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Title: Imaging A Traditional Knowledge Commons: A Community Approach to Ensuring the Local Integrity of Environmental Law and Policy

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Abstract: Under the Convention on Biological Diversity, international negotiators are currently developing an International Regime on Access and Benefit Sharing (IRABS). While this inchoate international legal framework primarily addresses commercial research on traditional knowledge, many questions remain about how this framework will affect non-commercial research agreements. This paper therefore presents a possible model for a Traditional Knowledge Commons designed to address some of these questions, such as how one differentiates non-commercial from commercial use of TK and how one defines benefits. The proposed model is formulated to provide a middle ground where traditional knowledge can be promoted and circulated without having to place it either into the public domain or deny access to it entirely. This Traditional Knowledge Commons would provide a platform for knowledge-sharing under conditions created by indigenous communities themselves and protected by a set of online user licenses requiring compliance with customary laws that govern the use of traditional knowledge. In addition to outlining how the model would be structured and how its online licensing system would function, this paper will examine the potential benefits of the model functioning as a system through which innovations developed through the use of traditional knowledge could be returned to the Traditional Knowledge Commons, further expanding this collective pool of knowledge and increasing the potential benefits that may be derived from it. Although the model would ultimately need to rely on the compliance mechanisms provided by the finalized IRABS, this paper also assesses the potential enforcement problems with which the Traditional Knowledge Commons may have to contend. Finally, it concludes with an analysis of the model's potential for strengthening the self-determination of indigenous communities as well as the protection of biological diversity to which their traditional knowledge is inextricably linked.

Key Words: Traditional Knowledge, Access and Benefit Sharing, Convention on Biological Diversity, open source, protected commons

IMPLEMENTING A TRADITIONAL KNOWLEDGE COMMONS: OPPORTUNITIES AND CHALLENGES[1]

Developments following the Traditional Knowledge Commons Workshop[2]

The Traditional Knowledge (TK) Commons model is a potential mechanism for addressing the problems faced by indigenous and local communities (ILCs) in negotiating meaningful and effective benefit sharing arrangements with researchers who want to obtain access to TK for non-commercial research.[3] While international negotiators developing an International Regime on Access and Benefit Sharing (IRABS)[4] are currently focused on creating a framework that primarily addresses commercial research on TK, many questions remain about how this framework will affect non-commercial research agreements.[5] The TK Commons model is fundamentally concerned with answering these questions, such as how one differentiates non-commercial from commercial use of TK and how one defines benefits. It is guided by the principle that these questions must be answered from the perspective of the ILCs providing access to the TK. It therefore seeks to contribute to the increased recognition and respect of the self-determination and *sui generis* customary laws of ILCs. The proposed model aims to address these and other challenges that regularly emerge in discussions over the shortcomings of TK protection. Above all, it seeks to correspond to a value system adapted by many ILCs in which the sharing of knowledge for specific use among peers is deeply integrated into customary law by providing a safe middle ground where TK can be promoted and circulated without having to place it either into the public domain where it is 'free for all' or deny all access to it entirely. A TK Commons could provide a platform for TK sharing under share-alike and other conditions put forward by the communities themselves and protected by a set of user licenses[6] through which ILCs could define what form benefits should take and require compliance with customary laws that govern the use of TK.[7]

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[1] This chapter is taken from "*Implementing a Traditional Knowledge Commons: Opportunities and Challenges*" (October 2010) by Natural Justice and the Access and Benefit Sharing Capacity Development Initiative for Africa, www.naturaljustice.org, which is an extensively revised and expanded version of an earlier monograph published by Natural Justice and the International Development Law Organization (IDLO) in November 2009.

[2] Traditional Knowledge Commons Workshop: Cape Town, South Africa, 14th-15th of December 2009. The aims of this workshop were to bring together a small group of experts to work towards bringing a first (set of) TK Commons pilot(s) into action, thinking about how it could be integrated into the broader national and international legal frameworks of TK protection as a mechanism capable of facilitating the expanded flow of benefits generated by TK-based non-commmercial research while simultaneously increasing recognition of and compliance with *sui generis* customary law.

[3] Oldham, P (2009) An Access and Benefit-Sharing Commons? The Role of Commons/Open Source Licenses in the International Regime on Access to Genetic Resources and Benefit-Sharing. *Initiative for the Prevention of Biopiracy, Research Documents, Year IV, No.11*. http://ssrn.com/abstract=1438027. Also available at UNEP/CBD/WG-ABS/8/INF/3

[4] Although it still remains to be determined what form it will finally it take, it is widely expected that an international legal regime for regulating access and benefit sharing will be finalized at the tenth meeting of the Conference of the Parties (COP 10) to the Convention on Biological Diversity, which will be held in Nagoya, Aichi Prefecture, Japan, from 18 to 29 October 2010

[5] Oldham, *supra* note: 3

[6] Such licenses have been proposed by ILCs themselves. The Pacific Northwest Tulalip tribes, for example, have developed the idea of Traditional Knowledge Commons licenses as early as 2004.

[7] Oldham, *supra* note: 3

FROM COMMUNITY KNOWLEDGE TO A KNOWLEDGE COMMUNITY

"A gift is to the giver, and comes back most to him - it cannot fail…" - Walt Whitman
"One man's gift must not be another man's capital." - Marcel Mauss

In August 2009, approximately 80 traditional healers living in the Bushbuckridge area of the Mpumalanga province in South Africa developed a biocultural community protocol which provided clear terms and conditions for access to their collectively held TK.[8] A biocultural community protocol is a protocol that is developed as a result of a consultative process within a community that outlines the community's core cultural and spiritual values and customary laws relating to their traditional knowledge and resources. Based on these values and laws the community protocol provides clear terms and conditions under which access to community knowledge and resources shall be provided. The term biocultural is drawn from the concept of "collective biocultural heritage," which refers to the "knowledge, innovations and practices of indigenous and local communities that are collectively held and inextricably linked to traditional resources and territories, local economies, the diversity of genes, species and ecosystems, cultural and spiritual values, and customary laws within the socio-ecological context of communities."[9] It is used to emphasize the central importance of the interdependence of TK, biodiversity, land, cultural values and customary laws to the holistic worldview of many indigenous communities.[10]

The motivation for the Bushbuckridge biocultural protocol was an attempt by these traditional healers to assert their rights over their TK under Article 8(j) of the

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[8] For fact-finding missions carried out by the World Intellectual Property Organization (WIPO) in 1998-1999, the WIPO Secretariat used the following all-encompassing and working concept of "traditional knowledge": " 'traditional knowledge' ... refer[s] to tradition-based literary, artistic or scientific works; performances; inventions; scientific discoveries; designs; marks, names and symbols; undisclosed information; and all other tradition-based innovations and creations resulting from intellectual activity in the industrial, scientific, literary or artistic fields. 'Tradition-based' refers to knowledge systems, creations, innovations and cultural expressions which: have generally been transmitted from generation to generation; are generally regarded as pertaining to a particular people or its territory; and, are constantly evolving in response to a changing environment. Categories of traditional knowledge could include: agricultural knowledge; scientific knowledge; technical knowledge; ecological knowledge; medicinal knowledge, including related medicines and remedies; biodiversity-related knowledge; 'traditional cultural expressions' ('expressions of folklore') in the form of music, dance, song, handicrafts, designs, stories and artwork; elements of languages, such as names, geographical indications and symbols; and, movable cultural properties. Excluded from this description of TK would be items not resulting from intellectual activity in the industrial, scientific, literary or artistic fields, such as human remains, languages in general, and other similar elements of 'heritage' in the broad sense." (Available at http://www.wipo.int/tk/en/glossary/#tk, last accessed January 27, 2010.) "Traditional Knowledge – Operational Terms and Definitions" (WIPO/GRTKF/IC/3/9), May 2002, also contains a review of the variety of meanings that have been attributed to the "traditional knowledge" in a range of international fora and processes. However, this definition is provided only as a gloss and should not be considered exhaustive or exclusive: the TK Commons is based on the understanding that – like the definitions of "use" and "benefits" in relation to the use of TK – the ultimate definitions of TK should be determined by the ILCs who hold it.

[9] International Institute for Environment and Development (IIED). "Objectives and Methodologies," *Protecting Community Rights over Traditional Knowledge: Key Findings and Recommendations 2005-2009*, http://www.iied.org/pubs/display.php?o=G02583&n=2&l=24&k=community%20rights%20over%20traditional%20knowledge, last accessed January 27, 2010.

[10] *Ibid.*

Convention on Biodiversity (CBD)[11] and the concomitant South African ABS law. While the biocultural protocol itself sought to regulate access to their TK based on their customary laws[12], what was more interesting was the process of deep introspection that the biocultural protocol triggered within this community about the nature of their knowledge. The healers were clear about the idea of asserting ownership over their TK. According to them, their knowledge was passed on to them from their teachers, gained through experience, sharing, intuition, dreams and ancestral spirits. They did not see themselves as having absolute proprietary rights to profit from the use of this knowledge, whether collectively or individually owned. A small fee in cash or in kind was charged from patients who could afford it, but this fee merely ensured the healer's livelihood and wasn't seen as a right to profit from their knowledge. The healers did not want to interpret Article 8(j) as providing them with a title deed over their knowledge since they already saw themselves as its custodians. They instead interpreted it as guaranteeing a right to ensure that their knowledge would be used in accordance with their customary laws. They were healers who had a sacred calling and had received knowledge from their teachers and ancestral spirits, which obliged them to share this knowledge and serve their communities through the healing powers that the knowledge bestowed on them.

The healers of Bushbuckridge pose an interesting challenge to the implementation of Article 8(j) of the CBD: Can Article 8(j), while ensuring the rights of ILCs to enter into ABS agreements for the commercial use of their TK, also envisage an expanding TK Commons that includes non-traditional users who use TK strictly in accordance with the customary laws of its custodians? The answer to this question resonates beyond the preservation of TK to the issue of the continued existence of ILCs themselves.

International law provides a range of human rights instruments that guarantee the civil, political, economic, social and cultural rights of ILCs. These human rights are conceptualized as having at least three generations or categories.[13] The first generation of rights – political and civil rights – is outlined in the Universal Declaration of Human Rights (UDHR) and the International Covenant on Civil and Political Rights (ICCPR).[14] The second generation of rights are socio-economic and

[11] Article 8j of the CBD states: "(j) 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." (Convention on Biological Diversity (1994). Convention on Biological Diversity Text. CBD Secretariat, Geneva.)

[12] Customary laws are the principles, values, rules, codes of conduct, or established practices that guide the social practices of indigenous communities, including the use and management of a natural resources. "They are locally recognized, orally held, adaptable and evolving," although they are often not recognized by state governments or courts, especially when they conflict with state laws. (IIED, *supra* note 9.)

[13] See Karel Vasak, "Human Rights: A Thirty-Year Struggle: the Sustained Efforts to give Force of law to the Universal Declaration of Human Rights", UNESCO Courier 30:11, Paris: United Nations Educational, Scientific, and Cultural Organization, November 1977.

[14] The Universal Declaration of Human Rights was adopted by the United Nations General Assembly on December 10, 1948, in Paris, France. The International Covenant on Civil and Political Rights was adopted by the UN General Assembly on December 16, 1966, and entered into force on March 23, 1976.

cultural rights. These rights are also covered in the UDHR and are enshrined in the International Covenant on Economic, Social and Culture Rights (ICESCR).[15] The third generation of rights includes a range of other rights not explicitly covered in the previous two categories, such as collective and group rights and rights to a healthy environment and sustainable development.[16] This entire generational spectrum of human rights is essential in providing the international legal framework necessary to facilitate the recognition of ILCs' rights to self- determination and to culture, two of the most important cornerstones supporting their ability to enter into ABS agreements from a firm bargaining position.

However, none of these categories of rights directly addresses the dialectical nature of ILCs' relationships with their TK and the ecosystems from which that TK was developed. Like the healers of Bushbuckridge, many ILCs conceptualize their relationships to their TK as involving not only rights to its use but also customary laws guiding its use and responsibilities and obligations to the communities and ecosystems in which it is used. To divorce these rights from their reciprocal responsibilities could be detrimental to the biocultural framework of the ILCs and hence to the very integrity of the ILCs as they now exist. It is for this reason that the development of mechanisms that can preserve TK without severing it from its attendant customary laws may be essential both to the future of ILCs as well as to the continued expansion of an international human rights framework that can incorporate the category of biocultural rights within its range of protections. The model for a TK Commons presented here is one potential form that such a mechanism could take.

Unlike liberal conceptions of rights that emanate from a conceptualization of the individual as the fundamental agent of social activity, a biocultural approach to rights takes as its primary focus the community and the myriad relationships that bind it together.[17] Since the principal concern of a liberal approach to human rights is the preservation of the liberty of individuals in their relation to the state and each other, and since a primary locus of social relationships in liberal societies is property and the exchange of property, it is not surprising that rights related to the protection of individual property interests hold a *sine qua non* status in a liberal rights framework. In a biocultural context, however, in which TK rather than private property is one of the primary agents mediating human relations, the customary laws and values that determine a TK users responsibilities to the community and the ecosystem provide the basis for a somewhat different rights perspective that focuses on communal ties as

[15] The International Covenant on Economic, Social and Cultural Rights was adopted by the UN General Assembly on December 16, 1966, and entered into force on January 3, 1976.

[16] For more on group and collective rights see the Declaration of the Rights of Indigenous Peoples (DECRIPS), adopted by the UN General Assembly on September 13, 2007. For more on environmental rights see The Declaration of the United Nations Conference on the Human Environment (or Stockholm Declaration), which was adopted June 16, 1972, by the UN at the 21st plenary meeting and The Rio Declaration on Environment and Development (or Rio Declaration), which was drafted at the 1992 UN "Conference on Environment and Development" (UNCED, or also referred to as the Earth Summit). See also Paul Oldham and Miriam Anne Frank, *"We the Peoples…." The United Nations Declaration on the Rights of Indigenous Peoples"*, Anthropology Today Vol 24 No 2, April 2008.

[17] Kabir Bavikatte and Harry Jonas (eds.), *Bio-cultural Community Protocols: A Community Approach to Ensuring the Integrity of environmental Law and Policy*. Natural Justice and UNEP, October 2009. Available at www.unep.org/communityprotocols/PDF/communityprotocols.pdf, last accessed January 27, 2010

well as the individuals that share them. Community values regarding their knowledge vary as much as communities themselves, and for many communities these values are not incompatible with financial-based benefit sharing arrangements. In many others, though, knowledge is not seen as property that can be owned and sold as a disembodied commodity, but rather the very flow of knowledge affirms biocultural relationships within communities and between communities and their ecosystems. Knowledge about the natural world is not purely material but simultaneously cultural and spiritual. Its movement and application promotes a kind of biocultural cohesiveness.

Amongst biocultural communities, the movement of knowledge does not generate profits as in the sale of commodities. On the contrary, the knowledge itself increases by creating a continually widening community of knowledge holders all of whom are bound by the code that insists that they do not profit from what they have received freely. Whereas the profit remains with the seller in a transaction involving the sale of knowledge, the increase follows the knowledge while simultaneously affirming cultural and spiritual bonds within biocultural communities.

While biocultural communities, be they healers or pastoralists, do engage in transactions in which they are compensated in money or in kind in exchange for their knowledge, for some of these communities the nature of TK is such that it places a clear limit on the extent to which the knowledge can be commodified. This limit is important because when knowledge that emerges from certain cultural and spiritual relationships is commodified, it results in an erosion of a value system that creates such knowledge and frays the ties that hold the community together. This has been illustrated by research on the impact of the commodification of TK on ILCs – such as the extensive IIED-led participatory action-research project carried out with 11 ILCs in six different regions – which has documented a shift toward the privatization of communal resources and a decrease in the sharing of TK, often due to a lack of interest or out-migration by younger generations.[18]

TOWARDS A TK COMMONS

The TK Commons model offers the user an ABS arrangement that differs from the conventional model of an ABS agreement. A TK Commons could provide ILCs an alternative to the choice between providing unregulated access to their knowledge that leaves it open to abuse or having to negotiate a separate ABS agreement for every non-commercial use of their TK, which would greatly restrict the sharing of that knowledge and potentially drive up the transaction costs for providers and users. In a similar vein to the Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples[19], a TK Commons seeks to allow ILCs to share and exchange knowledge, provided that the knowledge is used in accordance with conditions that they are able to define and control.[20] In a TK Commons system, the customary laws and values of ILCs that guide the use of their TK would be complied with by new users as well.

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[18] See, e.g., the case studies in IIED's *Protecting Community Rights over Traditional Knowledge: Key Findings and Recommendations 2005-2009*, *supra* note 9.

[19] Mataatua Declaration on Cultural and Intellectual Property Rights of Indigenous Peoples (1993), http://www.ngatiawa.iwi.nz/documents/mataatua.shtml.

[20] Oldham, *supra* note: 3

The crucial difference between TK and knowledge as a commodity in the context of Article 8(j) lies in the manner in which the knowledge is produced and how it is shared. While TK is a result of biocultural relationships between communities and their ecosystems and is shared according to customary laws, knowledge as a commodity is a result of commercial exchanges and its movement is governed by the principles of the market. The moment TK becomes a commodity, it loses its moorings in customary law and snaps the biocultural relationships within which it is embedded. While this may be inevitable when TK enters the marketplace through ABS agreements, it raises the question of whether the transformation of TK into a commodity undermines the *in situ* conservation aspect of Article 8(j) that requires the "respect, preservation and the maintenance of knowledge, innovations and practices (TK) of indigenous and local communities and promotion of their wider application."

ILCs seek to limit the wholesale commodification of their TK by basing ABS agreements relating to the commercial use of their TK on their biocultural protocols or customary laws. The right of communities to enter into commercial ABS agreements for the use of their knowledge needs to be respected, but how should communities respond to non-commercial uses of their knowledge? While Article 8(j) requires the sharing of benefits arising from any non-traditional utilization of TK, it also assumes that the customary sharing of TK within and between communities falls outside the realm of ABS since any increase of knowledge is not appropriated by individuals but collectively shared. The question that confronts us now is whether the notion of community can be expanded to include non-traditional users who would be willing to use TK in accordance with the customary laws of the community and be willing to freely share any increase of knowledge that arises from its use with the community. Such an expanded community that includes non-traditional users who are willing to allow their use of TK to be regulated by the customary laws of the TK providers would constitute a TK Commons.

A TK Commons would therefore be a widening circle that goes beyond the direct reciprocity of an ABS agreement.[21] Whereas the latter involves a relationship between two sides, a circle requires the continued movement and growth of knowledge that benefits not just the original community that provided the knowledge but other communities too. Although many of the benefits may be indirect, the members of a TK Commons benefit not just from the increase in their knowledge but also from the knowledge of others who are a part of the commons. If TK is conceptualized as part of a widening circle shared between communities, however, then one could also conceptualize an oppositional, market-based pyramid model that channels knowledge upward to restricted access

WHAT IS A COMMONS?

"Commons" refers to a "particular institutional form of structuring the rights to access, use, and control resources."[22] A commons is a resource that is controlled by a

[21] Lewis Hyde, *The Gift: Imagination and the Erotic Life of Property*, Random House: New York, 1983, pg 35 and Oldham, supra note 3: 28

[22] Yochai Benkler, The Wealth of Networks, Yale University Press, 2006, pg 24 and Elinor Ostrom, *Governing the Commons; The evolution of institutions for collective actions*: Cambridge; Cambridge University Press, 1990

community using systematic rules that govern use of the resource. "All commons are functioning arrangements that connect people to the material and social things they share and use to survive and operate outside of – but most frequently alongside – capitalist markets."[23] In a sense, a commons can be understood as operating through a denial of the commodification[24] of its resources since "members of a commons refuse to allow the resources that they jointly control as common property" to be treated as commodities "even though legally they often could be."[25] Indeed, " the functional webs of interdependence that people who organize their lives around" commons have created – with respect to each other as well as the common resources – "cannot be reduced to market valuations."[26]

There are many different kinds of commons, although the kind that is perhaps most often the topic of discussions about the commons is the material commons made up of natural resources valuable to human activity.[27] These resources are almost always "rival goods" in the sense that their use prevents others from using them[28], which means that their use is also almost always subtractive, meaning that use subtracts from overall amount off resources in the commons.[29] These are the kind of commons that Garrett Hardin famously claimed were heading toward a tragic end due to rapid depletion from over-use by individual actors racing to take as much for themselves as they could.[30] Of course, Hardin's commons was actually a straw figure composed of natural resources not subject to any social arrangement since, as will be explained further below, by definition a commons includes a system of rules governing its use that would make the kind of free-for-all Hardin describes impossible.[31]

A second kind of commons are social commons, which are "organized around access by users to social resources created by specific kinds of human labor," such as "caring for the sick, the elderly, and children; educating children; maintaining households; finding or creating pure water; removing waste; even policing."[32] A third kind of commons is knowledge commons, "organized around shared intellectual and cultural resources."[33] It can be argued that in many contexts, unlike material resources, these intellectual and cultural resources are non-rivalrous and non-subtractive because one

[23] Donald M. Nonini, "Introduction: The Global Idea of 'the Commons,'" *The Global Idea of 'the Commons.'* 2007 Ed. Donald M. Nonini, New York: Berghahn Books,1-25:6.
[24] "The term "commodification" can be construed narrowly or broadly. Narrowly construed, commodification is the actual buying and selling of something. Broadly construed, commodification includes not actual buying and selling, but also market rhetoric, the practice of thinking about interations as if they were sale transactions, and market methodology, the use of monetary cost-benefit analysis to judge these interactions." Margaret Jane Radin, "Market–Inalienability" Harvard Law Review Vol 100 No 8 June 1987: 1859
[25] Nonini, supra note 23
[26] Nonini, *supra* note 23: 10.
[27] Elinor Ostrom, *Governing the Commons; The evolution of institutions for collective actions* (Cambridge; Cambridge University Press, 1990)
[28] Stephen Gudeman, *The Anthropology of Economy*. Oxford: Blackwell, 2001: 52-53, cited in Nonini, *supra* note 23: 5.
[29] Ronald J. Oakerson, "Analyzing the Commons: A Framework," *Making the Commons Work: Theory, Practice, and Policy.* Eds. Daniel W. Bromley *et al.* San Francisco: Institute for Contemporary Studies Press, 1992: 41-59:43-44, cited in Nonini, *supra* note 23: 5.
[30] Garrett Hardin, "The Tragedy of the Commons." *Science* 162: 1243-1248.
[31] See Oldham *supra* note 3: 7
[32] Nonini, *supra* note 23: 6.
[33] Nonini, *supra* note 23: 7.

person learning or using knowledge does not prevent another person from doing the same.[34] Further, a knowledge commons can be generative in the sense that it "can 'scale up' as it develops: the more users, the better the commons functions, since the marginal cost of adding users is zero, and new users are not only the recipients of the gifts of non-rival knowledge from others in the commons, but also reciprocate by producing new knowledge for them refined on the basis of knowledge previously received."[35] This would only apply to a TK Commons, however, if the new users also complied with customary laws related to the use of the TK since scaling up could also potentially create a barrier to the protection of TK by collating knowledge that is currently in the hands of a small number of experts right now, making it more easily exploitable.

All of these kinds of commons can operate on multiple scales, including "the local, infra-national, national, transnational, or global."[36] And they all have limitations on use that are "symmetrical." The rules, which govern the commons, permit some uses while prohibiting others. TK systems that both permit use of knowledge and require reciprocity[37] are thus a form of knowledge commons. The rules that govern such knowledge commons are customary laws that dictate the sharing and exchange of knowledge related to plants, animals and ecosystems. For this reason, the holistic biocultural way of life based around the recognition of the interdependence of people and the environment could in itself be understood as a large commons. Indeed, as legal scholar Carol M. Rose observes, "The very idea of the commons itself is enormously variegated. . . . [T]here is not a single commons or even a few global commons in the world; rather, there is a tapestry of constituent large and small commons, interacting and overlapping in ways that are as subtle as the environment itself."[38] The biocultural practices of ILCs are composed of these many different material and knowledge commons.

A history of abuse of these legally unprotected commons has resulted in communities being wary of sharing knowledge with outsiders, independent of the nature of the research undertaken. The issue is not therefore how TK may be placed into a commons – since knowledge commons amongst ILCs already exist and have existed for millennia – but how to give effect to the customary laws governing existing TK Commons using national and international law and policy processes that affect ILCs. From a legal perspective the rules governing a commons grant rights while also imposing obligations. Although often not acknowledged in law, with its overt focus

[34] Nonini, *supra* note 23: 7. See also the Statement by the Tulalip Tribes of Washington on Folklore, Indigenous Knowledge, and the Public Domain (July 9, 2003) to the Intergovernmental Committee on intellectual Property and Genetic Resources, Traditional Knowledge and Folklore Fifth Session in Geneva, Switzerland on July 5-17, 2003; as well as the Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities (UNEP/CBD/WG8J/INF/9, December 21, 2005). The authors also wish to thank Preston Hardison for first bringing the distinction between "rivalrous' and non-rivalrous" to their attention.

[35] Donald M. Nonini, "Reflections on Intellectual Commons," *The Global Idea of 'the Commons.'* Ed. Donald M. Nonini, New York: Berghahn Books, 66-88: 71.

[36] Nonini, *supra* note 23: 7.

[37] See Flora Lu, "The Commons in an Amazonian Context," *The Global Idea of 'the Commons.'* Ed. Donald M. Nonini, New York: Berghahn Books, 41-52.

[38] Carol M. Rose, "From Local to Global Commons: Private Property, Common Property, and Hybrid Property Regimes: Expanding the Choices for the Global Commons: Comparing Newfangled Tradable Allowance Schemes to Old-fashioned Common Property Regimes," *Duke Environmental Law & Policy Forum* 45, Fall 1999, 45-72:72.

on concepts of property owned by individuals and corporations, most developed economies rely on commons. "Commons are another core institutional component of freedom of action in free societies, but they are structured to enable action that is not based on exclusive control over the resources necessary for action." [39] Commons-based peer production, for example, is the basis of technologically enabled successes such as Free and Open Source Software (FLOSS), and Wikipedia. FLOSS, such as the in Linux operating system, has enabled members of the FLOSS community to benefit from their co-operative creation of the software while preventing its appropriation by software vendors with proprietary models.[40]

TK COMMONS ARE NOT IN THE PUBLIC DOMAIN

Although the resources in a knowledge commons are quite distinct from private property, they are also certainly not a part of the public domain.[41] "The distinction between common and private property is misleading in that *all* commons . . . include some people but exclude others from membership, and are private in the latter extended sense."[42] A song on the radio, for example, is publicly available, but it is not in the public domain.[43] Similarly, free software is not in the public domain, but rather secured from appropriation by a license, usually the GNU General Public License that requires all users to use the software according to the values of the free software community.[44] TK likewise is governed by traditional and customary law and is not in the public domain. While someone may rework something in the public domain, and

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[39] Benkler, *supra* note 22.

[40] Oldham, *supra* note 3: 7

[41] Paragraph 122 of the Report of the Meeting of the Group of Technical and Legal experts on Traditional Knowledge Associated with Genetic Resources in the Context of the International Regime on Access and Benefit-Sharing states: "Furthermore, the experts recognized a critical distinction between traditional knowledge associated with genetic resources being in the 'public domain' versus being 'publicly available'. It was pointed out that the term public domain, which is used to indicate free availability, has been taken out of context and applied to traditional knowledge associated with genetic resources that is publicly available. The common understanding of publicly available does not mean available for free. The common understanding of public availability could mean that there is a condition to impose mutually agreed terms such as paying for access. Traditional knowledge has often been judged to be in the public domain and hence freely available once it has been accessed and removed from its particular cultural context and disseminated. But it cannot be assumed that traditional knowledge associated with genetic resources that have been made available publicly does not belong to somebody. Within the concept of public availability, prior informed consent from a traditional knowledge holder that is identifiable, could still be required, as well as provisions of benefit-sharing made applicable including when a change in use is discernible from any earlier prior informed consent provided. When a holder is not identifiable, beneficiaries could still be decided for example by the State. The experts also felt that the phrase public domain in the context of traditional knowledge needs to be more correctly re-phrased as publicly available. One expert did not agree with this distinction." UNEP/CBD/WG-ABS/8/2*, July 15 1009, available at www.cbd.int/doc/meetings/abs/abswg-08/official/abswg-08-02-en.pdf, last accessed January 27, 2009.

[42] Nonini, *supra* note 23.

[43] For more on this distinction between "publicly available" and the "public domain" see the Statement by the Tulalip Tribes of Washington on Folklore, Indigenous Knowledge, and the Public Domain (July 9, 2003) to the Intergovernmental Committee on intellectual Property and Genetic Resources, Traditional Knowledge and Folklore Fifth Session in Geneva, Switzerland on July 5-17, 2003; as well as the Composite Report on the Status and Trends Regarding the Knowledge, Innovations and Practices of Indigenous and Local Communities (UNEP/CBD/WG8J/INF/9, December 21, 2005). See also Preston Hardison, "Indigenous Peoples and the Commons" (December, 2006), annexed to this monograph.

[44] Oldham, *supra* note 3: 3

then claim "ownership" in the reworking, a commons governs the re-use of resources, usually requiring reciprocity, attribution of others, and re-licensing on the same terms. A commons is also distinguishable from a publicly available resource like a free-to-air broadcast that may be freely viewed but not freely re-transmitted because the publicly available resources vest in companies or individuals not communities. While these may permit some uses and not others, they do not form the basis of a community.

This distinction between knowledge commons and the public domain is especially important in the context of a TK Commons since other knowledge commons, such as the Creative Commons (CC), endeavor to facilitate access to knowledge by preventing its enclosure through IPRs with the overall goal of accelerating movement of knowledge towards the public domain, whereas customary laws regulating TK are influenced by concern related to proper relationships and reciprocity with the goal of maintaining these relationships, not moving knowledge toward the public domain.[45] However, in many cases TK is just as sensitive to exclosure – being permanently outed into the public domain – as it is to enclosure. Large amounts of TK are already publicly available in publications and archives, and ILCs have long struggled to prevent this TK from being treated as though it were in the public domain and used as though it were free. It is therefore essential that a TK Commons provides access to the use of TK strictly within the framework of customary law so as to avoid its exclosure into the public domain. In other words, the TK Commons would be a mechanism for providing regulated access to TK – albeit guided by the biocultural values of ILCs – not altogether free access. For this reason, ILCs need to be able to exercise the options to stop access and refuse appropriation of any development based on their TK when necessary to protect against its misuse.

HOW THE TRADITIONAL KNOWLEGDE COMMONS COULD WORK

The Traditional Knowledge (TK) Commons would be a system where innovations developed through the use of TK would be returned to the pool of TK from which they were developed, allowing ILCs to expand the collective pool of TK that they chose to share with or make available to particular researchers. It is from this pool that the TK Commons model gets its name since this pool can be conceptualized as a closed and regulated commons of TK through which ILCs and researchers could form a mutually beneficial community of knowledge-sharers based on the self-determination of ILCs and guided by their customary laws. While a strong compliance mechanism would be essential to the successful functioning of a TK Commons, this model is intended as an implementation solution to address some of the gaps regarding non-commercial research in the IRABS. As such, it would operate within the framework of the IRABS and would rely on the compliance mechanisms of the IR; it does not seek to be a compliance mechanism in itself.

DEVELOPING TERMS AND CONDITIONS

The creation of a TK Commons would require a community of TK holders to develop in accordance with their customary laws the terms and conditions for non-commercial access to their TK. The formation of biocultural protocols provides a particularly

[45] Oldham, *supra* note 3

effective process for developing these terms and conditions. Biocultural protocols were originally developed as a *sui generis* tool by communities in the context of the ABS negotiations, but this tool is now being extended to other contexts such as the UN Reducing Emissions from Deforestation and Forest Degradation in Developing Countries Programme (REDD). The goal of biocultural protocols is to ensure the central role of communities who have been custodians of ecosystems in any discussion regarding the conservation of lands that they have been stewards of. They are a mechanism through which communities can assert their rights while also highlighting the importance of their biocultural relationships with the environment. Furthermore, the process of developing biocultural protocols can benefit communities through encouraging community-level dialogue that can lead to awareness raising and education throughout the community about the importance of their TK in the larger context of outside interests in its use, as evidenced by the Bushbuckridge example. As such, biocultural protocols are ideally suited as a means of expressing the customary laws and values on which the terms and conditions of non-commercial use will be based.[46]

Although the contents of each biocultural protocol and the resulting terms and conditions will be somewhat unique depending on the varying perspectives of different ILCs, there are some common unifying values shared to some extent by a majority of ILCs.[47] These include reciprocity, duality, and equilibrium. Reciprocity "means equal exchange in society and in nature," which, if adapted into a rule for use, would suggest that access should be reciprocal so that communities receive knowledge and resources "in equal measure in return for access provided."[48] Equilibrium "means balance in nature and society," which suggests "respect for nature and social equity" would also play a significant role in the articulation of terms and conditions for use.[49] Finally, duality refers to the idea that "everything has a complementary opposite," which supports an openness to the use of "complementary systems," meaning many ILCs would see the possibility of a certain degree of compatibility between western systems and traditional systems[50], as would be necessary for a TK Commons with non-traditional members to operate.

DEFINING NON-COMMMERCIAL USE

In addition to the terms and conditions for use, there are two other foundational elements that must be established by a community before a TK Commons can be functional. Non-commercial use will need to be clearly defined, and communities will need to articulate what forms benefits can take. Non-commercial research can be generally defined as research with the goal of creating new knowledge without restrictions or proprietary ownership.[51] However, it will be important for communities to be quite specific in how they define non-commercial use in the terms and

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[46] For more on biocultural protocols see www.unep.org/communityprotocols/PDF/communityprotocols.pdf

[47] International Institute for Environment and Development (IIED), *supra* note 9

[48] *Ibid.*

[49] *Ibid*.

[50] *Ibid*.

[51] Policy Forum: Global Biological Resources - Preserving International Access to Genetic Resources for Non-commercial Biodiversity Research. David E. Schindel, Christoph L. Häuser, Scott E. Miller and the International ABS Workshop.

conditions they set forth since the boundaries between non-commercial and commercial research are becoming increasingly porous, especially in regard to university-based research.

A. The Blurred Boundary Between Commercial and Non-Commercial Research

Historically, university research has been widely viewed as an archetype of non-commercial research, but this is no longer the case. The distinction between commercial and non-commercial research in the university context is getting increasingly difficult to make. "[M]assive subsidies for research in the sciences at US universities today come from transnational corporations" drawing large profits from patent royalties and licensing fees in the global South.[52] Meanwhile, under the US legislation called the "Bayh-Dole Act of 1980 (a.k.a. the University Small Business Patent Procedure), universities have acquired exclusive rights to own, patent, or license the inventions of any of their faculty who have received federal government funding for their research."[53] As a result, universities have become the principal agents of the privatization of academic knowledge production, "securing patent rents as brokers between faculty inventors and corporations" as well as other researchers.[54] As of 2000, almost every research university in the US had its own university technology management offices – the branch of university administrations responsible for patenting university-controlled knowledge products and licensing them to other users, including for-profit corporations.[55] Drawn from the circumstances surrounding the 2000 lawsuit filed against the government of South Africa by pharmaceutical companies in response to its decision to purchase generic versions of patented anti-retroviral drugs for HIV treatment, the following case illustrates the degree to which the categories of non-commercial and commercial research have blurred in the university context:

> Numerous holders of the original patents for such drugs were not the pharmaceuticals suing South Africa but rather universities, whose faculties' inventions (subsidized by government funds) had been licensed exclusively by their technology management offices to these corporations, or which joined with their faculty inventors to form new for-profit ventures to produce the drug on behalf of a pharmaceutical. One such drug, stavudine, had been invented by a Yale University researcher and licensed exclusively by Yale to Bristol-Myers Squibb (BMS), which produced it under the brand name Zerit. BMS, one of the plaintiffs to the lawsuit, rejected the South African attempt to purchase a low-cost generic version. Yet for several months, Yale refused to renegotiate its license with BMS to allow this, perhaps one reason for its reluctance being that the university had already received $262 million in royalties for stavudine from 1994 – 2000.[56]

[52] Donald M. Nonini, "Reflections on Intellectual Commons," *The Global Idea of 'the Commons.'* Ed. Donald M. Nonini, New York: Berghahn Books, 66-88: 71.
[53] *Ibid*
[54] *Ibid*
[55] Jennifer Washburn, *University, Inc.: The Corporate Corruption of American Higher Education*. New York: Basic Books, 2005, cited in Nonini, *supra* note 52: 74.
[56] Nonini, *supra* note 52: 81, citing Washburn *supra* note 55: 164-165.

Although quite problematic, this increasing erasure of the separation between commercial and non-commercial research is not necessarily an argument for ILCs avoiding use agreements with universities and other non-corporate research institutions altogether. On the contrary, it underscores the need for developing robust *sui generis* frameworks of terms and conditions for TK use that can actually compel researchers to comply with the customary laws and values of ILCs in their use of TK. Given the current lack of clarity about how an IRABS and subsequent national legislation will define and address non-commercial research, and the possibility that non-commercial researchers may even be exempted from ABS requirements, it is important for ILCs to articulate their own definitions of non-commercial use along with the terms and conditions that will regulate it. Indeed, depending on how it is defined, an exemption of non-commercial research could essentially create a backdoor through which universities and other non-corporate researchers could channel TK accessed under a non-commercial guise into research that could eventually result in patents. A *sui generis* system implemented through a TK Commons, however, could potentially close this door by requiring non-commercial researchers to conform to terms and conditions that explicitly deny the commercialization of research without negotiating a separate ABS agreement.[57]

Ultimately, as far as utilization is concerned, the distinction between commercial and noncommercial is illusory. It is not possible to determine the distinction based on the intent of users because that can change, or on the nature of the research institution because anyone can use research results for commercial purposes. Perhaps the only way to make a distinction is to determine what purpose it is being used for and this must be defined by a community. Anything ranging from a patent to just publishing an article, for example, could be defined as commercial. The TK Commons model could enable ILCs to determine what constitutes commercial and non-commercial use, and based on that what constitutes misappropriation or misuse of their TK, enabling them to integrate customary laws governing the use of TK directly into the terms governing its use by researchers.

B. Community-based Ethical Research Guidelines

A positive factor conducive to the creation of such terms is the fact that universities and researchers are increasingly adopting ethical and best practice research guidelines for engaging with ILCs to distance themselves and their research from associations with biopiracy.[58] Many academic professional organizations whose members work with ILCs have also adopted codes of ethics, including the International Society of Ethnobiology (ISE), whose code of ethics "affirms the commitment of the ISE to work collaboratively, in ways that support community-driven development of indigenous peoples' cultures and languages; acknowledge indigenous cultural and intellectual property rights; protect the inextricable linkages between cultural, linguistic and biological diversity and contribute to positive, beneficial and harmonious relationships in the field of ethnobiology."[59]

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[57] Oldham, *supra* note 3

[58] See, e.g., the ethical guidelines from academic, professional, and non-profit societies listed at http://www.learning.cihr-irsc.gc.ca/mod/resource/view.php?id=174, last accessed January 27, 2010.

[59] ISE Code of Ethics, available at http://www.ethnobiology.net/global_coalition/ethics.php,last accessed January 27, 2010.

While this environment of institutional support for respecting and complying with the values of ILCs is a positive indicator for the potential of *sui generis* systems of terms and conditions for TK use, even more encouraging is the growing number of ethical codes already being created by ILCs themselves.[60] A case study of the Kuna and Embera-Wounaan societies in Panama by Heraclio Herera (of Fundación Dobbo Yala) provides an example:

> A Visiting Protocol for Research on Biodiversity in Indigenous Territories and Code of Ethics were developed to regulate access, protect the intellectual property of indigenous peoples and ensure equitable benefit-sharing, based on customary laws. The protocol sets out the process for Prior Informed Consent and the information required. An external researcher should present a proposal to the Kuna General Congress, which submits it to a technical committee for initial evaluation and discusses it with the authorities of its 49 communities. If accepted, the researcher then has to obtain permission from the specific community. If approved, the researcher can approach a knowledge holder who can also agree or deny access.[61]

Such codes and guidelines can provide useful models for other ILCs to draft their own *sui generis* systems of terms and conditions for use of their TK. Furthermore, these systems can draw on the parallel institutional guidelines for further support. ILCs can even have the terms require that any users must be affiliated with institutions that have already adopted ILCs' own ethical codes or research guidelines.

DETERMINING BENEFITS

In addition to defining what will constitute non-commercial use and the terms and conditions that will govern it, it is equally important that ILCs are able to determine what will constitute benefits, especially since non-commercial use is unlikely to produce the kind of financial profits that usually form the basis of benefits in conventional ABS agreements.[62] It is important to define benefit for purposes of benefit sharing because only then is it possible to design a system for capturing that benefit. Indeed, these terms and conditions could facilitate an expanded range of community-generated definitions of what constitutes benefits that are not limited to the narrowly conceptualized idea of monetary compensation that is currently at the center of ABS negotiations. As the Action Group on Erosion, Technology and Concentration (or ETC Group) argues:

> No one refutes that benefit sharing is needed. The issue is that the real "benefit sharing" – to the benefit of humankind – has been practiced for millennia by the "biodiversity actors:" Indigenous Peoples, peasants, small farmers,

[60] See, e.g., indigenous community ethical codes and guidelines for projects involving indigenous peoples, indigenous organization ethical codes and guidelines for projects involving indigenous peoples, the indigenous templates for projects involving indigenous peoples, and the sample agreements for projects involving Indigenous peoples at http://www.learning.cihr-irsc.gc.ca/mod/resource/view.php?id=174, last accessed January 27, 2010.

[61] Heraclio Herera, "Panama Case Study – Kuna and Embera-Wounaan Medicinal Knowledge & Access Protocols," in IIED, *Protecting Community Rights over Traditional Knowledge: Key Findings and Recommendations 2005-2009*, *supra* note 9.

[62] Oldham, *supra* note 3: 10

> fisherfolks, forest dwellers, pastoralists and other traditional communities. All agriculture and health care systems are based on their past and present contributions, which, in turn, have been based on reciprocity, on free flows of exchange of resources and knowledge among Peoples, between communities, regions and across the world. The process is not comparable to a commercial transaction. Rather, it is based on the collective and intergenerational nurturing and development of biodiversity.[63]

So what should constitute benefits for the terms of benefit sharing? Benefits could of course take the form of non-monetary compensation, such as technology transfer and capacity development, but there are other conceivable benefits that could be incorporated into the terms and conditions of a TK Commons as well. The return of new knowledge resulting form non-commercial research would benefit the TK Commons as a whole by expanding the pool of knowledge available to all its members, and this could be facilitated through terms that required periodic reports on research progress and the sharing of research findings in a language and form that would be accessible and useful to ILCs, provisions that are already frequently included in indigenous research guidelines and protocols. While the TK Commons may not be able to directly solve the wider range of threats to TK, such as loss of indigenous land and resources, giving ILCs more control over defining benefits would also create the possibility for setting terms and conditions for use that required recognition and compliance of the whole range of indigenous rights, not just their rights over their TK. Taking the problem of over-harvesting on community lands, for example, terms could require support for community control over determining what is harvested on their land – as well where, how much, and by whom – so as to reduce the impact of over-harvesting.

LICENSES[64]

These terms and conditions could be in the form of a license that would need to be complied with by non-commercial users of TK such as students, non-profit organizations, academic researchers and archivists.[65] This licensing system would help to alleviate some of the burdens on the time and resources of both ILCs and non-commercial researchers by providing a process through which the ILCs' free prior and informed consent (FPIC) can be clearly established without requiring separate case-by-case meetings for every research request. Instead of approaching the communities directly, researchers would already have the terms and conditions for use explicitly documented in the community-designed licenses. After agreeing to the terms and conditions of the license, the researcher would be able to clearly establish FPIC for the particular use of TK specified in the license. While ILCs' could develop one or more general licenses for use of certain parts of their TK, they would also be

[63] ETC Group, "From Global Enclosure to Self Enclosure: Ten Years After - A Critique of the CBD and the 'Bonn Guidelines' on Access and Benefit Sharing," Communiqué, February 11, 2004: 12. Available at http://www.etcgroup.org/en/node/128, last accessed January 27, 2010.

[64] This section draws heavily on the presentations given by Bernard Maister (Intellectual Property Law and Policy Unit of University of Cape Town) and Andrew Rens (PHD Candidate at Duke University Law School) at the TK Commons Workshop, as well as the responses of the other participants.

[65] Oldham, *supra* note 3: 10

able to adapt them to specific situations to ensure that they address the TK-related concerns of the communities.

The TK Commons could draw on the Creative Commons (CC) or Science Commons license models and adapt them to fit the needs of ILCs, although these licenses would be different than the kinds of licenses employed in these commons to the extent that communities would have many unique concerns that exceed those which these commons were adapted to address. The basic elements of a TK Commons license could include terms requiring enduring recognition, environmental soundness, non-appropriation, and restricting use to that specified in the license terms and requiring FPIC for any change in use, as well as a requirement that subsequent users comply with these terms as well. One possibility is that the licenses could be made available online as part of an online database[66], and a copy of the license along with the address of the TK Commons website would be required to be displayed on any research.[67]

The general characteristics of the licenses could include:

- The use of the knowledge takes place only on the terms of the license. Any person using the knowledge is therefore taken to have agreed to be bound by the license. Instead of providing general permission to use the knowledge, the license sets out how knowledge can be used, and what obligations a user incurs to respect the spiritual and cultural values and customary laws of the knowledge-bearing community. The licensee will not appropriate or profit from any new development based on the TK by restricting further access to such new development or requiring payment for it, but will instead place these new developments back into the TK Commons, usually by placing it under the same license.
- Using TK in a manner that is inconsistent with the stated terms and conditions in the license is forbidden.
- Any subsequent users of the TK, or developments based on it, who access it from the licensee will also have to comply with the terms of the license.
- All licensees must provide enduring recognition of the source of the TK.
- Any change in licensed use of the TK would require explicit permission from the holders of the TK.
- The licensee will not use the TK in any manner that would cause harm to the environment.
- The licensee will ensure the confidentiality of all research material so as to prevent unauthorized access to TK or developments based on it by third parties who are not a party to the license.[68]

A. The Legal Structure of a License

A license is a contract between two parties, a licensor and a licensee. The asset is the thing and/or the right licensed, which in this case would be the use of TK. For example, if a community had TK regarding a particular plant, then the asset would be the plant and the right or set of rights to grow it, analyze it, reproduce it, or genetically modify it. Before developing a license, it is necessary to decide what the subject of the license is and how many rights attach to it. The scope of the license is also something that must be decided. It can be an exclusive license with one licensee being granted one right; it can be a co-exclusive license permitting "shared" use between the licensor (who retains the rights given to the licensee) and one licensee; or it can be a non-exclusive license licensed to many users.

[66] For further discussion on the TK Commons online database refer *to "Implementing a Traditional Knowledge Commons; Opportunities and Challenges"*, www.naturaljustice.org

[67] Oldham, supra note 3: 14

[68] Confidentiality requirements are also frequently a provision in indigenous research guidelines and proposals as well as university technology management office guidelines.

The licensor is the legal owner of the asset. The category of licensor under the TK Commons could include a nation, tribe, clan, council, fully elected leaders, elders, spiritual leaders, or legal representatives. The term owner can mean different things. It is often a person generally considered to have all the rights related to the asset, but in some communities an owner is considered more of a trustee, guardian, or fiduciary with only some rights. It is very important to consider these definitions and concepts as a license is created.

A licensee could be a single individual, either alone or with obligations to or funded by a research group, university, or corporation. In addition to the licensor and licensee, a license should be clear about how it applies to third party beneficiaries. For example, a license might include the text: "No provision of this Agreement is intended to confer upon any person or entity other than the identified Parties any rights."

A license needs to specify the legal jurisdictions that will apply to it and what law will be applied in dispute resolution circumstances. A license designed to be enforced within the jurisdiction of Germany, for example, might incorporate the following kind of text: "This agreement shall be construed in accordance with and governed by the laws of the federal republic of Germany. All dispute which can not be resolved by mutual agreement of the parties shall be finally settled in accordance with the Arbitration law of the German Institute of . . . The place of arbitration is Berlin, Germany . . . The arbitral tribunal consists of . . . ."

Examples of the kinds of rights a license might grant include: the right to speak with tribal members and/or their recognized representatives regarding the licensed product; the right to enter lands of the licensor only under the supervision of a tribal member; the right to collect a single healthy sample of product; or the right to propagate a single generation for purposes of research. On the other hand, limitations on and commitments required from the licensee might include: to deliver to the licensor a report of all research performed on the licensed product no later than a specified time period; to use the licensed product in a manner consistent with the mission and goals of the licensor (known as a "White-knight" provisions); to make available to the licensor all test data; and to provide the licensor with all details of current research, research methods, data collected, and any offers to commercialize within a specified number of days of a request from the licensor. This last provision in particular helps to protect the licensor. For example, if they get an anonymous email that the licensee is trying to sell a plant, they can contact them to investigate. Finally, a license needs to include representations and warranties to clearly establish its general provisions. For example, a license might say: "Licensor hereby represents and warrants to Licensee that: (i) it is the sole owner of the licensed product; (ii) the sample of the licensed product provided to the licensee is a complete and healthy specimen." A full license might include the following components: Article 1: Definitions, Article 2: Rights and Licenses, Article 3: Consideration and Payment, Article 4: Intellectual Property Rights, Article 5: Warranties, Article 6: Confidential Information, Article 7: Terms, and Article 8: General Provisions.

B. Types of TK Commons Licenses

A commons structured around a licensing system would draw on the principle of "*Wehrhafte Demokratie*," the idea of a democracy that can defend itself, because the licenses would enable the commons to protect itself by preventing people from misappropriating. Licenses would therefore be an essential element of the defence of a TK Commons. The TK Commons would have two basic licenses: a research license and a commons license. The research license would apply to somebody who is going to interact with the community. Under this model, researchers would need to obtain the research license before they could engage any further with communities. The research license would require an individual application that would be reviewed for in-community, on site and physical material research. This license would vary by community; given the diversity of ILCs and their TK-related concerns, a one-size-fits-all license model would not work.

The commons license would apply to the product of research. It would be required for use of any research results in the TK Commons and would automatically apply to any new research work product developed from licensed material. Currently researchers enter into an agreement, derive their knowledge product from their research and then publish it in some form. The TK Commons model, however, seeks to create a second layer of protection that keeps that knowledge product subject to the license too. Its goal is as far as possible to incorporate the knowledge products of TK research into the TK Commons as well. Researchers who engage directly with TK-holding communities would need to take on greater responsibilities to the community in terms of non-monetary benefit sharing than others who make use of the knowledge, as use is mediated through the primary researchers. Primary researchers would therefore need research licenses that impose a broader range of requirements on them, one of which is that the various research outputs must be licensed under TK Commons licenses. A research license would be issued to an individual researcher on personal application by that researcher, while a TK Commons license would operate in the same manner as a free software license, by accompanying the encoded knowledge resources. It would therefore apply to everyone who uses the resource. Both types of licenses would conform to the general characteristics listed above.

There would be three tiers to either license: a layperson readable/plain language version, a lawyer readable/ legal language license, and a machine-readable license. The licenses[69] would be structured around the basic principles of reciprocity, attribution, no commercial use, environmental sustainability, and the binding of successor research into the system. The principle of reciprocity would require researchers to share knowledge with the TK Commons. Research results could automatically be incorporated into the license. Researchers would also have an obligation to report back to communities on research progress and could be required to provide whatever translation is necessary to make research and results accessible to ILCs. Reciprocity could also include the sharing of innovations with communities or the development of practical applications of research results for use by communities. The principle of attribution would ensure that the origin of TK is acknowledged in all knowledge products of TK research. The "no commercial use" principle has dual meanings: it prohibits both the exchange of any research product for profit and the

[69] Oldham *supra* note 3: 15

researcher taking any exclusive rights in the research product, including patents, trademarks, plant breeders rights, designs, and automatic rights such as copyright.[70] These would instead all vest in the communities. Researchers would have the duty to report the commercial potential of research and the duty not to disclose commercial potential outside of communities. Developing clear communication on who can give commercial right, however, may require the building of institutional structures capable of making authoritative decisions by ILCs that currently lack such decision making structures.

C. Enforcement

Licenses could be designed to draw on multiple forms of enforcement so at to potentially mitigate the weaknesses of individual forms of enforcement. First, both licenses would be structured as contracts, legally enforceable agreements between providers and users. The strengths of a contract are that it is a globally recognized legal arrangement and binding irrespective of underlying rights. Some of the challenges to contracts include ensuring that it complies with national contract requirements and addressing the problem of contractual privity. For example, what happens if a TK user breaches a contract and shares knowledge with a third party? One could sue the user, but the third party is not a party to the contract and would still have the knowledge. It may be very difficult to enforce the contract terms against that third party.

The second form of enforcement is IP licenses, which are different than contracts in some jurisdictions. If somebody doesn't have permission from a copyright holder, they can't use the copyrighted material. A contract is unnecessary because the person would be automatically in violation if she did something without the permission of the exclusive rights holder. Copyright rights are what make the Creative Commons (CC) enforceable. The strengths of an IP license are that they apply automatically without the need for entering a contractual agreement. Contractual issues thus become irrelevant. The challenges are that IP licenses rely on underlying statutes for their enforceability, and they aren't as well understood globally as compared to contracts. By structuring TK Commons licenses to draw on both contracts and IP licenses, the strengths of one can be used to buttress the weaknesses of the other, forming a sort of double-enforcement safety net. If it can't get recognized as one, it may be able to be recognized as the other.

TK licenses could also rely on indirect enforcement. If the TK Commons can influence academic research rules and encourage the proliferation of research codes of ethics that recognize the customary laws of ILCs, it could help create an ethical imperative for research institutions and their representatives to comply with the terms of licenses, which could also lead to donor organizations requiring compliance as condition of funding. National parks could also be encouraged to pass regulations that prevent research in parks or biosphere reserves without appropriate licenses from communities. The licenses could also be attached to Material Transfer Agreements (MTA) so that MTAs to *ex situ* archives could require that the archives obtain licenses before they can use any of the material.

[70] Oldham, *supra* note 3

Finally, the licenses can employ self-enforcement mechanisms like a "break one, lose all" term that any violation of the license will result in the automatic loss of the license. This could also include an option to declare the researcher, research entity, or research sponsor as disqualified from participating in the TK Commons ever again with any community, though it may be useful to also include an appeals mechanism. This creates further incentive for universities or other research institutions to enforce compliance with licenses because the entire institution could be disqualified. In this way, the licensing system could also induce researchers to engage in advocacy to change institutional rules to require compliance with licenses.

There are legal precedents for the enforcement of commons licenses. The GNU General Public License (used by Linux) was upheld in Germany. A French court even said a licensee could sue. This raises the question of whether the TK Commons would want licensees to be able to enforce licenses. This might actually be an advantage for communities because research institutions could sue on a community's behalf for a violation by somebody else. In *Jacobsen v. Katzer*[71], a US court ruled to uphold a CC license as a license rather than a contract, although the court also found that there was consideration (based on the fact that people have to give back attribution and share alike under the same license), and it was willing to see commercial value in this (which was required for an injunction). Since CC-style licenses have been construed by courts as a part of the copyright system, under which licensed material eventually moves into the public domain, this could pose problems for ILCs desire to maintain enduring control of TK. To meet these needs of ILCs, a TK Commons license would need to draw on the authority of a *sui generis* system outside the copyright system to support an enduring claim to TK.

This licensing system would still need to contend with the problem of leakage of some TK beyond its protection. The TK Commons can make researchers agree to put their product under licenses that will also apply to anybody who republishes/remixes that product (in a textbook, for example), but it is not clear to what extent it will be able to claim that an idea was derived from an article under license. This model is probably not going to be able to completely control somebody getting an idea and patenting it from reading an article. While this is a serious issue to consider, it is an issue that will need to be contended with in any ABS context. Trying to apply compulsory licenses to "leaked" knowledge has not been tested by the courts yet, but it might be a useful tactic to incorporate into this TK licensing system. Certificates of origin and of compliance are one set of tools that could be used to facilitate tracking and monitoring, so that even if it is not always possible to link ideas to licensed TK, it may be possible to track research and prevent unauthorized research. One strength of the TK Commons model on this issue is its transparency: it would at least be able to provide evidence to support claims about the origin of TK.

Another issue with licenses that may need to be addressed involves determining the burden of proof that will be necessary to support them. Putting the burden on ILCs to document everything to ensure against future misappropriation creates a situation analogous to a policeman telling a homeowner that he will protect her and her property if she documents everything in her house. In order for a legal system to provide protection, it has to have some information to go on. One approach would be

[71] 535 F.3d 1373, 1381 (Fed Cir. 2008)

shifting the burden of proof. In 1990, the US Congress passed the Native American Graves Protection and Repatriation Act[72], withdrawing Native American human remains from the public domain. It stated that if remains existed prior to European contact or were dated to some point after contact with clear evidence of Native American connection, then their discovery must be disclosed to nearby tribes so that they could be claimed by the tribes. Basically this assigned property rights to remains that were 10,000 years old. A similar approach could be advocated for TK, as long as there is a living culture that can show connection to this knowledge. Human remains are often similar to knowledge systems in their importance and value to ILCs.

D. Benefits of a Licensing System

In addition to extending more control to ILCs over the use of their TK, a major benefit of the licensing system is that it could ensure that new research would continue to flow back to the TK Commons and the communities. This might require a way of databasing knowledge with "knowledge trustees" who can review knowledge and report back to communities, facilitating ways that knowledge can benefit them. It could also involve communities putting out requests on areas of research that are valuable to them. The idea of knowledge trustees is an attempt to innovatively ensure that new knowledge that is being generated does flow back to communities in the form of reports, meetings, or other mechanisms that will bridge the gap between the results of research and communities' needs. Given that ILCs have struggled so long for recognition of their autonomy, one important question is whether this model might depersonalize relationships around knowledge, potentially taking away negotiating power from communities. While communities may not be involved in every decision, it could still be possible for communities to play a role at a meta-level. With enough resources and participation from universities, it could even be possible to develop a legal unit that tracks use and ensures compliance.

There are also some other potential secondary benefits that could result from this system. In addition to providing an intermediary mechanism that could reduce the drain on ILCs' time and resources that would result from having to engage directly with every researcher that wanted to negotiate access to TK, they can reduce the kind of problems that are associated with gatekeeper patents. Gatekeeper patents are patents that "cover the first in a class of related discoveries."[73] They are "usually broad in scope and give the holder undue control over future research."[74] When used by the holder to prevent others from doing related research, they can essentially block any future research on the material they cover. This problem resonates in the case of the ABS agreement with the San over access to hoodia. One issue that has resulted from this case is that others cannot use the results of the many field trials that have been done because the corporation Phytopharm will not release the research results. This withholding of approximately 20 million euros worth of research ties up the San from being able to negotiate with other researchers who don't have the capacity to invest in their own research from the beginning and are blocked from building on the

[72] 104 STAT. 3048 PUBLIC LAW 101-601--NOV. 16, 1990, available at http://www.nps.gov/nagpra/MANDATES/25USC3001etseq.htm, last accessed July 27, 2010.
[73] Stephen B. Scherper and Hilary Cunningham, "The Genetic Commons: Resisting the Neo-liberal Enclosure of Life," *The Global Idea of 'the Commons.'* Ed. Donald M. Nonini, New York: Berghahn Books, 53-65: 62, fn 5.
[74] *Ibid*.

previous research.[75] The fact that some researchers couldn't identify value doesn't mean that others won't be able to; especially since research successes are contingent on the financial resources and research capacity of institutions. Such situations therefore underscore the potential benefit in communities retaining rights to research work product as a means of enabling ILCs to secure the benefits of the large amount of research which is being continuously generated but has no immediate commercial value.

Although a primary benefit from retaining the rights to research is the ability it gives ILCs to prevent the patenting of their TK in the first place, there may be situations in which they do enter into ABS agreements for commercial use of their TK. In these cases, this licensing system creates the opportunity to avoid the kind of circumstances that resulted from the hoodia agreement. Since the licensing model is actually focused on non-commercial and commercial use rather than institutions, it could be possible for for-profit companies to also get a license to do non-commercial research. The benefit of this would be that, in situations in which commercial research that hits a dead-end would have otherwise locked down that research for future use (both non-commercial and commercial), this licensing system would instead facilitate researchers starting the research process as non-commercial research that could be useful even if it has no commercial potential.[76] If it does, then they would need to enter into a separate ABS agreement if they wanted to develop that commercial potential. But if it doesn't, then the non-commercial potential would not be wasted, as would be the case under failed commercial research.

This licensing system also has the potential to help ILCs to extend control over TK that is already publicly available by incentivizing researchers to get licenses before using that TK in research. One simple incentive the system provides is making it easy for a researcher to do the right thing and making it clear what the right thing to do is. Also, it concentrates multiple points of protection rather than spreading them out over different protection mechanisms, like the patent system and the copyright system. The goal of the TK Commons is to create a system with benefits to communities that they can define and that actually flow back without creating perverse incentives for researchers to resort to biopiracy. Licensing may in fact be unable to prevent some biopiracy or misappropriation, but it has the potential to limit it as much as possible.

It is important to note that without the permission given by the license, a researcher cannot make use of the knowledge without violating both the community protocols and ultimately the supporting legislation. The license only gives permission to use the knowledge in the ways prescribed in the license. Use that does not comply with the license is then use for which no permission has been given. By requiring researchers to get a research license before they can engage in research that involves a community or its TK, the terms determining what research they would have to contribute back to the commons and when they would have to submit it can be made clear to them in advance. While some researchers may be reluctant to submit information that could be taken by somebody else to do their own research without giving the first researcher an original researcher credit, they would have to agree to the terms of the license in order to access the TK.

[75] http://www.nutraingredients.com/Industry/Unilever-drops-hoodia, January 2010
[76] Oldham, *supra* note 3: 11

THE VARIETIES OF TK COMMONS

The above-mentioned features of a TK Commons license are not any different from the customary laws that community members who use the TK are bound by. The customary laws of the *sangomas* or *gunis* such as sharing, non-appropriation or not profiting, enduring recognition, conservation and respectful use are merely elaborated as the terms of a license. If the terms of a license are based on the customary laws or biocultural protocols of indigenous peoples and local communities, it is a possibility that the licenses of the different groups could vary. For example, while the terms of a license developed by different groups of traditional healers may have common elements, these could differ from the terms of a license developed by pastoralists. This raises the possibility of not one 'TK Commons,' but multiple ones.

The conventional understanding of holders of TK is one under which they are perceived as a homogenous ethnic community. A more nuanced understanding would be one in which they could be a group of shared knowledge holders. Examples might include: traditional healers living in a certain region with knowledge about the use of plants in that region; communities living within a biosphere engaged in a variety of practices that have conserved the biosphere; communities living across national boundaries that share TK by virtue of living within the same ecological corridor; or pastoralists on specific migratory routes with shared ethno-veterinary knowledge and breed diversity. Each of these groups has certain commonalities that make them a community with shared interests in preserving TK.

The variety of communities that share TK therefore create the possibility for a variety of TK Commons – such as the "Biosphere Commons," a "Traditional Healers Commons," or a "Pastoralist Commons," forming clusters around which communities with shared interests can share knowledge and resources with others. A "Biosphere Commons" for example could be regulated by a biocultural protocol jointly developed by the different stakeholders within the biosphere, all of whom are in different ways responsible for the conservation of the biosphere. A 'Traditional Healers Commons' or a 'Pastoralist Commons' can be similarly regulated by a biocultural protocol and be a pool of knowledge held in trust by the traditional healers or pastoralists whose use is clearly regulated in accordance with their customary laws. Of course, there would need to be multiple licenses that would adapt to the needs of these different commons.

In addition to multiple kinds of TK Commons, there are also multiple categories of TK. Examples of such categories include communal knowledge, "such as agricultural practices, seeds and everyday health knowledge," access to which is open to the whole community; specialized knowledge, which is usually medicinal and often restricted to family, clan or kin, and holders of this knowledge must ensure its proper use for community healthcare;" and sacred knowledge, which "is held by elders and healers, and must be kept secret."[77] The spiritual dimensions of traditional knowledge are thus very important in this context. While Western jurisprudence (especially IP law) tends to view knowledge as information or data, indigenous peoples often see it as having definite, spiritual power. Decisions regarding what TK should be revealed or documented must therefore be determined by communities. This raises questions

[77] IIED, *supra* note 9.

about how much detail should be put in a license. At best it would only capture the particular aspects that a community thinks are important.

A TK COMMONS ONLINE LICENSING SYSTEM[78]

One model of how a TK Commons could function would be through an online licensing system. This could be useful since the IRABS is likely to produce some form of online mechanism in any case. There is discussion of the need for a clearinghouse mechanism with certificates that would accompany documented agreements once the IR comes into force. At a national level, there could be a functional paper trail, but at the international clearinghouse level, it will likely be electronic since there are no practical alternatives. The key elements of an online licensing system would be:

- A potential user will have to register on the website and log on to be traceable.
- The potential user, prior to use of the TK, will have to agree to the online license on the TK Commons website that acts as a database of the TK the community is willing to share or TK that is already publicly available from *ex situ* sources.
- The TK Commons website would then store a copy of the license, and the user would be provided with a copy of the license and a link to the license on the website that s/he must display in any work that s/he produces based on the TK.
- The licensee will be bound by the "share alike" terms of the license, which means that licensees cannot appropriate or privatize any work they produce based on the TK but must share it further in accordance with the conditions under which they accessed the TK.
- All future users of the licensed work based on the TK must further display this license on their work so as to ensure enduring recognition of the rights of the providers of the TK and the licensing conditions.
- If the use changes (still within the non-commercial framework) – for example, a student accesses the TK from an archivist who has a different kind of a license – then s/he would have to get a new license from the TK Commons website.
- The license terms will state that a copy of any work/research based on the TK would have to be placed back into the TK Commons website where it will be collated under different database headings.
- All new research or knowledge based on the TK of any community that is a part of the TK Commons could be accessible to all other communities, thus creating a system of knowledge-sharing between communities across the world.
- Any use of this new knowledge from the TK Commons would be licensed in a similar fashion.
- The TK Commons website could be managed by a governing board which would be comprised of representatives of ILCs, research centers, and universities. The TK Commons website and the knowledge trustees could be supported through periodic stipulated financial contributions by research centers and universities who are members of the governing board.

There are, however, several challenges an online licensing system may face. For one, the effects on the diffusion of knowledge must be carefully considered. In local commons, knowledge diffusion occurs across small, like-minded communities and social networks, affording a large degree of transparency and local control. Under a CC or Global Commons model, diffusion can occur across large, unlike-minded communities through "jump diffusion" over the internet or through illicit uses, creating problems for the transparent regulation of its use. Of course, this issue of "jump diffusion" and the increased risk it poses of people abusing knowledge the

[78] This section draws heavily on the presentations of Shalini Bhutani (GRAIN), Preston Hardison (Policy Analyst for the Tulalip Tribes Natural Resources Treaty Rights Office), and Kanchi Kohli (Kalpavriksh) at the TK Commons Workshop, as well as the comments of the other participants.

further it gets from the community is a serious problem in general. Once a community enters into an ABS agreement based on customary law, for example, how does a community enforce customary laws outside of its jurisdiction? There are two apparent options. The first is the ghettoizing option, under which a community enforces customary law regarding TK use internally, but outside the community the TK is governed by a system that does not have to consider what those customary laws are. The second option is to attempt to globalize community values rather than ghettoize them. The TK Commons model is one potential way to facilitate the enforcement of customary law related to TK outside of community jurisdictions.

Another potential problem with an online licensing system is that many communities have extremely limited or no access to internet technology. It would be necessary for these communities to have an intermediary in this model, such as the knowledge trustee mentioned above. In contrast to other models that would also require some form of intermediary, though, this one would have the advantage of the increased transparency of the internet which would make it possible to better scrutinize how ILCs are being represented. It is also the case that the representative structure of the TK Commons may not be compatible with the social structure of some ILCs. Since representative politics can and often are a problem in any context, the best solution to this problem may merely be to not take the possibility of easy representative politics for granted and recognize the likelihood of strife, disagreements, and processes of trial and error that all social movements must contend with. In other words, both the TK Commons and the ILCs would have to adapt to each other in the way that would best suit the needs of the ILCs.

There are also problems that may arise in relation to the online system including a database of TK. First, the TK Commons may need to contend with potential liability issues. For example, some process of confirmation may be necessary to ensure that TK that is put into the commons is put there by those who actually have a right to do so. Second, when considering the documentation or databasing of TK, it is important to ensure that the system does not function as a mechanism that subordinates TK-related indigenous values to the access needs of users. Some examples from India illustrate the kinds of concerns electronic databases raise. Under India's Biological Diversity Act, biodiversity management committees (BMCs) prepare people biodiversity registers (PBRs) with the guidance of state biodiversity boards (SBBs). The PBRs contain "resource" and TK information. PBR methodology requires the linking of PBRs to two online tools, the People's Biodiversity Register Information System (PeBINFO) and the Indian Biodiversity Information System (IBIS). IBIS is an online system through which all PBR information is compiled and centralized, extending national responsibility over local common heritage, establishing prior art, and providing a "back up" database in case of the loss of species or knowledge (although there are questions whether this "back up" constitutes conservation). One major criticism is that this system treats communities merely as data providers: BMCs prepare PBRs under the guidance of the Technical Support Group and SBBs. There is no community control institutionalized in law.

A second example, the Traditional Knowledge Digital Library (TKDL), is the result of a US$ 2 million joint project between five Indian government organizations, including the Council of Scientific and Industrial Research and the National Institute of Science Communication and Informative Resources. This 30 million page online

database includes 54 authoritative textbooks on *ayurvedic* medicine; nearly 150,000 *ayurvedic*, *unani* and *siddha* medicines; and over 1,500 physical exercises and postures in *yoga* – knowledge that is more than 5,000 years old. On February 2, 2009, the Indian government gave TKDL access to the European Patent Office and is currently in negotiations with the United States Patent and Trademark Office. A TK bill is currently being proposed by the Federation of Indian Chambers of Commerce and Industry, which is holding consultations on an IBIS inter-linkage with the TKDL. There have been 368 approvals for access (for commercial research) under the Biodiversity Act, 258 of which were for IPRs. Another 205 IPRs applications by the Council of Scientific and Industrial Research are pending approval, yet no proactive steps have been taken for TK protection. This system raises serious concerns about how to control against leakages and "legitimate" piracy.

It is imperative that a web-based databasing system with the intent of conserving commons from privatization avoids carrying the commons toward privatization in practice. Unlike documentation, which needs to be located at a local community level so that its knowledge is most accessible there, databasing is often not centered in communities but is rather set up so it can help people outside the community to understand their knowledge. It is for this reason that TK made available through an online database must only be accessible under the terms of customary law related to that TK. In this way the online TK Commons model can ensure that the access needs of outside users do not take precedent over ILCs' rights over their TK.

PROTECTING THE TK COMMONS[79]

The purpose of the TK Commons would be to provide communities with a trusted system through which they can be as certain as is reasonably possible that the terms and conditions under which their TK will be made available to the commons are being complied with. Of course there will be the possibility that the knowledge from the commons will be used in ways that violate the license. However, such a possibility exists with or without a TK Commons considering that large amounts of TK are available *ex situ* in publications and archives. The issue of tracking, monitoring and ensuring compliance with the customary laws or biocultural protocols of ILCs in relation to the use of their TK is something that would have to be resolved through the potential IRABS and the concomitant national legislations. In any case, a TK Commons would fall under a *sui generis* system of TK protection developed by ILCs by functioning as an ABS arrangement of sorts with the TK Commons license providing both FPIC and the mutually agreed terms for the use of the TK, and the TK Commons as a whole being a pool of growing knowledge benefits. This would entitle the TK Commons to the same kind of protection that the potential IRABS would provide for any ILC entering into a standard format ABS agreement for the use of their knowledge.

The outcome of a TK Commons would be the interoperability of licenses through which user country laws could require their institutions and citizens who use TK to have valid licenses and would determine what would constitute misappropriation or misuse based on these licenses. The ideal scenario would be one in which the

[79] Parts of this section draw on the presentation of Morten Tvedt (Senior Research Fellow at the Fridtjof Nansen Institute) at the TK Commons Workshop, as well as the comments of the other participants.

aggrieved community, the ombudsman or the legal aid authority under the IRABS would contact the Competent Authority of the user country in situations where it is reported that TK is being used for purposes that are not allowed by the licenses. There would have to be similar processes at patent offices whereby applications for patents based on TK would disclose the relevant ABS agreement or license. A possible TK Commons database could have a legal section that would conduct random and periodic checks for license violations, and when such a violation is found, take the necessary legal action through the channels made available through the IRABS. The legal strength of TK Commons compliance mechanisms, like any other ABS arrangements, will ultimately only be as strong as the support provided by the IRABS once it is in place as well as the support of related national legislation.[80] While it cannot function as a compliance mechanism in itself, the TK Commons could – unlike other ABS arrangements – provide the resources to incorporate *sui generis* customary laws into the terms with which users must comply.

There is of course a range of enforcement challenges a TK Commons may need to deal with. Potential litigation for the violation of licenses raises one large set of problems. Assuming there is a legally binding private law contract agreed to by the user, there are two possible enforcement situations that could arise out of a TK license. There could either be a situation within a license's jurisdiction that would depend on that jurisdiction's legislation, or a situation outside of that jurisdiction that would depend on both international law and the law of foreign jurisdictions. Relevant aspects of international law would include potential forums for creating assistance for enforcement such as the Convention on Biological Diversity (CBD) and the Intergovernmental Committee (IGC) on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore of the Standing Committee on Patent Law at the World Intellectual Property Organization (WIPO). For the CBD to work as a forum, there may need to be stronger implementation of article 8(j)-related subject matter so that the IRABS includes enforcement rules for TK-related contracts. At the IGC, discussion of enforcement related issues is currently on the agenda, but the IGC are still a long way away from agreeing on practical measures. WIPO's Standing Committee on Patent Law could address substantive patent law issues such as whether the Patent Cooperation Treaty would recognize a license as part of prior art and whether the subject matter of a license would be disclosed in a publicly available forum. While these forums have the potential to contribute to making licenses enforceable, this issue is not currently in their cross hairs.

There are also cross-border challenges to enforcement that need to be considered. National legal systems can differ greatly at the basic level. There are differences both at the level of "traditional" classifications (common law, civil law, etc.) as well as more essential differences such as that between countries with a "strict rule of law" (where law is a country's primary organizing force) and ones with more flexible systems (where law is a secondary force). It is also important to compare what actions are permitted in a user country with what actions are required by the provider country.

[80] One example of the form such legislation might take is a 2008 policy document on "knowledge commons" issued by the government of the Indian state of Kerala, which states that all traditional knowledge, including traditional medicine, must belong to the domain of "knowledge commons" and not to the "public domain." It establishes the rights of right-holders to brand names and to use, and allows third person use under "commons licenses." For more information, see http://www.grain.org/bio-ipr/?id=542, last accessed January 27, 2010.

Equally important is a comparison between what enforcement is possible in the user country and what the provider country may need to enforce.

Other challenges to bringing a claim in a foreign jurisdiction include problems with interpretation of foreign laws, judges' lack of specialized knowledge regarding ABS-related issues and technical issues, and political factors influencing restrictions on lawsuits against major commercial sectors. After confronting all these hurdles, a TK provider would still need to prove that her rights against the user outweigh the user's rights against her, prove the amount and type of each remedy owed (providing persuasive answers to the questions of what the benefits are and what an "equitable share" is), and attempt to collect that share, if the judge awards it.

Overall, TK licenses could face some significant enforcement issues. It will be a challenge to make the patent system (and other IPRs) a positive contributor to recognizing TK-related rights asserted under licenses. It may be necessary to have a pilot case to make this an issue at both an international and a national level. Current negotiations are focused on trying to harmonize different countries' legislation into an IRABS, and licenses have already been mentioned in those negotiations as a possible legal tool that could be employed under this convention. To facilitate enforcement of such licenses under an IRABS, however, it would also be important to have some mechanism that involves ILCs in dispute resolution, such as an ombuds structure, to address some of the issues around dealing with violations of licenses without necessarily needing to go to litigation. Also, because some communities are not juridico-literate, limiting possible claims to those made by them on their own behalf would be problematic. The TK Commons could therefore provide a mechanism for ILCs to not have to depend solely on the self-identification of injury.

CONCLUSION

The idea of a TK Commons enters the heart of the debate around TK in the context of Article 8(j). The TK Commons does not preclude the rights of communities to enter into commercial ABS agreements for the use of their TK to bring much needed income to a desperately poor community, as in the case of the San in Southern Africa. However, the TK Commons does offer the possibility for ILCs to move beyond the dominant "sale of TK leads to conservation" interpretations of Article 8(j). A TK Commons allows communities to share their TK whilst being able to equally define and control its use as well as the benefits derived from that use. It provides communities with an opportunity to strengthen local, national, and international recognition of the *sui generis* systems of customary laws at the heart of their ways of life that have ensured conservation of biological diversity for millennia. It offers the possibility for communities to ensure their knowledge isn't disembodied by widening the understanding of "community" to include all non-commercial users who agree to abide by the customary laws that underlie the use of TK.

Though there would be challenges for such a model to contend with, ultimately the TK Commons seeks to provide a medium through which an indigenous view of rights as inextricably joined to reciprocal responsibilities grounded in a *sui generis* system of customary laws can be incorporated into the larger international human rights framework. Rather than merely relying on the generations of rights that have already been formulated, ILCs could actively participate through the TK Commons in the

ongoing process of shaping the evolving framework of international human rights. The TK Commons would thus enable ILCs to build on previous generations of rights with new articulations of biocultural rights that recognize the complex, interdependent relationship of ecosystems, human communities and the cohesive flows of knowledge that bind and shape them. Addressing the need to move beyond the simplistic binary of open access versus appropriation often reflected in commercially-focused ABS negotiations, the TK Commons acknowledges the distinctions between the *sui generis* ethical foundations guiding knowledge use among ILCs and conventional IPR models for the regulation of knowledge use. It provides the possibility of a participatory system of rights guided and supported as much by appreciation of community bonds and indigenous values as it is by legal mandate and market processes.

ACRONYMS

ABS: Access and Benefit Sharing
BMC: Biodiversity Management Committee
BMS: Bristol-Myers Squibb
CC: Creative Commons
FLOSS: Free and Open Source Software
FPIC: Free Prior and Informed Consent
GR: Genetic Resources
ICCPR: International Covenant on Civil and Political Rights
ICESCR: International Covenant on Economic, Social and Cultural Rights
IDLO: International Development Law Organization
IGC: Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore
IGOs: Intergovernmental Organisations
IBIS: Indian Biodiversity Information System
IKS: Indigenous Knowledge Systems
ILCs: Indigenous and local communities
IP: Intellectual Property Law
IPRs: Intellectual Property Rights
IRABS: International Regime on Access and Benefit Sharing
ISE: International Society of Ethnobiology
MoU: Memorandum of Understanding
MTA: Material Transfer Agreements
NBA: National Biodiversity Authority
NGOs: Non-governmental Organisations
PBR: People Biodiversity Register
PeBINFO: People's Biodiversity Register Information System
REDD: UN Reducing Emissions from Deforestation and Forest Degradation in Developing Countries Programme
SBB: State Biodiversity Board
TKDL: Traditional Knowledge Digital Library
TK: Traditional Knowledge
UDHR: Universal Declaration of Human Rights
WIPO: World Intellectual Property Organization