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Research report

Forum: ECONOMIC AND SOCIAL COUNCIL

Issue: Incorporating indigenous knowledge and practices
in sustainable development policies

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Introduction

Indigenous knowledge is the wisdom, skills and traditions that are passed down through generations. It comes from a close connection to the land, water and the environment. It is shaped by the unique history and experiences of each community. These knowledge systems exist all over the world. From Aboriginal fire management in Australia to terraced farming in the Andes and Inuit understanding of sea ice in the Arctic. Each system is different, but they share valuable lessons that can guide us toward more sustainable ways of living today.

These lessons aren't just interesting; they are practical. Traditional farming methods show how to keep soil fertile and crops diverse without relying on chemical fertilizers.

Community-based water management helps ensure resources are shared fairly and used wisely over the long term. In many regions, controlled burning has been applied to reduce the risk of severe wildfires and to maintain the health of ecosystems. Studies have shown that communities using traditional fire management experience up to 50% fewer large wildfires (Yibarbuk et al.,2001;WWF Australia 2024). Just as preserving seeds helps protect biodiversity and makes ecosystems more resilient to climate change.

When Indigenous knowledge is respected and included in modern projects, the results are often better, longer lasting, and more widely supported by local communities. Ignoring these perspectives can lead to failure, but listening to and learning from them can help protect biodiversity, improve food security, address climate challenges, and preserve cultural traditions. Recognizing the value of these knowledge systems isn't just about respecting culture, it's also a practical step toward solving some of the biggest environmental challenges we face today.

Definitions of key terms

Indigenous Knowledge

The knowledge, skills, and traditions that Indigenous communities have developed and passed down over many generations. It comes from living closely with the land, water, and nature. This can include farming methods, ways of protecting forests, healing practices, and rules for sharing resources.

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Traditional Ecological Knowledge (TEK)

A type of Indigenous knowledge that focuses specifically on the environment. It's based on years of observing nature and understanding how plants, animals, and ecosystems work together.

Sustainable Development

A way of improving people's lives without damaging the planet or using up resources that future generations will need. It's about finding a balance between economic growth, protecting the environment, and supporting communities.

Sustainable Development Goals (SDGs)

Seventeen global goals created by the United Nations in 2015 to make the world better by 2030. They include ending poverty, protecting nature, and making sure everyone has equal opportunities.

Biocultural Diversity

The connection between the variety of life in nature (plants, animals, and ecosystems) and the variety of human cultures (languages, traditions, and knowledge). Protecting one often helps protect the other.

Free, Prior and Informed Consent (FPIC)

A principle that protects the rights of Indigenous peoples when decisions or projects may affect their lands, resources, or way of life. *Free* means there is no pressure, intimidation, or manipulation. *Prior* means consent is asked for before plans are made or work begins. *Informed* means communities receive all necessary information, in a clear and understandable way, so they can decide with full knowledge of the potential impacts. FPIC is recognized in the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) and is meant to ensure respect, fairness, and genuine participation.

Intellectual Property Rights

Legal rights that give people or communities control over their creations, inventions, and knowledge. For Indigenous peoples, IPR can protect traditional knowledge, cultural expressions, and biodiversity-related practices from being used or exploited without permission or benefit-sharing.

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Climate Resilience

The ability of communities, ecosystems, or systems to prepare for, adapt to, and recover from the effects of climate change. Indigenous practices often help strengthen resilience by using sustainable and adaptive ways of managing resources.

Co-Management

When governments, local communities, and Indigenous peoples work together as equals to take care of natural resources.

United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)

An international agreement adopted in 2007 that sets out the rights of Indigenous peoples, including their rights to land, culture, and self-determination. It also protects their right to give or refuse consent for projects that affect them.

General overview

Indigenous Knowledge

Indigenous knowledge is the wisdom, skills, and traditions communities have developed over generations. It comes from living closely with the land, water, and natural environment, and it reflects each community's culture and history. This knowledge includes traditional farming methods, sustainable hunting and fishing, water management, use of medicinal plants, and community decision-making. Each system is unique, but together they show ways humans can live in balance with nature.

Historical Context

Indigenous knowledge has guided communities worldwide for centuries, long before modern science existed. Over generations, communities carefully observed nature, tested methods, and adapted practices to local climates and ecosystems. Techniques like rotational farming, agroforestry, controlled burning, and water management were improved. This happened to maintain soil fertility, conserve water, protect biodiversity, and prevent natural disasters.

However, many of these practices were disrupted during colonization, when Indigenous peoples were often displaced from their lands, traditional governance systems were ignored, and local knowledge was undervalued. Industrialization and large-scale development further weakened these practices, as forests were cleared, rivers were dammed, and ecosystems altered. The result was not only environmental degradation but also the loss of cultural heritage and community cohesion.

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Despite these disruptions, many Indigenous communities have preserved their knowledge, adapting it to modern challenges such as climate change, deforestation, and food insecurity. Understanding this history is important because it shows why Indigenous knowledge is resilient, locally adapted, and deeply connected to both environmental and social well-being.

International Recognition

In recent years, global organizations have acknowledged the importance of Indigenous knowledge in sustainable development. The UN Declaration on the Rights of Indigenous Peoples (UNDRIP, 2007) stresses that communities must give Free, Prior, and Informed Consent for projects affecting their lands or resources. Agencies like UNESCO and the FAO highlight that Indigenous knowledge can support climate adaptation, biodiversity conservation, sustainable agriculture, and ecosystem restoration. This shows that traditional knowledge is both culturally significant and highly relevant for modern environmental challenges.

Challenges

Despite the growing recognition, Indigenous knowledge is often overlooked in development policies. Ignoring it can harm the environment, waste resources, and create tension with local communities. Common challenges include insecure land rights, limited participation in decision-making, misuse of knowledge without consent, and environmental threats from climate change and industrial development. These obstacles make it difficult to fully include traditional practices into sustainable development strategies.

Global Examples in Practice

Indigenous knowledge is applied successfully in many regions around the world, examples include:

- Guatemala - The Mam community uses agroforestry, combining trees with crops and livestock on the same land. Alongside intercropping, this maintains soil health, reduces erosion, and improves food security.
- Ecuador - Ancient water management systems called “cochas” are being restored to capture and store rainwater efficiently. These systems have supported agriculture for centuries and now help communities adapt to unpredictable rainfall caused by climate change.
- Northern Australia - Aboriginal communities practice controlled burning, also called cultural burning. This reduces the risk of large wildfires, promotes the growth of native plants, and maintains healthy ecosystems. Studies show areas using these methods experience fewer and less severe wildfires.
- Brazil - Indigenous designers use Amazonian fibers and natural dyes to create sustainable fashion. This preserves cultural traditions, supports local economies, and reduces the environmental impact of textile production.

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- Canada - First Nations communities apply traditional fire and land management techniques in Boreal forests, enhancing biodiversity and supporting species that are sensitive to human disturbances.
- New Zealand - Māori knowledge informs river and forest management. For example, the Whanganui River has been granted legal status, reflecting Māori beliefs and ensuring sustainable environmental stewardship.

Importance for Sustainable Development

These cases show what Indigenous knowledge can do, but it is still not used equally in policymaking. When implemented, it improves environmental protection, increases food security, boosts climate resilience, and promotes culturally inclusive sustainable development. Recognizing and honoring Indigenous knowledge is more than just preserving cultural history; it is a practical strategy to developing more effective, resilient, and sustainable policies for the future.

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Major parties involved

United Nations Permanent Forum on Indigenous Issues (UNPFII)

The UNPFII advises the UN's Economic and Social Council (ECOSOC) on Indigenous rights, development, and cultural preservation. It holds annual sessions where governments, NGOs, and Indigenous leaders share experiences and propose policies. For example, in its 2024 session, the Forum urged countries to use Indigenous fire management techniques to prevent large-scale wildfires, highlighting their proven success in Australia and Canada.

United Nations Educational, Scientific and Cultural Organization (UNESCO)

UNESCO protects cultural diversity and promotes science and education. Its Local and Indigenous Knowledge Systems (LINKS) programme has helped Pacific Island nations integrate traditional weather forecasting into disaster planning. In Vanuatu, for instance, local communities use cloud patterns, bird migration, and sea temperature changes alongside scientific models to prepare for cyclones.

Indigenous Peoples' Organizations

These are community-led groups that advocate for rights and sustainable practices. The Sámi Council in Northern Europe campaigns for reindeer herding rights threatened by mining projects. In South America, the Coordinadora Andina de Organizaciones Indígenas (CAOI) works to protect water sources in the Andes using traditional irrigation systems. IPOs often succeed where government projects have failed because they rely on generations of place-based knowledge.

National Governments

Some governments actively involve Indigenous communities in policymaking. New Zealand includes Māori perspectives in environmental law, such as granting the Whanganui River legal personhood in 2017 to reflect Māori beliefs about the river as an ancestor. Meanwhile, Bolivia and Ecuador have written Indigenous principles like *Buen Vivir* ("living well") into their constitutions. In contrast, in countries where Indigenous rights are not recognized, large development projects often lead to conflict over land use.

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Environmental and Development NGOs

Organizations like Conservation International and Cultural Survival work directly with Indigenous groups on biodiversity protection and climate adaptation. For example, WWF's partnership with Indigenous rangers in Australia has combined satellite mapping with traditional burning methods to reduce wildfire risks. However, some projects have been criticized for failing to ensure fair benefit-sharing, sparking debates about the balance between conservation goals and Indigenous rights.

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Timeline of Key Events

1989 June 27 The International Labour Organization adopts Convention No. 169. This treaty recognizes Indigenous peoples' rights to be consulted and to give their consent before any projects affecting their lands or resources take place.

1992 June 5 The Convention on Biological Diversity (CBD) is adopted. It emphasizes the importance of traditional knowledge in conserving biodiversity and asks countries to work with Indigenous communities when planning conservation or development projects.

2007 September 13 The United Nations General Assembly adopts the UN Declaration on the Rights of Indigenous Peoples (UNDRIP). It sets global standards for protecting Indigenous rights, including their land, culture, and self-determination.

2015 September 25 The United Nations launches the 2030 Agenda for Sustainable Development. It includes 17 Sustainable Development Goals (SDGs) and highlights the importance of Indigenous knowledge in achieving these goals.

2019 August 8 The Intergovernmental Panel on Climate Change (IPCC) releases a special report on Climate Change and Land. It emphasizes that Indigenous land management practices can help fight climate change and protect biodiversity.

2022 April 21 UNESCO publishes new guidelines on including Indigenous knowledge in environmental and sustainability policies. These guidelines encourage countries to work with Indigenous communities when planning development projects.

2024 October 21 At the 16th Conference of the Parties to the Convention on Biological Diversity (COP16), world leaders met in Cali, Colombia. They agreed to create a permanent group to make sure Indigenous peoples have a voice in decisions about biodiversity. This shows that Indigenous knowledge is being recognized as important in protecting the environment.

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Previous attempts to solve the issue

As previously stated, The United Nations has recognized the importance of Indigenous knowledge through the UN Declaration on the Rights of Indigenous Peoples. Which emphasizes that Indigenous communities must give Free, Prior, and Informed Consent before any projects affect their lands or resources. UN agencies such as FAO and UNESCO have also promoted the use of Indigenous practices in agriculture, environmental management and climate adaptation. Despite this recognition, implementation has mostly been inconsistent, as these guidelines are largely non-binding and rely on national governments to act.

Some countries have tried to include Indigenous knowledge in policy. In Australia, Aboriginal “cultural burning” programs have been incorporated into certain land management plans. While in Ecuador, ancient water systems inspired by pre-Incan practices have been restored. NGOs have also partnered with Indigenous communities on projects such as the agroforestry in Guatemala and sustainable fashion initiatives in Brazil. These efforts show the importance of Indigenous knowledge; but are usually small in scale, focused in local areas or underfunded. On top of that, they rarely lead to widespread policy change.

These attempts face several challenges. Indigenous lands and knowledge often lack legal protection, communities have limited say in decisions, knowledge can be misused, and ecosystems are threatened by climate change and industrial development.

These past efforts show both the potential and the difficulties of integrating Indigenous knowledge into sustainable development, showing us that future solutions would need to address these gaps while respecting Indigenous rights and perspectives.

Possible solutions

Stronger Legal Protections for Indigenous Knowledge

Governments could pass laws that officially recognize Indigenous knowledge as a valuable resource. This would include protecting communities’ rights to manage their land, water, and cultural practices. Clear legal frameworks would help ensure that development projects respect Indigenous traditions.

Inclusive Decision-Making

Development projects should include Indigenous leaders and communities in the planning and decision-making processes. This could be done through consultation panels, local advisory boards, or co-management agreements. When communities have a real say, projects are more effective and sustainable.

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Education and Capacity Building

Training programs could be created to teach both Indigenous and non-Indigenous people how to combine traditional knowledge with modern science. Sharing skills and knowledge can improve environmental management, agriculture, and disaster resilience.

Integration in National and International Policies

Countries could incorporate Indigenous practices into national sustainable development strategies, climate plans, and biodiversity conservation programs. International organizations could provide guidance and support for these efforts, helping to scale up successful local initiatives.

Research and Documentation

Supporting research projects to document Indigenous knowledge can help preserve it and make it easier to integrate into development policies. However, this should always be done with the communities' consent and respect for their intellectual property.

Further reading

- Global Forest Watch – Indigenous land rights and forest management: <https://www.globalforestwatch.org/>
- UNESCO – Local and Indigenous Knowledge Systems (LINKS): <https://www.unesco.org/en/links/ipbes>
- · FAO – Indigenous Peoples and Traditional Knowledge: <https://www.fao.org/indigenous-peoples/our-pillars/traditional-knowledge>
- United Nations Permanent Forum on Indigenous Issues (UNPFII): <https://www.un.org/development/desa/indigenouspeoples/>
- Convention on Biological Diversity (CBD) – Indigenous and local communities: <https://www.cbd.int/indigenous/>
- International Labour Organization (ILO) – Indigenous and Tribal Peoples Convention: <https://www.ilo.org/global/topics/indigenous-tribal/lang--en/index.htm>
- Indigenous Environmental Network: <https://www.ienearth.org/>
- Global Forest Watch – Indigenous land rights and forest management: <https://www.globalforestwatch.org/>

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