

# What can we learn from indigenous ecological knowledge?

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**For centuries – even millennia – indigenous peoples have lived sustainably on their ancestral lands. This is made possible by their ecocentric worldview which emphasizes that human beings are *part* of Nature, rather than separate from it. Indigenous ecological knowledge has been gathered by indigenous communities through intimate observations of local ecosystems over many years of living in harmony with their environment. It is not just a body of beliefs, but a *way of life* – a set of ethical practices governing indigenous peoples’ relationships with Nature. Despite its ecological sophistication and ethical richness, indigenous ecological knowledge has often been treated as ‘primitive’ and as superseded by Western science. In this paper, I argue that – on the contrary – indigenous ecological knowledge deserves to be taken seriously by mainstream approaches to ecology and ecological policy making, for it has much to teach us about how to address the environmental crises we face, and how to relate sustainably and non-exploitatively to Nature.**

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**T**he environmental crisis raises crucial questions about the possibility of harmony between human beings and the rest of Nature. To restore ecological equilibrium, it has become imperative to promote an ecocentric ethos that sees humans as *a part* of Nature, not *apart* from Nature (Mazzocchi, 2020). One fertile source for such an ethos is indigenous ecological knowledge, which is characterized by beliefs that promote ecological equilibrium. As profoundly important as these biocultural beliefs may be for the restoration of a properly ecocentric relationship to other-than-human Nature, they have remained marginalized and thus relatively unexplored.

This epistemological marginalization is the parallel of the socio-political marginalization experienced by many indigenous peoples today. Although the

land occupied by indigenous peoples remains vital, many groups still find it hard to secure basic rights (ICCA Consortium, 2021). For instance, 80 per cent of the world's biodiversity is domiciled in the 22 per cent of land inhabited by indigenous peoples, and 70 per cent of the world's food is produced through traditional knowledge. Despite this clear contribution to food security and protecting global ecosystems, indigenous peoples the world over are often subject to oppression, discrimination, disempowerment and social exclusion.

### Indigenous wisdom

Indigenous people and local communities are profoundly place-based, living within the ecological capacities of their territories through exchange and reciprocity. Thus, the major lesson that can be learnt from indigenous peoples is the importance of discovering (or, perhaps, rediscovering) a biocultural paradigm for living within ecological limits. For instance, much of the world's biodiversity is in the forests managed by indigenous peoples, and their wisdom offers us good lessons in protecting and restoring the integrity of forest ecosystems (Brondizio *et al.*, 2021).

Similar lessons can be learned from indigenous wisdom with regard to soil ecosystem integrity. Many indigenous peoples engage in no-till farming, retention of farm residues and the cultivation of cover crops to increase carbon density in the soil. Carbon sequestration is achieved through crop and land rotation. The indigenous concept that the natural world is imbued with life and is our home, rather than merely a source of 'ecosystem services', reinforces the idea that restoration is a way towards an ecocentric way of life rather than simply another tool for serving human ends (Unuigbo, 2021).

As is well known, anthropogenic climate change is a major cause of the ecological crisis. Data from indigenous ecological knowledge can be used in areas where there is little or no baseline environmental data. The understanding of climate-induced changes and building climate adaptation strategies can be enhanced by acquaintance with historic conditions (Mafongoya and Ajayi, 2017; Cajete, 2020). This is validated by the UN report on Climate Change and Land which emphasized the need for indigenous land management systems and agricultural practices (ICCA Consortium, 2021).

The UN report has validated the fact that environmental decline is less severe in places where Nature is regarded as sacred and indigenous ecological knowledge remains a guide. This has created an opportunity for indigenous peoples to be at the forefront of conservation initiatives. For example, the Bambuli-Babuluko community is helping to protect one of Central Africa's last remaining tropical forests. In Iran, the semi-nomadic Chandegal Balouch oversee 580,000 hectares of fragile scrublands and desert. In Canada, Inuit leaders are working to restore caribou herds, whose numbers have been in steep decline.

### The nature of indigenous ecological knowledge

Despite the growing recognition of the relevance of indigenous ecological knowledge, it is still often dismissed as 'primitive', 'savage' and

'superstitious', with policy makers and scientists claiming that it lacks sufficient credibility to be consulted for the purpose of helping to address the ecological crisis, or other challenges that touch on human existence such as food security and conflict resolution (Nepal, 2021). To effectively address this challenge, we need to briefly examine the nature of indigenous knowledge.

The term *indigenous knowledge* denotes a set of practices, beliefs and attitudes which an indigenous community has possessed over a long period of time (centuries, or even millennia), and which has been validated through its use and usefulness in human experience. Despite being thus deeply rooted in the experiences of previous generations, such knowledge is also dynamic and adapts to current technological and socioeconomic realities. Indigenous ecological knowledge includes a system of classification, a set of empirical observations about the local environment and, perhaps most importantly, an ethical framework that governs relationships between human beings and the rest of Nature. That is, indigenous ecological knowledge is not simply a set of propositions that attempt to describe and explain the world, but is *a way of life* (Maweu, 2011; Congretel and Piton, 2020).

Hence, attempts to separate indigenous ecological knowledge from its ecocentric *community* worldview and integrate it into western scientific knowledge would be a misappropriation, and a denial of its essence. In this way, the profound contributions that indigenous ecological knowledge can make to our understanding of ecological integrity will be missed. For this reason, it has become imperative to promote genuinely collaborative research that recognizes the distinctive nature of such knowledge (Maweu, 2011; Berkes *et al.*, 2000; Huntington, 2000).

Indigenous ecological knowledge is, of course, not a panacea for achieving harmony with Nature. For instance, it can be fallible and subject to bias, and should be verified when possible. Furthermore, indigenous ecological knowledge is vulnerable to corruption resulting from the larger capitalist economy and society, which is always keen to turn a sustainable subsistence ecocentric economy into a for-profit exploitative anthropocentric economy. However, rather than summarily dismissing indigenous ecological knowledge as incorrect whenever it does not correspond with scientific research, researchers should strive to understand the cause of the discrepancy.

## Indigenous ecological knowledge and ecological policy making

An illustration of cooperation between indigenous ecological knowledge and 'Western' thought is provided by some Melanesian communities, where constitutions or national legislations give recognition to customary laws.

For example, in Palau the major indigenous conservation practices were moratoriums (*buls*) and taboos. The traditional chiefs, or *Rubaks*, had extensive and intimate knowledge of local ecosystems, and implemented *buls* to ensure that the integrity of those ecosystems was protected. For example, with their knowledge of the spawning season of various fish species, they would implement *buls* to prevent overfishing. When *buls* were in effect, there were

indicators to notify villagers – such as a coconut frond being placed vertically in the soil. With regard to taboos, the people of Palau had certain foods that were traditionally taboo to them and some of these taboos are still respected. These taboos were rooted in a belief system, for example about how certain foods were taboo during illnesses or pregnancies, or that certain animals should not be hunted because they were protective spirits. Such taboos should not be blithely rejected as ‘mere superstition’, but seen in their context as part of a holistic ethical framework for protecting the integrity of local ecosystems.

These traditional systems for governing human interaction with the non-human world drew their legitimacy from the vast body of ecological knowledge gained by generations of people in intimate contact with the ecosystems they relied upon. This grounding in shared indigenous ecological knowledge (rather than in the esoteric knowledge of scientific experts) meant that people were inclusively engaged in the decision making, which resulted in less conflict and increased rule compliance.

Through the inclusion of traditional chiefs in Palau’s legislature and government bodies, a compromise between Western and indigenous models is being achieved. Importance is now given to building traditional knowledge into regulations and policies. One such regulation is Palau’s Marine Protection Act of 1994 ([https://www.ffa.int/system/files/Marine\\_Protection\\_Act\\_1994.pdf](https://www.ffa.int/system/files/Marine_Protection_Act_1994.pdf)) which incorporated traditional knowledge of spawning periods, and imposed catch limits and seasonal closures for important fish species (see also Caillaud *et al.*, 2004).

The traditional Māori concept of *Kaitiakitanga* (roughly translatable as ‘guardianship’) is another example of how indigenous ecological knowledge can contribute to policy formation. As part of *Tikanga Māori* – the intermixed laws, knowledge and protocols ruling society – *Kaitiakitanga* is deeply embedded in Māori culture. It captures the idea of having ethical responsibilities to Nature – obligations to guard and respect the well-being of places, species and ecosystems. To promote recognition of Māori rights and involvement in ecosystem protection at the local level, the *Kaitiakitanga* concept has been incorporated into New Zealand law. Under the Fisheries Act of 1996 (<https://www.legislation.govt.nz/act/public/1996/0088/latest/DLM394192.html>), for instance, *kaitiakitanga* has been interpreted as “the exercise of guardianship; and, in relation to any fisheries resources, includes the ethic of stewardship based on the nature of the resources, as exercised by the appropriate tangata whenua [people of the land] in accordance with tikanga Maori” (Part 1, s. 2.1). The *kaitiakitanga* ensures Māori participation in the development, establishment and management of fisheries; it also serves as a tool for empowering Māori communities to manage and protect customary fisheries and other local ecosystems.

## Conclusion

The Earth is in the midst of an environmental crisis, brought about by self-interested human activities. We are witnessing mass extinctions caused by pollution, soil erosion, climate change, deforestation and desertification.

Individualistic and instrumentalist attitudes towards nature have led humans to plunder the environment recklessly. If we are to find a comprehensive solution to this spiralling environmental catastrophe, there is a great need to learn from the wisdom of the world's indigenous people, accumulated over millennia of living sustainably within ecosystems. The indigenous ethos of a harmonious community of human and non-human nature offers a necessary ecocentric corrective to the anthropocentrism that has characterized so much of Western ecological thought.

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