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INDIGENOUS KNOWLEDGE, INTELLECTUAL PROPERTY AND BIOPIRACY: IS A GLOBAL BIO-COLLECTING SOCIETY THE ANSWER

Peter Drahos.

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Abstract: Problems of uncertainty and enforcement confronting contracting parties over use of **knowledge** of **indigenous** groups about plant material and role global bio collecting society could play in addressing problems.

*245 The economics of **knowledge** in the emerging global **knowledge** society has seen some life sciences companies enter into partnerships with **indigenous** groups over the use of **knowledge** that those groups possess in relation to plant material. [FN1] It is an intriguing and potentially unstable combination--some of the world's most globalised and hypermodern companies seeking deals with some of the world's most local and traditional people. Finding ways in which to encourage mutually satisfactory contractual arrangements between life sciences companies and **indigenous** groups over the use of **indigenous knowledge** has become a major regulatory challenge. Part of the solution, it will be argued, lies in the creation of a global bio-collecting society ("GBS"). A GBS will overcome some of the problems of uncertainty and enforcement that confront contracting parties in this area. The second section of this opinion outlines the role that the GBS could play. The first section sketches the problems that need to be addressed.

Collecting **Knowledge**

Knowledge about the way in which local people have used plants has always been important to collectors: "uses by local peoples have been the starting point for all the major Floras Kew has produced over the last 150 years." [FN2] For the most part plant resources and **knowledge** about their use have been freely acquired by Western collectors from **indigenous** groups. The closing decades of the twentieth century brought with them the beginnings of change to this particular practice of free-riding. Activists from non-governmental organisations ("NGOs") have assessed the probity of corporate conduct concerning the utilisation of **indigenous knowledge** drawing on a moral framework of human rights and a notion of customary entitlement of **indigenous** groups to that **knowledge**. [FN3] Companies that have exploited **indigenous knowledge** without consulting **indigenous** and local groups have found themselves on the receiving end of charges of "biopiracy" as well as a public relations disaster. [FN4] The international community has also recognised in the Convention on Biological Diversity ("CBD") that, at least in the case of **indigenous** and local **knowledge** related to the conservation and sustainable use of biological diversity, states are under an obligation to ensure the equitable distribution of benefits that flow from the use of that **knowledge**. [FN5] At the national level, some developing states have enacted legislation that governs the use of **indigenous** and local **knowledge**. [FN6] This *246 right is a right that relates to an intangible--the use of **knowledge**. Access to biological resources is a separate matter that is being dealt with by states under national access laws, although these laws may also contain provisions that relate to the use of **indigenous knowledge**. [FN7]

Progressively, the informal norms that have governed the collection and dispersal of biological resources for most of human history are slowly being replaced by specific national laws and bureaucracies that impose a variety of conditions on potential collectors. Stricter controls by some countries, lack of control by others as well as the CBD standards have created less rather than more certainty over the legality of collecting biological

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resources and the use of **indigenous knowledge**. The result has been that some companies collect in fewer countries, especially in countries with stricter procedures (Australia, Brazil and Andean Pact countries), make more use of ex situ collections and employ intermediaries to bear the costs of actual collection. [FN8] **Indigenous** groups are also facing their own set of uncertainties. Well-publicised incidents of **biopiracy** involving the use of **indigenous knowledge** such as the turmeric and neem tree patents have sown the seeds of distrust in the commerce of biodiversity-related **knowledge**. [FN9] The establishment of trust is fundamental to such a commerce. [FN10] Without it, companies and **indigenous** groups will find it impossible to cross the cultural barriers that divide them. There will be losses on all sides. **Indigenous** groups will lose the benefits of trades in **knowledge** that they would have been prepared to make under other circumstances. Companies will not gain the benefit of **indigenous knowledge** that increases their own probability of finding a *247 successful medical or agricultural product. [FN11] Pareto superior exchanges, in other words, will not take place. There will also probably be dynamic efficiency losses because **indigenous knowledge**, which if utilised might otherwise have led to further innovation, will remain undisclosed.

Part of the solution to these problems lies in a well-defined set of sui generis **intellectual property** rights in **indigenous** and local **knowledge**. Concepts such as "community rights", "**indigenous knowledge**", "local **knowledge**", and "traditional resource rights" will have to be defined with more precision and at least to some extent harmonised. Some of the strength of the patent system derives from the fact that national patent laws share a common conceptual vocabulary. The principal rationale for the enactment of such a sui generis regime is that it will serve to generalise trust in the market for **indigenous knowledge** related to biological resources. A **property** rights regime will give **indigenous** groups some degree of control over the use of their **knowledge**, thereby raising the incentive for disclosure of that **knowledge**. Existing **intellectual property** regimes will not perform this task because they are based on cultural presuppositions that do not fit the needs of **indigenous** and local groups. [FN12] Plant breeders and semiconductor chip manufacturers went down the sui generis path of **intellectual property** protection in order to gain laws that met the need of their respective market cultures. The needs of **indigenous** groups will also have to be specially met.

The existence of a well-defined sui generis **property** rights regime in **indigenous knowledge** will not by itself guarantee that mutually beneficial exchanges between **indigenous** groups and companies will take place. To begin with, national sui generis **indigenous intellectual property** laws will, under the principle of territoriality, be enforceable only in the state in which they are enacted. A treaty on **indigenous intellectual property** rights that creates a minimum set of standards and entrenches the principle of national treatment remains for the time being a remote possibility. [FN13] International free-riding remains a legitimate option under national regimes for **indigenous knowledge**. There are problems that relate to the enforcement and negotiation of the contract. Clearly, a contract between an **indigenous** group and a multinational corporation is not a contract between equally well-resourced parties. If, for example, a company breaches a term of a licence agreement with an **indigenous** group that obliges it not to seek patents over life forms, the **indigenous** group will have to be able to meet the costs of seeking enforcement of the agreement. Experience reduces uncertainty, and here it is also worth noting that multinationals have a great deal of experience in negotiating licensing arrangements for the exploitation of **intellectual property** rights. **Indigenous** groups do not.

A fundamental problem in this area is the problem of pervasive imperfect information. When **indigenous** groups disclose to a company information about their uses of a plant, they are not giving that company a product. The **knowledge** that they disclose reduces, to a degree, uncertainty in the state of nature. But only to a degree. One estimate has it that for every 5,000 or so compounds that show some kind of activity in the early stages of testing one makes it to the stage of marketing. [FN14] Whether a company can take advantage of the reduction of uncertainty that the disclosure of **indigenous knowledge** brings with it and deliver a product to the market depends on a host of factors, including its scientific expertise, the behaviour of its competitors, the size of the market, the patenting position that the company can take and the regulatory hurdles it must overcome. **Indigenous** groups also have to cope with imperfect information. They do not know the value of the **knowledge** that they are disclosing [FN15] and whether the disclosure will, among other things, be treated in a way that is consistent with their cultural values and goals. They face the possibility that they will conclude ex post that their

integration into the commerce in biodiversity was not worth the resulting changes to their traditional social world. Sometimes these information problems afflict both parties equally and in other cases one party has superior information to the other. [FN16] Never do any of the parties have perfect information.

A Global Bio-collecting Society

Collecting societies are common in the copyright area, where they serve copyright owners by reducing their transaction and enforcement costs. [FN17] *248 The proposal being put forward here, however, differs somewhat from the usual copyright collecting society model. Rather than having many bio-collecting societies at the national level, it would be better to have one global bio-collecting society ("GBS"). The operation of one GBS could be more easily scrutinised by the various interested actors than the operations of many national collecting societies. Better transparency, in short, would be one outcome of a GBS. It might also be argued that international organisations, for the most part, serve the interests of **indigenous** groups better than state organisations. States, not uncommonly, have been opponents of **indigenous** groups in the context of land claims and rights issues. Political-economic elites wielding the power of the state present the greatest danger to **indigenous** groups. [FN18]

Another important difference between copyright collecting societies, which tend to serve the interests of copyright owners alone, and a GBS would be that the GBS would be chartered in a way that attended to the broader purposes that are specified in the CBD and perhaps also the International Undertaking on Plant Genetic Resources. The protection of **indigenous knowledge** by a GBS would be a primary rather than absolute duty.

A GBS would be best established as a private organisation outside the context of any treaty negotiation. The politicised waters of treaty negotiation make it difficult for any initiative to reach the shoreline. Funding for the GBS could come from the World Bank, which in recent times has become much more interested in the role of **knowledge** in economic development. [FN19] Importantly, membership would be open to both companies and **indigenous** groups and would be entirely optional. The idea would be that the GBS would stimulate a process of private ordering among companies and **indigenous** groups. If the services that the GBS provided turned out to be useful then corporations and **indigenous** groups would employ it. If not, then it would fold. The GBS could provide the following services:

(1) It could act as the repository for community registers of **indigenous knowledge**. [FN20] The GBS could assume the custody of a community register under strict obligations of confidentiality. There would be no registration system as such. A third party could find out that **Indigenous** Group X had notified a community register with the GBS, and any further details that had been agreed to by **Indigenous** Group X. This notification system would be designed to trigger a dialogue between the **indigenous** group and the third party.

(2) The GBS could, if requested, provide assistance with any contractual negotiation between a third party and an **indigenous** group. The GBS could maintain a register of independent legal experts who were willing to assist **indigenous** groups in such negotiations.

(3) The GBS could provide a monitoring service for the use of **indigenous knowledge**. It can take from eight to fifteen years from the date of filing of a patent for a pharmaceutical product to its eventual release on the market. [FN21] The long time frames involved in the use **indigenous knowledge** make the provision of a monitoring service vital. Monitoring might involve regular checks of patent applications around the world or requiring parties to report on the use of the licensed **knowledge**.

(4) The GBS could have a dispute resolution function. As part of its structure it could have a committee, the members of which would be people of impeccable independence. They would publicly examine the conduct of the parties in the dispute and make recommendations. The aim of such a committee would be to gain the trust of industry and **indigenous** groups by virtue of its independence and impartiality. Failure to adhere to its recommendations would not be accompanied by any legal sanctions. A party ignoring its recommendations would be seen publicly to have done the wrong thing and in certain cases it might be excluded from the GBS altogether. Exclusion from this body would be a form of global shaming that might in fact act as a powerful deterrent to non-compliance with the committee's recommendations. A GBS dispute

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resolution procedure that operated in this way could conceivably avoid the "tyranny of lawyers". [FN22]

*249 (5) The GBS could also have some sort of standard-setting function. It might, for example, develop an authoritative code of conduct for the negotiation of a biodiversity prospecting contract. For the purpose of standard-setting, it is important that the GBS have a tripartite process. [FN23] Standards would be agreed in a process involving representatives from industry, **indigenous** groups and representatives from states.

One advantage of establishing the GBS in the way being suggested is that it would side-step the need for an international treaty in relation to national **indigenous intellectual property** rights. Membership of the GBS would itself constitute an acceptance that national **indigenous property** rights were to be respected. It is conceivable that respect for the use of **indigenous knowledge** could be secured in this way even if the state to which the **indigenous** group belonged had failed to provide legislative protection for **indigenous knowledge**. Clearly, the success of the GBS would depend on the extent of its membership. If most **indigenous** and industry members participated, it could work. The question then is whether there are strong incentives for **indigenous** groups and companies to participate.

(1) Incentives for the life sciences industry. The life sciences industry wants in this field freedom of contract, low search and transaction costs, and certainty of use. At the moment there is a proliferation of CBD laws at the national level that is, as observed earlier, creating uncertainty. Dealing with the GBS rather than potentially many national bureaucracies administering laws protecting **indigenous intellectual property** would lower industry's transaction costs. The GBS, by bringing together **indigenous** groups and members of the life sciences industry, would lower the search costs of both.

The GBS would play a critical role in obtaining certainty of use for companies. A company that acquired permission to use **indigenous knowledge** through the GBS process would have a defence against any other claims to the ownership of that **knowledge** that might surface later. Assume, for example, that **Indigenous** Group X had notified their **knowledge** to the GBS and that Company Y had been given permission to use that **knowledge**. Some time later **Indigenous** Group Z claims that that **knowledge** also belongs to it. Assume that this is genuinely a case of independent origination of **knowledge**. Under the GBS procedures Company Y would have a defence against **Indigenous** Group Z. However, **Indigenous** Group Z might be able to claim some of the money that Company Y paid to the GBS for the use of the **knowledge**. The critical thing is that it would be the GBS that would be centrally involved in the collection and distribution of the royalties and lump sums being paid to it. It is vital to separate companies from very difficult distributional issues such as these.

The issues relating to freedom of contract are also complex. States might be tempted to impose a host of mandatory conditions on parties wishing to make use of **indigenous knowledge**. But it is open to question whether this would serve either the interests of industry or **indigenous** groups. If the conditions prove too onerous, companies will not invest in utilising **indigenous knowledge**. This result would be Pareto inferior and dynamically inefficient. Allowing the state to set mandatory conditions also carries with it the risk of strategic rent-seeking behaviour by the state. The state may end up over-pricing the use of the **indigenous knowledge**. A non-profit GBS would be in a much better position to recommend to parties contractual conditions that were genuinely efficient.

(2) Incentives for **indigenous** groups. The GBS would help **indigenous** groups to solve the problem of international free-riding by offering them some prospect that the rights over their **knowledge** would be recognised by companies irrespective of where those companies were located. It would also offer them a means by which to enforce their rights. The GBS could absorb the monitoring costs that the use of **indigenous knowledge** would bring with it in the pharmaceutical sector. One of the functions of the GBS would be to provide help to **indigenous** groups with the negotiation of licensing agreements. A GBS could *250 also, when it came to the collection and distribution of royalties, deal directly with **indigenous** groups, thereby avoiding state apparatuses. Bearing in mind the problem of systemic corruption in some developing countries this would, on the whole, be a good thing. [FN24] **Indigenous** groups have absolutely nothing to lose in experimenting with a new form of distribution since it has been estimated that "less than 0.001 per cent of the profits from drugs that originated from traditional medicines have ever gone to the **indigenous** peoples who led researchers to them". [FN25]

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The GBS would be in many ways a unique creature--a private global organisation facilitating private ordering between international companies and local actors so as to champion the global public purposes for which it was chartered. The role that has been sketched for it here will no doubt raise as many questions in the minds of readers as it answers. But on the face of it at least there are enough reasons to think that a GBS might deal with some of the needs that face **indigenous** groups and the life sciences industry as they begin to forge partnerships in the commerce of biodiversity.

PETER DRAHOS

Queen Mary **Intellectual Property** Institute

University of London

FN1. An example of a contractual arrangement over the use of **indigenous knowledge** is the know-how licence that the Aguaruna people of the Peruvian Amazon granted to Searle & Co. (the pharmaceutical division of Monsanto corporation) in 1996 for the use of their know-how in relation to plants with medicinal **properties**. See G. Dutfield, **Intellectual Property** Rights, Trade and Biodiversity (2000), p. 43.

FN2. Grenville Lucas, "Plant collecting and conservation" in Plant Hunting for Kew (F. Nigel Hepper ed., 1989), pp. 209, 211.

FN3. For examples of the use of the rationale of customary entitlement to **knowledge** by **indigenous** groups see Michael Blakeney, "The International Framework of Access to Plant Genetic Resources" in **Intellectual Property** Aspects of Ethnobiology (Michael Blakeney ed., 1999), pp. 14-20. On the relationship of **intellectual property** and human rights see Rosemary J. Coombe, "**Intellectual Property**, Human Rights & Sovereignty: New Dilemmas in International Law Posed by the Recognition of **Indigenous Knowledge** and the Conservation of Biodiversity" (1998) 6 Indiana Journal of Global Legal Studies 59; Peter Drahos, "**Intellectual Property** and Human Rights" (1999) 3 **Intellectual Property** Quarterly 349.

FN4. The activist Vandana Shiva has been prominent in drawing attention to this issue. See her Protecting our Biological and **Intellectual** Heritage in the Age of **Biopiracy** (1996). The Rural Advancement Foundation International, an NGO, runs a **biopiracy** update service on its website-<http://www.rafi.ca>.

FN5. See Art. 8 (j) of the CBD.

FN6. See, for example, the **Indigenous** Peoples Rights Act 1997 (Republic Act 8371) of the Philippines. Executive Order 247 of the Philippines provides a regulatory framework that governs access to biological resources. In Thailand, the Traditional Medicine Bill would, if enacted, protect traditional **knowledge** related to medical uses of plants. In Brazil, Bill 306/95 (approved by the Senate in 1998) deals with the protection of **indigenous knowledge** in the context of bio-prospecting. See M. Mendonça Wolff, "**Indigenous** Peoples and the Protection of Genetic Resources in Brazil" in **Intellectual Property** Aspects of Ethnobiology, n. 3 above, pp. 175, 179. The Executive Secretary of UNEP in a recent note (see UNEP/CBD/WG8J/1/2 January 10, 2000 at 6-7) observed that there were several models that might be used to develop sui generis legislation for traditional biodiversity-related **knowledge**, including the following:

"1. The Model Provisions for National Laws on the Protection of Expressions of Folklore Against Illicit Exploitation and Other Prejudicial Actions, developed by the United Nations Educational, Scientific and Cultural Organization and the World **Intellectual Property** Organization;

2. The Principles and Guidelines for the Protection of the Heritage of **Indigenous** People, elaborated by the Sub-Commission on Prevention of Discrimination and Protection of Minorities

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(E/CN.4/Sub.2/1995/26);

3. The Third World Network's proposal for a Rights Regime for the Protection of **Indigenous** Rights and Biodiversity;

4. The **Intellectual** Integrity Framework of the Rural Advancement Foundation International;

5. The Model Biodiversity Related Community **Intellectual** Rights Act of the Research Foundation for Science, Technology and Ecology;

6. The Draft Legislation on Community Rights and Access to Biological Resources, developed by the Organization of African Unity."

FN7. Examples are the Andean Community (Bolivia, Colombia, Ecuador, Peru and Venezuela) Common System on Access to Genetic Resources 1996 and the Biodiversity Law 1998 of Costa Rica. Para. 3 (1) (g) of the Environment Protection and Biodiversity Conservation Act 1999 of Australia states that one of the objects of the Act is "to promote the use of **indigenous** peoples' **knowledge** of biodiversity with the involvement of, and in co-operation with, the owners of **knowledge**". The draft Biological Diversity Act being considered by the Indian Parliament contains provisions dealing with the protection of local **knowledge**. See A. Viswanathan, "The Proposed Biological Diversity Act in India: A Comparative Analysis with the UN Convention on Biological Diversity" (1999) 13/5 World **Intellectual Property** Report 170 at 172.

FN8. Kerry ten Tate and Sarah A. Laird, *The Commercial Use of Biodiversity* (1999), pp. 300-302.

FN9. Dutfield, n. 1 above, pp. 65-66.

FN10. On the importance of trust to capitalism see Francis Fukuyama, *Trust: The Social Virtues and the Creation of Prosperity* (1995).

FN11. On the importance of ethnopharmacological data to the discovery of new drugs see P. A. Cox, "Ethnopharmacology and the search for new drugs" in *Bioactive Compounds from Plants* (D. J. Chadwick and J. Marsh eds, 1990).

FN12. For a review of some of the literature pointing to this conclusion see A. B. King and P. B. Eyzaguirre, "**Intellectual Property** Rights and Agricultural Biodiversity: Literature Addressing the Suitability of IPR for the Protection of **Indigenous** Resources" (1999) 16/1 *Agriculture and Human Values* 41-49. See also M. Blakeney, "Protection of traditional medical **knowledge** of **indigenous** peoples" [1997] *E.I.P.R.* 446.

FN13. The World **Intellectual Property** Organization began a series of fact-finding missions on traditional **knowledge**, innovation and culture of **indigenous** peoples, local communities and other holders of traditional **knowledge** and culture in June 1998. There is thus far no suggestion that a treaty is an appropriate normative response to the problems in this area.

FN14. Philip W. Grubb, *Patents for Chemicals, Pharmaceuticals and Biotechnology* (1999), p. 366.

FN15. The difficulties of valuing information in this area are discussed by Uma Suthersanen, "Legal and Economic Considerations of Bioprospecting" in **Intellectual Property** Aspects of Ethnobiology, n. 3 above, pp. 72-78.

FN16. For a discussion of symmetric and asymmetric information problems as they relate to contract law see Michael J. Trebilcock, *The Limits of Freedom of Contract* (1993), chaps 6 and 7.

FN17. J. Thorpe, "Regulating the Collective Exploitation of Copyright" (1998) 16 *Prometheus* 317.

FN18. Coombe, n. 3 above, at 95.

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FN19. See, for example, U. Lele, W. H. Lesser, G. Horstkotte-Wesseler, eds, **Intellectual Property Rights in Agriculture: The World Bank's Role in Assisting Borrower and Member Countries** (1999).

FN20. Community registers are forms of recording and documenting of **indigenous knowledge** that are authored and maintained by **indigenous** communities themselves. See Graham Dutfield, "Protecting and Revisiting Traditional Ecological **Knowledge: Intellectual Property Rights and Community Knowledge Databases in India**" in **Intellectual Property Aspects of Ethnobiology**, n. 3 above, pp. 103, 117-121.

FN21. Grubb, n. 14 above, at 366.

FN22. J. Braithwaite, "Restorative Justice: Assessing Optimistic and Pessimistic Accounts" (1999) 25 *Crime and Justice* 1 at 106.

FN23. For an analysis of the importance of tripartism in international organisations see J. Braithwaite and P. Drahos, *Global Business Regulation* (2000), p. 573.

FN24. The problem of systemic corruption would also likely defeat the economic benefits that are argued to flow from state-run biodiversity cartels (see the discussion of such cartels in Dutfield, n. 1 above, pp. 116-117). The model being proposed here would facilitate private negotiations between companies and **indigenous** groups while taking advantage of collective organisation to solve problems of transaction and enforcement costs. It would deliver better dynamic efficiency than the cartel model.

FN25. Posey, cited in Coombe, n. 3 above, at 96.

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