# CONTROLLING INDIGENOUS KNOWLEDGE: TOWARDS A PROPERTY REGIME FOR INDIGENOUS KNOWLEDGE SYSTEMS

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## INTRODUCTORY NOTE

This study argues that any discussion concerning the protection of indigenous knowledge systems through a property rights regime must necessarily be linked to the indigenous peoples' struggle for the recognition of their ancestral domains. It begins by putting the discussion in the context of the ancestral domain struggle and points out that because of the worldview of indigenous peoples, land, life, people, and knowledge form interlinked parts of an overarching whole.

Next, this study examines the theoretical premises of modern intellectual property rights regimes and points out that there are essential incompatibilities between them and indigenous knowledge systems. These incompatibilities render modern IPR systems incapable of effectively reflecting and recognizing the validity of the communal property rights inherent in indigenous knowledge systems.

Lastly, this study argues that there is a need for the creation of a separate and distinct but co-equal legal property rights regime for indigenous knowledge systems in conjunction with legal recognition of ancestral domains. Such rights regime must reflect and recognize the cultural values of indigenous peoples regarding knowledge and intellectual creations.

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## I. ANCESTRAL DOMAINS AND INDIGENOUS KNOWLEDGE SYSTEMS

Any discussion concerning protection of any aspect of the traditional knowledge system of indigenous peoples must necessarily be linked to the broader context of natural resources management systems thereof. As will be demonstrated later, this treatment of indigenous peoples' rights to their knowledge as a function of their rights to resource tenure security is due to the fact that the worldview or paradigm, if you will, of such peoples treats natural resources and their knowledge thereof in a holistic and integrated manner.

Hence, as its take off point, this study shall first situate Philippine indigenous peoples resource tenure concerns within the context of the Philippine legal regime for natural resources. More specifically, the discussion will first focus on the legal context of ancestral domain recognition in the country and then delve into a brief exposition on property ownership conceptualizations by selected Philippines indigenous peoples.

### *A. Ancestral Domains and the Law*

#### 1. The Regalian Doctrine

Resource tenure in the Philippines is based on the Regalian Doctrine framework. This doctrine is now enshrined in Article XII, Section 2 of the 1987 Philippine Constitution, stating in part as follows:

> Sec. 2. All lands of the public domain, waters, minerals, coal, petroleum, and other mineral oils, all forces of potential energy, fisheries, forests or timber, wildlife, flora and fauna and other natural resources are owned by the State. With the exception of agricultural lands, all other natural resources shall not be alienated. The exploration, development, and utilization of natural resources shall be under the full control and supervision of the State.

In short, the doctrine states that all natural resources, except lands which have been titled in fee simple to private persons, are owned by the State. At a single stroke, this doctrine provides the legal basis for effectively negating the property rights of indigenous peoples over the lands and natural resources that they have occupied and used since time immemorial under their customary law. The subsidiary nature of indigenous peoples' property rights to land and resources is made explicit by Article XII, Section 5 of the Constitution which states that:

> Sec. 5. The State, subject to the provisions of this Constitution and national development policies and programs, shall protect the rights of indigenous cultural communities to their ancestral lands to ensure their economic, social, and cultural well-being.

The Congress may provide for the applicability of customary laws governing property rights or relations in determining the ownership and extent of ancestral domains.

2. The Legal Treatment of Ancestral Domains

The concept of ancestral domain is a key concept in indigenous peoples' rights. In the context of the Philippine indigenous peoples' struggle for recognition of their ancestral domains, the above Constitutional provisions have been deemed, in varying degrees, as inadequate.

As one indigenous peoples' rights advocate stressed:

> Ancestral Domains [in the legal system] do not exist. While certainly there are Constitutional provisions which do refer to the Indigenous Cultural Communities, none of them define the concept of Ancestral Domains, or specify its legal relationship to other land categories, or mention its attributes.... there has been no clear or categorical statement in law or jurisprudence to the effect that this decision defines or refers to the particular legal concept of "Ancestral Domain." As a legal concept, it is defined and therefore exists only within the Department of Environment

> and Natural Resources, and then, only for rather limited purposes.[1]

Such Constitutional provisions have been considered as being merely statements of policy which are not self-executing and hence by themselves do not create or recognize and rights for indigenous peoples to their lands and the resources therein.[2]

Another author puts forth the idea that the Constitution deals with two different concepts: ancestral lands and ancestral domains.[3] He argues that only the protection of ancestral lands is mandated by the Constitution while that for ancestral domains will have to await legislative action;[4] but that, notwithstanding this dichotomized treatment, the Constitution was "clearly an acknowledgement of the property rights of the indigenous peoples over the `broader area' of their territories."[5]

A. Impact of the Legal Land Classification Regime

Furthermore, the classifications in the Constitution relating to lands of the public domain[6] has had great adverse impact on the ownership claims of indigenous peoples to their ancestral lands and domains. The one with the most serious impact is the classification of forest lands.

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[1]Gatmaytan, *Land Rights and Land Tenure Situation of Indigenous Peoples in the Philippines*, 5 PHIL. NAT. RES. L.J. 5, 18 (1992) [hereinafter Land Rights].

[2]*See* Royo-Fay, *Regalian Doctrine: Whither the Vested Rights*, 1 PHIL. NAT. RES. L.J. 1 (1988) [hereinafter Royo-Fay].

[3]Gatmaytan, *Ancestral Domain Recognition in the Philippines: Trends in Jurisprudence and Legislation*, 5 PHIL. NAT. RES. L.J 43, 44 (1992) [hereinafter Ancestral Domain].

[4]*Id.*

[5]*Id.*

[6]CONST., art. XII, sec. 3, classifying public domain lands into: agricultural, forest or timber, mineral lands, and national parks. Only agricultural lands may be alienated in favor of private persons.

Under Presidential Decree No. 705 (1975), forest lands are those lands which have a slope of 18 percent or more.[7] As the World Bank pointed out in a study, this definition of forest lands "has no clear ecological, silvicultural, agronomic, economic, or even cultural basis."[8] Indeed, insofar as land classification is concerned in the Philippine legal system, "it is the exclusive prerogative of the Executive Department of the Government to classify public lands"[9] Furthermore, as the Philippine Supreme Court stressed, "[t]he classification is descriptive of its legal nature or status and does not have to be descriptive of what the land actually looks like."[10]

This method of classification clearly shows that the legal system views land and resources not from a holistic perspective. It divorces land and resource classification from its physical basis and instead treats it in the abstract. This hence allows the legal system to disregard the actual and physical linkages, ramifications and effects of such legal classifications on the occupants of the land and their use of the resources therein.

Thus, different legal regimes may be imposed based on differing legal classifications of the land and resource, notwithstanding the fact that in the real world, land and resources have mutually interdependent linkages. The classification of forest lands is a prime example of this adverse effect. Since most indigenous peoples communities live in upland areas that fall within the 18 percent slope definition of forest lands, when such communities (or the persons therein) have not obtained patents thereon under the Public Land Act, they become squatters on such

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[7]PRES. DECREE NO. 705 (1975), sec. 15.

[8]WORLD BANK PHILIPPINES: ENVIRONMENT AND NATURAL RESOURCE MANAGEMENT STUDY (1989) cited in Land Rights, *supra* note 1, at 20.

[9] Director of Lands v. Court of Appeals, 129 SCRA 689, 692 (1984).

[10]Heirs of Jose Amunategui v. Director of Forestry, 126 SCRA 69, 75 (1983); Republic v. De Porkan, 151 SCRA 88, 105 (1987).

land even though the community has been there since the time of the Spanish colonial regime or earlier.[11]

The negative impact of an abstractionist paradigm for land classification on indigenous peoples is further intensified by the fact that there is as yet no legislation that recognizes the ownership rights of indigenous peoples to their ancestral domains.[12] In effect, the current legal regime pertaining to land and natural resources constitutes a threat to the indigenous peoples' very existence and survival as individuals and as a community and endangers their socio-cultural, political and spiritual systems as well as their way of life.[13] It allows outsiders to enter the ancestral domains of the indigenous peoples and exploit the land and natural resources therein without regard to the effect of such exploitation on the way of life of the indigenous communities affected thereby, all under the mantle of positivist legality afforded by the current legal regime.[14]

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[11]This is because Sec. 15 of Pres. Decree. No. 705 reverts to the classification of forest lands those lands 18 percent in slope or over which are not covered by titles under the Public Land Act.

[12]*See* Land Rights, *supra* note 1, at 24; and Ancestral Domain, *supra* note 3, at 63-79.

[13]Land Rights. *supra* note 1, at 34.

[14]*See id.* for brief case studies of the interaction between the current legal regime, outsiders, and indigenous communities. Generally, indigenous peoples get the short end of the stick in such interactions. Please note that for the purposes of this paper, the terms "indigenous peoples", "indigenous communities", "indigenous cultural communities", and "tribal peoples" shall be used interchangeably. It must be noted that the term by which such peoples are addressed reflects particular perspectives regarding the role and characterization of such peoples as discrete portions of humanity. Some definitions of the term "indigenous peoples" are:

> Those who, having a historical continuity with pre-invasion and pre-colonial societies that developed on their territories, consider themselves distinct from other sectors of the societies now prevailing in those territories, or parts of them. They form at present non-dominant sectors of society and are determined to preserve, develop and transmit to future generations their ancestral territories, and their ethnic identity, as the basis of their continued existence as peoples, in accordance with their own cultural patterns, social institutions and legal systems. *See* United Nations, Study of the Problem of Discriminaation Against Indigenous

It can be seen hence that security of tenure over land and natural resources is the primary problem of indigenous peoples in the Philippines.[15] It has also been pointed out that indigenous peoples have four basic needs: "namely the need for (a) cultural protection; (b) recognition of land claims; (c) recognition of individual economic and social (welfare) rights; and (d) political autonomy."[16] Furthermore, in contrast to indigenous peoples of North and South America for example, the issue of indigenous peoples rights in the Philippines relates primarily to a conflict between competing domestic groups[17], i.e. dominant Filipino groups such as Tagalogs, Ilocanos and Visayans encroaching on the ancestral domains of, say, the Mangyan, Kalinga and Manobo.

B. Ancestral Domains and Ancestral Lands

The concept of ancestral domains cannot be properly understood without reference to the cultural context of the indigenous peoples. Although the Government has its own administrative definition of ancestral domain[18], we shall for the purposes of this paper utilize the term of "ancestral domain" as

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Populations: Report of the Sub-Commission on Prevention of Discrimination and Protection of Minorities, UN Doc. E/CN.4/SUB.2/1983/21/ADD.8 379 (1983) *cited in* Raizda Torres, *The Rights of Indigenous Populations: The Emerging International Norm*, 16 YALE J. INT'L L. 127, 128 (1991).

Indigenous Cultural Communities -- a homogenous society identified by self-ascription and ascription by others, who have continuously lived as a community on communally bounded and defined territory, sharing common bonds of language, customs, traditions and other distinctive cultural traits, and who, through resistance to the political, social and cultural inroads of colonization, became historically differentiated from the majority of Filipinos. *See* DENR Admin. Order No. 2, art. 1, sec. 3(a) (1993).

[15]Land Rights, *supra* note 1, at 11.

[16]La Viña, *Biodiversity, Indigenous Peoples, Traditional Knowledge: Interfaces in Asia*, 11 THE WORLD BULLETIN 1, 8 (1995) [hereinafter La Viña].

[17]*See* Land Rights, *supra* note 1, at 10.

[18]*See* DENR Admin. Order No. 2, art. I, sec. 3(a), and art. II, sec. 2 (1993).

understood by indigenous peoples themselves. Thus, for example, the Manobos of Northeastern Mindanao would consider as their ancestral domains "the rivers and creeks, the mountains, forests and sacred sites, large trees and our farms and residential areas, ... recognized by us and by neighbouring communities."[19] In short, ancestral domains refer to the totality of land and the natural resources thereon claimed and recognized by the community and other communities as such.

Ancestral domains must be distinguished from the concept of "ancestral lands."[20] To quote:

> Roughly speaking, Ancestral Lands, as understood among organized Indigenous Communities and advocates cover only surface rights to land and do not include the natural resources found in these areas. Ancestral Domains, a broader term, includes both the land and the resources found therein.[21]

C. Ancestral Domain as a Human Right

The issue of ancestral domain recognition therefore involves a recognition of the continuing relationship between the land and resources and the people.[22] Some have in fact linked the struggle for the recognition of ancestral domains with human rights, insofar as threats to security of tenure over their ancestral domains are likewise threats to the continued viability of the indigenous way of life.[23]

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[19]*See* Affidavit of Datu Makapukay, a 34 year old Manobo residing in Suba, Tago, Surigao del Sur, in PASIMIO (ed.), VOICES OF THE LUMAD 1 (1996) [hereinafter VOICES].

[20]Defined in DENR Administrative Order No. 2, art. I, sec. 3(b), and art. II, sec. 1.

[21]Land Rights, *supra* note 1, at 12.

[22]*Id.*, at 11.

[23]*See id.*, at 15.

In short, since the life of indigenous peoples depends on the existence of their ancestral domains. Non-recognition of their ancestral domains would mean the extinction of their lifeways.[24] It is an inalienable human right that no person, or people, should be deprived of life without due process of law.

D. The Cariño Doctrine

Although, as stated above, the Constitution does not explicitly recognize ancestral domains as being separate from lands of the public domain, there is legal basis for saying that ancestral domains never were part of the public domain since the time of the Spaniards.[25] Since the transfer of sovereignty under the Treaty of Paris transferred ownership of the lands and properties of the public domain from Spain to the United States, it would follow that not being part of the public domain under the Spanish regime, Spain therefore could not have transferred ownership of ancestral domains to the United States. One cannot dispose of what one does not have.

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[24]Ancestral domains as the source of life is echoed and re-echoed in the voices of indigenous peoples. As one Philippine NGO pointed out, there are very few tribal societies that do not depend on land as primary sources of their livelihood. *See* PAFID, COMMUNAL TILTLE: A VALID OPTION FOR LAND TENURE FOR TRIBAL FILIPINOS TRIBAL FILIPINOS? 38 (1993). As Manobo Datu Kasangkapan stated: "our ancestral domains ... is the source of our lives". VOICES, *supra* note 19, at 11. More explicitly, Oday Suarez, a Mamanua of Surigao del Sur, in no uncertain terms said: "This place is the source of our life. If this place is taken away from us, where shall we go?" VOICES, *supra* note 19, at 27. Modesta Badiang, a Manobo, explained that "even before, we have already used the forests, mountains, creeks and rivers, falls and other places here as our sources of livelihood, because these places serve as our hunting grounds, farming lots, fishing grounds, herabl or medicinal grounds, swimming and drinking pools and sacred grounds for prayers." VOICES, *supra* note 19, at 18.

[25]It has been stated that Spain recognized both individual and communal native title. It was only with the Maura Law that the Spanish colonial regime became legally empowered to deny the existence of native title. *See* Ancestral Domain, *supra* note 3, at 45.

Indeed, the separation of ancestral domains from the public domain owned by the sovereign was affirmed by the United States Supreme Court in the case of *Cariño v. Insular Government.*[26] In that case, the US Supreme Court held that:

> When as far back as testimony or memory goes, the land has been held by individuals under a claim of private ownership, it will be presumed to have been held in the same way even before the Spanish conquest, and never to have been public land.[27]

The doctrine of Cariño has been upheld by the Philippine Supreme Court in a line of cases.[28]

E. Different Property Regimes

But the question of what concept of ownership applies to ancestral domains remains. Do indigenous peoples then hold their ancestral domains as private property in the concept of the Civil Code or according to their customary law concepts of ownership? This point is crucial because the Civil Code property regime[29] is different from that of the indigenous peoples' property regime.

For example, under the Civil Code, the owner of real property is "the owner of its surface and of everything under it."[30]

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[26] For discussions of the doctrine in this case, *see* Lynch, *Native Title, Private Right and Tribal Land Law: An Introductory Survey*, 57 PHIL L. J. 268, 302-303 (1982); Sereno and Libarios, *The Interface Between National Land Law and Kalinga Land Law*, 58 PHIL.L.J. 420, 426-428 (1983); Lynch, *Invisible Peoples and a Hidden Agenda: The Origins of Contemporary Philippine Land Laws*, 63 PHIL.L.J. 249 (1988); and Ancestral Domains, *supra* note 3, at 52-58. Furthermore, Dante Gatmaytan posits that the private character of ancestral domains was recognized by the Constitutional Commission that drafted the 1987 Constitution. *See* Ancestral Domains, *supra* note 3, at 60-62.

[27] 212 U.S. 449; 41 Phil. 935 (1909).

[28] *See e.g.* Susi v. Razon, 48 Phil. 424 (1925); Mesina v. Senza, 108 Phil. 151 91960); Herico v. Dar, 95 S.C.R.A. 437 (1980); Republic v. De Porkan, 151 SCRA 88 (1987).

[29] *See* REP. ACT NO. 386, Book II.

[30] *Id.*, art. 437.

As such, he has the "right to enjoy and dispose of" the land.[31] He may also exclude other persons from enjoying and disposing of the property.[32] In short, what the Civil Code gives to the land owner is the right to appropriate for himslef and to dispose at his discretion not only the land *per se* but also the fruits of the land. However, it must be noted that a landowner owns only the surface of the land and everything under it to the extent that such ownership rights will not conflict with the ownership by the State, under the Regalian Doctrine, of any minerals and other natural resources found on, through, or underneath the privately owned land. In short, the Civil Code property regime desegregates nature into several components: land, minerals, trees, waters, wildlife, etc.; all of which have different legal regimes to govern them. Furthermore, it must be noted that in the Civil Code, "ownership of a piece of land cannot be acquired by occupation."[33]

Contrast the above property regime under the Civil Code with the property regime that may be gleaned from indigenous peoples' concept of ownership. From their perspective, ownership of a piece of land is equivalent to ownership of all the other natural resources that may be found above, on, in, or under the land.[34] In short, indigenous peoples' concept of ownership of land is a holistic one and takes into account the fact that in the physical world, everything about land is interrelated. This conception stems from the worldview that land, or nature, is a gift from a deity, or Supreme Being, if you will.

Thus, for example, among the Manuvu-Bagobo (of Southwestern Mindanao), the origin of their concept of property sprang from the general belief that all nature "belongs to *Manama*, the ... supreme god. *Manama* created diwatas and other deities

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[31] *Id.*, art. 428.

[32] *Id.*, art. 429.

[33] Republic Act No. 386, art. 714.

[34] *See* Land Rights, *supra*, note 1 at 37; Ancestral Domains, *supra*, note 3 at 47-48, 89-90.

who were assigned to keep watch over his creations, the land, mountains, streams, the plants, the animals, marriage and married life, warfare, commission of incest, and so on."[35] Given this view of ownership, it is not surprising that members of the indigenous community do not hold real property, *i.e.* the specific piece of land that they till, in the concept of ownership under the Civil Code -- that is, they cannot alienate it in their own name. For the Manuvu-Bagobo, the land of the community is held in the "concept of corporate ownership."[36] That is, land is held in common and individuals or families hold specific portions thereof as exclusive possessors.[37] Lastly, for the Manuvu-Bagobo, right to ownership of land for their ancestral domains is perfected by actual possession or occupation thereof.[38]

For the *Manobo* (of Northeastern Mindanao), communal ownership of the land claimed as part of their ancestral domains is likewise the norm. Thus, "outsiders cannot just use or exploit the areas within our territorial boundaries unless they ask for permission first from our leaders";[39] and "up to now, we do not practice land measurement".[40] Occupation vests ownership for the Manobo, with occupation being evidenced by place names given by the community and their oral history. To describe their concept of communal ownership, the Manobo use the Visayan term "korpo" (for corporate ownership). This is explained as follows:

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[35]Manuel, *The Evolution of the Concept of Property and Land Ownership Among the Manuvu of Central Mindanao*, 65 PHIL. L.J. 143, 160 (1990) [hereinafter Manuel].

[36]*Id.*, at 153.

[37]*Id.*, at 154.

[38]*Id.*, at 148.

[39]Affidavit of Datu Malipayon, in Voices, *supra* note 19, at 12. Also Affidavit of Datu Hubason, *id.*, at 25. Also Affidavit of Datu Tinuohan, *id.*, at 30. Also Affidavit of Datu Nadao, *id.*, at 32. Also Affidavit of Datu Depensa, *id.*, at 36.

[40]Affidavit of Datu Kajogjog, in *id.*, at 23. Note that accurate measurement of the metes and bounds of specific real property is crucial to the validity of a land title under the Torrens System because it is the technical description of the metes and bounds of the lot as reflected in the title which determines which particular piece of land is referred to thereby.

> 'Korpo' is a Visayan term used by Manobos to describe something owned in common, or more accurately, open to everyone's use or enjoyment. Generally, this refers to fish in the rivers, wild game, and forest products such as wild fruits and medicinal plants. The one who catches or finds these things is considered the owner thereof. Individual land ownership is immaterial; a wild pig caught in one's lati, or wild fruits thereon, belong to the hunter or finder.[41]

Furthermore, Manobo customary law obtains of three levels of ownership:

> A. The first is that of Magbabaya or Gino-o, who as creator, owns the whole world; much as a woman who weaves a basket is considered its owner;
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> B. The second level is derivative from the first: that of the Tagbanwa and other spirits. The Tagbanwa and other place-spirits are said to be the *tag-iya* or owner of the places where they live in or reside, by virtue of Magbabaya's having assigned them to those specific localities. Thus, part of agricultural work includes the invocation and address, through prayer or ritual, of any spirit-owner of the prospective farm-site, with the end in view of notifying them of the farmer's plan; asking them not to be disturbed, in return for the offerings; and to help in watching over the farm;
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> C. The third level is human: This is communal as far as the pasak is concerned, and the individual, as far as each farm-lot is concerned. In other words, each village owns in common a pasak or territory, based usually on the fact that that village's principal or oldest clans' ancestors were the first to cultivate the area. All members of the village may use any previously unclaimed portion of the pasak.[42]

For the Kalinga of the Cordilleras in Northern Luzon, no one can claim absolute ownership to the land because only *Apo Kabuniyan* - the Supreme Deity - "owns the land, including water

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[41]Gatmaytan, Field Data: Manobo Resource Use Systems - August to November 1995 29 (1995) (unpublished manuscript on file with the author) [hereinafter Field Data].

[42]*Id.*, at 35-36.

and mineral resources. The Kalinga, therefore, see themselves not as owners but as caretakers of divine lands."[43] Their land is their source of life[44] and their concept of land is built on a complex but coherent body of customs, traditions, beliefs and practices.[45]

For the Mangyans of Mindoro, their worldview of natural resources is a holistic one, "inextricably linked to the various aspects of Mangyan culture which includes property concept, techno-economics aspects and social relationships."[46]

The property regime generally followed by Philippine indigenous peoples therefore does not conform to the Civil Code's property regime. This creates difficulties insofar as the application of the Cariño doctrine is concerned. That doctrine considers lands held since time immemorial to be private property by the indigenous person who possesses that land and can trace back her possession in a continuum of predecessors-in-interest. But it would seem that the language of the doctrine fits such private ownership not within the concept of ownership held by the indigenous people concerned, i.e. communal in nature, but rather within the concept of ownership in the dominant legal system, *i.e.* individualist and exclusionary ownership.

This could create stresses within the community insofar as the practical application of the doctrine is concerned since the community member in whose favour the doctrine was applied would, in the eyes of the dominant legal system, have a better right to the use and disposition of the land than the community of which she is a part. It would seem therefore that a modification of the Cariño doctrine is necessary insofar as the treatment of the property subject to the doctrine is concerned. The idea that land

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[43]Sereno and Libarios, *supra* note 26, at 438.

[44]*Id.*

[45]*Id.*, at 427.

[46]Martinez, *Indigenous Organization for Natural Resource Management in Mindoro Island*, in INDIGENOUS KNOWELEDGE AND SUSTAINABLE DEVELOPMENT IN THE PHILIPPINES: PROCEEDINGS 133, 135 (1992). [hereinafter Martinez].

long-held such be deemed owned as private property and not part of the public domain should be retained but the incidents of such private ownership should be governed by the customary law property regime of the indigenous community to which the person claiming the land pertains.

To summarize, the commonality that can be discerned from the above examples of several Philippine indigenous peoples's concept of land ownership is that land, at least as far as their ancestral domains are concerned, are communally owned and such ownership extends not only to the land but also to the other natural resources that may be found above, on, in and below such land. This commonality is of great importance in the discussion regarding intellectual property rights and indigenous knowledge.

### *B. On Indigenous Knowledge Systems*

Most if not all of indigenous knowledge systems are ultimately derived from the interaction of natural forces and the people's livelihood activities. Therefore, take away the natural resources and you also take away the physical or experiential basis for such knowledge systems. Take away the natural resources from the control of the community and you will also automatically take away that community's ability to exist in and adapt to the environment. Take away the land and you automatically take away the very basis for existence of the community -- wiping out their entire economic, political and social systems as they are forced to integrate themselves with the dominant socio-econ-political system or go extinct.

Therefore, in considering any discussion regarding intellectual property rights for indigenous knowledge, it must be borne constantly in mind that such discussions must always be placed within the context of the indigenous peoples' struggle for the recognition of their ancestral domains and natural resource management.

1. The Concept of Indigenous Knowledge

For the purposes of this paper, "indigenous knowledge" is "knowledge that is unique to a given culture. It is the information base for a society and facilitates communication and decision-making. It is passed down from generation to generation, frequently by word of mouth."[47]

As a system, indigenous knowledge encompasses knowledge systems (or paradigms) that define "the social, natural and physical environments, as well as cognitive and ideational systems."[48] Thus, it will also encompass cultural heritage, arts and crafts. Indigenous knowledge reflects therefore the worldview of the community to which it pertains. As such reflection, it is also affected by events that affect the community's way of life. Thus, threats to the community arising from non-recognition of its ancestral domain would also be threats to the continued existence and validity of the indigenous knowledge systems of that community. Indeed, it has been pointed out that the marginalization of indigenous peoples is one root cause for the loss of indigenous knowledge.[49]

2. Issues of Control over Indigenous Knowledge

It is in this context that the issue of using intellectual property rights regimes for indigenous knowledge should be viewed. The issue of control over indigenous knowledge is directly linked to the issue of control over their ancestral domains and

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[47]Warren, *Indigenous Knowledge and Development in the Asian Region: The Role of the Regional Program for the Promotion of Indigenous Knowledge in Asia (REPPIKA)*, in INDIGENOUS KNOWLEDGE AND SUSTAINABLE DEVELOPMENT IN THE PHILIPPINES: PROCEEDINGS 1, 2 (1992) [hereinafter Warren].

[48]*Id.*

[49]Castro, *Using the Ethnographic Method in the Study of Indigenous Knowledge: The Case of the Hanunoo Farm Maintenance and Seed Storage System*, in INDIGENOUS KNOWLEDGE AND SUSTAINABLE DEVELOPMENT IN THE PHILIPPINES: PROCEEDINGS 6 (1992) [hereinafter Castro].

natural resources. In the same way that the dominant legal system for property ownership effectively disregards the indigenous property regime and hence allows and abets the exploitation by outsiders of lands and natural resources within ancestral domains, so does the dominant legal system for intellectual property rights effectively take away from indigenous peoples their control over such knowledge. As an author commented:

> The concern of indigenous farmers world-wide for safeguarding their intellectual property rights in crop genetic resources has increased as plant breeders' rights, patents, trademarks and other Western forms of intellectual property right threaten to alienate them from control of, and compensation for, these resources.[50]

Further, as another writer pointed out, the threat to indigenous knowledge comes from three sources. First, the loss of their territorial base - through the destruction of rainforests or their displacement by government projects or commercial utilization of natural resources - makes it impossible for many indigenous communities to sustain their knowledge as well. Second, indigenous knowledge is also threatened by the introduction of so-called "modern" practices of, among others, agriculture and medicine. These new practices frequently replace or substitute traditional practices which ironically are often more sustainable or effective than the former. Third, indigenous knowledge is increasingly endangered by misappropriation of this knowledge by outside researchers. The tragedy is that it is the North or the developed countries which often benefit from this misappropriation or intellectual piracy.[51]

The point here is that the individualist and exclusionary form of property ownership engendered by current forms of intellectual property rights goes directly against the communal

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[50]Soleri and Cleveland, *Gifts from the Creator: Intellectual Property Rights and Folk Crop Varieties*, in GREAVES (ed.), INTELLECTUAL PROPERTY RIGHTS FOR INDIGENOUS PEOPLES: A SOURCE BOOK 21, 24 (1994) [hereinafter Soleri].

[51]La Viña, *supra* note 16, at 20.

form of property ownership for indigenous knowledge. That is, where current intellectual property rights impose a monopoly (albeit of limited duration) in favour of the creator so that the creator can earn a profit in the use and disposition by others of the knowledge subject to such rights, indigenous peoples however view knowledge, and treat knowledge, as something that "cannot be owned and ... is to be freely shared."[52]

Of course, as La Viña pointed out, it does not mean that such refusal by indigenous peoples to "own", in the dominant legal property regime concept of ownership, such knowledge, that no rights attach to such knowledge in favour of the indigenous community. La Viña explains that:

> [t]here is enough anthropological data to support the conclusion that such rights exist, that, in fact, much of the information and knowledge considered indigenous and traditional are not freely shared with just any person within or outside particular communities. Instead, indigenous knowledge is classified into different categories according to the nature, characteristics, utility and even form of the particular information. The rights of the members of the community, as well as those outside of the community, to share particular knowledge is dependent on these categories. Thus, the knowledge of the medicine man or shaman as well as that of religious and political leaders are usually restricted to those called or chosen to this position. On the other hand, information concerning seed varieties and agricultural practices are more freely shared.[53]

Thus, for example, traditional healers generally hold a monopoly on indigenous medicinal knowledge regarding the use and curative effects of certain plants. Such knowledge is often wrapped within a blanket of traditional rituals and belief systems that together tend to confine acquisition and use of such knowledge within the ranks of the traditional healers and their acolytes.[54] As another author states,

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[52] *Id.*, at 29.

[53] *Id.*, at 29-30.

[54] *See e.g. id.* for a brief discussion of this aspect of indigenous knowledge.

> Knowledge of the therapeutic properties of wild species is often held in confidence by traditional societies, both because considerable training is needed before the materials can be used safely and effectively and because widespread knowledge of the cures would undermine the healers' vocation.[55]

3. Sampling Indigenous Knowledge

The scope of indigenous knowledge is very broad. In Southeast Asia alone, "traditional healers have been documented to use some 6,500 plants."[56] In the Philippines for example, indigenous peoples use a wide range of plant species for an equally wide range of applications -- from medicine to agriculture.

For example, the Manobo use the forest as their "botica" or drugstore, "where one could get all the herbal medicines that one needed. For example, one can use the *banilad, anitap, baklid, ayum* and *anangilan* as cures."[57] And more specifically, "some of the herbal medicines provided by the forests are *hagonoy* vine for fever; *samalang* plants and *salimbagat* vine for stomach pains; the *sambong* plant for body aches; *panambaga* plant for treating wounds; the *lunas* tree, which can cure poisonous bites; and the *kahabay* tree for dizziness."[58] The Manobo rely heavily on herbal medicines obtained from the forests and lands.[59] Other plants or parts thereof have other uses such as: the *anibong* plant - for food; *gala* tree - for glue for bolo handles; *lunas* trees - the roots can cure the bites of any poisonous animal; *sagubadbad* plants - to cure stomach and head aches; *pija* or *pili* plants - the fruits are edible and the sap can cure some sicknesses; and *olango* plant - for use in

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[55]Reid *et al, A New Lease on Life*, in. REID, *et. al.* (eds.), BIODIVERSITY PROSPECTING : USING GENETIC RESOURCES FOR SUSTAINABLE DEVELOPMENT 1, 20 (1993) [hereinafter Reid].

[56]La Viña, *supra* note 16, at 15.

[57]Affidavit of Mentong Astodilyo, in VOICES, *supra* note 19, at 15.

[58]Affidavit of Sonlayon Sandag, in *id.*, at 38.

[59]Affidavit of Datu Manigaon, in *id.*, at 40.

matchmaking and the fruits can be used as bait for monkey traps.[60]

The Tiruray, like the Manobo, also have an extensive stock of indigenous knowledge relating to food plants. They "know 137 rice varieties, 43 types of sweet potato, 32 types of bananas and 22 types of taro."[61] They use the sap from a particular tree specie to make a sticky gum used to trap birds.[62] They also "boil the seeds of a particular poisonous plant, *bukeg*, for ten minutes and scatter them along the trail of a wild boar. The boiled seeds are alternated with ordinary seeds. When eaten, these seeds cause paralysis to the pigs. The hunter then searches for the paralysed animal and finishes it off with a spear."[63] To quote:

> Schlegel enumerates from 223 to 241 basic and specific plant types used by the Tiruray. Of the 223, 86 or 39% are used as food. Of these, 36 different types are used as viands, six types provide substitutes for staples like rice and corn. Six are used as spices or ingredients for cooking and 48 wild basic plant types are used as snack foods. A total of 29 plants are used for medicinal purposes and 14 serve in ritual contexts. Around 154 or 70% of the total serve various "technological needs": firewood, construction materials, for weaving, fencing, lashing, as tool handles, for weapons and trap preparation, as musical instruments, for making soaps, etc.[64]

Other indigenous peoples use poison plants to catch fish. Such plants may "come from different vines, bark or roots of certain trees as well as the seeds of certain wild fruits or nuts." Unlike commercial poisons however, such as cyanide, indigenous

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[60]Affidavit of Warlito Behon, in *id.*, at 43. A listing of poisonous and medicinal plants and trees can also be found in Field Data, *supra* note 41, at 5-6.

[61]Agbayani, *Biodiversity and Indigenous Resource Utilization and Management Practices in Mindanao*, 6 PHIL. NAT. RES. L.J. 47, 51 (1993) [hereinafter Agbayani].

[62]*Id.*, at 55.

[63]*Id.*

[64]*Id.*, at 57.

poison for fishing "works on the gills of the fish and does not taint their meat."[65]

The Hanunoo Mangyan also cultivate different varieties of rice for both taste and practicality. "Certain rice varieties are resistent to specific types of pests."[66] They also use certain trees for crop protection.[67]

### C. Conclusion

Clearly, indigenous knowledge systems are of great practical value for both the communities themselves and humanity in general. They provide a dynamic base for specie use and improvement based on actual interactions between species rather than laboratory controlled experiments.

Furthermore, indigenous knowledge systems constitute an integral part of the overall fabric of social, political, economic and natural interactions that sustain the way of life of indigenous peoples. As such, the creation and expansion of indigenous knowledge systems should be encouraged and expanded within the context of the indigenous peoples' own culture and customary law framework. The creation of a *sui generis* system of intellectual property rights specially tailored to fit within the parameters of the indigenous peoples' own customary law property regime should be seriously considered. Such *sui generis* system furthermore must be placed on a level of legal force and application equal to that of existing intellectual property rights regimes.

Unfortunately, the dominant legal system favours the expansion not of indigenous knowledge systems but of Northern-developed intellectual property rights.

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[65] *Id.*, at 60.

[66] Castro, *supra* note 49, at 9.

[67] *Id.*

## II. MODERN INTELLECTUAL PROPERTY RIGHTS

### *A. The Premises of Modern IPR*

#### 1. The Legal Basis

The Constitutional basis for intellectual property rights in the Philippines is found in Article XIV, Section 13 of the 1987 Constitution thus:

> Sec. 13. The State shall protect and secure the exclusive rights of scientists, inventors, artists, and other gifted citizens to their intellectual property and creations, particularly when beneficial to the people, for such period as may be provided by law.

Implementing legislation can be found mostly in the Book II of Republic Act No. 386 (the Civil Code), Republic Act No. 165 (the Patent Law), Republic Act No. 166 (the Trade-Mark Law), and Presidential Decree No. 49 (the Copyright Law), among others.

#### 2. Concept of IPR

Intellectual Property Rights (IPR) are "legal means used by governments to ensure that the producers of technology reap the rewards of their investment, effort, and creativity.... [they] are legal rights granted by governments ... [and] must be obtained on a country-by-country basis."[68] Others have defined IPR as the "ownership right awarded by the state (thus, it is called a `statutory right') to innovators, inventors and authors to encourage innovation and artistic development. It grants the right to exclude others from commercially utilizing and reproducing protected

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[68]WICHTERMANN, INTELLECTUAL PROPERTY RIGHTS AND ECONOMIC DEVELOPMENT 3 (1991) at Internet site ttp://www.questel.orbit.com/patents/readings/ibipr.html [hereinafter Wichtermann].

innovations (thus, IPR is considered a `negative right')."[69] More pertinently for the purposes of this paper, IPR are private legal rights which apply to the intangible human contribution that goes into producing a particular technology. Legislation and case-law create the legal right and define its scope. In its most basic form, an intellectual property right allows its holder to control others' commercial use of the intellectual information embodied in the technology during the life of the IPR. In effect, the holder has a legal monopoly over the commercial exploitation of the intellectual property for a specified period of time and, therefore, the technology which embodies it. As a result, potential users must seek the holder's permission before commercially using the intellectual property. Permission is typically granted, and technology transfer effected, pursuant to a licensing agreement.[70]

From the above definitions, it is clear that IPR in effect treats an intangible, intellect, as a discrete object for legal relations in much the same way as tangibles. IPR in effect makes intelligence, and its manifestations, the private property of the person who exercised and manifested such intelligence in ways that are novel, useful, and non-obvious. Given the wide variety in which intelligence is manifested, IPR as a concept provides the basis for the various legal rights instruments governing various intellectual property.[71]

The concept of IPR is Western in origin and orientation.[72] As can be clearly obtained from the definitions above, IPR are

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[69]Southeast Asia Regional Institute for Community Education (SEARICE), A PRIMER ON BIODIVERSITY PROSPECTING AND INTELLECTUAL PROPERTY RIGHTS 3 (1995) [hereinafter SEARICE].

[70]GLOWKA, *et al.*, A GUIDE TO THE CONVENTION ON BIOLOGICAL DIVERSITY 87 (1994) [hereinafter GLOWKA].

[71]Among these are: trademarks, copyright, patent, mask work or semiconductor design. *See e.g.* Wichtermann, *supra* note 68, at 3-4, for brief discussions on these kinds of IPR's.

[72]*See* Greaves, *IPR, A Current Survey*, in GREAVES (ED.), INTELLECTUAL PROPERTY RIGHTS FOR INDIGENOUS PEOPLES 1, 5 (1994) [hereinafter Greaves].

"intended to secure ownership over `all those things which emanate from the exercise of the human brain.'"[73] Acquisition of ownership rights over intellectual creations or manifestations are based on the Eighteenth Century West European philosophy about social progress. Greaves discusses this philosophy as follows:

> In its barest form, the philosophy is this: A society thrives on progress. Creative people provide the innovations that generate progress. To foster creativity, creators must foresee the prospect of benefiting materially from their works. Within Eighteenth Century capitalism this meant (and still means) vesting creators with the rights of monopoly ownership in exchange for placing the information in the public domain. That monopoly remains in force for only a finite period of time; however, so as not to unduly impede further progress and price competition that comes when the innovation is available for all to use. Patents and copyrights, then, reward the innovator sufficiently to encourage creativity, but then lapse so that further development by others, and economic competitiveness, can supplant the temporary monopoly. This linkage between invention and social progress became a foundation of Euro-American social policy in the Eighteenth Century.[74]

Thus, utility, for both the creator as well as society in general, is the prevailing rationale for the existence of IPR.[75] That is, the existence of IPR is useful for both creator and society in terms of ultimate wealth creation within the context of a market-driven, capitalist economic system. Indeed, it has been stated that IPR are intangible and represent knowledge in the abstract that has been converted into a saleable market commodity owned and disposable by the creator.[76]

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[73]McDOUGALL, INTELLECTUAL PROPERTY RIGHTS AND THE BIODIVERSITY CONVENTION: THE IMPACT OF GATT 8 (1995) [hereinafter McDougall].

[74]Greaves, *supra* note 72, at 8-9.

[75]*See* Brush, *A Non-Market Approach to Protecting Biological Resources*, in GREAVES (ED.), INTELLECTUAL PROPERTY RIGHTS FOR INDIGENOUS PEOPLES 131, 134 (1994) [hereinafter Brush].

[76]*See* Tiu, *The Legal Protection of Computer Programs as a Genre of Intellectual Property: A Comprehensive Overview (Part I)*, 62 PHIL. L.J. 54, 74-75 (1987) [hereinafter Tiu].

There are therefore two general arguments used to justify the monopoly ownership of the creator over her intellectual creation: natural rights and economic benefits.[77] The former argument states in effect that ideas are property and the person having such ideas have a natural property right over them which society morally ought to recognize. Thus justice requires that persons who allow their ideas to be used by others should be compensated therefor. The economic benefits argument mainly rests on the premise that intellectual innovation is encouraged by guaranteeing profits from such innovation to the innovator.

However, as other authors have pointed out, intellectual property is a social invention rather than a natural right (thereby debunking the natural property rights argument).[78] Furthermore, the implication behind the economic argument is that commodification of intellectual creation as property is necessary for profits therefrom to accrue within the context of a market economy. However, the usual elements of the concept of property as applied to material or tangible things are clearly inapplicable to intellectual creations, which are abstract intangibles. Were it otherwise, there would really be no need to create a separate legal regime for intellectual property as distinguished from material property. It would seem however that while the natural rights theory has lost its force as a justification for the existence of IPR, the economic argument has not.

Thus, the main characteristics of IPR as an economic variable are that they: (1) entitles the creator to the economic and social benefits from the marketing of the intellectual creation; (2) give the creator an incentive to invest in the marketing of the invention or intellectual creation; and (3) seek to guarantee such incentives to the creator by giving her a time-bound and limited

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[77] *See* Brush, *supra* note 75, at 134.

[78] *See e.g.* Levin *et al.*, *Appropriating the Returns from Industrial Research and Development*, in 3 BROOKINGS PAPERS ON ECONOMIC ACTIVITY 783-820 (1987).

monopoly over the use and commercialization of the creation. As Brush puts it, the essence of IPR is to create a state sponsored monopoly over ideas in favour of the creator.[79] Of course, the reverse of this monopoly is that the public gets to acquire, upon payment of the appropriate compensation and fees, the use of the intellectual creation and its physical manifestations. And upon the termination of the monopoly, the creation enters the public domain and may be used by the public at large.

With respect to indigenous knowledge, insofar as such knowledge is directly applicable to natural resource use and management, the closest type of IPR instrument applicable thereto would be patents -- notwithstanding the fact that different value systems and ownership consideration come into conflict when we seek to import current IPR rules into indigenous knowledge systems.

Most of indigenous knowledge systems deal mostly with the direct use or adaptation of natural resources for livelihood and medicinal purposes. Therefore, indigenous knowledge systems tend to use natural resource products in ways that are novel, useful and non-obvious *in reference to their original character* as such natural resources. Indigenous peoples use, for example, a given fruit not as a fruit *per se* but rather as an ingredient or component of, say, a bird trap, or as medicine. The novelty of indigenous knowledge systems' use of natural resources hence comes in at the point where the indigenous people use these resources in ways new to the original nature of such resource.

These characteristics of the ways that indigenous knowledge systems utilize natural resources thus serve as a common ground for the application of current IPR rules thereon. Using the above characteristics as the basis, it could be concluded that patents are the most directly applicable IPR instrument for indigenous knowledge. Of course, such applicability should not be deemed in

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[79] *See* Brush, supra note 75, at 133.

any way as a negation of the basic conceptual incompatibility between current IPR rules on intellectual ownership and those of indigenous knowledge systems. Thus, for the purposes of this paper, we shall concentrate on the application of patent law on indigenous knowledge systems.

3. Patent as IPR

A patent, as defined in law, is a contract, invested with public interest, between the government on behalf of the people and the patentee, whereby the latter is granted the exclusive right to make, use, and vend his invention for a specified period of time, after which such right is to inure to the benefit of the public.[80]

Clearly, like all other modern IPR, a patent is not a natural human right but is statutory in nature, the rights from which accrue to the patentee solely because of legislation wherein the State grants to the patentee the privilege of benefiting from the intellectual creation. The elements of patentability are novelty, utility and non-obviousness.[81] That is, for a creation to be patentable, it must be new, useful or "practicable and capable of performing its specified functions to produce an advantageous or useful result", and hidden or it "must not have been one that can be created merely by the exercise of mechanical skill."[82] Republic Act No. 165 defines those inventions which are patentable as: "Any invention of a new and useful machine, manufactured product or substance, process, or an improvement of any of the foregoing ..."[83]

Would indigenous knowledge manifestations therefore fall within the patent system of Republic Act No. 165? It seems pretty clear that they do not. For one, most if not all indigenous knowledge are not new in the sense intended by the law. Section 8

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[80]Dynasty Enterprise v. Solicitor General, SP-6726, November 28, 1986.

[81]See Tiu, *supra* note 76, at 78.

[82]*Id.*

[83]REP. ACT NO. 165 (1947), sec. 7.

of Republic Act No. 165 defines "inventions not considered new or patentable" as any invention known or used by others in the Philippines before the invention thereof by the inventor named in an application for patent for the invention; or if it was patented or described in any printed publication in the Philippines or any foreign country more than one year before the publication in the Philippines before the application for a patent therefor; or if it had been in public use or on sale in the Philippines for more than one year before the application for a patent therefor; or if it is the subject matter of a validly issued patent in the Philippines granted on an application filed before the filing of the application for patent therefor.

Indigenous knowledge is "handed down" knowledge, passed on orally, in practice, or in written form from generation to generation as part of general cultural traditional knowledge. In this sense then, such knowledge is "known or used by others in the Philippines before the invention thereof by the inventor..." By this very fact alone, indigenous knowledge is removed from the legal ambit of the Patent Law.

The effect of this is that even if a member of an indigenous people were to apply for a patent for an agricultural process utilizing specific types of activities and plant species, which process has already been in use within her community since time immemorial as part of their traditional livelihood activities, such application would necessarily have to be denied since the process sought to be patented is no longer "new" within the meaning of Section 7 of the Patent Law.

It would seem that it is only when the indigenous community member, on her own hook, invents something that improves or departs from traditional processes, machines or manufactured products or substances obtained under their prevailing indigenous knowledge system, that such member can, subject to the qualifications laid down in Section 8 of the Patent Law, apply for a patent and have a reasonable chance of having

such application approved. Should she be able to obtain the patent, she will be in effect benefiting as an individual from the knowledge base of her people. Such individualized acquisition of benefits from patented intellectual creations by a member of an indigenous people can either benefit or disadvantage the community of which she is a part. That is, she can either exclude the community from the benefits which she enjoys by allowing outsiders to commercialize the patented creation or allow the community to determine the extent of disposition of such creation by assigning her rights thereto to the community.[84]

In this connection, assignment of patent rights can only take place within the context of Sections 50 to 53 of the Patent Law and of the Civil Code's provisions on contracts. Thus, patent rights can be assigned or conveyed only to persons who have capacity to contract and such assignment must be in writing, notarized, and duly recorded in the Patent Office. Where the other party is not a person under Articles 37 to 47 of the Civil Code, no assignment of patent rights can therefore be made to that other party.

This means hence that for an indigenous community to be made the assignee of a patent right, such community must have acquired juridical personality, whether as a corporation or as a partnership or association. Even if the community is able to create a juridical person, the patent right assigned thereto would still, in law, not belong to the community as communal property but rather to the juridical person so created, which person is separate and distinct in law from its members. Hence, patent rights, no matter how designated or assigned, still retains its nature as a private right and can in no way be converted into a communal right accruing to the community. That is, the individualized character of property ownership regarding the patent continues to subsist during its lifetime.

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[84]This is the necessary implication of a person acquiring exclusionary rights to property -- use and disposition of the property rests at the discretion of the property owner.

Clearly then, the Patent Law falls far short of having full direct applicability to indigenous knowledge systems on the same terms as that of the indigenous people's own communal property ownership regime.

### *B. Impact of Modern IPR on Indigenous Peoples*

Despite this shortfall however, the application of patent law continues to impact negatively on indigenous communities -- especially with respect to the use of their knowledge systems by outsiders as the take-off point for further outside research and development. While indigenous knowledge systems *per se* generally fall outside the scope of patent law application, the product of research and development efforts by outsiders based on indigenous knowledge systems do fall within the patent law system.

Thus, new medicines and technologies whose developmental lineage can be traced to traditional indigenous use are no longer owned by the indigenous community and the benefits therefrom therefore do not accrue to the community. This gives enough justification for the perspective that modern IPR systems, such as the patenting system, legalizes intellectual piracy by outsiders of the fruits of indigenous peoples' communities' traditional indigenous knowledge systems. And in so doing, modern IPR systems divorce knowledge from its physical context -- in the case of indigenous knowledge systems, from their natural resource context. This dichotomy is exactly opposite from that of indigenous peoples' intellectual property ownership regimes, that of viewing knowledge and natural resources as interrelated and linked to each other and the rest of Nature and the community.

In a sense hence, modern IPR systems represented by the patenting system allows extraction of indigenous knowledge for ultimate commercial purposes and use of such knowledge to exploit the natural resources to which it pertains without regard for the negative impact such dichotomized extraction and use of knowledge will have on indigenous community life. By viewing knowledge and

nature as two separate conceptual entities, modern IPR systems therefore goes contrary to the indigenous peoples' concept of ancestral domains, wherein the people, land, and resources are linked in a great cycle of mutual interdependence.

The interdependence between a healthy and biologically diverse stock of natural resources and human life is more sharply seen in indigenous communities. In the area of health for example, it has been pointed out that "there is a strong connection between the stability of the forests' biocultural diversity and the health of forest-dwelling people."[85] With respect to traditional agriculturalists, "the farmer's relationship to diversity is one of mutual dependence. The farmer relies upon the gene pool to maintain the resilience of crops and hence their survival."[86]

It is clear therefore that there is a strong link between continued biodiversity and indigenous peoples' natural resource management and knowledge systems. In the same way, concerns for biodiversity survival is directly linked to the ancestral domain concerns of indigenous peoples. It is only by viewing biodiversity, knowledge, land, life, and people from a holistic and integrated perspective that we can begin to appreciate the natural dynamism that characterizes indigenous knowledge systems.

1. Property and Knowledge

Modern property concepts have had a big impact on the loss of biodiversity in Southern countries and the ability of indigenous peoples in these countries to preserve such biodiversity. Not least of these property concepts, as pointed out above, is the Regalian Doctrine as well as the exclusionary concept of individual private property ownership. Property law provides the legal justification for activities that are ecologically unsustainable, on the basic

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[85]King and Carlson, Biological Diversity, Indigenous Knowledge, Drug Discovery and Intellectual Property Rights: Creating Reciprocity and Maintaining Relationships 16 (1993) [hereinafter King and Carlson].

[86]*See* McDougall, *supra* note 73, at 5.

principle that the owner has the right to enjoy and dispose of the thing owned without any limitations except those imposed by other laws. Thus the State may allow logging concessions to cut down hundreds of thousands of hectares of old growth forests, for example, consequently leading not only to biodiversity loss but also displacement of indigenous communities from their ancestral domains.

Furthermore, modern property systems are eminently tailored to fit within the capitalist market economy, rendering land, forests, minerals, and knowledge, for example, as readily disposable market commodities. Thus, property rights tie in directly with biodiversity loss. To quote extensively,

> Property rights theory provides much of the explanation for why biodiversity is lost despite its value. There are three types of property rights: private property, common property, and open-access common property.... Many of the goods and services derived from biodiversity are open-access public goods in the sense that consumption is non-rival and non-exclusive.... Unfortunately, because open-access resources belong to everybody, access is open to all and nobody has an individual incentive for conservation.... Common property is in a sense midway between pure public goods and private goods. While it is subject to individual use, it is neither owned individually, nor is it open-access. Access to many local resources in developing countries is restricted to members of a particular community, and exploitation is frequently controlled by community rules and regulations. Common property does not inevitably lead to resource degradation. However, with increasing economic pressure, and the decay of common property regimes, many resources become effectively open-access.[87]

Modern property regimes therefore render the communal property regimes of indigenous peoples virtually inutile, given the fact that virtually all transactions involving indigenous communities and outsiders take place within the ambit of modern property and contract law. It makes indigenous property a

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[87]Flint, Biological Diversity and Developing Countries: Issues and Options 14 (1991). [hereinafter Flint].

marketable commodity, assuming with it the concepts and premises behind the market economy. Reducing natural resources into a commodity, and subjecting it to the influence of market mechanisms through property regimes, will not foster biological diversity and ecological sustainability. In many ways, the market mechanism rewards overexploitation of natural resources as economically rational and profitable and penalizes activities intended to preserve resources.[88] More so with modern IPR systems.

The uniformity of a biological product is one of basic legal requirements for the extension of IPR over such product.[89] This uniformity is required to enable production of such product efficiently and economically. This requirement is clearly seen in the modern plant breeding industry, with the development of high-yielding varieties of rice.

Modern plant breeding systems are designed to discover and breed plant species, usually under laboratory conditions through manipulation of genetic material, which can be grown and marketed efficiently and profitability by the plant breeder. The products of such a system are intended to be placed on the market economy as a substitute for traditionally-grown and developed plant species. Of course, the intellectual property right (the "plant breeder's right") accrues to the developer of the new plant breed rather than to the source of the plant genetic material used to come up with the new plant.

The impact of such laboratory-dependent plant breeding on biodiversity loss has been great. It has been stated that "modern plant breeding systems and biotechnology actually reduce genetic diversity in their efforts to raise yield potentials ... modern plant

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[88] *See id.*, at 11.

[89] *See* McDougall, *supra* note 73, at 6.

breeding results in the destruction of the very genetic diversity upon which it depends."[90]

To illustrate,

> In 1966, the International Rice Research Institute released a `miracle' high yielding rice variety known as IR-8, which was quickly adopted for use throughout Asia. However, it was particularly susceptible to a wide range of diseases and pests and in the following years was hit very hard by blight and a tropical plant disease known as `tungro.' Farmers switched to another variety, IR-20, but that fell to a grassy stunt virus and brown hopper insects. IR-26, a super-hybrid resistant to a large number of diseases and pests, was next to fail the test when it was found vulnerable to strong winds. In an effort to correct this trait, breeders turned to Taiwan, in search of an original Taiwanese strain known to be able to withstand wind. To their dismay, they discovered that this strain was virtually extinct. Taiwanese farmers had replaced it almost entirely with the first `miracle' rice variety, IR-8.[91]

Despite the generally deleterious effects of artificial plant breeding on biodiversity, the impact of the dominant neo-liberal global and national economic system has been such that modern IPR have been steadily extended to biological life. As Reid points out, "[t]he increasing value of wildland genetic resources to private industry ... has created incentives for new kinds of institutional arrangements for capturing the return on investment in the use of biodiversity."[92] This has led to the application of modern IPR to lifeforms. Thus,

> [f]or decades, the major trend in the evolution of intellectual property rights for improved genetic and biochemical resources have been a gradual expansion in the scope and strength of ownership. As a result, two different systems now govern ownership and access to genetic and biochemical resources. On the one hand, "unimproved genetic material" -- wild species and traditional varieties of crops and livestock grown by farmers -- is treated as an ownerless, open-access resource. On the other

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[90] *Id.*

[91] *Id.*

[92] Reid, *supra* note 55, at 9.

> hand, intellectual property rights (IPR) regimes -- including patents, plant breeders rights, and trade secrets -- establish ownership for new varieties of plants and animals developed by commercial breeders and chemicals isolated and developed by pharmaceutical firms.[93]

This dichotomy of treatment between traditional crop varieties, for example, and new crop breeds developed in the laboratory, exemplifies the conflict between modern IPR systems and the indigenous peoples' welfare. Since traditional crop varieties are generally treated as open-access resources, outsiders can obtain samples thereof and then utilize such samples to innovate on the genetic material on the crop variety, in the process coming up with a new plant. The IPR to the new plant therefore accrue to the outsider. As we have stated above, this is nothing more than legalized intellectual piracy. And in order to recoup the research and development costs for the new crop variety, the outsider therefore commercializes the use thereof by farmers and hence eventually displaces traditional crop varieties from the farms.

It is clear therefore that modern IPR for biological lifeforms do not sustain biological life in all its diversity. Hence, the very grave concern among indigenous peoples and indigenous peoples' rights advocates regarding the steady intrusion of modern IPR into the lifeways of indigenous peoples is one of utmost urgency. The need to act to prevent further erosion of indigenous peoples' rights to their ancestral domains must necessarily extend to actions that seek to advance modern IPR systems.

2. Bioprospecting

The primary method by which outsiders, primarily of the North, obtain genetic materials from the South is bioprospecting. This activity is defined as "the exploration of biodiversity for commercially valuable genetic and biochemical resources. The

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[93] *Id.*

search for plants, animal and microorganisms with potential commercial value constitutes the act of bioprospecting."[94]

Reid states that "[t]he driving forces behind the evolution of new biodiversity-prospecting institutions has been the growing demand for new genes and chemicals and a growing awareness that an abundant and virtually untapped supply of these resources exists in wildland biodiversity."[95] Bioprospecting can take many forms, from academic ethnobotanical surveys to actual collections of knowledge and samples by company collectors.[96]

Bioprospecting activities tend to have a negative impact on indigenous peoples and other holders of unimproved genetic material, not only with respect to biodiversity loss but also loss of control over resources which they consider as part of their ancestral domain, loss or non-receipt of economic benefits arising from such bioprospecting activities, and cultural disruption. The open-access property treatment by most modern IPR systems regarding unimproved genetic material means that holders of the latter are generally at the losing end of the financial equation. Reid states that:

> [g]iven the high value added in both the pharmaceutical industry and agriculture, the abundance of unimproved genetic and biochemical resources, and the low probability that any specific sample will have commercial value, the holders of unimproved material are likely to receive a relatively low payment for access to the resources, current heightened demand [for genetic and biochemical resources] notwithstanding.[97]

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[94]SEARICE, *supa* note 69, at 2.

[95]Reid, *supra* note 55, at 4. In the Philippines, bioprospecting activities are regulated under Exec. Order No. 247 (1995).

[96]Laird, Natural Products and the Commercialization of Traditional Knowledge, in Greaves (ed.), Intellectual Property Rights and Indigenous Peoples: A Source Book 147, 150-152 (1994) [hereinafter Laird].

[97]Reid, *supra* note 55, at 7.

### *C. TRIPs And Indigenous Knowledge*

The need to recognize the essentially negative link between modern IPR systems and indigenous knowledge is made more urgent in view of the consolidation of such systems as part of the global economic order under the World Trade Organization regime.

The link between trade concerns and IPR is well explained as follows:

> At first glance intellectual property rights hardly seem related to international trade. But the economies of many countries are dependent on trade in technology, which in many cases is protected by intellectual property rights. Intellectual property protection standards vary from State to State and may create non-tariff barriers to the technology trade....

After much debate -- and many objections by developing countries who considered WIPO [the World Intellectual Property Organization] was the more appropriate forum -- the Trade-Related Aspects of Intellectual Property Rights (TRIPs) [Agreement] was placed on the Uruguay Round agenda. According to the preamble of the TRIPs Agreement finalized in late 1993 and signed in early 1994, the agreement was inspired by the need for new rules and disciplines in a number of areas relevant to intellectual property including *adequate* standards concerning the availability, scope and use of intellectual property rights, as well as *effective* means to enforce them.

For both moral and socio-economic reasons, one of the more controversial topics within the TRIPs negotiations was extending patent protection to living organisms. Under the final TRIPs Agreement, Members have the option to offer patent protection to all eligible inventions using genetic resources. Mandatory protection will have to be extended to eligible inventions of micro-organisms. Plant variety protection will to be provided *either* by patent, some other effective *sui generis* (specially designed) system, such as plant breeders' rights ... or a combination of both. Members have the option to exclude from patenting plants, animals and

essentially biological processes for their production.[98]

The TRIPs Agreement[99] is based on the premise that "variations at the national level in the degree and content of IPR legislation may cause distortions and impediments to international trade."[100] TRIPs will affect biodiversity and indigenous peoples because it will extend and regulate the commercialization of biological diversity and genetic resources.[101]

Since TRIPs espouses the internationalization and standardization of modern IPR systems, it could be said that TRIPs contemplates only the Northern model of innovation and fails to address Southern innovation models.[102] TRIPs furthermore allows patents to be taken out on plants and animals.[103] It will also consolidate the hold of Northern transnational corporations over indigenous knowledge[104] considering that the chief commercial beneficiaries of Southern biological and genetic resources are the North.[105] TRIPs therefore fails to recognize the role of the South as guardians and sources of genetic treasures for humanity.[106]

In short, by emphasizing modern IPR as the method for protecting intellectual creations, TRIPs essentially disregards the

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[98]Glowka, *supra* note 70, at 89.

[99]*See* Final Act of the Uruguay Round, Agreement Establishing the World Trade Organization.

[100]World Wide Fund for Nature, The UN Biodiversity Convention and the WTO TRIPS Agreement: Recommendation to Avoid Conflict and Promote Sustainable Development 6 (1995). [Hereinafter WWF]

[101]*Id.*

[102]Zamora, Proprietorship of Knowledge in Agriculture and Food Under GATT 3 (1994).

[103]*See* Alampay, GATT as Jurassic Park: Intellectual Property Rights, Biotechnology and the Third World, 11 World Bulletin 35, 39 (1995) [hereinafter Alampay].

[104]*Id.*, at 40.

[105]Reid, *supra* note 55, at 3.

[106]*See* McDougall, *supra* note 73, at 18.

use of indigenous property systems for the protection of indigenous knowledge.

Although Article 27(3) of the TRIPs Agreement allows Members to protect plant varieties through an effective *sui generis* system either alone or in combination with a patents system, it should be noted that at present, just about the only international system existing for plant variety protection is the UPOV system.[107] Unfortunately, the UPOV favours modern plant breeders over traditional farmers.

In general therefore, the internationalization of modern IPR systems under TRIPs do not serve the interests of indigenous peoples with respect to their indigenous knowledge systems and natural resources.

### *D. Conclusion*

Modern IPR therefore does not fit within the paradigm of indigenous peoples. Aside from its conceptual incompatibility with communal property regimes, modern IPR systems allow the continued exploitation of indigenous peoples as well as the environment.

The challenge that remains, given this view of the interrelationship between modern IPR systems and indigenous knowledge systems, is how to ensure that indigenous knowledge remains within the control of indigenous peoples despite the pressure from outside.

Control of indigenous knowledge, like control by indigenous peoples over their land and resources, is bound up with the issue of control over their ancestral domains. Hence the answer to the challenge necessarily lies not by looking at indigenous knowledge

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[107]WWF, *supra* note 100, at 11.

issues alone but in linking them with the greater struggle for ancestral domains. Therefore, any proposed legal regime designed to protect and place indigenous knowledge and knowledge systems on the same footing or level as modern IPR systems should take into consideration the linkage between indigenous knowledge and ancestral domains.

## III. TOWARDS PROPERTY RIGHTS FOR INDIGENOUS KNOWLEDGE

### *A. The Legal Basis*

There is therefore a need for the creation of a new legal regime for indigenous knowledge protection. Such a legal regime must recognize and reflect the cultural perspective of indigenous peoples regarding knowledge and resources. Furthermore, such a legal regime must ensure that control over knowledge and the benefits arising therefrom must continue to accrue to the community. Also, such indigenous knowledge legal regime must be made and implemented in conjunction with a legal regime recognizing indigenous peoples' control over their ancestral domains.

There is sufficient legal bases for the adoption of a legal regime for indigenous knowledge co-equal with but separate from modern IPR regimes. The linkage between these two regimes occurs only insofar as indigenous knowledge is utilized for commercial research and development under the modern IPR regime -- but the conditions, methods, and benefits of acquisition of indigenous knowledge will be governed by the indigenous knowledge legal regime.

Thus, it has been suggested that indigenous knowledge should be considered as part of the overall protection for indigenous peoples' human rights, asserting that "the most effective way for indigenous peoples to protect their intellectual property is to assert

collective ownership of their land base."[108] It has also been suggested that indigenous knowledge, especially of traditional crops, should be "treated as the cultural heritage of local communities under international law."[109]

Furthermore, Article 16.5 of the Convention on Biological Diversity requires national and international IPR systems to support the objectives of the Convention -- which overall is to ensure the protection of biodiversity. As we have pointed out current modern IPR systems do not protect biodiversity but rather promote further exploitation of biodiversity. Countries which signed the Convention are required to pass implementing legislation therefor.[110]

Thus, it would seem that the Philippines, being a signatory of the Convention, is legally bound by the terms of the Convention to enact IPR legislation that will further biodiversity. Since modern IPR systems do not foster biodiversity, the only alternative model for IPR is that of indigenous communities. We have seen that indigenous knowledge systems generally tend to view and utilize natural resources in an ecologically sustainable manner.

### *B. Basic Considerations*

Hence, if indigenous knowledge systems are to fall within an IPR system, it is necessary that the property rights to such knowledge must fit the cultural context of the indigenous people, that is, the right must accrue to the group (if property ownership is communal in nature) and must be on the same level of enforcement as modern IPR.[111]

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[108]Soleri *et al.*, *supra* note 50, at 26.

[109]*Id.*

[110]*See* Reid, *supra* note 55, at 2.

[111]*See e.g.* World Wide Fund For Nature, Fair Play, Fair Pay: Laws to Preserve Traditional Knowledge and Biological Resources 36 (1995).

Furthermore, all possible stakeholders must be consulted in the formulation of such new legal regime for indigenous knowledge property rights.[112] This requirement encompasses the concept that in the exploitation of indigenous knowledge, the prior informed consent of the community must be obtained.

Lastly, the benefits of the use of indigenous knowledge as the basis for commercial research and development in the modern IPR system must accrue to the source community, whenever possible, or at the very least, to the source country, which in turn must ensure that such benefits are channelled for the benefit of the indigenous peoples within the country. In all cases, provision of such benefits, and acceptance by the outsider-developer of such conditions, must be continuing in favour of the beneficiary source community or country.

Such benefits must be such as would give adequate compensation to the source community or country in relation to the amount of income or profits earned by the outsider-developer through the commercialization of the products derived from indigenous knowledge and natural resources. Benefits must not be made conditional on the result but rather, bioprospectors, for example, must ensure that in the conduct of their bioprospecting activities, benefits must already accrue to the source community in terms of financial gain, technology transfer, strengthened organizing capability, and biodiversity protection. Of course, in all cases, the indigenous community must be the one to determine the benefits to be received.[113]

Furthermore, indigenous knowledge property rights must not be treated separate from indigenous land and resource property

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[112]Glowka, *supra* note 70, at 2.

[113]*See e.g.* Alampay, *supra* note 103, at 42, for a discussion of the compensation issue. But *see* Rural Advancement Foundation International, Bioprospecting/Biopiracy And Indigenous Peoples, RAFI Communique 6, November 1994, stating that sharing of benefits from biosprospecting usually proves to be illusory.

rights. Considering that indigenous peoples view land, resources, and knowledge as interlinked, any legal regime developed for the purpose of protecting indigenous knowledge must likewise recognize and reflect such perspective.[114]

Recognition therefore of ancestral domains and giving real and effective control over such domains to the indigenous peoples remains a necessary prerequisite for the effective implementation of any system of property rights for indigenous knowledge.

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[114]In fact, it has been pointed out that viewed logically, there is no real need to adopt an intellectual property rights regime for indigenous knowledge but that rather, it is more important to strengthen the capacity of the community to innovate. *See id.* However, it would seem that this point of view fails to see that in the absence of a legal regime for indigenous knowledge, exploitation of such knowledge by outsiders will necessarily have to be on the basis of existing IPR law, which law does not promote indigenous peoples rights.