prior and informed consent', 'free, prior and informed consent' or 'approval and involvement', depending on national circumstances, where appropriate, of these indigenous peoples and local communities, in accordance with national legislation, and that these indigenous peoples and local communities obtain a fair and equitable share of benefits arising from the use and application of such traditional knowledge and for reporting and preventing unlawful appropriation of traditional knowledge relevant for the conservation and sustainable use of biological diversity.

(Secretariat of the Convention on Biological Diversity, 2016: 3)

Indigenous communities have also made claims regarding their relationships with researchers. As reported by Graham Dutfield in 2002, many declarations and statements have been published before and after 1992 (Dutfield, 2002). Many more have been adopted since that time. In these public documents, Indigenous communities expressed their needs and claims on several topics such as: ownership and rights over traditional knowledge and resources, prior informed consent, participation, a right to veto over research, the disclosure of research results, benefit-sharing, and restitution (ibid.). In some statements and declarations, Indigenous people(s) call for a

moratorium on bioprospecting until the adoption of effective regimes to protect their rights (*ibid.*). In other words, Indigenous communities are not accepting of a business-as-usual solution. In the absence of a framework to protect their rights, they would rather not collaborate with bioprospecting projects. For example, in Canada, the James Bay Cree Nation experience resulted in an imposition of a moratorium on research by outsiders (Oguamanam & Koziol, [Chapter 7](#); Vodden & Bannister, 2008).

These sources reflect a shift in what is acceptable in research projects involving Indigenous people(s) and their heritage, particularly their traditional knowledge associated with biodiversity. This evolution is becoming more and more difficult to ignore today considering the efforts made to publicize and to explain ABS principles and protocols on conducting research involving Indigenous people(s) (Burelli, 2016).

As a result, it seems impossible or at least very risky for a user not to respect ABS principles by reason of lack of appropriate legislation in the country of collection. Indeed, the issue of biopiracy, defined as an unauthorized access and use of genetic resources and associated traditional knowledge, is now widely known and unanimously condemned (Shiva, 2001). It is no longer morally and ethically acceptable to ignore ABS principles (Bannister and Barrett, 2001; Hardison and Bannister, 2011).

That is why, in my opinion, researchers and Indigenous people(s) do not have to wait for a national framework to change their terms of collaboration. There is no longer an excuse for ignoring ABS principles, especially for researchers who have the power to take advantage of an absence of implementation. More importantly, researchers have a responsibility for implementing ABS principles based on international law, ethics, morality and calls from Indigenous people(s). As explained by Menzies: '[t]o deny the colonial legacy by not adapting our research projects to accommodate Aboriginal concerns is to participate in the colonial project itself' (Menzies, 2001: 22).

Collaboration in research projects between academic researchers and Indigenous communities has not stopped since 1992. However, some researchers have been unwilling to implement ABS principles and this practice has led to accusations of biopiracy (Burelli, 2013; France Libertés, Burelli, Costes, 2015; Burelli, 2015a). In other cases over the last 20 years, researchers and Indigenous communities have attempted to transform their relationships (Burelli, 2015b). This is particularly true in Canada where one may identify two types of documentary contributions: general frameworks such as ethical codes, and several forms of contractual practices. In my research, I identified more than 100 of these approaches from 1995 to 2014. The frameworks are very scattered and sometimes little is known about them. It is important to analyze their characteristics to identify the best practices for respecting ABS principles.

DIVERSITY OF INSTRUMENTS DEVELOPED LOCALLY IN CANADA

Researchers and Indigenous people(s) share common objectives when jointly and directly involved in research projects on genetic resources and traditional

knowledge. Ostensibly, they are interested and involved in regulating the circulation of genetic resources and traditional knowledge. As we will see, in some countries such as Canada, researchers and Indigenous people(s) have seized the opportunity to improve their relationships.

Crucial Contributions from Primary Actors

ABS issues involve a wide range of actors. States can be providers and/or users of genetic resources, but this claim may not be entirely accurate with regard to traditional knowledge. Several categories of users of genetic resources and traditional knowledge include private companies from the biotechnology sector, academic researchers in relation with the public and private sectors, etc. Providers of genetic resources and traditional knowledge include Indigenous individuals, Indigenous and local communities, and gene banks. Laird et al (2002: 78) note the disagreements which may occur due to the complex and multiple interests involved in ABS issues:

[b]ecause different stakeholders, communities, ethnic groups or nation states have different and even conflicting needs and proprietary claims over genetic resources and associated knowledge, and because many of these stakeholder groups do not necessarily recognize the rights of other stakeholders to represent them of their interests, it is unlikely that there will be much consensus as to what constitutes legitimate or illegitimate appropriation.

According to Santos (2002: 478), ABS can be described as a contact zone 'in which rival normative ideas, knowledges, power forms, symbolic universes and agencies meet in unequal conditions and resist, reject, assimilate, imitate, subvert each other, giving rise to hybrid legal and political constellations in which the inequality of exchanges are traceable.' Santos (Ibid.) continued, '[t]he contact zone between traditional herbal knowledge and modern scientific knowledge of biodiversity is a social field of fierce political and legal disputes.' More specifically, he describes this contact zone as 'the time-space where alternative and rival knowledges meet: on one side, the Western-based modern science and technology; on the other side, the local, community-based, indigenous, peasant knowledges that have been the guardians of biodiversity' (Ibid., 477).

In this contact zone, academic researchers and Indigenous people(s) share a very specific position as far as they are directly involved in research projects on genetic resources and traditional knowledge. They participate in the designing of projects and in setting project parameters. Therefore, they are the very first to be involved in regulating the circulation of genetic resources and traditional knowledge. By pursuing research projects on genetic resources and traditional knowledge, researchers and Indigenous people(s) are contributing to ABS implementation. This does not imply that they are following the requirements of international law or that their

contributions are necessarily congruent with it. However, especially in the absence of national legislation, the study of researchers' and Indigenous people's contributions are of the utmost importance.

Because researchers and Indigenous people(s) are directly involved in the design and implementation of research projects, we can expect to observe an emergence of innovative principles, tools and mechanisms when these actors take into account ABS principles. We can expect them to translate relevant international principles into practices adapted to their realities. Of course, these contributions can and do still reveal power imbalances between the actors. However, we need first to identify and analyze these contributions before rejecting them. In addition, even if these contributions are not perfect, and even if they would not be turnkey solutions, some of their elements could be useful for other actors on the field.

However, despite their potential, very few people are focusing on these contributions. Some researchers and institutions have drawn attention to the instruments developed by Indigenous communities in Canada (Bannister, 2009; Bell & Paterson, 2009). Recently, the First Nations of Québec and Labrador Health and Social Services Commission has published the *Toolbox of Principles for Research in Indigenous Contexts* which gathers several instruments (First Nations of Québec and Labrador Health and Social Services Commission, 2014). Beyond the identification of these experiences, a critical assessment of them, is needed to determine emerging best practices between researchers and Indigenous people(s) and to understand how these models can advance inclusive national ABS implementation.

It is not as if these variegated approaches and partnerships between researcher and Indigenous peoples are unknown to Canada or internationally. However, there is very little information about the operative instruments developed and their potential. Canada has stressed the importance of raising awareness about these contributions and the need to ensure that the rights of Indigenous peoples, particularly the right 'to grant permission to access genetic resources on Aboriginal land and to establish mutually agreed terms' are respected (Environment Canada, 2015: 8). For the further development of a federal ABS policy the federal government would '[s]eek to raise the awareness of Aboriginal communities with respect to their ability to control access to and benefit from the use of the traditional knowledge associated with genetic resources held by these communities' (ibid.).

Environment Canada is working to gather more information about the contributions developed in Canada and has referred to the possibility of sharing them with users and providers. It has directly stated a commitment to '[p]rovide examples of systems that have been applied by Indigenous communities in Canada and elsewhere to control access to and to share in the benefits from the use of traditional knowledge associated with genetic resources and, where appropriate, explore options to develop related capacity' (ibid., 8).

The instruments developed by Indigenous communities and researchers in Canada are scattered throughout the country. This chapter shares my work in

gathering and mapping a number of these instruments. The primary goal of this research is to determine the partnerships' actors and the reach or limitations of their experiences as evident from the instruments' text.

Types of Instruments Developed in Canada

I started with identifying instruments developed since 1992, the year of adoption of the Convention on the Biological Diversity. In this Convention, the ABS principles are recognized, arguably, most prominently, at the international level. Parties to the Convention are asked to take action to ensure that these principles are respected. This does not mean that before 1992 researchers did not have to respect the prior informed consent of the providers of genetic resources and traditional knowledge, or that no benefit-sharing was required (Burelli and Lafargue, 2017). However, after 1992, the expectation is that we could identify more instruments, given that ABS became more widely discussed.

Through my research, I identified more than 120 instruments³ developed in Canada, related to the use of traditional knowledge in general or traditional medicinal knowledge specifically. Within that context, I identified two main types of instruments: first, general frameworks developed by Indigenous people and their institutions and by actors from the academic community; second, contractual practices, models or signed contracts. For the purposes of this chapter, I will employ a few examples from the larger dataset to illustrate the main principles identified in the instruments. The instruments are anonymized in order to protect the participants who shared confidential information and also because the final list of instruments has not yet been released.⁴

General Framework Instruments

General frameworks are instruments designed to frame multiple research projects and to give guidance to collaborative agreements. These general frameworks are applicable to a specific territory, a specific people, and/or to specific projects. I further divide general frameworks into (a) those written by universities and (b) those written by Indigenous institutions. General framework instruments include policy frameworks, research protocols, code of ethics or statements. Guidance documents take the form of guides/guidelines, research principles, or tool kits. One example of a guidance document tool kit is the Toolbox of Principles for Research in Indigenous Contexts published by First Nations of Québec and Labrador Health and Social Services Commission (First Nations of Québec and Labrador Health and Social Services Commission, 2014).

A majority (49/61) of the general frameworks adopted throughout Canada since 1992 (earliest 1996 and most recent, 2016) were adopted by Indigenous actors, while the rest (12/61) were developed by academic researchers. Indigenous actors which

have adopted general frameworks include representative political organizations, representative sectorial organizations, tribal councils, and First Nations. The wide scope of Indigenous actors which have adopted general frameworks demonstrates the importance of framing the relationships with researchers at every level of Indigenous governance throughout Canada. General frameworks have addressed several topics such as: ownership and rights over traditional knowledge and resources, prior informed consent, participation, a right to veto over research, the disclosure of research results, benefit-sharing, and restitution.

Although it is surprising that only 12 general frameworks have been adopted by the more than 200 colleges and universities throughout Canada, some of the general frameworks adopted by academic researchers have a very large scope. Indeed, since 1998, the Three Research Councils of Canada (the major federal funding agencies) have developed several ethical frameworks with wide scope of application. Specific principles for research involving Indigenous peoples have been gradually defined in these frameworks (1998, 2007 and 2010) (Oguamanam, [Chapter 11](#); Bannister, [Chapter 12](#)). Some universities have also adopted their own ethical framework, which would apply to any research projects associated with the university.

Contractual Practices

Contractual practices adopted throughout Canada since 1992 can be further divided into (a) consent forms to be signed between researchers and participants and (b) research agreements. I identified 15 consent forms and 6 research agreements based, at least partially, on the use of traditional medicinal knowledge. It is interesting to note that Indigenous actors are more likely than other actors to make such contractual practices public. While many research agreements and consent forms are publicly shared by Indigenous actors, very few examples are publicly shared by academic institutions.

THE INNOVATIVE PRINCIPLES AND MECHANISMS INCLUDED IN THE INSTRUMENTS

The remainder of this chapter will focus on four priorities for ABS, extracted from my analysis of the four types of instruments outlined above. The four priorities are:

1. Free, Prior and Informed Consent
 - a. Ongoing Consent
 - b. Right to Withdraw Consent
2. Indigenous Participation in Research Projects
3. Rules of Use on Material and Associated TK
4. Benefit-Sharing

Examples of principles or mechanisms extracted from each type of instruments have been included for each of the four topics that I am discussing. These examples do not capture the diversity of principles and mechanisms which can be observed in each of the categories of instruments. However, they give us an idea of their potential for implementing ABS principles.

Free, Prior and Informed Consent

The free, prior and informed consent principle (FPIC) stems from the notion that researchers and Indigenous participants should be partners in conducting research, so they must share power equally. For Leanne Simpson, this is a simple pre-requisite for balanced and fair relationships: ‘including Indigenous peoples (and therefore Indigenous world views, values, morals, ethics and TEK) in a fair and equitable manner means sharing power equally’ (Leanne Simpson, *ibid.*; Bannister, [Chapter 12](#)). FPIC is essential for Indigenous communities to be able to determine for themselves how they will use and allow access to TK (Simpson, 1999: 94). Therefore, consent is often defined in the Canadian documents as an ongoing process that animates the entire research project and that may be withdrawn if the research is not conducted in a manner consistent with the equality principle.

Examples of FPIC Provisions

Indigenous general framework	‘Researchers should “[s]hare with the communities, information about the purpose of their research, its methods, and findings throughout the life of the project”.’
Academic general framework	‘A community or an individual has the right to withdraw from the research at any point.’
Consent form	‘I will be consulted from time to time during the course of the research to make sure that I still wish to continue my participation.’
Research agreement	‘The right to withdraw without repercussions will be made clear to participants.’

Rules on Use of Research Material

Conditions of use of research material were included in many of the analyzed instruments. This issue is not well-developed in the CBD and Nagoya Protocol regimes. In fact, the tools developed by Indigenous actors and academic researchers often go beyond the principles recognised at the international level.

Most instruments I analysed required full transparency about the uses of research material. In some, there were procedures in place for handing of research material

back to the supplier if a participant decided to withdraw consent. In some cases, it is recognised that the data should be returned or destroyed.

In some instruments, secondary uses (other than those initially agreed upon) are not authorized without the consent of communities and their members. For example, if a community authorized the use of plants and traditional knowledge for the treatment of malaria, the researchers would not be allowed to use the material to conduct research on cancer treatment without getting renewed consent from the participating community.

Some instruments also addressed the issue of transfer of material to third parties. This refers to situations in which an initial user wishes to share the collected material to a third party not mentioned in the initial contract, for a similar use or for a different one. While some instruments require that every user be known, others explicitly forbid such transfers.

Examples of Provision on Rules for Use of Research Material

Indigenous general frameworks	<p>‘An individual participant has the right to withdraw from the research process at any point. If this occurs, all information already collected on the individual should be destroyed or returned to the individual.’</p> <p>‘No research data is to be sold, transferred or reused without the prior approval of the [competent authority].’</p>
Academic general frameworks	‘Transfer of data and biological samples from one of the original parties to a research agreement, to a third party, requires consent of the other original party(ies).’
Consent forms	‘I agree that any material recorded to date will be returned to me in full if I decide to withdraw from the interview.’
Research agreements	<p>‘The Academic Institutions shall use any Confidential Information and the Plants and extracts solely as described in the Research Protocol.’</p> <p>‘The [name of university] will not, without the prior informed consent of the [name of the indigenous community]: use or permit the Traditional Knowledge to be used by any other person or body other than for the purposes of or incidental to the Traditional Knowledge Project.’</p>

Right to Review and Access Data

One of the most interesting and innovative principles which can be found in instruments throughout Canada is the rights of the participants regarding use of collected data before its publication. Many instruments require that the raw data and/or the results of the projects must be submitted to the participants before any publication. Participants then usually have a right to review the data, to comment on

it and to ask for some elements to be excluded from publication. This is a way to avoid confidential and sacred elements from being improperly disclosed or published without situating the data in its proper cultural context. This practice reflects the principle of ‘data sovereignty’ which Oguamanam explored in greater depth in [Chapter 11](#).

It is recognized in most of the instruments that the data and results should be shared with the participants and their community in plain language and, where possible, in the language of their choice.

Examples of Provisions on Right to Review and Access Data

Indigenous general frameworks	<p>‘Researchers have an obligation to provide the [name of the people and the institutions of the community to be consulted] with an opportunity to review the research results and provide comments before the final product is completed.’</p> <p>‘That once the research is complete, the data will be disseminated to individual participants and participating communities in such a manner that is comprehensible and useful to those individuals.’</p>
Academic general frameworks	<p>‘Researchers should afford community representatives engaged in collaborative research an opportunity to participate in the interpretation of the data and the review of research findings before the completion of the final report, and before finalizing all relevant publications resulting from the research.’</p>
Consent forms	<p>‘Each elder will be given the opportunity, within a two-month period, of providing corrections, revisions, deletions, or additions, which will be incorporated into the field notes.’</p> <p>‘We will provide the [name of the indigenous community] with one copy of the original draft and final draft of the information documented. This include original and typed field notes, audiotapes, videotapes, photographs, Ph. D. dissertations, and journal articles.’</p>
Research agreements	<p>‘The research partners must first approve any communication of results, including written or oral presentations.’</p>

Benefit-Sharing

One of the non-monetary benefits prescribed in some Canadian instruments is publication acknowledgement. The contributions of participants may be recognised in the publication where their consent is given and with due respect to confidentiality requirements. In some cases, the participants may be recognised as co-authors.

Other benefit-sharing arrangements prescribed by instruments addressed intellectual rights developed as a result of a project. In most of the instruments dealing with

this topic, it is stated that intellectual property rights should be negotiated and shared with the communities and their members. Some instruments go as far as to assign co-ownership to any future inventions which may result from the research project.

Alternatively, some Indigenous actors reject the notion that intellectual property rights may be asserted over natural elements and so the instrument explicitly forbids assertion of intellectual property rights over the research material.

Examples of Benefit-Sharing Provisions

Indigenous general frameworks	<p>‘From time out of mind, [name of the First Nation] have gone into the forest to gather plants, soils and creatures for food, for healing and for spiritual purposes. As a result of this inherent relationship we have a proprietary interest and right to all species on our traditional territory, and to our cumulative knowledge of their preparation and use, as part of our property and cultural heritage. We will take steps to prevent any assertion of intellectual property rights to the genetic integrity or genetic potential of biotic systems in our ancestral territories.’</p> <p>‘Any publication using TK must acknowledge TK holders and their contribution and include TK holders as joint authors where appropriate.’</p>
Academic general frameworks	<p>‘Researchers will not exploit informants, or the information gathered from the research, for personal gain or aggrandisement. Where possible and appropriate, fair return should be given for participants’ help and services, which should be acknowledged in the final output.’</p>
Consent forms	<p>‘Some of the research associated with this project may lead to a commercial product or service. If, and only if, your information may be used to support this component of the larger research project you will be asked to sign a separate consent form.’</p>
Research agreements	<p>‘Any Joint Intellectual Property is deemed to be created, discovered or developed by using (...) Traditional Knowledge. Therefore, the Participating [First Nation] (...) for the benefit of the [First Nation Peoples] of their respective communities shall be undivided co-owners of the concerned Joint Intellectual Property, together with the [academic institutions] whose Researchers contributed as inventors to the creation, discovery or development of the concerned Joint Intellectual Property.’</p>

CONCLUSION

As we have seen, the impression that researchers and Indigenous peoples are oblivious of ABS implementation is not accurate. However, some researchers, as we have seen with the French Guyana case, tend to exploit the lacuna in the law.

Where there is no clear ABS law at state or domestic level, they insist that they have no obligation to observe ABS principles in their conduct. By ignoring ABS principles, they can access genetic resources and traditional knowledge and can potentially use them without limitations, willingly excluding Indigenous communities from the benefit-sharing process. This approach from researchers is inappropriate as it reflects an abuse of their position of power.

Researchers have a responsibility to take into consideration the ABS principles and to participate in their implementation, regardless of the actions or inactions of States (Menzies, 2001: 22). By refusing to incorporate ABS principles, methods and approaches, or by ignoring the importance of doing so, researchers participate in biopiracy (Shiva, 2001; Robinson, 2011) and perpetuate colonial practices (Menzies, 2011: 22).

On the other hand, this chapter has shown that some actors from the scientific community and Indigenous people(s) are developing and mobilizing their own tools such as codes of ethics and contracts to try to move toward more respectful and equitable relationships. Canada is a very rich case study to observe these contributions, which are often underestimated and under-valued. Therefore, some of these studies help debunk the questionable impression in many quarters that ABS is very complicated process to implement in the Canadian context (Hodges and Langford, Chapter 2). There is evident capacity of researchers and Indigenous people(s) to actively contribute to the transformation and improvement of their relationships. In fact, many examples of ethical frameworks and contractual practices are already available and could inspire people and institutions. We are convinced that while waiting for hypothetical national legal frameworks, these contributions can be very useful and can at least inspire all stakeholders at the ABS table (Phillips, Chapter 9).

Some of these contributions from Canada were used in 2014 in French Polynesia to develop the first French code of Ethics to deal specifically with research projects involving Indigenous people and their cultural heritage. This code has been adopted in 2015 by the Creole-CNRS centre and it has been included in the annexes of the centre's regulations.

The instruments I have identified constitute a rich source of information on the relationships that researchers and Indigenous people(s) wish to develop (in the general framework) but also on the relationships they have established for more than twenty years now. These instruments should not be neglected or underestimated as they constitute critical stepping stones or building blocks for the eventual implementation of national ABS principles in the Canadian and other contexts. This is not to suggest that these instruments could not be subjected into more rigorous scrutiny on an individual and contextual basis. They do, however, constitute useful stop-gap measures and ought to be acknowledged as representing pragmatic steps and evidence of current practices that can shape future progress on an Indigenous-sensitive ABS policy in Canada.

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NOTES

- 1 Institut de Recherche pour le développement in French. Online: www.ird.fr/.
- 2 'Ce travail partait du postulat que les populations vivant en zone d'endémie palustre utilisent des plantes médicinales pour se soigner, et ainsi qu'il a été démontré précédemment, certaines de ces plantes ont des activités antiparasitaires réelles, pouvant être mises à profit dans l'élaboration de remèdes traditionnels améliorés'. (Bourdy and al., 2008: 38–9). While studies showed that indigenous and local populations were using traditional remedies, and while researchers recognize that the plants used by the indigenous and local populations have a 'real antiparasitic activities' (which is not very surprising considering that these populations are using these plants as treatments for years...), researchers are arguing that improved traditional remedies could be (should be?) developed, of course with the help of western science, its logic and its methods. In this case, as we will see, the definition of 'improved

traditional remedies' would mean the isolation of a molecule and the application for a patent (solely controlled by the research institute and its researchers).

- 3 To identify and gain access to these instruments, I contacted universities and colleges in Canada in addition to researchers who work on medicinal traditional knowledge and Indigenous organizations. The documents identified and reviewed as part of my thesis research only constitute a portion of the instruments developed since 1992. Some are confidential, while those that are not confidential might be associated with other research-related limitations. For instance, while I identified more than 800 potential Indigenous actors, I only had contact information for 500 of them. Of that 500, only a portion responded to a request for information on tools to regulate research on genetic resources and traditional knowledge. In some cases, I found reference to a tool but could not find copies of the document itself. The contractual practices, especially signed ones, are the most difficult types of instruments to gain access to because they are not always made available to the public, even when they are not considered confidential.
- 4 The complete list will be released as part of my PhD thesis.

ABS, Reconciliation and Opportunity

Chidi Oguamanam

Contrary to conventional assumptions, ABS is not an issue for developing countries alone; it besets developed and developing countries alike. Neither is it a subject that is easily limited to the simplistic binary of provider and user country; or of Indigenous and non-Indigenous knowledge systems; of biodiversity-rich and genetic resource barren countries. ABS is a strategy that harmonizes the complementary strengths of every strand in the process of knowledge production, for example the 'scientific' and traditional/Indigenous knowledge; the local and the global, etc. Every country is a stakeholder in ensuring that the process of accessing genetic resources and various knowledge systems associated thereto are adequately integrated into the complex contexts for the evolution of knowledge and its scaling up for a just and equitable benefit sharing system.

In a way, therefore, ABS is about equitable knowledge governance as an aspect of social justice. Those are worthy goals in and of themselves. But perhaps more importantly, they have ramifications for sustainability in various contexts. They include the conservation of biological diversity, enhancing the standard of living of Indigenous peoples and Local Communities (IPLCs), sustaining their knowledge systems and worldviews as aspects of their self-determination, not to mention optimization of insights and maximization of opportunities for innovation, collective wealth creation and the management of environmental challenges that face us now and in the future.

A deliberate and genuine ABS regime at both global and national levels opens wide-ranging opportunities for knowledge production on a sustainable scale across various sites of innovation. Studies by the ABS Capacity Development Initiative and Peoples and Plants International elaborate on a range of sectors, as a practical matter, where demands for access to genetic resources and associated traditional knowledge raise significant ethical challenges for researchers and industries which can be mediated by the ABS process. Those sample sectors are botanical, agriculture, food and beverage, pharmaceutical, biotechnology and cosmetic industries.

ABS can support effective knowledge governance in the botanical industries which focus on the use of plant-based products for medicines and health promotions. It is an industry that produces and markets a wide range of products under the designations of 'herbal medicines, dietary herbal supplements, phytomedicines and phytotherapeutic agents' (Laird and Wynberg, 2015, 3). Experts affirm that 'unlike pharmaceuticals, botanicals are not highly purified or chemically modified medicines and typically do not involve identification of active constituents and characteristics of biological activities' (ibid.) in the ways they are applied by 'Indigenous knowledge practitioners.'

ABS is implicated in the uses of genetic resources or seeds (most of which are curated and conserved as part of global gene pool by IPLCs) in commercial agricultural production, through conventional breeding, various forms of direct or indirect genetic modifications and marker-assisted, trait or variety-enhancing applications and diverse manners of crop and environmental protection or control in agricultural production. Similarly, ABS is relevant to the food and beverage industry. Dependent on genetic resources for food and agriculture which are supported and sustained substantially by traditional agricultural knowledge, innovations and practices of IPLCs, the industry operates at various intersections – 'agriculture, processing, distribution and retail' – in the food and beverage space. ABS is relevant to enhance and advance collaborative knowledge production in food and beverages subsectors relevant to 'novel and functional foods, biotechnology, nanotechnology, bio-processing' (Wynberg, 2015, 2).

In the pharmaceutical industrial sector, analysts note the progressive decline of interest in natural products research generally and especially in that sector. But available records indicate that between 1981–2013, on an annual average, 31% of new drugs that entered the market were natural products (Laird, 2015). Drug discovery based on natural products remains an important cornerstone of the pharmaceutical industry. Notwithstanding the perceived declining influence of genetic resources and traditional knowledge in drug manufacturing, stakeholders in the pharmaceutical industry now recognize that ABS protocols are integral aspects of optimizing R&D and knowledge production in that sector on an ethical and sustainable basis.

Perhaps the sector that has magnified the ABS imperative the most is the biotechnology sector, which consists of a diverse range of evolving interfaces of technology with biological systems and various forms of living organisms and their derivatives for applications in healthcare, agriculture and industrial biotechnology as well as climate change or environmental mitigation and control. The ABS imperative is relevant in this sector not only because of the interconnectedness of knowledge systems (including traditional knowledge) as a continuum but because of the stewardship of IPLCs in the conservation of global genetic pool. According to Sarah Laird, 'Industrial biotech is growing rapidly due to advances in science and technology, concerns over climate change and energy security, and growing interest in more efficient manufacturing processes that use less energy, produce less waste, and

result in purer products' (2015, 2). Stakeholders are wont to access genetic materials relevant to industrial biotechnology from global genetic reservoirs mostly curated by IPLCs through their complex knowledge systems and now conveniently said to be in the public domain by their users (Oguamanam, 2018).

Recently, industrial biotechnology interests focus on unique ecosystems, such as 'areas with high species diversity, extreme environments, and unique ecological niches' (Laird, 2015a, 2). The value of such extreme environments and ecosystems, which is often the natural turf of many Indigenous peoples in Canada and elsewhere, for bioprospecting and research is further exacerbated by the ecological unravelling incidental to climate change and the consequential unsettling of hitherto pristine marine ecosystems and other unique and extreme climatic conditions. The quest to adapt and or mitigate the disruptive effects of climate change requires exploring all epistemic insights and options, including those from the traditional knowledge of IPLCs. It is an approach that further underscores the ABS imperative notably in the context of climate change.

In Canada, the rapidly melting sea ice in the Arctic and sub-Arctic regions has since opened new prospecting dynamics both in extractive industry sectors and in areas of novel genetic resources in ways that draw traditional knowledge and insights of the Inuit and other stakeholder Indigenous communities into increasing relevance and urgency for a functional ABS regime (Dylan, Chapter 5). As evident in Oguamanam and Koziol's contributions in Chapter 7, biopiracy is already a reality in Canada. It is no longer a reference to what is happening in far-flung Indigenous and local communities in the global south. Many Indigenous peoples are having to contend with uses of genetic resources endemic to their natural environments and communities and their associated traditional knowledge by third parties within and without with little or no reference to them. That trend is most likely to increase as a corollary to climate change intensification and its inherent opportunities.

However, in Canada as elsewhere, there are demonstrable examples throughout this book (Bannister, Chapter 12; Burelli, Chapter 13; Oguamanam & Koziol, Chapter 7) of how researchers and Indigenous peoples have engaged in creative forms of partnerships that express sensitivity to principles related to ABS, even though those can benefit more from stronger ethical consciousness. Despite these developments, existing and formal legal regimes relevant to ABS remain inchoate, isolated and deficient (Dylan, Chapter 5). These partnerships are patchworks; often, of ad hoc dimensions. They have yet to account for the realities of the interface of genetic resources and associated Indigenous or traditional knowledge as envisaged under the Nagoya Protocol. Meanwhile, as the Nagoya Protocol continues to be embraced and implemented in regions (e.g. Regulation EU N0511/2014) and across countries,¹ a range of new opportunities as well as challenges for its implementation confront countries such as Canada that have yet to seriously or fully embrace ABS.

Notwithstanding Canada's current lethargy on the domestic implementation of ABS, unbeknown to many, the country was once one of the leading champions of

ABS at the early onset of the international negotiations on the Nagoya Protocol. Within that context, as elaborated by Tim Hodges and Jock Langford in [Chapter 2](#), Canada was committed to full recognition of Indigenous peoples as vital partners on ABS. The country later dropped the ball on the ABS file for a number of reasons which, Hodges and Langford argue, include the complexity of the subject matter, ‘political disinterest, entrenched interests, senior bureaucratic inertia and fundamental failure to see Canada as both a user and provider of genetic resources and traditional knowledge.’ Yet, globally and within Canada, stakeholders continue to advance the implementation of ABS which is now the received wisdom of responsible research, effective biodiversity conservation strategies, ethical bioprospecting, and corporate best practices. Canada can no longer afford to ignore these developments.

ACCESS AND BENEFIT-SHARING IN THE SHADOW OF RECONCILIATION

Perhaps there is no better time and context to realistically engage ABS in Canada than now, for a number of reasons. The first is a point already made above – climate change, rapidly melting sea ice and the resulting new dynamic in Canada’s Northern regions and their implication for bioprospecting and disruptive effect on Indigenous ways of life. In addition, as a related matter, another reason is the reality of extant flashpoints of biopiracy within Canada in which Indigenous peoples’ knowledge and uses of genetic resources are already the target of appropriation. With the continued impact of climate change being felt across the confluence of ecological and Indigenous ancestral homelands in Canada, new opportunities for the extractive industries have continued to open up but little or no consideration has been given to the potential or real ramifications for dealings in genetic resources and associated traditional knowledge in these contexts.

Perhaps more than the circumstances above, the most opportune time or moment to take ABS seriously is the ongoing policy of reconciliation with Indigenous peoples as led by the current federal government. Two important instruments, among sundry others, relevant to the reconciliation agenda are crucial to advancing ABS in Canada as a complementary part of reconciliation. They are the 2015 Truth and Reconciliation Commission of Canada’s Calls to Action (TRC Calls to Action, 2015) and the 2017 Department of Justice’s Principles Respecting the Government of Canada’s Relationship with Indigenous peoples (Department of Justice, 2017). A lot has been written on these two documents and related others in the preceding chapters (e.g. Hodges & Langford, [Chapter 2](#); Nichols, [Chapter 4](#); Perron-Welch & Oguamanam, [Chapter 6](#)). Despite its historic reluctance, in 2017 Canada finally withdrew its decade-long reservation against the United Nations Declaration on the Rights of Indigenous peoples (UNDRIPs). Pursuant to the TRC’s Calls to Action, proclamations from the federal government indicate a willingness to ‘breathe life’

into Section 35 of the Constitution by using UNDRIPs as a framework for activating and unpacking Section 35 rights. That approach was inspired by the TRC's Calls to Action and reflected in the enunciated principles respecting the Government of Canada's relationship with Indigenous peoples.

In a nutshell, Section 35 of the *Constitution Act, 1982* guarantees existing Aboriginal rights and such rights that were preserved (i.e. not extinguished) or those conferred in treaties signed between Indigenous peoples or communities and the Crown before the adoption of the *Constitution Act*. That section ranks perhaps as one of the most contested, litigated and interpreted constitutional texts in Canada's jurisprudence. Over the years, Canada's judiciary has supervised progressive and elaborate enunciations of those rights in direct and indirect ways² notwithstanding procedural difficulties and entrenched inequitable power relations that have persisted to deny Indigenous peoples' determined efforts to realize the promises of those rights, which have remained frustratingly elusive (Nichols, [Chapter 4](#)). The courts have affirmed that Section 35 rights (rights that were never extinguished) are rights in continuum and essential to the sustainability of the Indigenous peoples of Canada. In essence, those rights do not depend on formal legal recognition in Canada, directly or in delegation. Included in the universe of those rights are recognition of the identities of Indigenous nations as distinct societies, with their own world views, cultures, practices, legal and political traditions, authorities, and complex relationships of interdependence and understanding with natural forces and their own ecological and environmental ethics, to mention just a few.

A persistent and thorny aspect of Canada's relationship with Indigenous peoples revolves around the scope and interpretational approach to Section 35 of the *Constitution Act* and, by extension, the status of Indigenous peoples in the Canadian federation. Despite progressive judicial intervention, the dominant colonial approach remains fixated in favour of Canadian sovereignty and juridical competence to the exclusion of Indigenous sovereignty and meaningful self-determination. The result is the continued subservience of Indigenous peoples with little regard for the principle and integrity of true, nation-to-nation relations. Eurocentric concepts – like the doctrine of discovery and *terra nullius*, which denigrate and deny Indigenous peoples, their lands, identities, and status and construe them as subjects of European sovereignty and objects of paternalistic intervention – frame the entire Canadian-Indigenous relationship.

The 2015 TRC's 94 Calls to Action are revolutionary as a major catalytic roadmap for reconciliation. In its core essence, among other considerations, reconciliation is less a literal expression than it is an important legal initiative, and much more (Bannister, [Chapter 12](#)). It harps at the fair and equitable terms of engagement between Indigenous and non-Indigenous Canadians. In a way, it is a charter of respectful and mutual co-existence in a form of shared or collaborative sovereignty among equal partners, which is how Indigenous peoples have always understood the treaty-making process. As recalled by Perron-Welch and Oguamanam ([Chapter 6](#)),

Binnie, J., argues that with a framework of reconciliation, a concert of Indigenous and non-Indigenous Canadians results in ‘a sovereign entity with a measure of common purpose and united efforts. It is this entity, as inheritor of the historical attributes of sovereignty, with which existing aboriginal and treaty rights must be reconciled’ (*Mitchell v. MNR*, para. 129). In essence, reconciling pre-existing and, indeed, continuously evolving Indigenous societies and ways of life and attendant rights with the sovereignty of the Crown is the essence of reconciliation (*R. v. Van der Peet*, 1996, para. 31). The TRC’s Calls to Action were unequivocal regarding the anchoring of reconciliation on nation-to-nation relationship, and rejection of all vestiges of colonial doctrines and principles that hitherto defined the Crown’s relationship with Indigenous peoples. It endorsed a full-fledged and equal partnership model of the Canadian federation that recognizes Indigenous laws and legal traditions and a respectful Crown-Indigenous treaty and overall relationship on the basis of mutual respect, and shared commitment in maintaining that relationship on a sustainable and equitable basis.

An important aspect of reconciliation is giving full weight to pre-existing Indigenous sovereignty over their land and resources, including their legal traditions, knowledge systems, and the customary practices and bundles of relationships that undergird their inherent rights. Those include rights to genetic resources and the practice or applications of associated Indigenous knowledge as pre-existing Indigenous rights which are now at the core of ABS. The rights are fully affirmed in the UNDRIPS, which the TRC’s Calls to Action have benchmarked as a critical framework or roadmap to reconciliation. Interestingly, as indicated, the 2017 Ten Principles to undergird the Government of Canada’s relationship with Indigenous peoples builds on the TRC’s 94 Call to Action and packs fundamental aspects of UNDRIP, unequivocally sanctioning Indigenous peoples’ rights to self-determination and self-government while endorsing reconciliation as the central objective of Section 35 of the *Constitution Act*.

Despite the skepticism that can sometimes cloud Canada’s ongoing reconciliation mantra – justifiable given the legacy of broken promises – the reconciliation blueprint dovetails neatly with the existing international legal architecture on Indigenous rights. ABS is but one of the nascent and fledgling aspects of international initiatives that engage IPLCs’ rights. This book has highlighted aspects of the inherent difficulty of building an ABS regime in a complex, colonial, federal structure with a complex and often dark history of relations with Indigenous peoples. Interestingly, however, the current reconciliation initiative provides us with a pragmatic and comprehensive framework for the potential realization of ABS. Markers of that framework include the work of the Royal Commission on Aboriginal Peoples, the Truth and Reconciliation Commission’s Calls to Action, the Ten Principles and the Prime Minister’s Working Group of Ministers charged to ensure the federal Crown’s devotion to its obligations to Indigenous peoples and to the UNDRIPS.

The expressed expectations of Indigenous peoples in the ABS Canada focus groups (Oguamanam, Phillips, Nichols, Koziol, 2015, 2016, 2017)³ that ABS can be implemented in a condition that is not only sensitive to their worldviews, but one that recognizes their sovereignty and rights to self-determination and self-government, including their legal systems and traditions in a framework of collaborative federalism are sentiments that are amply captured by the aforementioned documents. It is instructive to point out that sharing, which is a defining element of ABS is one of the central characteristics of Indigenous worldviews and relationships. For Indigenous peoples, on its surface, the undergirding rationales for ABS invoke natural sentiments in sharing as well as justice and equity. But for ABS to make any sense, Indigenous peoples have to be genuine partners in its implementation by leveraging, in an unfettered manner, all the Section 35 rights pursuant to and within the framework of the TRC's Calls to Action and the roadmap of reconciliation. Thus, Canada has never had a more opportune moment and a better political context to energize the ABS file which, as we have seen, is logically integral to reconciliation.

ABS: STRATEGIES, CHALLENGES AND OPPORTUNITIES FOR CANADA

In the shadow of the reconciliation project, Canada and, certainly, many stakeholder countries need a more dedicated strategy to give effect to ABS on many fronts. First, administratively, as Tim Hodges and Jock Langford (Chapter 2) argue, there is an urgent need for interdepartmental coordination on ABS and for the continuing engagement and participation of Indigenous peoples and their organizations. They recommend that each department at federal, provincial/territorial and even Indigenous levels of government must develop a threshold or trigger for ABS concerns and must be able to coordinate horizontally and, certainly in any direction for that matter, to ensure that ABS is realized and not undermined. One of the oft-cited obstacles to implementation of ABS is the ubiquitous and cross-cutting nature of the subject matter. In Canada alone, ABS could be engaged in one degree or another across diverse departments, including Crown-Indigenous Relations, Indigenous Services, Global Affairs, Trade, Industry, Justice, Environment and Climate Change, Heritage, Natural Resources, Forestry, Fisheries and Oceans, Agriculture and Agrifood, Health, etc. Yet, ABS is not the only subject matter that is dispersed across a wide range of government departments. Coordination happens on other files – what is desperately required is strong and sustained political will and leadership.

Second is the case for capacity building (where there is none) and capacity development (where existing capacity is inadequate) on ABS.⁴ Capacity building and capacity development do not only arise with regard to IPLCs but also they are critical needs for public servants and a range of policymakers who are engaged in

decision making on ABS. Indigenous participants in the ABS Canada Focus Groups insist that the making of domestic ABS law and policy must be an exercise in equal partnership. They argue that many policymakers need to develop capacity to understand the realities and expectations of Indigenous peoples on ABS as foundational matter that precedes the making of policy. In addition to that often-mentioned context of capacity building (i.e. as it applies to public servants and a range of policy makers), the Nagoya Protocol recognizes the need for capacity building and capacity development on ABS. After all, compared to other interest holders in ABS, such as corporations and individual or institutional researchers, there is no doubt that Indigenous peoples are in greater need of capacity building and capacity development on the subject. Regrettably, however, the Protocol limits its focus on capacity building and capacity development to the local communities of the global south. That exclusionary approach reflects the fault line of the contemporary global development narrative (Oguamanam & Hunka, [Chapter 3](#)). It is a narrative that ignores or masks the development gaps and deficits of Indigenous peoples of the global north such as those in Canada, United States, Australia and their counterparts everywhere else in that geopolitical bloc.

Therefore, capacity building and capacity development on ABS presents a potential context or opportunity for global solidarity among Indigenous peoples of the global north and their local community counterparts in the south. For a number of considerations, Indigenous peoples of Canada and other Indigenous peoples of the enclave territories of the north could look to their local community counterparts in the south for capacity building and capacity development on ABS in a counter-intuitive form of north-south development (Oguamanam & Hunka, [Chapter 3](#)). The focus of the Nagoya Protocol on capacity building and capacity development on the global south is understandable but not entirely justifiable for its exclusionary tenor. The region has far more countries and, consequently, more experience with implementing ABS pursuant to the Nagoya Protocol (Medaglia, Perron-Welch & Phillips, 2014) as evident from the statistics from the ABS Clearing-House. Also, that region remains the highest beneficiary of independent capacity development on ABS as demonstrated in the work of such organizations as the ABS Capacity Development Initiative and other civil society organizations that have remained bulwarks against biopiracy in the global south. The prospects for the Indigenous peoples in Canada to look southwards for capacity building and capacity development on ABS as a matter of solidarity will not only fast track their participation in the process, it will engage and exercise their inherent rights to self-determination while building needed solidarity.

Third, the current dynamic for ABS enforces an imperative for a new research and ethical landscape that requires deliberate incorporation of ABS as a new reality of research and development (Bannister, [Chapter 12](#); Burelli, [Chapter 13](#); Oguamanam, [Chapter 11](#); Phillips, Smyth & de Beer; [Chapter 10](#)). ABS is an integral aspect

of researcher-community outreach, partnership and engagement as well as a crucial feature of corporate best practices and corporate community engagement. Canada's research ethics landscape has evolved through progressive and ongoing attempts to integrate Indigenous peoples as equal stakeholders in research and knowledge creation. After an elongated period of suspicion and exclusions that characterized Indigenous perception of the research enterprise, Indigenous peoples have continued to demonstrate renewed and constructive engagement with researchers and are now determined to be active and not just passive participants in research and development generally and those involving them in particular as demonstrated by Bannister and Burelli (Chapters 12 and 13). ABS would constitute a fundamental aspect of the future of research ethics and bioprospecting in Canada and globally as it presents an opportunity for further research ethics review or 'fine-tuning.'

The good news is that while the Nagoya Protocol has provided the impetus, existing practices demonstrate the involvement and awareness of Indigenous peoples in partnership and execution of elements of ABS in their relationship with researchers and corporations. To put it simply, there is no need to reinvent the wheel. Globally, ABS has evolved on the back of diverse legal principles and rules at the intersection and confluence of actors in vertical and horizontal spheres of engagements and in multiple contexts around genetic resources, IPLCs, biodiversity conservation, ecological dynamics, intellectual property, innovation, markets and industries, and research and development in both public and private regulatory spaces. In the European Union, the fledgling regional experience on ABS reflect sensitivity to the confluence of legal regimes and regard for country-to-country differences and local contexts as foundational to a functional ABS regime (Coolsaet et al., 2015).

But in Canada, there is an opportunity to leverage existing practices in the shadow of the Nagoya Protocol and reconciliation to model Indigenous-sensitive research and knowledge co-creation that is respectful of equitable ABS. Canada can look in a number of directions for inspiration. Like Brazil or the Commonwealth of Australia, Canada is a federal state that must invariably balance a nationally consistent ABS framework with sensitivity to the local contexts in its sub-national parts, (Phillips, Chapter 9; Wright, 2017) including across its 73 Indigenous nations. Each of the latter should be capable of constituting their own competent authorities on ABS, as repeatedly professed by Indigenous partners and participants in the ABS Canada Focus Groups. Canada has more catching up to do though. The country's long hiatus on the ABS file accounts for the slow uptake of ABS and its mainstreaming in the research landscape among the research communities and corporate interests in Canada. That is contrary, for example, to the case in Switzerland where the Swiss Academy of Sciences undertook a project on ABS in Academic research since 2006 (Biber-Klemm & Sylvia Martinez, 2006) thereby setting the stage for an ongoing national conversation and policy evolution (Biber-Klemm, Sylvia Martinez & Anne Jacob, 2010).

Fourth is the idea of Canada's potential late comer advantage on ABS and the opportunities inherent in that otherwise undesirable status. The preceding paragraph has alluded to Canada's ability – along with its Indigenous peoples – to learn and build on developments from other jurisdictions who already have a head start on ABS. Perhaps more importantly, the rapidity and escalation of technological developments around the uses and applications of genetic resources and their interface with associated Indigenous or traditional knowledge in diverse realms of biotechnology (health, agriculture, environment, etc.) has precipitously called for reconsideration of conventional uses of genetic resources which is premised on user's direct physical contact. Future domestic implementation of ABS would need to be mindful of increasing possibilities of the technological contexts in which uses of genetic resources and even associated traditional knowledge is possible through information about genetic resources that de-links them from their physical sources and origins (Oguamanam, [Chapter 11](#); Phillips, Smyth & de Beer, [Chapter 10](#)). One clear example is the recent initiative by the Conference of Parties (COP) of the CBD (serving also as COP of the Nagoya Protocol) which in 2016 set up an Ad Hoc Technical Expert Group on Digital Sequence Information (DSI) on Genetic Resources to shed light on the use of DSI on genetic resources in the context of the CBD and the Nagoya Protocol.

In its 2018 report, the Ad Hoc Technical Expert Group recognized various forms and categories of information relevant to the utilization of genetic resources in digital and other hi-tech and scientific contexts. The Group's opinion was divided, however, on whether the definition of genetic resources in the CBD and Nagoya Protocol includes DSI. While some believe that DSI is included by implication in the definition of genetic resources, others are of the view that DSI refers to intangible material and is therefore not included in the definition of genetic resources. The significance of an interpretation that includes DSI in the definition of genetic resources is that even though use of DSI does not entail direct access to physical genetic resources, it could still amount to a use that would trigger ABS in favour of providers in the origin or sources of the genetic resources. As such, users of DSI are not able to evade ABS or disclosure of source or origin obligation attached to their use of DSI simply because they may not have had physical contact with the genetic resources and their providers. With specific regard to use of DSI on genetic resources for fair and equitable benefit sharing, the expert group makes the follow observations in para 20 (a) and (c) of its report:

'DSI' could bring transformational change to the use of genetic resources, which may influence the type of benefits and the way benefits are shared. There may be useful lessons in this respect from how digitization of information in other sectors has impacted benefit-sharing, including possible lessons from music, software, publishing and other industries; ... On the other hand, 'DSI', in the light of advances in sequencing technologies in particular, may, in some cases, challenge the implementation of arrangements for access to genetic resources and benefits

sharing (ABS) by obviating the need for users to seek access to original tangible genetic resources, thus potentially enabling users to bypass procedures for access and benefit-sharing.

(CBD-DSI AHTEG, 2018)

With all of these important and impactful technological transformations on ABS, Canada is in a position to implement a robust domestic ABS regime. As many contributions in this book have maintained (e.g. Hodges and Langford, [Chapter 2](#); Oguamanam, [Chapter 1](#); Oguamanam and Koziol, [Chapter 7](#)), no country is exclusively a provider or a user of genetic resources; many, especially Canada, are clearly as much providers as they are users. Consequently, domestic implementation of ABS would aim to incorporate cutting edge beneficial technologies such as the applications of DSI or even digital DNA (Oguamanam & Jain, 2017) that advance research and development in genetic resources and associated traditional knowledge in mutually beneficially and not exclusionary ways. The debate whether the scope of definition of genetic resources includes DSI remains ongoing in the cognate forum such as the World Intellectual Property Organization Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expression (WIO-IGC), where regrettably Canada takes a position that reflects its self-positioning as a user as opposed to also a provider of genetic resources and associated traditional knowledge.⁵

Fifth is related to the last point on the opportunities inherent in Canada's 'latecomer advantage' that enables the potential incorporation of new technological insights into its domestic implementation of ABS. It is in respect of the increasingly ubiquitous and profound role of data in the exploitation and management of genetic information and associated traditional knowledge which have significant implications for research and development concerning Indigenous peoples in the ABS context. Genetic resources and, certainly, associated traditional knowledge now constitute part of the big and open data landscape (Oguamanam, [Chapter 11](#)). In that context, research and development relating to IPLCs are reduced to pieces of information and datasets that are readily de-linked from their sources and origins and integrated into the global big data infrastructure as an essentially virtual resource to which everyone has access for all manners of uses and applications. While the role of big and open data in advancing information and knowledge production as a global public good is important, they raise new dynamics and strong ethical concerns in the context of the undergirding rationale for ABS, especially with regard to IPLCs who have, historically, been victims of unequal power relations that undergird research. In the formulation of a domestic ABS regime in Canada and elsewhere, it is essential to critically appraise how to balance the open and big data dynamic with a deliberate and meaningful sensitivity to Indigenous peoples and their interest in data sovereignty and data equity. This would ensure that the prevailing and nascent technologies are deliberately deployed to promote, not undermine, the letter and spirit of ABS to the detriment of historically disadvantaged

parties such as IPLCs. Recently, block chain applications or software are being deployed in the management of marketing and miscellaneous value chain information in agriculture. That innovation is a potential game changer in ABS and related matters, especially with regard to resolving the problem of de-linking information from its source.

CONCLUDING REFLECTIONS

The experience of ABS Canada's three years of field work shows that the making of a domestic ABS law and policy will not be a simple exercise. For starters, the concept itself is as complicated as any phenomenon can be. In addition, the historical antecedents of Canada's relationship with Indigenous peoples are characterized by justifiable suspicion on the basis of failed promises and a long history of colonialism, including a colonial legal tradition that erects substantive and procedural obstacles against Indigenous peoples' quest for justice, fairness and equity on many fronts. ABS is, in a way, a little known and disguised site for engaging the interconnected legion of issues that shape Canada's relationship with Indigenous peoples which are also broached at many separate and interlinked regimes of international law from Indigenous peoples' rights, environmental sustainability, biodiversity conservation, resource rights, agriculture, food, health, biotechnology to innovation and intellectual property rights, among many others.

While ABS may seem like an arcane or niche subject quite alienated from the daily markers of Indigenous injustice in Canada, many Indigenous participants in the ABS Canada Focus Groups insist that issues raised by ABS are as constitutional as they are aspects of the holistic scale of injustice that characterize their relationship with the Canadian state. With the right political will across all orders of government and a commitment to an equitable economic partnership with Indigenous peoples, now is an opportune time to formally enable a domestic ABS regime in Canada, which does not exclude opening up new partnerships for entrepreneurship with Indigenous peoples. This is with regard to the context for the current initiative to revisit Canada's relations with Indigenous peoples through reconciliation as well as with regard to more robust international and various national regimes on ABS courtesy of the Nagoya Protocol, not counting existing variegated contractual arrangements between researchers and Indigenous peoples across Canada that continue to negotiate and implement arrangements that increasingly recognize ABS concerns.

While the Nagoya Protocol represents a framework for ABS, each domestic regime has the potential to improve on Nagoya with sensitivity to stakeholder expectations and local realities. Such expectations need to be galvanized through a comprehensive stakeholder needs assessments supported through inclusive and continuing stakeholder partnerships and other creative models of meaningful, effective and inclusive consultations. In both the background study to the present volume and in its many contributions, it is clear that even though Canada has yet to

fully recognize it, Indigenous peoples are supposed to be major actors on ABS and must be recognised as such. After all, ABS is concerned with genetic resources and associated traditional knowledge – inherent in that phrase is a recognition that genetic resources constitute the dominant site for the production of Indigenous knowledge. However, apart from Indigenous peoples, governments and a range of policy makers, other actors directly engaged in ABS include researchers and corporations. While the contributions in this volume have explored the interface of ABS with all the prominent stakeholders, there is no devotion to corporations as crucial constituent of ABS stakeholders.

As part of their existing trust deficit with the Government of Canada, Indigenous peoples perceive the government to be aligned with corporate interests with regard to ABS, which many believe explains Canada's lethargy on the subject. For good reason, in ABS and cognate regimes and incidental negotiations, Canada has a tendency to align with a bloc of countries that self-identify as genetic resource user countries in perpetuation of the increasingly discredited provider-user dichotomy. This is primarily because Canada likes to emphasize its status as a leading biotechnology country without paying much attention to its increasingly evident status as genetic resource provider country, not to mention the abundance of associated traditional knowledge of its many Indigenous peoples. This historically pro-industry disposition by the Government of Canada has shielded corporations from proactively engaging with other ABS stakeholders beyond the government. To formally implement ABS as part of Canada's domestic policy and legal regime, corporations must be part of the group of stakeholders directly committed to shaping the system. The existing gulf between corporations, Indigenous peoples and other stakeholders in ABS has continued to fuel exaggerated or unrealistic and uncritical expectations about the whole process. Those hyped expectations can be tampered to their realistic levels with the transparency that will flow from the proactive participation of corporations in the making of domestic ABS laws, and through respectful partnerships with Indigenous peoples and all other interests. For corporations, ABS should be seen as a site for sound corporate practices, good public relations and healthy community engagement rather than rather an avoidable irritation or a perceived barrier to doing business.

The importance of a domestic ABS policy for all countries, including Canada, is now evident. This is especially so in the light of the fact that dichotomizations of countries as users and providers of genetic resources is simply not sustainable. For Canada and other kindred countries, lack of a domestic ABS policy will present an obstacle to their multinational corporations to access genetic resources and associated traditional knowledge in the centres of genetic origins or other countries that have domestic ABS laws. In this volume, we have weaved the results of ABS Canada's Focus Groups on ABS – which gauged the pulse of segments of Indigenous peoples on the subject through a participatory partnership model of mutual learning and capacity building by and with Indigenous peoples – and the many other contributors to this volume. From that experience, it is clear that there are

many opportunities to continue to explore meaningful forms of engagements and collaborations on the subject. The opportunities inherent in such endeavours far outweigh the challenges. Whatever the inadequacies of the present project, this volume has attempted to demystify the subject of ABS in the Canadian policy space, while calling attention to the escalating contexts in which ABS issues arise and the opportunity for advancing ABS in Canada as a logical part of the reconciliation agenda. All of this has been done with a view to encourage continuing and progressive re-thinking of Canada's approach to ABS which, in the context of prevailing international developments and extant domestic political and economic opportunities, is no longer justifiable.

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NOTES

- 1 The Access and Benefit-Sharing Clearing-House (ABS-CH) publishes on periodic basis information on interim national reports and statistics on the implementation of the Nagoya Protocol globally. See for statistic and report at the time of writing, ABS-CH <https://absch.cbd.int/>.
- 2 See, for example, *Calder et al. v. British Columbia* (1973), *R v. Sparrow* (1990), *R v. Adams* (1996), *R v. Van der Peet* (1996), *Delgamuukw v. British Columbia* (1997), *R v. Marshall* (1999), *Corbiere v. Canada* (1999), *Campbell v. British Columbia* (2000), *Mitchell v. MNR* (2001), *Haida Nation v. British Columbia* (2004), *Mikisew Cree First Nation v. Canada* (2005), *McIvor v. Canada* (2009), *Tsilhqot'in Nation v. British Columbia* (2013), *Daniels v. Canada* (2016).
- 3 The four authored the reports of ABS Canada Focus Groups on ABS held in 2015 (Moncton), 2016 (Ottawa) and 2017 (Saskatoon).
- 4 In the context of ABS, capacity building and capacity development are both engaged in different degrees depending on the extent of existing capacity in a given community. For example, in terms of mobilization and raising awareness, much capacity development needs to be done to supplement existing levels of knowledge and awareness; whereas in the case of specific subjects such as negotiating material transfer agreements under mutually agreed terms and such considerations as appropriate forms of benefits sharing, in many Indigenous communities there is a dearth of capacity or expertise. Such a situation requires building capacity from the 'bottom up.'
- 5 At the current negotiations of international instrument(s) for effective protection of traditional knowledge, pursuant to the WIPO IGC, while African countries, countries in the group of like-minded bloc and the Indigenous caucus insist that digital technologies now render physical contact between genetic resources and their users unnecessary, Canada, the United States, Japan and a host of others maintain that direct physical contact between genetic resources and users is necessary to trigger disclosure of origin or source of the genetic resources to support application for intellectual property, especially patents based on such genetic resources and associated in traditional knowledge.

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