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A study of land management indigenous group

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Abstract

International forums are increasingly acknowledging the importance of indigenous peoples and local communities (IPLCs) in the sustainable use and management of natural resources (e.g., the UN Permanent Forum on Indigenous Issues and Intergovernmental Platform on Biodiversity and Ecosystem Services). There is little or no support for IPLCs to continue managing their land. Only four ecosystem services, worth \$1.16 trillion annually, are discussed in this research, all of which are provided by IPLC-managed lands (excluding coastal, marine, and other resources). IPLCs benefit from these four ecosystem services (ES), which include carbon sequestration, bio control, air, and water regulation, but do not reap any advantages themselves. Rather, they face additional climate and natural disaster-related difficulties as a result of mainstream society's own actions. Aside from that, it identifies the most pressing issues and makes the case for the establishment of stewardship mechanisms to encourage and support the IPLC's land management practises in order to better safeguard biodiversity, water, and other Earth's natural resources for future generations.

Keywords: Indigenous peoples and local communities (IPLCs); natural resources; ecosystem services; payments for ecosystem services (PES); indigenous land management; stewardship arrangements

Introduction

Indigenous peoples and local communities (IPLCs) over the world live in harmony with the natural environment. Many socio-cultural values are supported by the great diversity on Earth because of their use and respect for nature's resources. U.N. Secretary-General Ban Ki-moon emphasised the importance of supporting and preserving indigenous cultures, stating that "Indigenous peoples are the bearers and practitioners of unique traditions and ways of engaging with people and nature ^[1]." IPLCs' efforts to protect nature and/or their ability to astutely exploit nature's resources that contribute to delivering various environmental advantages for the larger regional and global public have not been widely recognised and acknowledged to yet. According to a wide range of media resources, such as migration of numerous island communities across the Asia-Pacific region, mainstream society has left many IPLCs much more vulnerable to natural calamities such as climate change in recent decades ^[2-4]. Following the United Nations–Indigenous Peoples and Intergovernmental Panel on Biodiversity and Ecosystem Services (IPBES), the term "Indigenous peoples and local communities" (IPLCs) is used here to recognise people's historic ties to the land and the natural environment, their unique cultures and traditions, as well as their ability to adapt to environmental change. It is estimated that there are 2.5 billion individuals of Indigenous and local heritage around the world, with 370 million of these people being Indigenous ^[5, 6]. About half of the world's landmass is administered by IPLCs, and much of it is done so in a cooperative manner. Only 10% of the total land area is legally owned by Indigenous peoples, while another 8% is managed by them ^[7]. Among the IPLCs, indigenous peoples alone manage 38 million km² of land spanning all continents, including a wide diversity of ecosystems, including savannas, tropical forests, shrub lands, and rangelands. Although many ecologists and ecological economists highlighted the importance of natural resources for supporting our economies and human well-being in their writings after the 1990s, the uptake of embracing nature as a foundation for supporting human well-being and economies in the policy arena has been poor to date. There is little doubt that human well-being, economies, the number of people impacted, and the size of those impacts, notably due to floods, droughts, and wildfires are increasing in both intensity and scale as a result of mismanaging natural resources.

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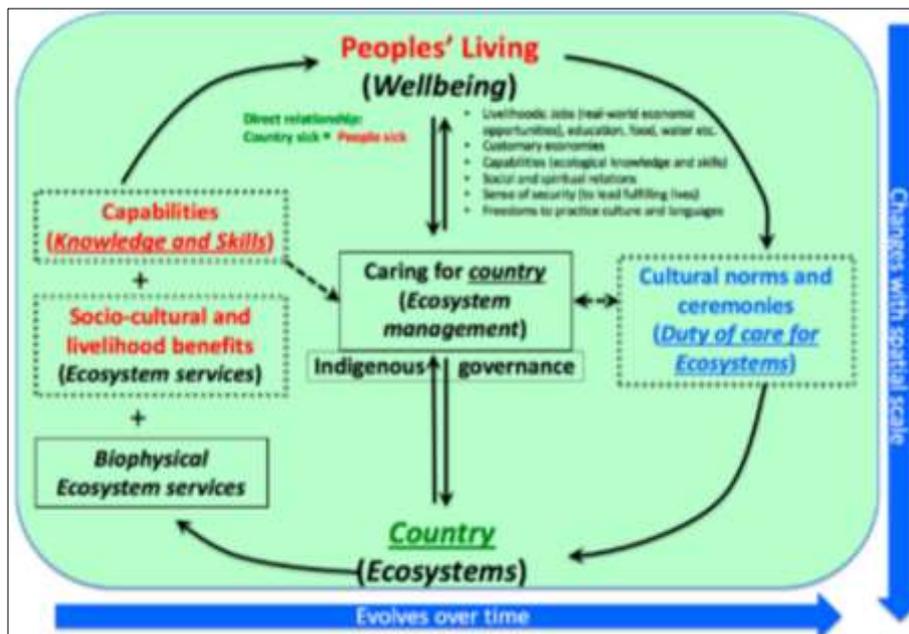
IPLCs have a critical role to play in safeguarding biodiversity, water, and other natural resources that sustain life on Earth in this current climate. Using IPLCs as a case study, this article argues that if we wish to safeguard natural resources under the Anthropocene, we must also construct stewardship structures. Additional support mechanisms (financial and non-financial) should be put in place in order to ensure that environmental advantages continue to be enjoyed by the general public. As a result of these mechanisms, IPLC land management can be promoted to preserve and safeguard natural resources at the local, regional and global scales, while placing significantly less pressure on natural resources than the bulk of the mainstream population.

Role of indigenous and local communities in managing natural resources

The rate of deforestation on IPLC-managed properties is far lower than on any other land use worldwide [7]. Ecosystem services (ES)-the benefits that humans derive from nature-are a fundamental benefit of IPLC-managed lands, not just for locally but also for regional and global human populations. Astute management, limited use of natural resources, and integrated knowledge applied by IPLCs contribute to the

conservation of natural resources. Environmental services (ES) such as providing clean air and water, protecting biodiversity, reducing greenhouse gas emissions, regulating and maintaining water and climate cycles, as well as sustaining soil and other ecological processes to support life on Earth are all provided by ecosystem services. In many IPLCs, people's customs and rites are intertwined with the land and form an integral part of daily life.

When it comes to Indigenous peoples in northern Australia, they have a two-way relationship with the earth, and they refer to their native territory as "country." Because they saw themselves as 'guardians of traditional land [clan] not owners,' they commonly use phrases like 'my nation is sick, I've got a sickness in my heart'. This is in contrast to the common human belief that one owns one's own body (Table 1). Peoples' customs and rites evolved over time as a result of an intertwined link between IPLCs and their traditional lands, which has resulted in modern environmental management techniques, as depicted in Figure 1. This deep connection to nature may have its roots in IPLCs' unique worldviews on spirituality, land, and nature connection, which contrast sharply with the normative beliefs of the general population (Table 1).



Source: Sangha and Russell smith

Fig 1: An Indigenous framework for demonstrating connections with country. The green box denotes country of which people and their living are an integral part (thus, red and green texts are not enclosed in a box). People derive socio-cultural, livelihoods, and other benefits including their capabilities from being connected with country, not in isolation. In each text box, the normal font indicates Indigenous, and the italicized equivalent indicates Western perspectives (except for country). The arrows denote the influence (benefits/knowledge) between the two systems. The blue arrows at the base and on the side reflect changes in peoples-country associations over temporal and spatial scales.

Table 1: World views of Indigenous vs. Western society

	Indigenous Society	Western/Contemporary Society
Spiritual views	Strongly spiritually oriented.	Scientific requiring proof for spiritual belief.
Connectedness	Everything, living and non-living, is connected, and identity comes from connectedness.	Compartmentalised values, with isolated 'silo' systems approach.
Land	Sacred, usually believed to be created by the supreme spiritual beings.	Land is considered a resource, and often its resources are extracted for the development/human purposes.
Time	Cyclical, nature's processes are central to the time domain.	Linear, man-made targets are central to the time domain.
Human being	Part of nature.	Most important in the world.
Education or learning	Focus on on-ground learning, with on-going training from the Elders as teachers.	Focus on theoretical and practical knowledge obtained in formal settings (educational institutes).

Public environmental benefits from Iplcs' effective land management: When Indigenous peoples manage 38 million square kilometres without exploiting resources to optimise production—a normal practise among the mainstream society—the wider regional and global public reaps the benefits. So In addition, these benefits include reducing greenhouse gas emissions, sequestering carbon, promoting biodiversity, regulating water and climate cycles, and preserving IPLCs' spiritual and cultural practices for future generations to learn about and appreciate. IPLC's 38 million km² land area is controlled by TEEB (The Economics of Ecosystems and

Biodiversity) database and the monetary values of four important ES (carbon sequestration; air quality; managing water cycles; and bio control) were estimated. Both 50 percent and 25 percent of the entire area supply four critical ES, respectively, according to the study. Under scenario I the four ES are valued at \$1.16 trillion year, while under scenario (ii), the ES are valued at \$583 billion annually (Table 2). It was decided to analyse only four of the specified environmental services (ES) here since these services directly contribute to offsite benefits that extend beyond the local area.

Table 2: Estimated value of ES from indigenously managed land of 38 million km² area, applying two scenarios: i. 50% of the area managed effectively to deliver ecosystem services (ES); and ii. 25% of the area managed effectively to deliver these ES

Value of ES in Million USD (all Values in 2015]	50% of Indigenously Managed Land Delivering ES	25% of Indigenously Managed Land Delivering ES
C sequestration'	1,102,000	551,000
Air quality 2	25,346	12,673
Maintaining water cycle'	15,516	7758
Etioccontrol '	23,473	11,736
Total in million USD	1,166,335	583,167

However, it is crucial to remember that these estimations omit land managed by local populations, which usually practise sustainable livelihoods and agricultural practices without extensive use of pesticides, fertilisers, and water and land resources. Furthermore, many cultural and spiritual services are priceless, yet they are essential for IPLCs to study and practise their cultural norms, rites, languages, and many other aspects of traditional living. This service and its involvement in IPLCs' well-being are far more valuable than the projected values shown in Table 2.

An overview of the current situation of IPLCS land affairs and available support through global platforms

To support and progress mainstream society, many governments in developing and developed countries have either encroached on or suppressed IPLC-related territories [6]. This has resulted in long-term social, economic, and cultural consequences for IPLCs, including forced relocations and the abandonment of ancestral grounds. IPLCs' rights and access to land, which underlies people's way of existence, are not adequately protected around the world [6, 7].

As previously stated, IPLC-managed lands provide a wide range of environmental and social (ES) advantages to the general public, but the public and policymakers are typically unaware of these benefits due to their focus on traditional economic activities. This shows how little people know about the value of IPLC-managed lands in the decision-making process and the broader public. Over the last few years, there has been some improvement in the global recognition of IPLCs and their territories. The UN Economic and Social Council receives advise on Indigenous concerns from international platforms like the UNPFII, which in turn provides recommendations to UN agencies, funding, and programmes. One of the most prominent human rights organisations in Denmark, the International Work Group for Indigenous Affairs (IWGIA) is devoted to defending the rights of indigenous people around the world. Non-governmental organisations (NGOs) such as Survival International, the Indigenous Peoples' Council on Bio-Colonialism, and the Amazon Conservation Team all play a role in raising awareness of Indigenous issues.. Despite this, there are only a few organisations dedicated to helping the

370 million Indigenous people living in 90 nations. IPBES and other UN agencies are unable to adequately represent the interests of over 500 million rural communities, many of whom live in close proximity to their land and practise sustainable agriculture, because of the lack of specific international or regional organisations or platforms to represent their concerns. Native American activities have been recognised by environmental experts at the forefront of climate change and biodiversity concerns over the past 1–2 decades. IPLCs working groups have been established by worldwide platforms such as IPBES, the International Union for the Conservation of Nature (IUCN), and the Conservation of Biological Diversity. IPLCs' position as biodiversity defenders and critical actors in sustainable development and land management is widely recognised by the United Nations, but this is not the case for local communities. This is further affirmed in UN Declaration on the Rights of Indigenous Peoples (UNDRIP 2007), which states that indigenous peoples have the right to maintain and strengthen their distinctive spiritual relationship with the land, territories, waters, coastal seas, and other resources that they have traditionally occupied or otherwise used and to uphold their responsibilities in this regard for future generations. These ideas can only be implemented with the help of local and/or regional administration. This hasn't happened much yet. Local communities, made up of more than two billion people, should have the same kind of assistance and recognition because they cultivate land sustainably utilising traditional practices and norms and relying on far fewer foreign inputs, helping to conserve biodiversity in agricultural landscapes.

Challenges to recognise indigenous peoples and local Communities role in managing natural resources

Many IPLCs, on the other hand, have weathered the political, economic, and environmental crises, and give vital lessons to the rest of the globe. There's no doubt that we need to put more emphasis on sustainable local economies in order to improve human well-being while also developing community resilience. Non-monetary advantages from land management must be taken into account when advising policymakers about sustainable development. Such efforts would assure the preservation of nature's biodiversity, which

directly and indirectly contributes to our economies and well-being. For the most part, our current economic models fail to recognise the importance of IPLCs in effectively maintaining and utilising traditional lands that provide a variety of environmental services (ES). IPLCs' knowledge, skills, and competencies are strongly related to their traditional systems, particularly their expertise of land management. This leads to policies and programmes aimed at mainstreaming IPLCs that are based on misinformation about their worth as land managers. Due to a lack of proper measurements to account for non-monetary advantages, such as biodiversity and water regulation, that result from sustainably managing lands, policy decision-making is frequently misguided by utilitarian values and monetary estimates [10,12]. We have an important issue in recognising and valuing IPLCs' contributions to traditional land management and in incorporating those contributions into decision-making. However, it is critical that such values be taken into account when making policy decisions. The Nobel Laureate in Economics, Prof. Amartya Sen, argues that such measures can help IPLCs live the life they want by enabling them to achieve numerous rewards. He makes the case that 'development' is all about giving people the tools they need to reach their full potential and live the lives they envision for themselves. Governments and non-profits can help by recognising the potential of their citizens and providing them with the appropriate resources. At present, typical contemporary economics/development approaches require serious consideration of:

1. Indigenous worldviews (IPLCs perspective of development);
2. Understanding of the 'true' value of IPLCs managed lands;
3. The application of multiple monetary and non-monetary approaches.

Such an integrated understating will appropriately inform policy decision-makers to develop the right opportunities for enabling IPLCs, applying a two-way approach, as shown in Figure 2.

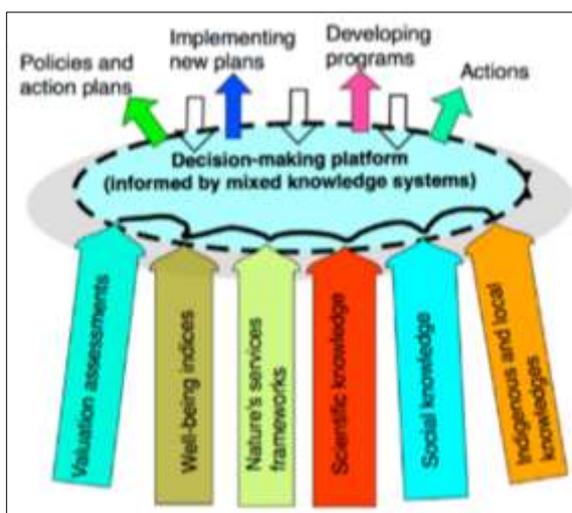


Fig 2: Diverse knowledge systems, represented as 'pillars', to inform decision-making and appropriate policy choices following two-way flows of information

Conclusion

IPLCs play an important role in managing natural resources and providing environmental benefits for regional and global

populations if they are properly recognised. For example, the estimated monetary value of just four ecosystem services (ES) from indigenously managed lands (USD 1.16–USD 0.583 trillion per year) suggests that there are many more benefits to indigenous peoples, including non-monetary ones such as cultural and spiritual ones, which are essential to their well-being. Only four Ecosystem Services (ES) from Indigenous lands (excluding coastal, marine, and other resources) make up 1% of the entire ES value around the world. ES are estimated to be worth USD 125 trillion each year. Even so, the IPLCs get little or no reward from their efforts to keep the ES in place that benefits everyone else. It is critical that IPLCs have the ability to manage their land successfully in order to sustain a steady supply of ES for the benefit of both the local and wider public.

With this, we need to build systems that respect IPLC rights and allow for the equitable distribution of land, as well as the creation of funds such as Payments for ES (PES) (as advocated by several experts). Prof. Partha Das Gupta, a well-known economist, recently highlighted the significance of such plans in a report titled "The Economics of Biodiversity." Beneficiaries often pay service providers under PES arrangements. However, for IPLC-managed lands, the wider public is the primary beneficiary, and so requires indigenously created PES systems that extend beyond geographical limits. Establishing regional and global forums that make each state responsible for IPLC land management concerns and provide financial support to keep conservative policies in place is essential in this interrelated condition. IPLC's natural resource management strategies and knowledge are credible in this Anthropocene era to maintain biodiversity and reduce climate change. 'Working on Country' in Australia is a fantastic illustration of how Indigenous people across the tropical savannas maintain their ancestral lands to protect biodiversity and other natural resources while still adhering to their own cultural practices. More than 840 rangers are currently employed by the programme in outlying areas with few other work options. As a result, it provides a wide range of socio-economic and health benefits to Indigenous people, allowing them to continue to acquire and practise their traditional knowledge and to live their lives as they choose to. Many examples can be found around the world, but they tend to be on a smaller, more localised size. Efforts at the global, regional, state, and local levels are needed to assist IPLCs while protecting the environment. UN-led Sustainable Development Goals, such as eliminating poverty; improving health and well-being; encouraging direct work and economic growth; reducing disparities; establishing sustainable cities; and climate action, will benefit greatly from such an effort. IPLCs believe that economic progress should be redefined by utilising Sen's concept of development for allowing people the freedom to pursue the lives they desire. As a result of stewardship arrangements, IPLCs can gain direct job and development opportunities, as well as improve their resilience. A practical, logical, and cost-effective approach to development is the implementation of PES schemes that reward IPLCs for their work in encouraging sustainable resource use. As a society, it will assist us all to be more resilient in the face of the current global issues that we face.

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