

Expanding Biocultural Horizons: Integrating Indigenous and Traditional Knowledge Into a Global Framework for Sustainability

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Abstract

The current ecological crisis that our planet faces, caused by globalization, overconsumption, and overpopulation, demands swift action to revolutionize our global society into one that is, by definition, sustainable. The vast bank of information stored in the biocultural relations and means of subsistence practised by indigenous people around the world has the potential to provide our society with valuable insights for the necessary societal transition that should be sought by our world leaders. Indigenous people's efficient use of local economies, sustainable land management practices, and reciprocal spiritual relationship to the natural world promote biodiversity conservation and healthy lifestyles for people. The field of ethnoecology has revealed that with the help of traditional knowledge, humanity has the ability to make great strides toward a truly sustainable society that will preserve the world's natural ecosystems and the priceless services provided by them for future generations.

Keywords: indigenous knowledge, nature, societal change, sustainability, traditional ecological knowledge, world views

Introduction

Humanity has finally put itself into a position that Thomas Malthus predicted several centuries ago (Ehrlich, 1971; Seidl & Tisdell, 1999). The size of the human population and the unchecked and irresponsible growth of the global economic system have caused

our species' ecological footprint to put so much pressure on the biosphere that its natural ability to regenerate and absorb waste is unable to keep up—we are beyond the carrying capacity of Earth (Ehrlich, 2009). We are currently in an era of change in which many determined people are beginning to take on the massive undertaking of solving this problem of epic proportions—that is, to create a society that will be sustainable in the long run so that future generations can still live off the ecosystem services provided by our blue planet.

The enormous diversity of life that has been created through billions of years of evolutionary change provides the conditions on Earth that make it habitable for our own species. In 1988, the United Nations recognized the need for a global treaty that would protect this immensely valuable biodiversity for future generations. The United Nations Environment Program (UNEP) was responsible for drafting the treaty, which was opened for signature in 1992 at the UN Conference on Environment and Development (dubbed “The Rio Earth Summit”) in Rio de Janeiro, Brazil. Within one year, the convention had nearly universal membership with 168 signatories, all of which promised to conserve biological diversity, to promote sustainable development, and to share equitably the use of genetic resources. In addition to recruiting national leaders from around the world, the convention called for the full participation of indigenous people, recognizing that they hold practices, innovations, and systems of knowledge that are relevant to the conservation and sustainable use of biological diversity (UNEP, 1993).

The ethnoecological literature further suggests that the indigenous cultures of the world possess systems of knowledge that have an enormous potential to assist us in our all-important endeavour of achieving sustainability (Morito, 2002). Their way of life has allowed them to persist in their respective homelands for centuries without overwhelming the ecosystems that support them. Several reasons exist for their ability to live within the carrying capacity of the land they inhabit.

Indigenous societies are well known for their ability to use the resources at hand to supply them with everything they need to survive (Turner, 1999). Food, shelter, water, clothing, material goods, and the technology required to take on their daily activities all are obtained from very local sources. In our world of globalization, we have become dependent on goods that come from all over the planet. Not knowing where our goods come from and how they are made has detached us from the fact that all our needs are originally extracted from the natural environment. This has the effect of keeping us ignorant of how the ecosystems from which we extract our resources fare after the extraction occurs. Our ignorance in turn allows the large-scale degradation of ecosystems without most people ever even knowing about it. We would be wise to take note of the indigenous knowledge that allows people to live within local environmental

constraints (Turner, 1999) in order to help curb ecosystem degradation and the associated costs of resource transport.

Many of the resources we take from our environment require us to manage the landscape for our needs. The global scale of our economic system has catapulted us into a frenzy of mass production, where most of our crops are produced from huge monocultural plots run by the corporations of the agribusiness sector that strive for maximal short-term gains while ignoring the health of people and the environment (Hawken, 2007). Vast tracts of virgin old-growth forest are cut down for timber products, many of which are extracted largely for aesthetic purposes, such as hardwood floors and luxury furniture. The loss of natural habitat and biodiversity associated with these practices goes unnoticed by consumers because they are disconnected from our means of production.

Many areas of the world that are discovered to be hot spots for biodiversity turn out to be managed in some way by indigenous people (Daniels, 2005; Nabhan et al., 2002). The management systems used, such as controlled burning and shifting agriculture, allow the sustainable extraction of resources while promoting high levels of environmental heterogeneity and biodiversity—taking into account the year-to-year needs of the ecosystem (Kaschula et al., 2005; Kunstadter, 1994). Land management practices that have been sculpted through centuries of trial and error by indigenous cultures are a treasure trove of knowledge that can be used worldwide to attain a sustainable system of extractive resource use.

Much of humanity, especially in those societies moulded by Western philosophies, has a long history of seeing nature as fundamentally distinct from human society (Morito, 2002). Humans have placed themselves on a pedestal above all other natural beings on this planet. The modern sciences of ecology and evolutionary biology have begun to dismantle this anthropocentrically arrogant ideology, revealing that we are inextricably linked to our natural world through direct kinship and ecological connectedness. The philosophical standpoint held by the majority of indigenous groups in the world is completely compatible with this fact, and recognizes that we are only one part of a holistic, spiritual environment (Berkes, 1999). Incorporating ideas from indigenous people that imply all relationships with natural entities have serious consequences would make our relationships with people and our attitude toward the environment much healthier. Mythological stories from Distant Time are emotionally loaded enough to force a reverence for nature upon people at a young age, and to demand that respect be used in all interactions with nature (e.g., Barbeau & Beynon, 1987; Nelson, 1983). Scientists and conservationists have been warning of threats to our environment for decades now, and it seems that the ever more compatible world views held by followers of scientific and indigenous philosophies can complement each other

in the task of creating a sustainable society (Berkes, 1999; Moller et al., 2004). Viewing nature as a familiar extension of human society fosters a biocultural sense of community that essentially prohibits the wanton destruction of the biosphere, thereby promoting the shift to sustainable lifestyles that will keep our ecosystems with all their vital services intact for generations.

This is not to suggest by any means that people should revert to ancient lifestyles or lead the life of contemporary indigenous people. On the contrary, it is the purpose of this paper to introduce aspects of indigenous life revealed by the field of ethnoecology that can be incorporated into people's modern lives in order to help humans achieve sustainability. This will include environmentally friendly resource management and conservation practices. More important, it will also highlight indigenous philosophical perspectives that could lead to a fundamental shift in people's attitudes toward the natural environment, thereby complementing the science of ecology. I will argue that if these ideals were to be integrated into Western culture, or if Western culture were at least to be influenced by them, then we would be well on our way to living in an ecologically sustainable society.

The Efficient Use of Resources by Indigenous People on a Local Scale

Selective fuelwood extraction: Although humans have discovered many fuel sources over the centuries, wood is still the most widely used by people around the world because it is less expensive and more accessible than other sources. Indigenous people need fuelwood for warmth, for cooking food, and for smoking meats to preserve them for long periods (Nelson, 1983). Fuelwood extraction by the rural poor who inhabit the shantytowns of the world have in recent decades caused some severe environmental degradation (Appasamy, 1993); however, there are examples of indigenous practices that have been studied in an ethnoecological context and are sustainable.

Many villages located in the South African savanna have developed communal woodlots from which fuelwood is harvested in a sustainable manner (Shackleton et al., 2002). Thousands of years of experimentation by indigenous people here have revealed methods to avoid irreparable damage to savanna ecosystems while sufficient amounts of firewood are still harvested from a particular grove. People have realized that cutting specific plant parts for firewood has different effects on the regeneration of the coppice or grove that is harvested. Regeneration is also affected by the time of year the plant parts are harvested and the conditions of the soil in which the fuelwood species are growing (Kaschula et al., 2005).

The careful consideration of all these characteristics allows a more holistic view of the biology associated with this type of harvesting. If the people of the south who are overharvesting fuelwood learned the importance of considering the whole species they

are exploiting, and if governments recognized and supported the need for this knowledge among the people, they would be better able to manage their local resources for sustainability, potentially helping to diminish some of the conditions contributing to their current poverty.

This also has implications for indigenous people elsewhere, who are trying to enter and benefit from the global economic system. It is important for the people entering such a market to realize that sustainable methods of harvesting these types of resources will likely be better in the long run, contrary to what Westerners and the market may indicate at any particular time. This realization may affect how, for example, indigenous people living off forests in the tropics decide whether they are better off clear-cutting forests for agricultural purposes or keeping the forest healthy and pursuing economic benefits in some other way, such as with non-timber forest products.

Non-timber forest products: Forestry management methods practised by Western governments and corporations in tropical as well as temperate areas often lead to the deforestation of vast tracts of virgin forest. The habitat loss associated with deforestation can have devastating effects on species that are dependent on that ecosystem, leading to a loss in biodiversity (Wilson, 1992). In addition, the loss of the forest as a carbon sink results in much of the carbon formerly stored in plants being released into the atmosphere and thus contributes to global warming (Suzuki & Taylor, 2009). The view that forests are valuable only in terms of timber is now being seriously called into question by many, who cite the other values derived from forests, such as ecosystem services and non-timber forest products, as being important for subsistence as well as for economic benefits (Godoy et al., 1993).

The capacity for indigenous forest-dwelling people to make use of forests without the large-scale destructive timber harvests that are omnipresent in Western forest management practices is remarkable. Traditional cultures have often managed to live solely off the forests in which they live. Subsistence gathering can include wild mushrooms and fungi, herbs, honey, fruit, berries, and insects, all of which can be used for both medicinal and nutritional needs (Appasamy, 1993). Medicinal properties can also potentially be found in bark, lichens, insects, soil organisms, and decomposing wood (Wills & Lipsey, 2000). Indigenous people from a wide range of geographical areas are capable of living off the forest's bounty, a diversity that includes, but is not limited to, people in India (Appasamy, 1993), Latin America (Godoy et al., 1993), South Africa (Shackleton et al., 2002), and the Pacific Northwest (Wills & Lipsey, 2000).

There is no question that many of these forest products are already valued by members of Western cultures; however, they are not taken into account in most cases when forest managers evaluate the worth of a forest stand (Morito, 2002). Forest products like the ones mentioned above, when joined by other more obscure forest

products such as natural pesticides and anti-phytovirals, as well as forest uses such as ecotourism (Wills & Lipsey, 2000), have the potential to be used as the basis for a more realistic valuation system for intact forests. This new system of valuation, largely inspired by the local resourcefulness of indigenous people, could bring global forest management into a paradigm that promotes indefinite sustainability. The balanced and careful use of non-timber forest products and ecotourism can relieve the intense pressure that the timber industry places on forests, mitigating the habitat loss and greenhouse gas emissions caused by it.

Indigenous Systems of Sustainable Land Management

Water use and soil fertility in arid and semi-arid regions of Africa: The African continent contains some of the driest areas on the planet. The Sahara Desert, already one of the largest in the world, is growing as a result of climate change and soil denudation due to the long-time use of colonial agricultural practices (Adams, 1993). Intensive agriculture performed for the purpose of cash cropping has ignored the local needs of people, and is typically not practised in a sustainable fashion (Adams et al., 1994).

International development aid organizations aimed at assisting the indigenous people who suffer from excessive malnourishment and poverty are beginning to recognize the legitimacy of indigenous agricultural knowledge systems through information obtained from the study of ethnoecology. Small-scale farmers are now recognized as having the ability to manage water appropriately and to increase soil fertility. Irrigation schemes used by these farmers are, for the most part, small in scale and use local technical expertise to create log aqueducts, brushwood dams (which are incredibly similar to natural beaver dams), and irrigation furrows (Adams et al., 1994). Practices such as these minimize detrimental ecological effects and decrease risk to downstream agriculturalists (Adams, 1993).

In addition to using water to increase crop yields, indigenous farmers use a variety of other methods that often mimic natural processes. The mixing of the soil with ash and other organic fertilizers, the careful spacing of crops and subsequent soil conditioning, and the cultivation of legumes all help to enhance the soil nutrient regime. In addition, indigenous cultivators of crops tend to choose native species that evolved under local soil conditions, making them much less demanding of resources. Crops are also rotated in a manner that allows soils to recycle organic matter (Phillips-Howard & Lyon, 1994).

Small-scale agricultural systems, such as the ones practised by the indigenous groups of Africa, allow the people involved in them to retain a close relationship to the land and to provide sufficient food for the local community. Not only are these practices ideally

suited to the environment where they occur, but they also provide insights for local crop production in the West. Our current method of intensive monoculturing allows environmental degradation in the form of pollution from chemical fertilizers and pesticides, without even providing more than a minimal proportion of local people's nutritional requirements. Indigenous systems of agriculture can re-teach the West how to produce a wide variety of crops in an area without the environmental costs associated with current agrarian practices, which were developed during the Green Revolution.

Tropical forest management in Latin America and Southeast Asia: In recent times, large-scale slash-and-burn operations with severely shortened fallow periods have been practised by colonialists and corporations. These operations have tarnished the reputation of all related agricultural systems as they are intended for short-term gain and usually result in compromised biodiversity and heavy deforestation (Berkes, 1999).

Conversely, when carried out properly, indigenous slash-and-burn techniques tend to emulate natural disturbances and forest succession, thereby increasing biodiversity and preventing the loss of forests for other purposes (Eden & Andrade, 1987). Most groups, such as the Lua' people of Thailand, practise slash-and-burn techniques with the utmost caution. They perform the burning on days with little or no wind, and use firebreaks to prevent the flames from spreading to the surrounding forest. Vegetation occurring on slopes or along water is spared to prevent erosion. Unburned logs are also laid strategically to prevent soil loss. The Lua' harvest a wide variety of foods, such as uncultivated bamboo, ferns, mushrooms, mustard, maize, beans, roots, tubers, squash, melons, rice, sesame, sorghum, herbs, and chili peppers. Plants used for material goods, fuel, and medicines are also incorporated into this system (Kunstadter, 1994).

Swidden, an agricultural technique within the larger realm of "field and fallow" or shifting cultivation (Eden & Andrade, 1987), is a unique method of mimicking natural disturbances to meet people's needs. This type of agroforestry has been shown to conserve and possibly even to enhance biodiversity (Berkes, 1999), which evidently makes it compatible with the goals of indigenous people, the global conservation movement, and those seeking processes for the sustainable production of food.

This adaptive land management exemplifies the widespread ability of indigenous societies to come up with elegant solutions to environmental change. Systems such as these can help avert forest loss and the global food shortage we face, bringing us closer to the intragenerational equity that is a prerequisite for sustainability (Adams, 1993).

Fire use by Native North Americans: Indigenous people all over the world use fire as a resource management tool. Fires are a natural occurrence and, whether humans or abiotic processes such as lightning cause them, they clear vegetation and enhance or initiate the growth of many species that are either directly or indirectly valuable to

human subsistence (Turner, 1999). They also help to maintain the integrity of ecosystems (Natcher, 2004). Fire can increase environmental heterogeneity, providing a more variable habitat and promoting higher levels of biodiversity (University of Alberta & CFRN Television, 1978). Natives across the North American continent have used fire extensively for thousands of years (Anderson, 1993), and ethnoecologists have described fire management as important from southern California to northern Alaska (Berkes, 1999; Natcher, 2004).

Fire is used as a mechanism for managing land for a variety of reasons, such as deterring insect pests, collecting edible insects, clearing villages and trails of brush, drying fuelwood, and depleting built-up fuel to control for future fires (Turner, 1999). The most imperative reasons for burning are the rapid recycling of organic carbon and other nutrients to speed up or initiate new plant growth.

Many plant species, such as the lodgepole pine (*Pinus contorta*), have resin-coated seeds that must be burned in order to germinate; others that are members of primary successional communities need disturbance conditions such as those created by fire in order to grow successfully (Natcher, 2004). Herbaceous plants, berries, and edible roots consumed by humans are much more abundant and succulent after fires (Turner, 1999). Forage species increase for a wide range of herbivores, including deer, beaver, elk, and moose, all of which are hunted and/or trapped extensively in North America (Berkes, 1999). In addition, growth in numbers of small mammals, such as hares, voles, and mice, helps to broadcast seeds and increase populations of predators that are also hunted and trapped for human consumption (Natcher, 2004).

Fire is used not only by hunter-gatherers, but also by agriculturally based societies. Fire has the potential to increase germination rates in cultivated seeds by providing them with better soil in their early stages of life (Berkes, 1999).

The use of fire by indigenous people has many valuable implications for Western forestry and agriculture. In forestry, land managers have long viewed fire as damaging to the environment, and, over the past century, fire suppression has severely altered several components of many of these ecosystems. This suppression effectively depletes the nutrient level of the soil by drastically slowing decomposition, and all the years of fuel buildup have put thousands of square kilometres of forest and timber at risk of burning out of control. Increased use of controlled burning could potentially increase the health and value of forests, promoting new tree growth and increasing the abundance and variety of non-timber forest products.

In the agricultural sector, returning to the use of fire as a management practice has many advantages. Burning fields in springtime could promote faster and earlier seed germination. Soil nutrients could be better replenished, which would contribute to the health of crop species and reduce the need for harmful fertilizers and pesticides. The

productivity of grazing lands could be increased, providing fodder for more livestock and decreasing dependence on irrigation.

Indigenous landscape management practices like the examples discussed above have been developed over centuries in the places inhabited by indigenous people. People who have survived for long periods in a sustainable manner in particular regions are in touch with the needs of local ecosystems. During the past few centuries of globalization, foreigners have arrived at new destinations and assimilated local landscape management techniques in favour of their own. Although modern technology can often alleviate problems that arise because of this, it is unlikely to provide long-term solutions. In order to achieve land management that will sustain our ecosystems indefinitely, the Western world must look to indigenous societies that are familiar with the land for techniques that are adaptive and take the needs of the ecosystem instead of the market into account.

Discussion: Altering Our World Views to Be Compatible with Conservation and Sustainability

Human society as an integral part of nature: The Greco-Christian legacy still permeating Western philosophies views nature as being entirely distinct from humans, and reductionism in Western science reflects this by underestimating the role humans play in most environments (Mikkelsen, 2007). Since Aristotelian times, people have deemed our level of intelligence as grounds for reserving us a place above nature, as we constantly overcome its frontiers and alter it for our every need (Wilson, 1992). This standpoint has led to the devaluation of natural systems that is largely responsible for our current position of vulnerability (Morito, 2002). In addition to devaluing nature and the services that it provides—upon which we depend as a species—the majority of people are now entirely disconnected from it. Although disconnection is partially a result of this devaluation, urbanization and the expansion of capitalist economic systems that separate extraction from production and consumption have also played a role. Lacking a sense of worth associated with the natural world and a connection to it, people are not likely to have much desire to protect it—and therefore ecological degradation within the biosphere appears inevitable. Although many commendable NGOs, scientists, and concerned citizens have reached out to government officials to promote strong sustainability, this disconnection of society from nature and the resulting lack of public support for conservation and sustainability severely impede any policy reformation that these parties seek (Kiss, 2008).

Indigenous people, on the other hand, hold an almost universal stance that people are inseparable from nature, which is endowed with spirituality and pervaded by connectedness. Rather than exercising human dominion over nature, traditional

societies hold a deep veneration for it, consecrating the biophysical and cosmological worlds in their entirety and placing a responsibility on humans for the upkeep of sustainable relations within them (Grillo, 1992; Knudtson & Suzuki, 1992).

This same theme of inextricable connectedness within nature is now being approached by way of the conceptual paradigm shift that has materialized over the past several decades on the holistic side of contemporary ecology (Dunne et al., 2002; Paine, 1966). Humans are now recognizing that we are entirely dependent upon the biological world, that the biosphere is finite, and that it has the potential to be overexploited, which weakens its ability to foster life (Nelson, 1983). With this new paradigm we can see the emergence of a new environmental ethic, one that seems to be leading to the rediscovery of the spiritual side of the natural world so familiar to indigenous people (Berkes, 1999). The advances made in modern (holistic) ecology seem, increasingly, to be granting validity to many of the beliefs long held by traditional societies.

Another field of Western science beginning to legitimize many of these beliefs is evolutionary biology. The theory of natural selection, along with the great leaps forward brought by genetics, biochemistry, and phylogenetics, has revealed beyond a reasonable doubt that all life on earth is monophyletic—that is, all living organisms share a common ancestor (Wilson, 1992). Since antiquity, indigenous cultures worldwide have been familiar with the kinship of all life through myths, totems, and clan systems (Knudtson & Suzuki, 1992).

The realization of universal kinship and the concept of the inherently connected facets of the natural world in both modern biology and traditional knowledge are causing another convergence between the two philosophies—one involving morals and responsibilities. However, people who are unaware of or confused about the scientific realities of a problem cannot begin to try to solve it. Comprehension of the vital concepts that have emerged from these knowledge systems infuses people with a personal moral sense of an ethical obligation to do their part to maintain an ecological balance on Earth (see Grillo, 1992; Horowitz, 2001; Mathur, 2008 for indigenous people; see Mikkelsen, 2007; Wilson, 1992 for Westerners). Essentially, these ethical obligations can be achieved by acknowledging reciprocity and practising respect in all interactions.

Respect and reciprocity: Spiritual and biological affinities between humans and nature lead many cultures to view the connected natural and supernatural worlds as extensions of society, effectively granting social personhood to a variety of entities. These entities include species with especially benevolent powers and characteristics in common with humans, such as the black bear and moose for indigenous people in Alaska (Nelson, 1983). Proper respect must be paid to people and other organisms, especially in order for them to be reincarnated, and this respect is granted even after the death of the creature (Johnson Gottesfeld, 1994). The inclusion of nature and its

divine beings as part of society leads to the morally acceptable treatment of them by indigenous peoples, which affects their daily lives through well-established rules of etiquette and behaviour (Nelson, 1983).

The avoidance of waste by traditional societies, such as the Wet'suwet'en and Gitskan of northwestern British Columbia (Johnson Gottesfeld, 1994) and the Koyukon of Alaska (Nelson, 1983), is an excellent example of this. When hunting and gathering and fishing, indigenous people are reminded that waste is not acceptable. People are never to take more than they need for food, so as not to upset the spirits of the animals taken. If these spirits are offended, the animals likely will not present themselves in such abundance in following seasons. In addition, disrespecting spirits will affect not only their ability to reincarnate in the future, but also their abundance (Nelson, 1983). Cosmological views such as these, which affect the conservation of resources upon which people depend, are inherently adaptive in an evolutionary sense (Johnson Gottesfeld, 1994).

Although these rules are initiated through cosmological means, they do have parallels in modern conservation and resource management. It is widely recognized in ecology that the overharvesting of species usually leads to a compromised ability to reproduce and regenerate (Ludwig et al., 1993), as was obviously the case with the North American bison and, more recently, Canada's Atlantic cod. Animal species that no longer have sufficient access to mates will not be able to reproduce properly, which leads to extinction either directly or indirectly through genetic deterioration caused by bottlenecks (Wilson, 1992). Scientists and indigenous people reach agreeable conclusions as to how these consequences can be averted, even though they arrive at their conclusions through different methods of knowledge acquisition. It is arguable that traditional mythology and storytelling are much more emotionally loaded in giving moral instructions than is modern science, providing a more convincing argument for people to behave in an appropriate way (Nelson, 1983).

This brings us to the idea of reciprocity in nature. Many traditional societies believe that every action in nature has both tangible *and* spiritual significance. If a man treats an animal and its spirit properly, he will be rewarded; thus there exists an exchange between the two. Ecology and evolutionary biology come into play here again. Evolutionary biologists have noted that on the whole, predator-prey populations keep one another in check without severe detriment to either. Ecologists have discovered countless cases of two organisms living together to the benefit of both. Both types of interactions exemplify symbiosis, illustrating reciprocity (Knudtson & Suzuki, 1992) and further corroborating connectedness within nature.

It is fairly easy to envision how the resource and land management applications used by indigenous people, as well as the suggestions for integrating them into Western

practice, fit into these broader complementary systems of knowledge. They all incorporate a holistic view of nature and the effects people have on it (connectedness), and they all adhere to the needs of the ecosystems in which they are enacted (respect and reciprocity). Whether one is fallowing fields or burning them, there is a “payback” to nature, so that it is replenished in a way that allows continual regeneration.

The reciprocal relationships that exist between humans and the environment also exist between people at the social and personal levels. With globalization we are beginning to realize that no society lives in isolation and that each society’s actions affect all others. The study of ethnoecology has brought the world views of modern Western scientists, conservationists, and indigenous people around the world closer together, allowing them to pursue common goals. A conscious recognition of the strengths and weaknesses of different knowledge systems allows us to keep our minds open to ideas and solutions brought forward by diverse biocultural philosophies.

Conclusion: Creating a Biocultural Sense of Community

The purpose of this paper is not to suggest that the global society adopt the philosophical systems of the indigenous people of the world; rather, we should try to broaden our horizons to accept different ways of knowing that can help us reach the commendable goal of ecological sustainability. Human beings have an enormous capacity to solve problems, and the concomitant loss of cultural and biological diversity is not one to be overlooked. Indigenous knowledge can help us accomplish this task if we are open-minded and resourceful, as is highlighted by the following quote: “Indigenous cultures may show us an image of a future by which we can escape our present. If a culture does not become like us, it may not be a failure but a gift to what is now an uncertain future” (Hawken, 2007).

The only reason that our future is currently uncertain is the lack of political will to make sweeping changes in our society. If we choose to broaden our biocultural horizons, we have the technological capabilities and a diverse repertoire of evolutionarily adaptive knowledge spread through the cultural landscape of the world, which has been tried and tested for thousands of years. These will allow us to mould our society into one that is fundamentally sustainable.

Indigenous philosophies have the power to help us reconnect to nature and force upon ourselves the aforementioned sense of “biocultural community.” In acknowledging the concepts of respect, reciprocity, and connectedness—and in paying closer attention to our own dreams, music, language, and cultural diversity—we could be reconnected to the world in a more realistic manner, no longer seeing the economy as an end in and of itself (Mikkelson, 2007). This reconnection would teach us to be familiar with where we are in the world and where we obtain all the resources

necessary for our survival. This reconnection would, in turn, allow us to focus on and attempt to tackle the major problems inhibiting social and environmental sustainability.

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