

Regulating Access to Customary Fourth World foods & medicines: Culture, Health and Governance

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ABSTRACT

Fourth World (indigenous) nations regularly express concerns, frustrations and demands declaring their rights to sustained access to wild-harvested plants and animals as sources of medicines and nutrition for the benefit of their people. They give rhetorical power to the claim that biological diversity is essential for sustainable life on the planet. Yet, despite public declarations and appeals to prevent contamination, damage, or destruction of biologically diverse medicinal sources of wild plants and animals, biologically diverse plants and wildlife continue to be destroyed. In this article the authors argue that little actual evidence exists to demonstrate that neither the cultural and governing leadership of Fourth World nations or states (or their international bodies) proactively engage in the promulgation of enforceable customary or statutory regulations or laws ensuring access and uses of medicinal plants and animals beneficial to indigenous communities.

The authors furthermore argue that cultural and governing leaders in Fourth World nations can and must initiate regulatory rules, laws and practices that they enforce to prevent continuing plant and animal damage and destruction reported by the nations themselves and the states exercising jurisdiction. Non-Fourth World jurisdictions (cities, states, provinces/counties) regularly engage in economic, social and political development activities that alter and often destroy access to or the healthful use of wild plants and animals beneficial for the health and sustainability of Fourth World communities and individuals. These alterations include activities that elevate CO₂ and other greenhouse gas levels, herbicide and insecticide contamination and genetic modifications). Pathways to restore access to, and protection of customary wild-harvested foods and medicines to Fourth World nations may include a framework, statutory incorporation of customary

laws (cultural incorporation), complimentary jurisdictional regulation or intergovernmental protocols. Alternatively, a form of internationally supervised reconciliation that in part holds non-Fourth World jurisdictions accountable for the destruction and restoration of dietary and medicinally beneficial wildlife that recognizes the agency of Fourth World nations to proactively establish and enforce customary and statutory laws may serve as an alternative or parallel initiative.

Keywords: wild harvested plants, foods, medicines, regulation, statutes, Fourth World peoples, indigenous nations.

This research study was undertaken to answer the overarching question: “What institutional or legal measures can Fourth World nations in the United States develop and implement to ensure the application of customary laws¹ to the regulation of traditional plant-based and animal-based food and medicine uses and access to ensure the long-term health and well-being of these nations?” The question arises in part from the growing calls by assemblies of Fourth World nations in the United States of America and elsewhere in the world for recognition of their sovereign rights to traditional foods and medicines to ensure the long-term availability of plants and animals. The frequency of these declarations and pronouncements commands the attention of policy makers, researchers, practitioners of tribal law, and indigenous health and nutrition institutions though there is little actual information about the extent of existing Fourth World customary laws

or states’ laws to respond in concrete and proactive ways. The purpose of this study is, therefore, to inquire into the role of traditional foods and medicines in the decision-making of Fourth World governments, states’ governments as well as international institutions in an effort to gauge the most likely and most appropriate shape and focus of institutional measures for enforcing and regulating human behaviors in relation to traditional systems of food and medicine that may reasonably be expected to ensure the long-term benefits of traditional foods and medicines.

The world’s Fourth World peoples (indigenous peoples) comprising more than 5000 distinct cultural communities with an aggregate population of 1.3 billion worldwide use and consume wild plants and animals for their health and nutrition. Most of these peoples are located in biodiverse territories

¹ Customary law means the rule of conduct, laws, practices, and traditional norms of an indigenous society originating in Origin Stories, oral histories, pictograms, petroglyphs, paintings and other ancestral records that guide social, cultural, political, and economic behaviors of members of a culturally distinct society (Mataatua, 1993). Stated another way “Customary law refers to locally recognized principles, and more specific norms or rules, which are orally held and transmitted, and applied by community institutions to internally govern or guide all aspects of the lives and activities of indigenous and local communities. * * * Customary law is “procedural... * * * by which rights are obtained” and not codified (Ongugo, et al, 2012). Customary law in the international sense specifically entails the “customary relations between states.” The distinction is important so as to make clear which form of customary law is being specified.

that contain most of the world's life sustaining plants and animals—they occupy lands with 80% of the world's remaining biodiversity. Partial dependence or full dependence on wild harvested plants and animals importantly differentiates Fourth World peoples from peoples living in corporate societies where industrial farms, food processing and pharmacological products are the main sources of nutrition and medicinal support. Yet, the ability of Fourth World peoples to apply their cultural and governing interactions with plant-based and animal-based foods and medicines is increasingly limited by their inability to enforce their customary laws against encroachments by corporate-state development and controls over their ancestral lands. The limitations on Fourth World peoples imposed on them now threaten the availability of nutrient-rich plants and animals necessary for life that comprises biodiverse ecosystems. When Fourth World peoples describe themselves as protectors of the environment they are drawing a clear connection between their dependence on living sources of nutrition and medicine and, their ability to sustain their societies. The imperative for ensuring the continuity of Fourth World cultures is intimately connected to global necessity to sustain and expand the diversity of ecosystems to sustain life on the planet.

Fourth World peoples on all of the settled continents and islands rely on balanced ecosystems that are biologically diverse to support their nutritional and health needs. The ability to limit and reduce encroachments from corporate societies (i.e., deforestation, mining, oil extraction, uses of herbicides and pesticides) are incomplete or in many instances non-existent. The looming breakdown of biologically diverse and “protected” lands on every continent is

supercharged by industrial farms, housing and facilities development, “road-building, installation of power lines,” and the construction of cities, according to **James Watson from the University of Queensland and the Wildlife Conservation Society** in statements given to the British Broadcasting System's environmental correspondent Mat McGrath. States' governments are enacting and promoting the destruction of biodiverse ecosystems in the name of “development” without legal or other regulatory restrictions either by Fourth World nations or international organizations.. It is this very same states' government-driven charge into ecosystems that undermines Fourth World nations' cultural regulation of access and uses of wild harvested plants and animals. What threatens the demise of biodiverse ecosystems also threatens the destruction of Fourth World cultures and their ancestral territories.

Theoretical Framework

Fourth World Theory (Ryser, Gilio-Whitaker, & Bruce, 2017) essentially states that the concepts of comparison, relational reasoning, balance between contending forces, and an equality of kind (that human beings are part of all living things and not the dominant living thing) will— when applied in life and thought— ensure comity between peoples, between peoples and living nature, and with the forces of the cosmos. If human need exceeds the capacity of the natural world to reproduce a destructive imbalance causes the destruction of life. This study tests whether the theory as stated is supported by the inquiry, requires modification, or whether the evidence rejects it.

Scope

This study has focused on finding the answers to these questions in an effort to assess what statutory framework might best be considered by US-based Fourth World governments when considering regulatory regimes for traditionally used and accessed plants and animals for food and medicine:

Q1. What native institutions have promulgated regulatory enforcement of laws that incorporate customary law to protect or oversee access and uses of plant-based and animal-based foods and medicines in the United States?

Q2. What are the laws, regulations or customary practices implemented by states' governments such as Ghana, India, Uyghuristan, Senegal, the Gambia, New Zealand and Norway that determine medicinal/pharmacologic uses of wildlife for the benefit of communities?

Q3. What are examples of indigenous institutional regulation, legislation or customary practice, methods of enforcement and the degree of their success concerning the medicinal/pharmacologic use of wildlife in the United States?

Q4. What plants and animals do indigenous institutions in the United States seek to regulate, legislate or control under customary practices or government statute?

To respond to these questions the study focuses on applying customary laws to the regulation of uses and access to plant-based and animal-based foods and medicines within the context of origin stories and national constitutions in an effort to understand effective means for enforcing these laws. Traditional foods and medicines are frequently imprecisely referred to in the literature as well as in public policy

formulations. Accordingly, our study defines traditional foods and medicines in a manner more directly reliant on origin stories and oral traditions as distinct from Complementary/Alternative and Allopathic medical systems in the following way:

Traditional Foods and Medicines: Traditional food and medicine practices include interaction between human beings, plants, animals, the earth, and the cosmos. Traditional foods are understood as “life-giving medicines” requiring exacting care and respect for both plants and animals. Traditional foods and medicines prevent, treat, and heal 80% of all human illnesses. Traditional food and medicine practices are localized to particular cultural communities. Practitioners of Traditional foods and medicines may include herbalists, diviners, spirit healers, and traditional birth attendants. The reciprocal respect between humans, plants, and animals fosters balance and includes a diversity of health practices, approaches, knowledge, and beliefs incorporating plant, animal, and/or mineral-based medicines; spiritual therapies; sweat baths; psychotropic substances including entheogenic fungi and plants; animal spirit medicine; manual techniques; and exercises, applied singly or in combination to maintain well-being, as well as to treat, diagnose, or prevent spiritual, mental, social and physical illness. Some traditions hold that human beings failed to fully respect plants, animals, and the earth by tormenting and corrupting them. It was this failure that caused disease and illnesses generally among humans. In response to this failure plants, animals, and the earth held to themselves the necessary cures, which could only be obtained if medicine men and women listened to the Spirits of plants, animals, and the earth for the appropriate remedy (Lore, 2018).

Complementary Medicine or Alternative

Medicine: These practices are distinctly separate from traditional food and medicine healing systems. While they may be practiced in Fourth World communities they do not originate with the nation or peoples, but are borrowed from other practices and methods of healing. They are secularized traditional medicine, denuded of the cultural, spiritual or indigenous origins, with the “active substance” used or practiced.

Allopathic Medicine: This system of medicine evolved in concert with the Cartesian era as it sought to dissociate medicine from religion and the supernatural. It prevents and treats approximately 20% of human illnesses. It includes descriptors such as western medicine or biomedicine, and uses pharmacologically active agents or physical interventions such as surgery to treat or suppress symptoms or pathophysiologic processes of diseases or conditions.

In our study we begin the assessment of traditional food and medicine customary law by reviewing oral history and origin stories. Our statutory assessments focus on treaties and executive orders with the United States of America, internal governmental regulatory institutions, and co-jurisdictional or cooperative arrangements between the Fourth World nation governments and the neighboring jurisdictions (country, city, state, port, and federal government). The study also considers international covenants and declarations by states’ governments and Fourth World assemblies as well as the existing laws and practices of international states’ governments in relation to indigenous population traditional food and medicine access and usages. Finally, the study

identifies potential language and measures how Fourth World nations and states’ governments may consider establishing customary and/or statutory regulation for access and uses of traditional plant-based and animal-based foods and medicines for the benefit of indigenous communities and beyond.

In this study it has become evident that Fourth World nations may need to extend their cultural practices regulating interactions with plants, animals and the land that maintain balanced ecosystems into statutory laws that either aid or obstruct corporate state development. Fourth World nations have attempted to seek states’ cooperation and collaboration to protect and enhance biodiverse territories, but with little success. States’ governments have adopted laws and regulations and they have caused their multilateral organizations to establish conventions such as the 1992 *Convention on Biodiversity*, but these statutory laws have gone unenforced and have not slowed or stopped the capital-driven encroachments. The last mechanism that could possibly stop the expansion into and destruction of Fourth World territories and other biologically diverse territories may well be Fourth World nations acting through their cultural practices while creating and initiating enforceable laws and regulations that impose restrictions to wildlife access and uses on outside jurisdictions.

Before the so-called “Age of Discovery” when European, Asian, Arabic, and some African kingdoms and empires began their search for resources on which to build their stores of lucre, Fourth World societies throughout the world tended to harvest foods and medicines from natural ecosystems.

While all methods were not perfectly successful (some societies suffered periods of starvation due to natural environmental changes or overuse of resources, or lack of methods for treating various “animal to human transferred” diseases²) the systems of “natural harvest” supported slowly growing societies all over the world. Though the conventional ethos is to conceive of human beings as separate from and dominant over other living beings, the common Fourth World cultural perspective may more accurately state this relationship thusly: “interaction between beings is based on the idea that behind the different bodies is a shared humanity” (Virtanen, Saarinen, & Kamppinen, 2012), which is to say that all beings are related, i.e., plants, animals, insects, fungi, humans, etc. (Trafzer, 1997).

Environmental Justice

When human industrial, commercial, and economic development expands in the world, access to traditional plants and animals becomes increasingly a matter of environmental justice. This view becomes more obvious when one considers that the poor and indigenous peoples are disproportionately affected by polluted ecosystems rampaged by industry-driven pollution³. Environmental justice is a matter of law and policy at the state level. The United Nations Development Program notes the

increasing trend of state governments incorporating environmental rights law into their constitutional frameworks, more than doubling between 1992 and 2012. It also notes, however, that indigenous peoples are the most vulnerable to environmental change, especially in light of histories of colonization. UNDP recognizes that because of indigenous peoples’ unique relationships with land and environment, the principle of legal pluralism must be able to account for indigenous customary law in addition to state-based law (UNDP, 2014).

Recent scholarship emphasizes settler colonialism itself as an ongoing system of environmental injustice in the context of the United States and Canada (Whyte, 2016). On a global scale, colonization manifested in myriad forms and even settler colonialism is complicated by regional and temporal particularities that differentiate Fourth World nations’ experiences and relationships with states’ settler populations. Overall, however, given the scope of land loss, the study of original indigenous nations working to restore their access to, and protection of, traditional medicinal resources must take into consideration the framework of environmental justice, which in part holds governments accountable for their maintenance of asymmetrical relations of power, and at the same time recognizes the agency

² So-called “zoonotic diseases” are caused by insect bites such as mosquitos and fleas, contact with other infected animals through scratches, bites, or eating contaminated food or drinking contaminated water, and plants contaminated by feces from other infected beings. Until the early 18th century these were the dominant health challenges experienced by most Fourth World peoples. It was only after the introduction of diseases by remote peoples that deaths from human-borne diseases changed the nature of human health challenges.

³ The World Bank observes that “development” has resulted in serious inequities between states, whereby large numbers of the world’s inhabitants are mired in poverty, especially in Africa, while inhabitants of the world’s richest countries live in both relative and absolute luxury. The Bank also notes, “due to development trends, populations in poor countries are becoming wealthier over time—a process linked to globalization because countries in the developing world can raise their standards of living by integrating with highly developed states.” (<http://www.globalization101.org/introduction-what-is-development-2/>)

of Fourth World nations to proactively work toward those protections. When attempting to protect and maintain access to resources now out of their control, this should be viewed, at least in part, as an environmental justice issue. Protecting resources within Fourth World nation boundaries, on the other hand, is a matter of self-determination, but also to the degree that governance has been influenced by a history of state control, it is a matter of how indigenous governments construct their relationships with land and their management approaches.

Fourth World peoples consider themselves responsible to the non-human life forms they consider relatives in what Whyte calls “systems of responsibility” (2016). As Whyte writes,

...[E]nvironmental injustice cuts at the fabric of systems of responsibilities that connect people to humans, nonhumans and ecosystems. Environmental injustice can be seen as an affront to peoples’ capacities to experience themselves in the world as having responsibilities for the upkeep, or continuance, of their societies...Systems of responsibilities are the actual schemes of roles and relationships that serve as the background against which particular responsibilities stand out as meaningful and binding (pg. 9).

In contexts where foreign settlement and other processes of development on or near indigenous lands disrupts traditional lives based on hunting, wildlife gathering, and other subsistence activities—interrupting their collective continuance—the disruption becomes an issue of environmental injustice (Whyte, 2016). The environmental justice frame-

work is especially true in areas that indigenous peoples still rely on and may be protected by treaty or other agreements, but are nonetheless beyond indigenous control.

Fourth World nations meeting in large international assemblies around the world issue declarations, statements, and pronouncements declaring their understanding that the loss of wild foods and medicines on which they depend threaten their livelihood. Forced dislocation of populations, and the contaminated, destroyed and systematically altered foods and medicines caused by state and corporate development trigger fear and anguish. Nations from Sámi land in northern Scandinavia, to the Cherokee, Cree, Q’anjob’al, Qom and Xochiquatla in the Americas, Igbo and Xhosa in Africa, the Uyghurs in central Asia to the Bashkir in Russia repeat calls for the protection of the environment and their sacred foods and medicines.

Biodiversity and Fourth World Regulation

Hinmuuttu-yalatlat (Thunder Rolling Down the Mountain who is also more famously known by his English name, Chief Joseph, 1840-1904) of the Chutpalu (Nez Perce) is often quoted as having said, “The earth and myself are of one mind. The measure of the land and the measure of our bodies are the same.” His words echo into the past, present and future said in thousands of different languages. Corporate societies struggle to dominate the living world while others find collaboration with living beings a more sustainable way of thinking and living.

University of California at Berkeley geographer Bernard Q. Nietschman wrote in 1994 that most of the world's biodiversity is embodied within the limits of indigenous peoples territories in tropical countries:

If you're interested in cultural diversity, you have to be interested in biological diversity, because nature is the scaffolding of culture — it's why people are the way they are. If you're interested in environments, you have to be interested in culture. (Nietschmann, 1994)

Fourth World communities' customary and constitutional governance regulating uses and access to wild-harvested foods may indeed serve as the primary defense to ensure biodiversity and access to and use of wild harvested plants and animals for food and medicine. This is now quite apparent despite decades of generally failed diplomatic and political efforts by state and international governing bodies to establish enforceable rules for regulating traditional access to and use of wild-harvested food and medicine systems. The essential ingredients to enforceable cultural and statutory controls are, as Nietschmann argues a fundamental recognition of symbiotic conservation as a principal underlying human survival in the face of human development.

This bio-cultural axiom, called by B. Nietschmann the 'concept of symbiotic conservation,' in which 'biological and cultural diversity are mutually dependent and geographically coterminous,' constitutes a key principle for conservation theory and applications, and epistemologically [sic] is an expression of the new, integrative, interdisciplinary research gaining recognition in contemporary science. (Toledo, 2013).

The World Bank reports that the world's Fourth World peoples⁴ occupy 20% of the planet's land-mass, but these more than 5000 distinct peoples use, access, and safeguard 80% of the world's last remaining biodiversity. What this means is that Fourth World peoples tend to rely in whole or in part on wild-harvested plants and animals for their foods, nutrition, medicines and raw material social and economic support⁵. They hold vital ancestral knowledge and expertise on how to adapt, mitigate, and reduce risks from climate change and natural disasters. However, only a fraction of these lands are officially recognized by states, whether they are lands Indigenous Peoples traditionally owned or possessed under customary title⁶.

⁴ Estimated by the Center for World Indigenous Studies to be 17% of the world's 2018 population or about 1.3 billion people located on six continents.

⁵ The United Nations and the World Bank claim that the world's total number of indigenous peoples in the aggregate is 370 million. This figure is misleading since it constitutes the estimated number of indigenous peoples "claimed" by UN member states—counted in 90 of the world's 193 countries. The indigenous populations in India, China, Russia, for example, are not included in the UN figure. The Center for World Indigenous Studies conducted a global study of indigenous populations and estimates that the actual figure is 1.3 billion or more people in more than 5,000 distinct culturally distinct peoples.

⁶ <http://www.worldbank.org/en/topic/indigenouspeoples>

As Fourth World nations and indeed all of humanity declare in public proclamations and pronouncements their utter and absolute dependence on plants, fungi and animals to sustain human life, the products (notably the wastes and byproducts) of industrial expansion are causing damage to life giving sources of food and medicine. Rapid human development since the 17th century has piled up poisonous contamination from petroleum, metallurgic, urban waste, technical and industrial production fundamentally altering and sometimes destroying the nutritional and medicinal benefits of virtually all plants and animals on earth. Despite evolving changes in forms of governance by Fourth World nations, states, and multilateral organizations, little success has been achieved in the form of enforced regulation to prevent human-produced and generated contamination and destruction of land, ecological systems, plants, animals, and water causing and risking human social, economic, political, and cultural displacement worldwide. And while thousands of political, spiritual, economic, and public health reports, proclamations, and warnings have been issued by spiritual leaders, traditional knowledge holders, scientists from traditional and conventional societies describing the declining quality of life experienced by major parts of the human family as a result of contaminated foods and medicines, the numbers of human beings suffering from dietary and nutritional shortages, limited access to quality food and medicines continues to grow in the cities and in the rural lands.

Traditional Plant and Animal Food Medicines

Fourth World peoples comprise the bulk of the world population located in high-risk countries

suffering from insufficient macronutrients and micronutrients. The result for populations suffering from these nutritional shortages is child stunting, and anemia, with increasing levels of obesity and chronic disease in adults such as diabetes due to the trend toward “lifestyle and nutrition transition” (Kuhnlein, 2003; Popkin, 2004; Korn, 2006; Gracey & King, 2009).

The “transition” of Fourth World peoples reliant on traditional foods and medicines to becoming reliant on relatively low cost commercially-produced foods and medicine is an increasingly accelerating social phenomenon. In the United States this phenomenon has for Fourth World peoples resulted in a form of malnutrition from excessive saturated and hydrogenated fat, high levels of sodium, refined sugars and grains, and excessive calories. American Indians, Alaskan Natives and Hawaiian Natives as well as Mayan Natives, Purépeche and other Fourth World expatriates from México, Guatemala, Honduras, and El Salvador in the United States suffer from high levels of chronic diseases including diabetes, obesity, hypertension, alcoholism, heart disease, asthma, and cancers. These chronic conditions combined are a direct result of recent and generational transitions from traditional foods and medicines to low-cost commercially produced and distributed sources such as quick stop food stores at gasoline stations, fast food restaurants, and food aid programs. US Fourth World peoples’ nutrient deficiencies may be linked higher levels of numerous conditions such as viruses, disease, infections, obesity, allergies, headaches, stress, strokes, fatigue, ulcers, bowel and colon problems, tumors, cancer, lower birth weights, kidney failure, heartburn, a weak immune system, arthritis, blood pressure problems,

heart attacks, and growth and circulation problems among other conditions (Mailer & Hale, 2015). The conventional wisdom remedy for this state of affairs is to prescribe consumption of whole grains, fresh fruits, green leafy vegetables, and elimination of refined, processed foods—all of which impose costs greater than family budgets can pay⁷, and without regard to traditional food use patterns. American Indian life expectancy is according to the US Indian Health Service 5.5 years lower than the general population (73 to 78.5). American Indians experience a higher level of mortality than the general population from preventable conditions (death from diabetes [32%], heart disease [8%], liver disease [22%], malignant neoplasm [3%]).⁸

Before the occupation of ancestral Yakama Nation lands by European settlers the Yakama people experienced none of these diseases (Trafzer, 1997). Indeed, it was not until 1930 that the Yakama people suffered a spike in communicable diseases such as tuberculosis, pneumonia, gastrointestinal, and influenza. By the beginning of the 1950s these medical conditions shifted to dominance of heart disease as the most common reason for death among Yakama men and women. The shift from infectious diseases to chronic diseases began with the commencement of mass commercial food production in

the late 1940s (Trafzer, 1997). The transition away from traditional foods and medicines had occurred decades earlier contributing to the rise of human created chronic disease as a result of refined foods and artificially created medicines (Omran, 2005).

The cause of these health disparities is directly attributed to loss of land, traditions, and poverty from urbanization (*The Lancet*, 2009). Mackey & Liang (2009) note that Indigenous peoples' health disparities are further complicated and exacerbated by bio-piracy and exploitation, and that state-based approaches to biodiversity protection have not led to adequate biodiversity protection, management, or resource sharing, which affects access to lifesaving drugs, and ethically links the issues to environmental justice.

Food Systems Movement

The growing health crises as a result of the lifestyle and nutrition transition in Fourth World communities also make obvious the function of food as preventative medicine. With many of today's health conditions nearly unknown in the indigenous world prior to colonization, the imposition of foreign and far less healthy foods is increasingly thought to be responsible for declining health of indigenous peoples and at least partially responsible for their high

⁷According to the United States Census updated in 2015 American Indian and Alaskan Native families with children under the age of 18 the poverty rate is 29.8%. Of 824,151 native households, 21% (142,637) are single women households. Retrieved from <https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>

⁸ Documenting health disparities for American Indians and Alaskan Natives eligible for services, the US Indian Health Service report in 2011 for leading causes of death was retrieved from <https://www.ihs.gov/newsroom/factsheets/disparities/> The median single family income in 2014 was \$37,227 compared to the general population with \$53,657 annually.

premature death rates in many places (Chino, Haff & Dodge-Francis, 2009; Mailer & Hale, 2015). The food systems movement across the globe manifests in food sovereignty projects that seek to restore the consumption of traditional foods as an important line of defense against colonial lifestyle diseases, and simultaneously revitalize cultures and assert self-determination (Kamal, Linklater, Thompson, Dipple & IMC, 2015; Gupta, 2015). In some food sovereignty projects the revitalization of traditional medicine is incorporated, including harvesting knowledge, the growing of medicinal plants, and the making of plant-based medicine products.

Plant-based Medicines

Long before indigenous and Fourth World peoples came to be surrounded and controlled by foreign powers they lived in homelands that provided nearly everything they needed: food, shelter, implements for hunting and harvesting, clothing, medicines and more. Traditional healing systems included many different practices that invariably involved plants and animals available in the surrounding environment. Colonization has profoundly disrupted Indigenous peoples' traditions in virtually every aspect of their lives. The central and colonial governments early in the colonization process induced and forced tribes to move into cash economies, and changed land use patterns in ways that became detrimental to wild plant and animal populations.

However, these disruptions vary from country to country, and indigenous peoples have maintained their use of traditional foods and medicines to varying degrees. In places such as the United States and

Canada western medical systems became the primary form of healthcare in the mid to late 19th century. While traditional medicine is still actively practiced in some indigenous communities, in others it is not, and these changing patterns have led to a conception of traditional medicine as "alternative" medicine (Johnston, 2002). In other regions of the world indigenous peoples still strongly depend on wild plants and animals to treat infections, endocrine and metabolic diseases, diseases of the nervous system, respiratory, eye, ear and throat infections, pregnancy and childbirth associated conditions (World Health Organisation, 2001). One study of a traditional community in Uttarakhand state in India, for example, found that 70% of the population still depends on herbal healers (Vaidyas) where modern healthcare facilities are rare (Phondani, Maikhuri & Bisht, 2013). A similar pattern can be found among the Ati located in forests on Guimara Island in the Philippines. The Ati's medicinal traditions persist though external influences are eroding traditional usages (Ong & Kim, 2014).

Animal-based medicines

Fourth World peoples' uses of animal-based medicines to support health and healing people pre-dates allopathic medicine by thousands of years. The range of animal-based medicinal sources include virtually all of the animal kingdom such as: marine invertebrates (star fish, sea cucumbers, sea urchins, etc.), mollusks (clams, conches, oysters), insects (termites, ants, bees, cockroaches, etc.), fish (cod, salmon, herring, etc.), amphibians, reptiles, (snakes, iguanas, lizards, tortoise), birds (ducks, black vulture, turkey, falcons, pea fowl), and mam-

mals (bovine, deer, elk, moose, sheep, fox, opossum, skunk, horse, camel, manatee, bat). Animal-based medicines are made from animal parts (glands, organs), bodily products of metabolism (i.e., secretions and feces), and from the nests or cocoons made by animals (Alves, Barbosa, Santos, Souto, & Barboza, 2011; Cordain et al., 2000; Costa-Neto, 2005).

The Hazards to Living Food and Medicines

The territories that Fourth World nations occupy and the lands outside their direct control but adjacent to them are under constant threat due to relentless industrialization in the name of development. Development can mean the construction of fossil fuel infrastructure (pipelines, refineries, and fracking); the building of dams, railroads, highways, cities and towns; the mining of minerals and plants that process minerals; manufacturing; commercial fishing and the building of harbors and other oceanfront projects; industrial farming, and more. Encroachments by neighboring jurisdictions through farming, logging, the taking of plant and animals and commercial development on Fourth World lands (reserved and treaty-guaranteed) do not respond to customary Fourth World laws. Much to the frustration of each nation these acts contrib-

ute to the destruction of plant and animal communities. The failure to recognize and observe customary laws also contributes to chemical, radioactive, and waste poisoning of biodiverse ecosystems that support the foods and medicines central to traditional livelihoods. Examples abound: In the Columbia River Basin where the most radioactive waste site in the world at Hanford, Washington is located on Yakama Nation ancestral lands⁹, and in the Dakota peoples' and Colorado Plateau regions, defunct uranium mines contaminate and pollute lands and waters that will not be restored for thousands of years (Grinde & Johansen, 1995; Moore-Nall, 2015; Voyles, 2015). In Canada's British Columbia the world's largest gold-copper project owned by Seabridge Gold's KSM¹⁰, mining of the Alberta tar sands has caused significant damage to First Nations ecosystems. In West Papua the Grasberg and Panguna open pit gold and copper mines have destroyed entire ecosystems directly harming the Amungme and Kamoro (Commission & Brisbane, 2016; Unknown, 2009), but also perpetuating genocidal violence against the indigenous populations. These types of encroachments dot Fourth World territories the world over.

On lands where conflict is low or non-existent, but where farming, logging and development has

⁹ The Center for World Indigenous Studies 2016 Radiation Risk Assessment Project reports how extensively radioactivity has been contaminating Fourth World human life, lands and wildlife in more than twenty territories: <http://www.truth-out.org/news/item/35381-the-indigenous-world-under-a-nuclear-cloud>

¹⁰ Canada's Minister of the Environment approved this copper-silver-gold and molybdenum open-pit mine located in the wilderness in 2014: <http://www.mining.com/canada-approves-worlds-largest-copper-gold-project-57001/> Concerned that "wet tailings" stored by mining in the area, Alaskan Native tribes and First Nation bands demanded changes: "Unless there are major changes to B.C. tailings storage, we will soon see more dangerous dams built across B.C. and in the headwaters of major trans-boundary salmon rivers such as the Stikine, Taku and Unuk. These tailings dumps will be toxic time bombs poised upstream of vital salmon habitat."

circumscribed indigenous homelands, such as in highly urbanized settings indigenous foods and medicines become non-existent or damaged. Foreign, invasive species also choke out indigenous species decreasing biodiversity, exemplified by garlic mustard proliferation in the eastern United States (Rodgers, Stinson & Finzi, 2008).

Genetically modified organisms (GMO) are another threat to indigenous plant and animal communities. Wild rice (*manoomin*) managed by Dakota, Menominee, Meskwaki, Ojibwa, Omaha, Ponca, and Winnebago in North America face potential nutritional food value changes. The Ojibwa have for years fought against the genetic patenting of their manoomin, engaging in legal battles with the University of Minnesota and corporations like Busch Agricultural Resources and Syngenta to protect the genetic integrity of manoomin as well as Ojibwa markets. In México, Guatemala, Honduras, Belize and El Salvador many Zapotec, Purépecha, Yucatec, Mixe, Totzil, Tzeltal, Ch'ol, Kekchi, Mopan and Achi, K'iche corn varieties were contaminated by GMO corn despite a ban on genetically modified maize (LaDuke, 2005). Similar battles are fought in many other places, including Hawai'i where GMO crops not only threaten biodiversity but also results in higher incidence of respiratory and other illness in Native Hawaiians due to intense pesticide use. In the Amazonian region of Brazil where rainforests have for decades given way to massive corporate mining, ranching, and farming, a ban on GMO's was lifted in 2003 resulting in heavy pesticide use and deeper encroachments into indigenous lands contributing to decreased soil quality and plant and animal diversity. The results for the Guarani people have been loss

of culture, murder of resisting tribal leaders, and a youth suicide epidemic (Bellevue, 2017).

Fourth World Government Regulation

Fourth World nations are intentional or accidental contributors to the sustainability of environmental biodiversity. Intentional and accidental customary and statutory regulation and uses of wild-harvested plants and animals for food and medicine is primarily achieved through cultural practices that result in sustained biodiversity in ecosystems¹¹. The intimate relationship between the peoples of Fourth World nations to the land and life-giving organisms promotes biological sustainability and the diversity of organisms. Ranjay K. Singh, et al (2006) conducted a study of the Monpa Tribe located in India's Arunachal Pradesh to learn the "dynamics of using *Paisang* (*Quercus rex*, Oak tree) and *Roinangsing* and *Lenthongsing* (pine tree spp. *Pinus wallichiana* and *Pinus roxburghii*) leaves in different crops." Biodiversity, this study concluded, is often sustained by the "cultural, spirit, and ethical norms possessed of the local people" (Singh, Singh, & Sureja, 2006). Further evidence of human sustained biodiversity is readily apparent in the traditional farming and selection of *maize* (Spanish), *corn* (English) *olote* (Nahuatl), *ix'im* (Yucatec), *selu* (Cherokee), *onenhste* (Mohawk), *naadqáq'* (Diné) over thousands of years. In México, Guatemala, the

¹¹ Biodiversity has been defined under international law as "the variability among living organisms from all sources including, inter alia, terrestrial, marine, and other aquatic ecosystems and the ecological complexes of which they are a part: this includes diversity of species, between species and ecosystems." (Parties, T.C., 1992, Art. 2)

US Southwest and throughout Central and South America the diversity of *olote* is maintained mainly by indigenous farming communities (Plested, Thurman, Edwards, & Oetting, 1998; Findings, n.d. Sarukhán, 2004; Frison, Smith, Johns, Cherfas, & Eyzaguirre, 2005).

Current Status of Customary and Statutory Regulation

Fourth World governments and states' governments exercise regulatory authority over their constituents directly or indirectly on most topics of life. The forms of regulation tend to be statutory, but may be customary in the form of a law, resolution or other official proclamation intended by the authors to be enforced by the government issuing the law. Governments may decide to impose their authority or they may symbolically enact a law and not actually enforce it.

Customary law rooted in the culture of the community serves as the regulating mechanism for social conduct of Fourth World societies. Indigenous systems of knowledge long predating corporate societies constitute the expression of social, economic, political, spiritual, health aspects of culture practiced in the form of customary law. To specify the major elements of customary law we turn to the creation texts of the Haudenosaunee, the *Great Law of Peace* as articulated by Deganawida, Jingosaseh, and Aionwantha in 1100, the Yucatec's *Popol Vuh* (Christenson & Translator, 2007), and the Tibetan's *Tibetan Book of the Dead* (Padma-Sambhava, 1927). Creation texts or oral transcriptions constitute the most fundamental law of each nation providing a

degree of clarity about the cultural foundations of customary laws. This can be illuminating since the relationship between all beings is depicted and in those relationships we can understand the reasons for customary laws. Though changes over time may cause adjustments in the laws (ecological, social, cosmological) it will remain true that the laws will have been founded on the basis of the dynamic relationship between humans, the land, and the cosmos.

Customary law identifies the subject matter for use, access and consumption of plant-based and animal-based foods and medicines. Customarily such law also states the limitations or extent of uses, and the extent of authority to be conferred on individuals or groups, and the conduct of individuals (the responsibility to treat all things with respect and honor). In addition, it is essential that the individual, family, or community must consult the well-being of the occupants of the land (plants and animals) to protect all that is there, respecting the influence of the moon and the seasons. Customary law may also require that a person or community exercise caution when seeking use and access to plant and animal foods and medicines while recognizing that when damage is done, damage will be reciprocated to the perpetrator. Customary law requires that individuals, families, and communities exercise responsible behavior to ensure the protection of sacred lands and sites and not disturb human remains and ancient artifacts. Customary Law requires that persons respect the nation and its inherent powers. Customary law formalizes the identity of ownership (individuals, families, communities), the modes of acquisition, the length of time that use and access

may be authorized and the specific forms of enforcement associated with the law (Christenson & Translator, 2007; Deganawida et al., 1100; Kuruk, 2003; Padma-Sambhava, 1927). All of these elements are essential to guide individual and community behavior. And when applied to plant and animal-based foods and medicines the cohesiveness of a community and assignments of authority determine how and when the laws are enforced.

Fourth World customary laws may vary from ecosystem to ecosystem and community to community, but the efficacy and essential nature of interaction between human beings, plants, and animals producing a biodiverse environment cannot be questioned. Customary laws do have enforcement and regulatory mechanisms built to ensure compatible human behavior within a particular society, the same cannot be said to be true in relation to other neighboring societies. Cultural authorities are at a disadvantage when asserting enforcement of customary law and regulation of culturally-defined rights to access and use plants and animals when actors outside the immediate society behave in ways contrary to customary law. Corporate societies define “property” as an individual right conferred by the governing jurisdiction. The collective right of a society is not comprehended by outside legal systems (Kuruk, 2003).

Despite the ancient roots of customary law, preventing violations of specific customary laws can be ignored by corporate societies though a minority of states has taken limited actions to incorporate customary laws into their legal framework. States’

conventions, statutes, and decisions of international bodies such as the World Intellectual Property Organization declare that “rights” to land, resources, and other interests flow from the state, thus reducing indigenous peoples and rendering their claims to original ownership as meaningless under international and domestic state laws. The state is the only authority with the power to confer “rights.” By not claiming and enforcing their “inherent rights” dependent on the originality of each indigenous nation itself, Fourth World nations place themselves in a condition of suspended supremacy bowing to the unearned claims of states and their international bodies. After decades of state-level and international declarations calling for action by states to produce responses to global malnutrition and medicinal demands, the promises of states have resulted in little domestic action to establish collaborative enforcement frameworks with indigenous nations. The possible uses of plants and animal species used for foods and medicines by Fourth World peoples remains unknown to states’ authorities (Kuhnlein, 2003). The result of Fourth World nations’ suspended supremacy is that their customary law remains enforceable only within each community, but unenforceable to regulate the behavior of external actors who may use and dispose of lands, foods, medicines, waters, and resources without restrictions imposed by nations in their ancestral territories.

The conventional wisdom in the corporate state asserts that even as foods and medicines are reduced by human contamination the world’s peoples will benefit from quick, new inventions of semi-artificial foods and pharmacological inventions to

replace those natural sources. Genetically modified foods as well as artificially grown animals and fishes (aquaculture and enclosed hothouses) are viewed as “win-win” commercial food and medicine production activities. Commercially produced food and medicinal substitutes are rapidly entering the human food and medicinal chains especially, but not exclusively in the urban centers where nearly two-thirds of the world’s 7.6 billion human beings now reside. The 2.6 billion people living in forests, jungles, deserts, mountain regions, plains, and in other rural locations are often reliant on farm-harvested plants and animals as well as wild-harvested plants and animals.

Fourth World nations issue frequent declarations, pronouncements, speeches, and resolutions calling attention to the damages caused to traditional foods and medicines by state and corporation sponsored contamination of plants and animals with herbicides, heavy metals, and insecticides. But despite the pronouncements, claims of sovereignty, rights to ancestral lands, and demands for access and preservation of traditional foods and medicines, these public announcements have gone unanswered. Though several international states’ organization (i.e., UN, IPO, WTO, ILO) have issued declarations regarding indigenous peoples and UN member states’ governments have made constitutional reforms conceding the collective nature of Fourth World peoples¹² and their right to ownership

of lands, “land-titling procedures have been slow and complex” and in many cases “the titles awarded to the communities are not respected” (UNPFII, 2007). Fourth World nations repeatedly call on the states, international state institutions, and state agencies to provide the acts of preservation and enforcement of the Fourth World “right” to those traditional foods and medicines with the result of symbolic gestures but no enforcement.

The realization of indigenous peoples’ rights to food and food sovereignty depends crucially on their access to and control over the natural resources in the land and territories they occupy or use. Food procurement and consumption of food are an important part of culture, as well as of social, economic, and political organization. Subsistence activities such as hunting, fishing, and gathering are essential not only to the collective right to food, but also to the nurturing of indigenous cultures, languages, social life, and identity. Only then can indigenous peoples maintain traditional economic and subsistence activities to meet their nutritional and sustenance needs, as well as protect and preserve their culture and distinct identity¹³.

Cultural-Social Regulation by Nations’ and States’ Governments

To ensure adequate harvests in the ecological niches where Fourth World societies generally

¹²Argentina, Bolivia, Brazil, Colombia, Guatemala, México, Nicaragua, Panama, Paraguay, Peru, Ecuador and Venezuela

¹³UNPFII (2012) “The Rights of Indigenous Peoples to Food and Food Sovereignty.” UN Department of Public Information, May 2012. Retrieved from https://www.un.org/esa/socdev/unpfii/documents/2012/News%20and%20Media/EN%20Fact%20Sheet_Right%20to%20Food.pdf

prospered they required cultural-social regulation to prevent over-harvesting or destruction of food and medicine sources. The central feature of the regulatory framework for each society is expressed through the dynamic and evolving relationship between the people, land (and ecosystems), and the cosmos. This customary approach established who harvests, and where, when and how they harvest. Clearing of lands (slash and burn for example) to maximize access to foods and medicines depends on customary regulation as well (Anderson, 2005). The rules for access and use decide seasonal access including how much can actually be harvested. Specialized food producers (hunters, gatherers, planters, etc.) and medicinal producers (traditional healers, medicine providers, herbalists) are specifically defined within each cultural framework and guided by cultural or what can also be called customary regulation.

Many modern Fourth World peoples implement the cultural regulatory framework based on what best suits the ecosystem from which foods and medicines are harvested. A central principle of the cultural regulatory framework is that it evolves and adjusts to changes—either movement of a population to new locations due to climatic or social conflict reasons or due to subtle actual changes in the environment. What may have been the cultural approach to regulating food and medicine access in the 18th century, for example, may not actually apply due to changes in the ecosystem or the socio-political environment.

A healer, elder, gatherer, hunter or preparer of foods may determine sanctions or implementation of cultural regulation. The role of persons in each society or by specialized societies established within a community usually takes precedence over specific

medicinal, food, and gathering practices. Neighboring societies might compete for access to foods and medicines resulting in staged conflicts to enforce rules of access and uses.

Customary nutritional and medicinal uses of foods and medicines derived from wild-harvested plants, fungi, animals, fish, mollusks, and insects by Fourth World peoples are at grave risk as are conventionally-cultivated foods. The protection and regulation of access to these life sustaining supports used by Fourth World peoples and for cultivated foods for the bulk of the world's population are being contaminated by state and corporation development policies and actions resulting in the wholesale destruction of life-giving plants and animals on which ultimately all life depends. Explaining that 80% of South Africa's population depends of wild harvested foods and medicines under customary community regulation for example Steve McKean (2007) writes,

Despite the persistence of customary controls on use of many species, the commercial trade and consequent economic benefits has [sic] eroded many of these controls to the detriment of the species involved and the systems in which they occur. (Mander et al., 2007).

Customary regulation of access and uses of plant and animals in a Fourth World territorial context carries weight and influence over the peoples living in such territories—particularly the culturally bound community members. Therefore, regulation has the significant effect of ensuring culturally defined balance and availability of plants and animals for

foods and medicines to the population. However, customary regulation does not necessarily influence or regulate the behaviors of individuals outside the cultural context of a particular Fourth World nation. Indeed, as frequently frustrated Fourth World assemblies state in declarations and proclamations calling on outside jurisdictions (counties, states, provinces, and central state governments) to comply with customary regulation or at least respect for living things suggest, outside jurisdiction do not take these calls for responsible action seriously.

The Cherokee Nation is engaged in an internal government/community dialogue concerning the most appropriate approach to land management and thereby securing the best method for protecting and sustaining use and access to plant-based and animal-based foods and medicines. In his published volume subtitled *Ethnobotany and Cherokee Environmental Governance* Clint Carroll (2015) describes how the Cherokee Nation developed an approach to land management that was shaped by its paternalistic relationship with the Bureau of Indian Affairs. Carroll argues that the “state system” adopted by the Cherokee government can consciously establish alternative ways for Cherokee to interact with the environment. The adopted state-based management system produced an approach to land management motivated by economic and commercial forces—the mandate for the land to generate income from activities such as cattle grazing and silviculture. Thus, Cherokee land management became enmeshed with complex bureaucracies, and adopted non-Cherokee language and frameworks, what Carroll calls “resource-based practice.”

In 2008 a Cherokee land management elders’ council was formed as a response to Cherokee community demands to incorporate traditional values into the tribal government’s management practices, which recognizes Cherokee responsibility to the nonhuman world. Carroll calls this a “relationship-based” approach, and is especially relevant because of Cherokee people’s recognition of the need to protect their medicine plants, which was brought about through the activism of an elders group in 2008.

Carroll’s work conceives of the Cherokee Nation in terms of a “transformative indigenous state,” a theoretical framework that is debatable from a Fourth World theory perspective, but is inconsequential to our discussion about how tribal governments protect their medicinal plant resources. What’s most relevant for our discussion is how institutional tribal structures negotiate conflicting forces to attain their goals, and the Cherokee Nation study provides us with a valuable example of what is probably true for most tribal nations.

Anecdotally, a comparison can be drawn between the Cherokee case, and the example of the Colville Confederated Tribes (CCT). The Colville tribal government commissioned a study in 2015 for the purpose of updating their Integrated Resource Management Plan. The study is the result of a survey in which the tribal membership was to choose between five management strategies. The choices essentially hinged upon approaches toward timber management and cattle grazing activities, including eliminating or expanding both. The preferred

strategy they chose was an “enhanced and improved current management strategy.” The document, *Draft Programmatic Environmental Impact Statement 2015*, exhibits the tension between economic activity inherent in resource management practices (inherited from BIA policies, as was the case with the Cherokee) and the need to protect “cultural resources,” including archeological resources and culturally significant plants. It notes the difficulty of protecting culturally significant plants due to a lack of resources for a permanent staff, impacts due to wildfire, livestock and wildlife grazing, and timber harvesting. Another impediment was the unwillingness of tribal members to divulge the locations of favorite gathering spots. Interestingly, 69% of survey respondents reported that “they or their family members actively gather plants on the Reservation” (pg. 27). On the governmental level the Colville report accurately reflects, as Carroll writes, the language of “resource-based practice” versus a “relationship-based” approach to land management.

Engaging in regulation of “cultural material” is about as close as Fourth World governments in the United States appear to get in their effort to establish statutory controls, but as the Warm Springs legislative example indicates these controls only extend to members of the community. No limitations are imposed or sanctions legislated to control non-member access and uses of “cultural material” much less food and medicine plants and animals. Only limited consideration is given to imposing restrictions on outside jurisdictions (county, state, federal) or peoples who live in those jurisdictions primarily invoking US government legal authorities.

The record on statutory regulation of wildlife access and uses for many US located Fourth World nations is extremely limited and usually tied to “economic development of natural resources” if the nation’s government exercises regulation. What follows is a sampling of how tribal governments in the U.S. do (or don’t) regulate the gathering of plant-based and animal-based foods and medicines within current official boundaries and treaty or executive order reserve rights in ancestral lands (i.e. reservations, Rancherias, and other Native community formations). We examined the tribes’ websites and other online sources for government documents relative to tribal plant and animal usages and protection/regulation policy. We chose a random sample of tribes with the possibility that each government would adopt such policies and codes in accord with founding documents and oral traditions.

Sixty-five percent of the published origin stories or histories that make up customary law specifically reference the relationship between humans, plants and animals: (See Table 1). The actual proportion is likely to be greater if one considers all of the more than 620 Indian nations and communities in the United States. The fundamental reality is that customary laws are foundational to American Indian nations. Customary law is defined in this study as rooted in origin stories as well as other oral traditions explaining the relationship between people, plants and other animals.



Table 1 - Sample FW/US-Based Governments Regulatory Status (n=16)

Fourth World Nation	US State	Customary Law	Constitutional and/or Treaty Provisions	FW Nation Statutes	Cross- Jurisdiction Access
Bishop Paiute	CA	0	0	1 ¹⁴	1
Cow Creek Umqua	OR	0	1	0	0
Crow (Absoro-Kee) (Apsáalooke)	MT	0	1 ¹⁵	1 ^{16 17}	1

¹⁴Under Article III para. 201 of the Tribal Environmental Policy Ordinance (2012) the Shoshone-Paiute government asserts its jurisdiction over members and non members in matters concerning violation of its Ordinance where it states: “The Tribe recognizes that the actions of persons and/or entities not located on Tribal lands have the potential to harm the natural environment of the Reservation and the health, safety and welfare of the Tribe, its members and territory. Because of Tribal concern and interest in, and duty to protect the environmental quality and integrity of its lands and health and safety of its members, the Tribe finds it necessary to have the ability to call persons who cause harm within Tribal jurisdiction to account for their acts or omissions before the tribal administrative and tribal judicial system.” The ordinance established the Tribal Environmental Protection Agency to establish and enforce the regulations.

¹⁵Under the Treaty with the Crow Indians of 1868 Article IV provides that the Crow may hunt on “unoccupied” lands outside the reservation, but no further agreement is made about access to foods and medicines.

¹⁶The Crow government adopted its Title 12 “Fish and Game Code” providing for “by Tribal Conservation Officers/Bison Pasture Rangers of the Crow Natural Resources Department or other duly authorized Federal Officers as provided for by tribal or Federal law or by cooperative agreement” under Chapter 11.

¹⁷Title 24 Environmental Policy of the Crow Governments Code provides for remediation when damage is caused to soil, plants and animals calling for restoration of “native plants” and document “animal systems.” The purpose of the code is to provide quality environment, “free of undue government regulation, to promote efforts that will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of humans, to enrich the understanding of the ecological systems and natural resources important to the Crow Tribe, and to establish an environmental quality council.

Fourth World Nation	US State	Customary Law	Constitutional and/or Treaty Provisions	FW Nation Statutes	Cross-Jurisdiction Access
Flathead	MT	1	1 ¹⁸	0	1 ¹⁹
Haudenosaunee	NY	1 ²⁰	1	0	0
Ho Chunk	WI	1	1 ²¹	0	1
Hopi	AZ	1 ²²	0	0	1

¹⁸Article III of the Treaty of Hellgate (1859) provides for the exclusive right to take fish from rivers running through and bordering the reserved lands and “the privilege of hunting, gathering roots and berries, and pasturing their horses and cattle upon open and unclaimed land.”

¹⁹The Flathead (Salish & Kootenai) government has drafted “Bird Hunting Regulations (2/27/2018)” that provide for US federal regulations and guidelines jointly enforced by the tribal government and the US government.

²⁰Responsibility for the foods and medicines were divided between the five confederating peoples by the creation spirit: “To the Mohawks, I give corn,” he said. “To the patient Oneidas, I give the nuts and the fruit of many trees. To the industrious Senecas, I give beans. To the friendly Cayugas, I give the roots of plants to be eaten. To the wise and eloquent Onondagas, I give grapes and squashes to eat and tobacco to smoke at the camp fires.”

²¹ 21 09-19-2015-09 To Amend the Ho-Chunk Nation Constitution and Provide for the Rights of Nature.

Amendment to Article X, Section 2. (b) iii. Rights of Nature: “The Nation shall apply preventive and restrictive measures on activities that might lead to the pollution of air, water and soil, affect the abundance of surface and groundwater, destroy Ho-Chunk food and medicine plants, decrease habitat for important Ho-Chunk plant and animal communities, cause the extinction of species, lead to the destruction of ecosystems and the to (sic) permanent alteration of natural cycles.”

cont.

(c) Prohibitions. It shall be unlawful within the Ho-Chunk territory for any corporation or government to engage in activities that would violate, or infringe upon, the rights recognized and secured by this Article, including but not limited to, damage or destruction of flora or fauna possessing traditional medicinal significance to the Ho-Chunk Nation or its members, fossil fuel extraction, frac (sic) sand mining, and the introduction or use of genetically engineered organisms.

²² For some time prior to their emergence from the underworld, people had been hearing footsteps above them, but when they reached the surface of the earth it was cold and dark, and nothing could be seen. In due time they noticed a distant light and sent a messenger who returned with the welcome news that he had discovered a field on which corn, watermelon, beans, etc., were planted. All around this field a fire was burning . . . by which the ground was kept warm so that the plants could grow. Nearby the messenger found a man whose handsome appearance contrasted strangely with the grotesque death's head mask that stood by his side. At once the messenger realized that it was Skeleton (Masauwuu) whom they had heard walking about from the other world. The deity proved kindly disposed, fed the courier and sent him to fetch all his companions. Here they built a large fire, warmed themselves, and Skeleton gave them roasting ears and watermelons, melons, squashes, etc., and they ate and refreshed themselves. Some of the plants were very small yet, others still larger, so that they always had food. (Titeva, 1944)

Fourth World Nation	US State	Customary Law	Constitutional and/or Treaty Provisions	FW Nation Statutes	Cross-Jurisdiction Access
Navajo (Diné)	AZ, NM, CO	1	1	1	1
Nez Perce Chutpalu	ID	1	0	0	1
Pine Ridge-Dakota	SD	1	0	0	1
Ponca	OK	1	0	1 ²³	1
Quinault	WA	1	1	1	1
Rosebud Dakota	SD	0	0	0	1
Standing Rock Dakota	SD	0	0	0	1
White Earth Anishinabe	MN	1	0	0	1
Wind River — Arapahoe & Shoshone	WY	0	0	0	1
Yurok	CAL	1 ²⁴	1	1	1
TOTAL	17	11	9	5	15
		65%	52%	29%	88%

²³ The Ponca Tribe of Oklahoma adopted the Rights of Nature Resolution that imposes misdemeanor and felony sanctions for violations: “Within the jurisdiction of the Ponca Tribe, all human beings, all governments, all corporations and public and private institutions must act in accordance with the rights and obligations recognized in Article 2 of this law, and the failure to do so shall constitute a crime against Nature.” Article 2 affirms the inherent rights of all elements of Nature, conceived of as “beings.”

²⁴ The jurisdiction of the Yurok Tribe extends to all of its member wherever located, to all persons throughout its territory, and within its territory, over all lands, waters, river beds, submerged lands, properties, air space, minerals, fish, forests, wildlife, and other resources, and any interest therein now or in the future (Yurok, 1993, Art 3). “We pray for the health of all the animals, and prudently harvest and manage the great salmon runs and herds of deer and elk. We never waste and use every bit of the salmon, deer, elk, sturgeon, eels, seaweed, mussels, candlefish, otters, sea lions, seals, whales, and other ocean and river animals. We also have practiced our stewardship of the land in the prairies and forests through controlled burns that improve wildlife habitat and enhance the health and growth of the tan oak acorns, hazelnuts, pepperwood nuts, berries, grasses and bushes, all of which are used and provide materials for baskets, fabrics, and utensils” (Yurok, 1993).

Of the Constitutions for Indian nations and often the treaties they signed with the United States 52% of those we examined contain provisions for access and uses of the lands, and in some instances areas for hunting and gathering. Constitutional and/or Treaty provisions must explicitly state the nation's jurisdiction over lands, uses and accustomed access to land and wildlife.

There is a significant drop off of oral and documented mentions of food and medicine access and uses for plant-based and animal-based foods and medicines where less than a third (29%) of those nations we examined included statutes providing guidance and regulation as well as enforcement of these regulations. Fourth World Nation statutes may be resolutions, legal codes or governmental regulations expressly stating protection, uses, or access to plants and animals with provisions for regulatory control over use and access by specialized individuals or groups in society.

Indian nations among those we sampled (88%) are nearly unanimous in their dependence on the legal and enforcement mechanisms of the United States government to control uses and access to plants and medicines usually not mentioned in arrangements concerning "environmental protection." Cross-Jurisdictional Access is the label for instances of Fourth World nation references to US Federal government regulations and laws controlling environmental activities within the boundaries of the nation's territory.

If a Fourth World nation's origin story, oral (to text) histories explain, describe and/or prescribe be-

haviors between humans, plants, and animals then we assigned a 1 and if not then a 0. We repeat this process for Constitutional and/or Treaty Provisions, FW Nation Statutes and Cross-Jurisdiction Access. The total then tallies the total nations with those references with a "1" and ignores the "0."

Indigenous Knowledge, State Governments and International State Bodies

Local jurisdictions inside corporate states and the states themselves issue laws and regulations over the uses and access to "natural resources" stressing the economic and aesthetic importance of expected outcomes. Of the 123 states documented by the World Health Organization's study of the "Legal Status of Traditional Medicine and Complementary/Alternative Medicine" researchers found that many states in Africa (notably South Africa, Ghana, Botswana, Kenya and Mali) recognize the role of traditional medicine as a practice by healers, herbalists, and spirit doctors and engage local practitioners as these essential authorities. These states have entered into cooperative arrangements with local communities to establish rules for apprenticeships that are in turn controlled by local practitioners. These practices by indigenous nation authorities in relation to state authorities are rather unusual on the global stage. Of 109 of the world's recognized states we examined, thirty-eight recognize the efficacy of traditional health practices by herbalists, spiritual healers, midwifery, and the formulation of plant-based and animal-based medicines by indigenous traditional medicine practitioners (World Health Organisation, 2001).

While primarily African and Asian and Pacific states¹⁴ recognize the efficacy of traditional medicine, regulating use and access to plant and animal-based medicines is left to local traditional medicine practitioners.

As **Table 2** illustrates summary findings of 109 states' regulation of indigenous plant-based and animal-based foods and medicines identified by the World Health Organization in 2001. We reviewed these states in our study and note that most do not or only partially recognize traditional medicine as an important part of the country health delivery system. It is, however, noteworthy that Fourth World nations play a major role in the delivery of beneficial nutri-

tion and medicines in Africa, South East Asia, and in Western Pacific states.

Beginning in the 1980s multi-lateral states' international organizations began to entertain new conventions to set standards for states' governments to regulate ecological environments and in some instances relations between indigenous nations and states governments to govern the uses and access to plant-based and animal-based foods and medicines.

¹⁴ For this research we found that 17 of 35 African states, 8 of 8 South East Asian states and 7 of 19 Western Pacific States recognized indigenous nation's traditional medicine systems. In the Americas of 15 states reviewed only three recognized traditional medicine systems

Table 2: Sample States' Regulation of Indigenous Plant-Based & Animal-Based Foods and Medicines (n-109)

World Region	Number of States	Recognize TM, Integrate in Health System	Local TM regulation	Recognize some TM, practices and limited integration into Health System	Does not Recognize TM or integrate into Health System
Africa	55	17		25	26
Americas	15	3		5	7
Eastern Mediterranean	12	2		3	7
Europe	20				20
SE Asia	8	8			
West Pacific	19	7		8	4
TOTAL	109	28		41	64

United Nations Conference on Environment and Development

The UN Conference on Environment and Development, held in Rio de Janeiro in 1992 and also known as the Earth Summit or Rio Summit, was the first major gathering of United Nations member states to address the growing issue of environmental degradation and articulate the concepts of sustainability in development and climate change. The summit accomplished several landmark initiatives, some legally binding, including the establishment of the *Framework Convention on Climate Change*, *Convention on Biological Diversity*, and the *Convention to Combat Desertification*. Non-binding documents included *Agenda 21*, *Forest Principles*, and the *Rio Declaration*. Most though not all of the documents produced by the UNCED contain clauses or sections specific to indigenous peoples¹⁵.

Principle 22 of the *Rio Declaration* proclaims:

Indigenous people and their communities, and other local communities, have a vital role in environmental management and development because of their knowledge and traditional practices. States should recognize and duly support their identity, culture and interests and enable their effective participation in the achievement of sustainable development.

The Forest Principles document mentions indigenous peoples in section 5 § a in Principles and Elements:

National forest policies should recognize and duly support the identity, culture and the rights

of indigenous people, their communities and other communities and forest dwellers. Appropriate conditions should be promoted for these groups to enable them to have an economic stake in forest use, perform economic activities, and achieve and maintain cultural identity and social organization, as well as adequate levels of livelihood and well-being, through, inter alia, those land tenure arrangements which serve as incentives for the sustainable management of forests.

And again in¹² § d:

Appropriate indigenous capacity and local knowledge regarding the conservation and sustainable development of forests should, through institutional and financial support and in collaboration with the people in the local communities concerned, be recognized, respected, recorded, developed and, as appropriate, introduced in the implementation of programmes. Benefits arising from the utilization of indigenous knowledge should therefore be equitably shared with such people.

Convention on Biological Diversity

Negotiated and concluded by states' governments in 1992, the Convention on Biological Diversity presents guidelines and terms of reference for promoting sustainability in diverse biological niches throughout the world. The Convention's efficacy is dependent on the willingness of states to comply and regulate institutions (businesses, non-governmental organizations,

¹⁵The Convention to Combat Desertification and Framework Convention on Climate Change did not contain any explicit references to indigenous peoples. The FCCC led to the establishment of the Kyoto Protocol, which also excluded indigenous peoples and was highly criticized by them for that among other reasons.

subordinate governmental entities) to protect the diversity of soils, plants, and animals in undeveloped regions. The Convention only tangentially comments on the role of indigenous peoples in the preservation of diverse ecosystems as noted in the preamble:

... the close and traditional dependence of many indigenous and local communities embodying traditional lifestyles on biological resources, and the desirability of sharing equitably benefits arising from the use of traditional knowledge, innovations and practices relevant to the conservation of biological diversity and the sustainable use of its components.

Despite the fact that indigenous peoples were not party to the Convention, authors of the principles and guidelines assumed the owners of the biological resources are the “states” themselves and not indigenous nations. Thus the “benefit sharing” sentiment essentially speaks to “state confiscation” of indigenous nations’ plant and animal foods and medicines. This perspective is reinforced by the operable paragraph Article 8 § j that states:

Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits

arising from the utilization of such knowledge, innovations and practices (United Nations, 1992).

The compromise language in Article 8 § j was negotiated to directly address relevant Fourth World ecological interests, but in reality, the language emerged as an agreement between northern states and the southern states to allow the northern states to gain access to biological resources while providing the means to compensate the southern states (Kuruk, 2003, p. 73). The language in Article 8 § j obscures this compromise with the result of actually undermining indigenous peoples’ authorities given that implementing the article is dependent on laws enacted by the affected states.

The Convention further imposes strictures on Fourth World nations despite referring to “traditional cultural practices” that must be judged compatible with states’ government definitions of conservation and sustainability as indicated in Article 10 § c of the Convention:

Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;

The final constraint on indigenous nations’ access and uses of traditional food and medicinal plants and animals is composed into Article 18 § 4

The Contracting Parties shall, in accordance with national legislation and policies, encourage and develop methods of cooperation for the development and use of technologies, including

indigenous and traditional technologies, in pursuance of the objectives of this Convention. For this purpose, the Contracting Parties shall also promote cooperation in the training of personnel and exchange of experts.

While the states' essentially impose their laws and policies on indigenous nations through the convention, they do not impose enforceable regulatory controls over the states and their subordinate economic and political entities.

Rome Declaration 2009

The *Rome Declaration* of 2009 expresses a determination to preserve, protect and guarantee Fourth World peoples' access and use of wildlife for nutritional, medicinal, and cultural benefits. The representatives to the Global Forum for Peoples' Food Sovereignty, a forum of people's organizations, social movements and NGOs, emphasized participation of indigenous representatives in the UN where decisions concerning food sovereignty are the subject: "Promote the effective participation of Indigenous Peoples and local communities in decision-making processes and the implementation of policies relating to the use of traditional knowledge and biodiversity, amongst many other issues including agriculture, poverty and development." That is a common theme throughout the declarations issued by indigenous peoples (*Declaration of Indigenous Peoples for Food Sovereignty*, 2009). The *United Nations Declaration on the Rights of Indigenous Peoples* (UNDRIP) underscores this principle where it states in Article 24:

Indigenous peoples have the right to their traditional medicines and to maintain their health

practices, including the conservation of their vital medicinal plants, animals and minerals. (United Nations General Assembly, 2007)

Neither the assertions by the Global Forum on for Peoples' Food Sovereignty or the UN General Assembly, though laudable in their intent, have the force of law to enforce compliance. They constitute sentiments that could inform the development of enforceable law that either a Fourth World nation or a state could act on to ensure compliance, but the sentiments have not achieved worldwide acceptance.

There are notable differences between the principles articulated in *UNDRIP*, the *Rome Declaration* and the UNCED documents. The UNCED documents include indigenous peoples' concerns primarily for the purposes of supporting ethical commerce, to ensure compensation for the taking of their traditional resources, which may or may not be taken or used with their consent. The *Rome Declaration* and the UNCED statements on the other hand emphasize principles based on indigenous values, i.e. the desire to conserve resources for reasons related to values rooted in ecological sustainability and cultural perpetuation. This exposes the inherent tension in UN approaches toward indigenous peoples that on one hand favor state-based objectives which privileges development over sustainability, and suggests the reinforcement of state policies and laws which may in fact undermine indigenous customary law, and on the other attempts to invest indigenous communities with a measure of power over their own resources. States' responses overall have leaned in the direction of not respecting indigenous peoples despite the preponderance of declarations and

other instruments that appear to forward indigenous concerns.

World Health Organization

The World Health Organization reported in 2017 that eighty-six countries or 45% of the world's countries suffer from high or moderate rates of malnutrition. These countries are located mainly in the continents of Africa, Melanesia, South America, and South Asia. The WHO reported that 2 billion people in the world lack sufficient micronutrients for good health, 155 million children are stunted due to the lack of sufficient micronutrients such as zinc and manganese. Protection of rural environments where indigenous peoples live and harvest their unique food species is a logical prerequisite for health promotion activities¹⁶.

When representatives of Fourth World peoples gathered from six regions of the world in Rome in 2009 the solemn pronouncement was made that "Indigenous peoples will continue to consume our traditional foods. Seeds are what we find along the way, wild animals are our sibling, our myths and our history ..." linked to the health and nutrition of the people. The Rome Declaration claimed "Food is not just agriculture ... it also includes wild plants and animals¹⁷ as the expression of "Indigenous Food

Sovereignty." ("Declaration of Indigenous Peoples for Food Sovereignty," 2009).

Fourth World International Declarations

These "globally conceived principles" are echoed in declarations issued by the Saami, Cherokee, Ojibwe, Hawaiians, and numerous other peoples around the world. In each instance declarations such as the *Kari-Oca 1 Declaration (1992)*, *Mataatua Declaration (1993)*, *Indigenous Peoples Seattle Declaration (1999)*, *the Kimberly Declaration (2002)*, *International Cancun Declaration of Indigenous Peoples (2003)*, *Kari-Oca 2 (2012)* and others affirm indigenous rights to access and use of traditional foods and medicines as an "inherent right" of Fourth World peoples. They also assert the right to be free from destructive state policies, to sustained biodiversity, customary environmental management, and to be free from the onslaught of GMO's and other pro-globalization practices (Mander and Tauli-Corpuz, 2006).

Fourth World nations issue these declarations, pronouncements, speeches, and resolutions calling attention to the damages caused to traditional foods and medicines by state and corporation-sponsored contamination of plants and animals with herbicides, heavy metals, and insecticides; yet the remedy

¹⁶ Kuhnlein, H.V. 2003. "Micronutrient Nutrition and Traditional Food Systems of Indigenous Peoples." Food, Nutrition and Agriculture. No. 32. Rome: FAO. Pp. 33-39 (p. 34)

¹⁷ Rome Declaration (2009) Declaration of Indigenous Peoples for Food Sovereignty. Six Regions: Asia, Africa, Latin America, North America, Northern Europe, the Pacific. 13-17 November 2009. Relevant paragraphs:

19. - We, the Indigenous Peoples will continue to consume our traditional foods. Seeds are what we find along the way, wild animals are our siblings; our myths and our history are linked to the way we eat.

20. - Food is not just agriculture or what men and women produce, but it also includes wild plants and animals, and the relationship between these and Mother Earth. We, as Indigenous Peoples will continue to put our traditional methods of food producing in practice as an act of self-determination.

is for whoever is causing the damage: STOP doing that. But, despite the pronouncements, claims of sovereignty, rights to ancestral lands, demands for access and preservation of traditional foods and medicines, these public announcements have gone unanswered. Even with the preponderance of international states' organization (i.e., UN, IPO, WTO, ILO) declarations regarding indigenous peoples and UN member states' governments have made constitutional reforms conceding the collective nature of Fourth World peoples¹⁸ and their right to ownership of lands, "land-titling procedures have been slow and complex" and in many cases "the titles awarded to the communities are not respected" (UNPFII, 2007). Fourth World nations repeatedly call on the states, international state institutions and agencies of states to provide the acts of preservation and enforcement of the Fourth World "right" to those traditional foods and medicines with the result of symbolic gestures but no enforcement.

The Study and the Theory

Fourth World Theory applied in this study demonstrates its utility when assessing traditional knowledge systems responsible for indigenous customary law particularly when applying the concepts of comparison, relational reasoning, and balance between contending forces. Since customary legal systems emerged in separated and often distinct cultures understanding similarities and differences must rely on these basic concepts. When comparing indigenous customary legal systems with state legal systems the theory's requirement of "balance between contending forces and equality of kind" made it possible to see the distinctions, but also recognize

bridges between the systems that could be developed to reduce and in some instances eliminate the perceived gap. Fourth World Theory is supported by this study and its results.

Summary of Findings- Research Questions

This study was organized based in the concepts of Fourth World Theory to address the problem that while Fourth World nations claim sovereign authority over plant-based and animal-based traditional foods and medicines in accord with their customary laws, these traditional sources of life are fast being destroyed, contaminated or placed out of reach. The overarching question of this study was "What institutional or legal measures can Fourth World nations take in the United States to ensure the application of customary laws to regulate traditional plant-based and animal-based food and medicine uses and access to ensure the long-term health and well-being of these nations?" Four questions are asked in this study to help identify a means for Fourth World nations to realize the sovereignty they claim to protect as well as ensure future access and uses of traditional plants and animals for food and medicine.

Question 1: What native institutions have promulgated regulatory enforcement of laws that incorporate customary law to protect or oversee access and uses of plant-based and animal-based foods and medicines in the United States?

The study took a random sample of American Indian governments to examine origin stories, constitutions, treaties, tribal statutes as well as

¹⁸Argentina, Bolivia, Brazil, Colombia, Guatemala, México, Nicaragua, Panama, Paraguay, Peru, Ecuador and Venezuela

cross-jurisdictional arrangements. While most of the sixteen nations included in the random sample had customary laws spelled out in origin stories or oral traditions recognizing the interconnection between humans, plants and animals—and stating the obligations of human beings to plants and animals—constitutional, treaty, and tribal statutory provisions were either not related to customary laws or when mentioning plants (trees) and animals (deer, fowl and elk) the references pointed to economically motivated benefits or controls or in the case of animals hunting limitations regulated by US federal authority coincident with tribal authority.

Question 2: What are the laws, regulations or customary practices implemented by states' governments such as Ghana, India, Uyghuristan, Senegal, the Gambia, New Zealand and Norway that determine medicinal/pharmacologic uses of wildlife for the benefit of communities?

We decided in this study to evaluate a significant proportion of the states (109) monitored by the World Health Organization (123 of 191 states) for the legal status of "Traditional Medicine and Complementary/Alternative Medicine" (2001) in six of the world's regions to capture a sample of states' policies and practices concerning the regulation of plant and animal access and uses for food and medicinal purposes. African, South East Asian and West Pacific states proved most notably engaged in establishing institutions and laws establishing regulatory regimes, whereas American, Eastern Mediterranean and American states did not engage the subject or did so in only very limited and restricted terms. Several African states began in the 1980s to

institute laws and create governmental mechanisms to facilitate the integration or recognize customary indigenous laws regulating uses and access to traditional plants and animals for food and medicines. These laws and mechanisms frequently give primacy to the customary laws of local communities and traditional food and health practitioners. Full or partial integration of customary uses and access to plants and medicinal sources occurs in some African states (Ghana, Madagascar, Lesotho, South Africa, Mali, and Ethiopia) and in South East Asian states (India, Thailand, Bangladesh), and the West Pacific states (China, Fiji, Japan, Laos, Mongolia).

Question 3: What are examples of indigenous institutional regulation, legislation or customary practice, methods of enforcement and the degree of their success concerning the medicinal/pharmacologic use of wildlife in the United States?

In this study it has become evident that Fourth World nations must extend their cultural practices regulating interactions with plants, animals, and the land that maintain balanced ecosystems into statutory laws that either aid or obstruct corporate state development. Fourth World nations have attempted to seek states' cooperation and collaboration to protect and enhance biodiverse territories, but with little success. States' governments have adopted laws and regulations and they have caused their multilateral organizations to establish conventions such as the 1992 *Convention on Biodiversity*, but these statutory laws have gone unenforced and have not slowed or stopped the capital-driven encroachments. The last possible mechanism that could possibly stop the expansion into and destruction

of Fourth World territories and other biologically diverse territories may well be Fourth World nations acting through their cultural practices while creating and initiating enforceable laws and regulations that impose restrictions to wildlife access and uses on outside jurisdictions. By their own declared terms Fourth World nations must become proactive since the “granting of rights” by states is not working. No state wants to give up its control and least of all to indigenous nations. Indigenous nations that “take” control of their lives meet resistance, but not always from the state.

Engaging in regulation of “cultural material” is about as close as Fourth World governments in the United States get to establish statutory controls based in customary law, but as the Warm Springs Tribe’s legislation¹⁹ indicates, these controls only extend to members of the community. No limitations are imposed or sanctions legislated to control non-member access and uses of “cultural material” much less food and medicine plants and animals. No consideration is given to imposing restrictions on outside jurisdictions (county, state, federal); however, limited restrictions are imposed on people who live in outside jurisdictions particularly in reference to fishing, hunting fowl, deer and elk, and some limited restrictions on environmental damage.

Virtually all such restrictions rely on the US federal government and its regulatory framework applied inside tribal territory. No such measures are consistently or widely used by Fourth World gov-

ernments in conjunction with outside jurisdictions to regulate plant and animal usages in non-reserved ancestral lands. No Fourth World legislation or regulations documented by the randomly sampled 15, nations seek to control access to or usages of traditional plants (except for trees and timber) and animals for food or medicine.

Given the limitations of customary law outside the indigenous community and the extent of plant and animal sources outside the immediate community lands, it becomes clearer that to ensure the quality and diversity of plants and animals for food and medicine indigenous communities must create new methods of regulating access and use to these valuable assets.

Question 4: What plants and animals do indigenous institutions in the United States seek to regulate, legislate or control under customary practices or government statute?

The study revealed that very few if any Fourth World nations through their governments legislate or in any way regulate plant and animal food and medicine usages by statute, with the possible exception of the Ponca and Ho Chunk’s Rights of Nature laws. Aside from these two examples, there appears to be no connection between customary law and the regulatory practices of Fourth World governments. There is some regulatory activity by these governments to preserve or manage forests, lands,

¹⁹ 490.520 Prohibited Acts. No tribal member shall gather, collect, possess, sell, barter, exchange, purchase, offer to sell, purchase or exchange, or transport any cultural material in violation of tribal laws, traditions or customs. Any tribal member doing so shall, in addition to any sanctions imposed by any other applicable law, be subject to such traditional sanctions as may be determined by the Tribal Culture and Heritage Committee. Tribal code for Protection and management of archeological, historical, and cultural resources 490.510, and 490.520

pastures, rangelands and waterways as economic assets. In a few instances salmon fisheries or other fisheries receive attention for regulation to preserve “cultural resources.” The fisheries regulatory frameworks resulted not by Fourth World initiatives as governing bodies passing legislation, but these governments passing legislation in response to US Federal Court decisions recognizing the right of nations to 50% of the fishery.

Other regulation of plants and animals by some Fourth World governments relies on the legal authority of the United States and in some instances of subnational state governments and counties. The various governments that do include regulation of hunting and fishing frequently point to the authority of the US government’s Fish and Wildlife Agency, Environmental Protection Department, US Department of the Interior and the US Department of Agriculture. There is no recognizable connection between these regulations and indigenous customary laws.

The overarching question and the specific research questions leads to the conclusion that the gap between Fourth World customary legal frameworks and state-formulated customary law in international and domestic law is quite wide, but not necessarily impossible to bridge (Kuruk, 2003. p. 72). That the two systems of customary law exist in parallel has been overcome in several parts of the world where Fourth World nations are frequently the dominant

political reality in the state. Where control by the state is in the hands of immigrant descended populations or a single Fourth World nation exercising governing authority without the consent of other nations inside the state, indigenous customary laws are either minimized or even outlawed.

International Institutes such as the United Nations, World Intellectual Property Organization, International Labor Organization, and World Health Organization are engaged in incremental efforts to give space for Fourth World customary law (at least referentially) in international state declarations and legal instruments (WIPO, 2013). The World Intellectual Property Organization established the Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC) in 2000 to develop an international instrument to protect Traditional Knowledge and Traditional Cultural Expressions²⁰. The WIPO instrument under consideration offers the possibility of developing an international enforcement regime for customary law as it relates to tangible expressions of traditional knowledge.

Among Fourth World nations in the United States it is clear that while customary law specific to each indigenous society does exist and in many instances enjoys a robust influence providing guidance for human behavior and cultural practice, it is also clear that customary law only incidentally influences the constitutions, treaties, and executive orders that form the basis of each nation’s governing

²⁰This refers to “tangible and intangible forms in which TK and cultures are expressed, communicated or manifested. Examples include traditional music, performances, narratives, names and symbols, designs and architectural forms.” Notably the cultural interactions between humans, plants, and animals are not included as directly relevant to the preservation, protection, access, and uses of plant-based and animal-based foods and medicines.

authority. As an apparent direct consequence of the limited relationship (and in most instances non-existent relationship) between customary law and each nation's statutory expressions, the governing bodies do not exercise governing powers to regulate access to or usages of plant-based and animal-based foods and medicines inside their territories or in ancestral territories. The United States government does not engage in regulation of plant-based and animal-based foods and medicines specific to each nation's cultural life; however, the US government and its subdivisions exercise regulatory controls over land use and controls over plants and animals under environmental laws as well as laws associated with farming and forestry.

Just as there is a gap between customary law and state-formulated customary law there is also a gap between most US-based Fourth nations' customary laws and their statutory laws. There is a significant disconnect between the declarations, pronouncements and proclamations of Fourth World nations' assemblages calling for recognition of "indigenous sovereignty over lands, plants and animals" and the actual practices of Fourth World nations' governing authorities in the United States.

While the gap between customary statutory legal systems is quite wide in United States of America and other states, the gap in states with populations heavily reliant on traditionally used plant and animal foods and medicines is significantly smaller. This is especially the case in South Africa, Kenya, India, Madagascar, Mongolia, Peoples' Republic of China, Bolivia, México, Ghana, and Mali. It is apparent that applying the experience of these other countries may help reduce the gap between legal systems

in the United States and Fourth World nations. A detailed comparative study of Fourth World nations and states' establishing cooperation between legal systems may constructively contribute to effective methods for enforcing cultural laws guiding wild plant and animal use and access for food and medicine.

The evidence is persuasive that to achieve the declared sentiment of "indigenous sovereignty over lands, plants, and animals" merely asking states' governments and institutions to recognize and enforce rules to prevent breaches of indigenous sovereignty is not tenable—given the gap between customary and state legal systems. Furthermore, evidence is rather clear that Fourth World nations' governments in the United States are not actively engaged in implementing the call for indigenous sovereignty through the application of customary law.

Pathways Toward Cultural and Statutory Regulation

In this study it has become evident that Fourth World nations must extend their cultural practices regulating interactions with plants, animals, and the land that maintain balanced ecosystems into statutory laws that either aid or obstruct corporate state development. Fourth World nations have attempted to seek states' cooperation and collaboration to protect and enhance biodiverse territories, but with little success. As noted, international agreements such as the 1992 Convention on Biodiversity have gone unenforced and have not slowed or stopped the capital-driven encroachments. The last mechanism that could possibly stop the expansion into and destruction of Fourth World territories and other biologically diverse territories may well be Fourth World

nations acting through their cultural practices while creating and initiating enforceable laws and regulations that impose restrictions to wildlife access and uses on outside jurisdictions. Fourth World nations must become proactive since the “granting of rights” by states is not working. No state wants to give up its control and least of all to indigenous nations. Indigenous nations that “take” control of their lives meet resistance, but not always from the state.

Given the limitations of customary law outside the indigenous community and the extent of plant and animal sources outside the immediate community lands, it becomes clearer that to ensure the quality and diversity of plants and animals for food and medicine indigenous communities must create new methods of regulating access and use to these valuable supports to life.

CONCLUSION

We conceive of three responses to the call by Fourth World leaders for outside jurisdictions to recognize their sovereignty over lands, plants, and animals to ensure the diversity and sustainability of wild plants and animals for food and medicine. These responses begin by recognizing that customary laws can only survive and benefit the communities in which they are formed if modern-day Fourth World governments accept responsibility in conjunction with traditional knowledge authorities for protecting and regulating plant and animal access and uses. To this point we suggest Cultural Incorporation as a necessary step.

While an approach to instituting regulatory authority within a community is achievable, rendering that authority effective in relation to outside individuals and jurisdictions requires a different level of

institution building. We see that as Complementary Jurisdictional Regulation.

That there are internationally formulated sentiments by state institutions and by Fourth World assemblies discussing and stating principles for traditional foods and medicines suggests the necessity for an international component structured on the basis of a reciprocal relationship between each Fourth World nation and each state government. Many international instruments urge or obligate state’s governments to engage Fourth World nations on the basis of the principle of “free, prior, and informed consent” yet there is no mechanism for accomplishing this as relates to traditional foods and medicines. We at the Center for World Indigenous Studies originated a proposed Intergovernmental Protocol in 2013 specifically designed for states and Fourth World nations to selectively implement and enforce provisions of international instruments concerned with the advancement of traditional knowledge. We think instituting the Intergovernmental Protocol as a mechanism for constructing an enforceable relationship between each Fourth World nation and the respective state(s) overseen by international bodies may further advance a successful framework for advancing customary law as the basis for regulating the use and access to traditional foods and medicine.

Cultural Incorporation

It is apparent that the exercise of indigenous customary law through local cultural practice may be beneficial to ensure biodiversity inside a reserved territory for plant-based and animal-based foods and medicines. But without an internally de-

defined indigenous government enacting an enforceable statute based in customary law through governing agencies, committees, or councils authorized to administer a law, the ability to enforce customary law may not be possible.

Forming traditional foods and medicine societies, councils, or committees comprised of customary law authorities within the community may provide the authoritative base for customary law in the community. The Fourth World government's recognition of such societies, councils, or committees as the expert and authoritative interpreters of customary law is a natural step. The government's ability to enforce laws within the community would need to draft and enact legislation to codify the traditional foods and medicine bodies within the community and provide the institutional enforcement mechanisms to carry out the customary laws as interpreted by the traditional groups. To ensure the supremacy of customary law, the statutes or codes that authorize the policy of recognizing traditional customary law the governmental statute would subordinate any competing policies and laws on a case-by-case basis. The traditional foods and medicine group would have the final decision-making power.

This approach to incorporating customary law into Fourth World governing codes to regulate access and use of traditional foods and medicines is informally observed in some Fourth World communities and on a very limited basis observed formally. Ponca and Ho Chunk's Rights of Nature laws is probably the most direct example of customary law being codified into the nations' formal governing structure, and in the case of Ponca, is enforceable through clearly defined penalties.

Fisheries management is notably one area where Fourth World governments have instituted more formal decision-making power vested in fishermen. Where traditional foods and medicines specialized knowledge is concerned, this approach could ensure four outcomes: 1. This will strengthen and confirm for each Fourth World community the importance and authority of traditional foods and medicine knowledge holders; 2. Institutionalize in the modern-day Fourth World societies in the United States a regulatory regime that ensures the diversity and sustainability of traditional foods and medicines; 3. Securing and affirming each Fourth World governments' sovereign authority to protect and regulate wild plant and animal uses and access for food and medicine; 4. Provide a mechanism within each Fourth World government to engage neighboring governments regarding wild plant and animal uses and access for food and medicine.

Complimentary Jurisdictional Regulation

Fourth World nations are neighbors to city, county, and state jurisdictions that enact laws and regulations that when implemented may encroach on the authority of the Fourth World nation. This is particularly problematic as relates to traditional foods and medicines that are on reserved land, but most problematic when located in ancestral lands outside reserved land. Most Fourth World nations claim or assert as a matter of public policy or as the individual right of members to access traditional plants and animals for food and medicine. Conflict over access and use can and does arise between jurisdictions due to differences between legal and authoritative understanding of traditional rights.

If a Fourth World government has enacted its own laws (Cultural Incorporation) it is well positioned to open a dialogue with neighboring jurisdictions to promote biodiversity and sustainability of plants and animals by negotiating “complementary jurisdictional regulation.” Just as many counties and Fourth World nations have instituted cross-deputation between nation law enforcement and county/city law enforcement, agencies establishing similar agreements concerning access and use arrangements for traditional plants and animals may be beneficial to both sides. Similarly, fishing, hunting, and wild plant harvesting arrangements between Fourth World nations and individual state governments have been formed and may be more widely instituted to incorporate traditional foods and medicine access and use regulation.

Intergovernmental Protocol

Central state governments exercise broad authority with their asserted boundaries as “universal law.” However, such state government powers (whether by a unitary government or a federal government) can and do conflict with the exercise of customary laws in relation to traditional foods and medicines. The United Nations Declaration on the Rights of Indigenous Peoples (UN-2007) and World Conference on the Rights of Indigenous Peoples (UN-2014) announce numerous principles to preserve and advance the rights of indigenous peoples. However, in neither case, (and this is equally true for virtually all other instruments such as ILO Convention 186 and Convention on Biodiversity for example) there is no mechanism for implementing the principles or commitments made or for monitoring compliance, except for the goodwill of each states’ government.

On the matter of traditional foods and medicines there are many claims to principles and commitments to recognize and protect traditional knowledge (in many forms), but no international body or instrument provides for a means to implementation or monitoring.

We suggest that the language in the Joint Statement of Constitutional and Customary Indigenous Governments (Piquot, et al. 2014) contains language and a framework for describing the process of establishing a formal arrangement between each Fourth World nation and respective state’s government to close the gap between customary law and state’s formalized law with respect to the regulation of traditional plant and animal food and medicine access and usage. The principles in various international instruments can provide the conceptual framework for implementing the principle of free, prior, and informed consent in relation to traditional plant and animal access and usages. And, the Joint Statement provides an enforcement mechanism in by incorporating a mechanism for a Third Party Guarantor for each agreement.

When all three levels are formalized, full regulation and protection of biodiverse ecosystems and their plants and animals can be assured. The essential agreement in this overall process is the commencement of Cultural Incorporation at the Fourth World nation level. In essence this is where the fundamental law begins and rests for the other levels.

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