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Discussion-Opinion-Editorial



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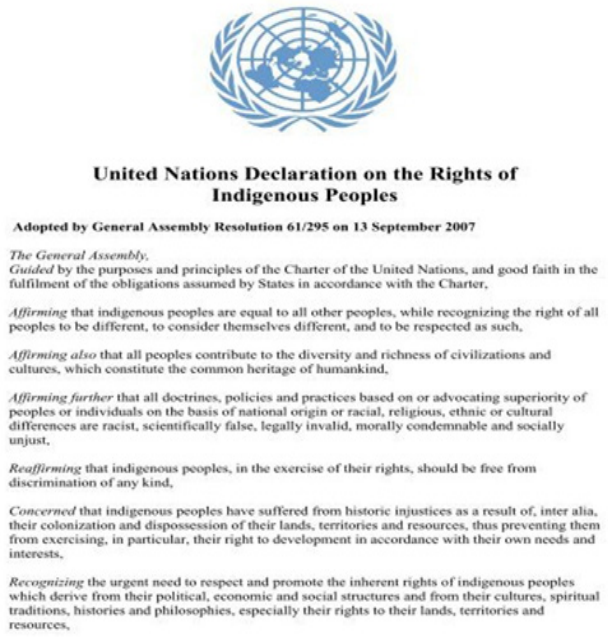
Investor, Developer, Miner, Local People, Settler, Public, and Government: Everybody Profits from Minerals, Oil, and Gas; Only the Indigenous People Suffer and Feel the Loss. "Justice is Local, Lip Service is Global" so far across the world- Part 2

1.0 Sustainable Citizens

It will be no exaggeration to claim that the Indigenous communities are the most sustainability-centric human beings on the earth. Their demands are few, local, and focused on as-needed use. They derive their necessities from nature. They use fossil fuel-based energy a little, they do not mostly use plastic, and their population is not on the rise. As they are part of the local ecosystem, their life and living are dependent on the offerings from nature and they protect the ecosystem as their means of sustenance.

Due to their subsistence economies and spiritual connection to lands and territories, most Indigenous Peoples suffer disproportionately from loss of biological diversity and environmental degradation. Their lives, survival, development chances, knowledge, environment and health conditions are threatened by environmental degradation, large scale industrial activities, toxic waste, conflicts and forced migration, as well as by land-use and land-cover changes (such as deforestation for agriculture and extractives for example). These challenges are further exacerbated by climate change. Indigenous Peoples' contributions are essential in designing and implementing solutions for ecosystems. Traditional knowledge and heritage can contribute to environmental assessments and sustainable ecosystem management. For example, the sustainable production and consumption of Indigenous and traditional food has invaluable benefits for natural resources and ecosystems.

Rather than helping, some mitigation measures can increase the threat to Indigenous Peoples' territories and coping strategies–as in the case of biofuel initiatives. While biofuel initiatives are meant to reduce greenhouse gas



United Nations Declaration on the Rights of Indigenous Peoples

Adopted by General Assembly Resolution 61/295 on 13 September 2007

The General Assembly,
Guided by the purposes and principles of the Charter of the United Nations, and good faith in the fulfilment of the obligations assumed by States in accordance with the Charter,

Affirming that indigenous peoples are equal to all other peoples, while recognizing the right of all peoples to be different, to consider themselves different, and to be respected as such,

Affirming also that all peoples contribute to the diversity and richness of civilizations and cultures, which constitute the common heritage of humankind,

Affirming further that all doctrines, policies and practices based on or advocating superiority of peoples or individuals on the basis of national origin or racial, religious, ethnic or cultural differences are racist, scientifically false, legally invalid, morally condemnable and socially unjust,

Reaffirming that indigenous peoples, in the exercise of their rights, should be free from discrimination of any kind,

Concerned that indigenous peoples have suffered from historic injustices as a result of, inter alia, their colonization and dispossession of their lands, territories and resources, thus preventing them from exercising, in particular, their right to development in accordance with their own needs and interests,

Recognizing the urgent need to respect and promote the inherent rights of indigenous peoples which derive from their political, economic and social structures and from their cultures, spiritual traditions, histories and philosophies, especially their rights to their lands, territories and resources,

Figure 1. United Nations Declaration of the Rights of Indigenous peoples

emissions, they may affect the ecosystems, water supply and landscape on which Indigenous Peoples depend, ultimately leading to an increase in monoculture crops and plantations and a consequent decline in biodiversity, food and water security.

On the other hand, when the rights of Indigenous Peoples are protected–and particularly their rights to land, territories and resources–their culture thrives and nature thrives.

The Declaration is the outcome of 25 years of hard negotiations. The rights spelled out in the document "constitute the minimum standards for the survival, dignity, and well-being of the Indigenous Peoples of the world." The Declaration protects the collective rights and individual rights of Indigenous Peoples about self-government, land, education, employment, health, and other areas.

The Declaration also requires countries to consult with Indigenous Peoples to obtain their consent on matters that concern them. As explained by former UN Special Rapporteur on the Rights of Indigenous Peoples, James Anaya, the right of self-determination is "to be full and equal participants in the creation of the institutions of government under which they live and, further, to live within a governing institutional order in which they are perpetually in control of their own destinies."

While several countries have made steps towards aligning their policies with the standards enshrined in the Declaration, an implementation gap remains. "Governments around the world must honor their responsibilities to move from Declaration endorsement to adoption and align their domestic laws and policies with the rights, self-governance, and self-determination of Indigenous Peoples," says Cultural Survival



Figure 2. A community of Indigenous people in India.

Executive Director Aimee Roberson (Choctaw and Chickasaw).

2.0 India's Stance

Indigenous Peoples in India comprise an estimated population of 104 million or 8.6% of the national population. Although there are 705 officially recognized ethnic groups, there are many more ethnic groups that would qualify for the scheduled tribe status, but which are not officially recognized. Therefore, the total number of tribal groups is undoubtedly higher than the official figure. The largest concentrations of Indigenous Peoples are found in the seven northeastern states of India, and the so-called "central tribal belt" that stretches from Rajasthan to West Bengal. The state government of Jharkhand declared the International Day of the World's Indigenous Peoples celebrated on August 9 every year worldwide as a state holiday.

India voted in favour of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) in 2007. However, the Indian government continues to deny the term and concept of "Indigenous Peoples". India voted in favour because the Declaration clarified that indigenous peoples' right to self-determination would not impair the territorial integrity or political unity of states.144 countries voted for the Declaration, 11 abstained, and four voted against.

The Indian government claims that all Indians are Indigenous, and therefore does not consider the concept of "Indigenous Peoples" applicable to India. Indigenous groups in India internalize and assert rights protected by international laws. India has several laws and constitutional provisions that recognize the rights of Indigenous Peoples to land and self-government. However, the implementation of these laws, like all countries of the world, is far from being satisfactory.

In India, there are 705 ethnic groups officially recognized as "Scheduled Tribes". In central India, the Scheduled Tribes are usually referred to as Adivasis, which means Indigenous Peoples.

India has several laws and constitutional provisions, such as the Fifth Schedule for Central India and the Sixth List for certain areas of northeastern India that recognize the rights of Indigenous Peoples to land and self-government, but their implementation is far from being satisfactory. India voted in favour of the United Nations Declaration on the Rights of Indigenous Peoples on the condition that after independence all Indians are Indigenous. Therefore, it does not consider the concept of "Indigenous Peoples"[1-3].

3.0 Free Prior Informed Consent (FPIC)

The section provides an explanation of Free Prior Informed Consent and how it is defined by the United Nations Permanent Forum on Indigenous Issues.The meaning of FPIC Free Prior informed consent means that consultation with indigenous communities should be done prior, during and following the development of private sector projects, it includes benefit sharing by indigenous communities in private sector activities and solving disputes. The term refers to the right of a local community to be informed about mining operations on a full and timely basis and to have a say as to approve a project before it starts. It includes participation in setting the conditions for addressing the economic, social and environmental impacts of all phases of mining including post closure of operations. For instance, in April 2008 Talisman, a Canadian oil company, gave a clear written commitment to Achuar indigenous leaders from the Peruvian Amazon that the oil company would not attempt to operate on their land without community consent. In the letter the CEO stated: "Talisman will not work in Peru in areas in which it does not have an agreement with the community. We consider an agreement allowing Talisman to work would require a General Assembly with a positive vote of no less than two thirds of all the members of the community."[2-4]

The meaning of free prior informed consent as commonly understood at United Nations Permanent Forum on Indigenous Issues:

- **Free** should imply no coercion, intimidation or manipulation.
- **Prior** should imply that consent has been sought sufficiently in advance of any authorization or commencement of activities and respect time requirements of indigenous consultation/ consensus processes. For instance, in the case

of Lutsel K'e Dene First Nation in Canada, they were given 60 days to decide on the agreement to negotiate. A period of time that was not enough, for a community that did not have much experience negotiating with mining.

- **Informed** implies that full disclosure of relevant aspects of the proposed project by the company and the authority in a way that is understandable and accessible to Indigenous Peoples. The information should at least cover the following aspects:
- The nature, size, pace and scope of any project proposed.
- The purpose and duration of the project.
- Areas that will be affected.
- A preliminary assessment of the economic, social, cultural and environmental impacts.
- Personnel involved in the project (including government employees, Indigenous Peoples, private sector employees, research institutions and others).
- Procedures that the project must follow.
- **Consent** implies meaningful participation and consultation are crucial components of a consent process. The parties should establish a dialogue that enables appropriate solutions in an environment of mutual respect, and full equitable participation. Indigenous Peoples should be able to choose their own representatives and customary or other institutions. The process may include the option to refuse to give consent The gender dimension should also be included and the participation of indigenous women is essential, as well youth and children and if necessary, should include special measures for vulnerable groups . For example, in Australia, under the Aboriginal Land Rights (Northern Territory) Act of 1976, Aboriginal people have the right to consent on explorations on their land, which includes the right to veto, as well as the right to negotiate agreements and timeframes for such exploration The land Councils created under the Act to identify and represent interests of communities specifically require representation by women. The Northern Land Council for instance has five positions specially set aside for women (ELI, 2004). Consent can take the form of direct representation through a community vote. In Voisey Bay's project in Canada, all members of Labrador Inuit Association and Innu tribes were allowed to vote on whether or not to approve the IBA negotiated . In India,

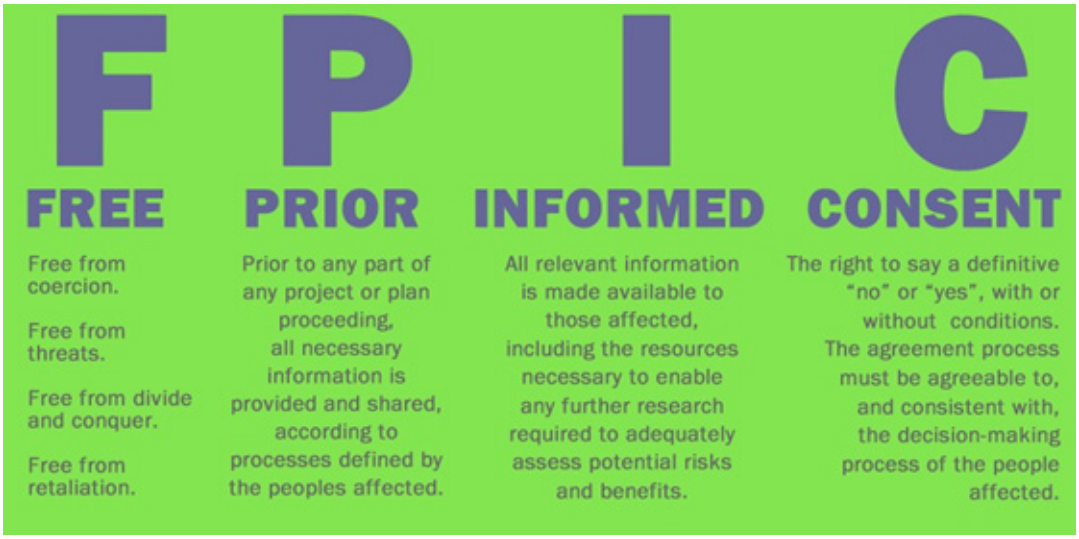


Figure 3. Free Prior Informed Consent FPIC.

RFCTLARR Law (2013) included all these provisions in the act for public purpose land acquisition.

4.0 Indigenous Knowledge

Indigenous Knowledge- also referred to as Traditional Knowledge or Traditional Ecological Knowledge- is a body of observations, oral and written knowledge, innovations, practices, and beliefs that promote sustainability and the responsible stewardship of cultural and natural resources through relationships between humans and their landscapes. Indigenous Knowledge cannot be separated from the people inextricably connected to that knowledge. It applies to biological, physical, social, cultural, and spiritual phenomena. Indigenous Peoples have developed their knowledge systems over millennia, and continue to do so based on evidence acquired through direct contact with the environment, long-term experiences, extensive observations, lessons, and skills.

This familial intimacy with nature enables the ability to detect often subtle, micro-changes and to base decisions on deep understanding of patterns and processes of change in the natural world of which people are a part. The information and summative historical and cultural ecology contained within Indigenous languages, practices, values, place names, songs, and stories hold data and knowledge that are relevant today.

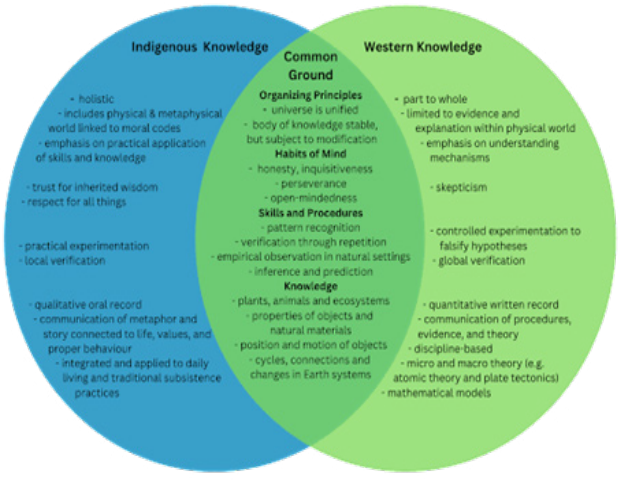


Figure 4. Indigenous knowledge.

It is estimated that, currently, at the global scale, Indigenous Peoples – and long-standing, place-based communities- manage over 24% of land, which contains ~40% of all ecologically intact landscapes and protected areas left on the planet, and a staggering ~80% of the world's biodiversity. In short, evidence suggests that the most intact ecosystems on the planet rest in the hands of people who have remained close to nature. Indigenous Knowledge is relevant to all human systems.

5.0 The Lip Service

Even after the UN declaration of the indigenous people's right nothing much has changed in the ground, except they are being heard but not listened. Even within academia, Indigenous knowledge is largely only valued when it confirms the conclusions of the dominant scientific thoughts. When it conflicts, disagrees or even suggests differently than the dominant thought it is often discarded or ignored.

Indigenous opinions are just romantic and nostalgic words on a piece of paper; they are considered but are not followed up with action. The issue is that the global development models are consumption-centric and construction oriented, and the indigenous concerns are directly against it. The developmental community is nervous about the effects of different developments on the capital markets and job creation as against different developmental models.

Indigenous knowledge tends to be localized and holistic, while the developmental science's approach is highly specialized, and seeks universal truths. In many respects, these different orientations can make threading these knowledge systems together fundamentally impossible. Responses to climate change tend to neglect the other elements of this equation, like addressing biodiversity challenges, environmental toxicity, and the broader socio-political and cultural changes needed to make solutions feasible.

The trust needed to meaningfully incorporate Indigenous knowledge into policy doesn't exist. Building equal relationships on the heels of a hundred years of colonization is not a quick process, and time is running out for climate action. It will take longer to implement a fully justice-informed approach to the climate crisis

than the time we have to address the worst impacts of climate change. We have already crossed thresholds of irreversible impacts for some Indigenous people. It is plainly visible how development leading to environmental destruction has made irreversible changes in the lives of the indigenous people. They are displaced, their culture and knowledge are lost, and they are confused with modern technology. Their habituating environments are under threat. Sea level rises are threatening the coastal indigenous people, warming of the Arctic has permanently displaced entire villages and disrupted thousands of years of cultural traditions and ways of knowing. Large swaths of indigenous land turn into multiplexes, industrial complexes, and plantations of medicinal plants.

Indigenous peoples' concerns face many challenges in the public policy-making, including:

Non-Inclusive Policies
Policies and service delivery models that are targeted towards Indigenous communities can be non-inclusive and top-down, which can create dependency on government services.

Lack of Political Representation
Indigenous peoples often lack political representation.

Language Barriers
Language constraints can prevent Indigenous participation in international forums, creating an Indigenous elite.

Denial of Rights
Indigenous peoples face denial of their right to control their own development.

Lack of Access to Social Services
Indigenous peoples often lack access to social services.

Education Systems
Education systems often fail to cater to the particular needs of Indigenous peoples.

Governmental Policies
Governmental policies can seek to separate Indigenous peoples from the places they are connected to.

Traditional Economic Analyses
Traditional economic analyses and national poverty rates are used to measure the well-being of Indigenous peoples.

6.0 Critical Minerals

The growing demand for critical minerals is increasing pressure for new mining activities on Indigenous Peoples' lands. This has led to concerns about increased potential for conflict. Indigenous communities have been negatively impacted by mining, including land dispossession, biodiversity loss, water pollution, soil degradation, and lost livelihoods.

Around the world,69% of existing or planned critical mineral projects are located on or near Indigenous Peoples' lands. 54% of the world's transition mineral reserves are located on or near Indigenous Peoples' lands. In the United States, 97% of nickel, 89% of copper, 79% of lithium, and 68% of cobalt reserves are within 35 miles of Indigenous reservations or the areas recognized by the government as the ancestral lands of the country's 574 tribes.

In Australia 57.8% of operational critical minerals mines are located on land where Indigenous Australians have rights to negotiate. Native title claims, and procedural rights exist for 79.2 % of critical minerals. Spatial distribution for late-stage projects is similar to mines already operating. Existing inequitable conditions are likely to continue without major policy reform. Australia has a safe jurisdictions bias that warrants research attention. The dire situation faced by much of the 3.8 % of Australia's population who identify statistically as Indigenous is not adequately accounted for in aggregate, national-scale indicators. At the same time, Australia has a large and growing list of "critical minerals" with government policies encouraging resource developers to "partner (!)" with Indigenous peoples in the process of resource development.

The U.S. Department of the Interior's list of minerals critical to economic and national security has one fundamental piece of a transition to a lower carbon economy globally that will mean a greater level of mining for these critical minerals and increased pressures to develop supply chains within the United States and globally. The list includes familiar materials like lithium,

which the U.S. imports 50 percent of its supply from abroad. But other materials on the list are less familiar: Tin, which the US import 75 percent of, is used for electronic soldering. Cobalt, 76 percent of which the U.S. must import, is used in rechargeable batteries. Gallium and manganese, which both have 100 percent reliance on imports, are used in electronic circuits and batteries, respectively. In fact, the U.S. is a net exporter of only one of these minerals: hafnium, which is used in nuclear control rods and alloying of metals. History reveals the impacts on Indigenous communities: uranium mining on the Navajo Nation in the name of national security during the Cold War, proposed copper mines within Oak Flat and Boundary Waters, lithium mining in Bolivia and northern Chile, gold and silver mining impacting indigenous communities in northern Mexico, and the current cobalt mining in the Democratic Republic of Congo.

As we have seen in the past, the large brunt of the negative consequences of these technologies will fall on marginalized communities who cannot afford to mitigate the impacts or are not in a political position to have a meaningful influence on policy to advocate for their positions.

The growing demand for these minerals prompts difficult questions about the extreme impacts the Indigenous communities will face. There is a long history of conflict between mining and Indigenous Peoples and Local Communities (IPLCs) in Latin America, Africa, and Asia. In June 2023, a study by an international team of researchers found that around 25 percent of environmental conflicts involving Indigenous Peoples were caused by mining. Researchers found that Indigenous communities were negatively impacted by land dispossession, biodiversity loss, water pollution, soil degradation, and lost livelihoods. According to a recent global mapping of 5,097 critical mineral projects, 69 percent of existing or planned projects are located on or near IPLCs' lands. Accelerating demand for critical minerals is increasing pressure for new or expanded mining activities in IPLCs' lands and territories and is already raising concerns about the increased potential for conflict.

What presently are we looking for: Management or solution? The situation borders on desperation and nihilism, we are merely postponing the solution for a future date, much like what a politician does. In terms of policy, we should begin by owning and addressing the colonial history of marginalization and dispossession. We must also accept that the solutions that we choose will continue to fall into the colonial ruts of the history we inherit, even if there will be wins for Indigenous people along the way. To have our ways of knowing acknowledged as valuable to addressing global problems is one of those wins, and we must celebrate it--but it's not enough to meaningfully address climate change or correct past injustices. We will also have to find a new way of consumerism that puts less pressure on the natural world and in effect, reduces the pressure on the indigenous community.

7.0 Communication

When executing a communications strategy that includes marginalized groups of people, there will always be certain nuances that are overlooked. Incompatibilities of social classes and deep-rooted social class issues that are not widely documented for analysis are predominant issues for strategic communicators. First things first, you need to thoroughly comprehend the issues plaguing Indigenous peoples. Only by understanding the historical policies that contributed to the cultural genocide and intergenerational trauma of Indigenous peoples can you begin mass communication. Certain strategies work:

1. **Connect with your diverse target audiences by communicating in ways they can easily grasp.** Adopt inclusive communication methods, such as straightforward language, and pair it with relatable imagery. For instance, when people see images of people resembling them on promotional materials, they feel more recognized and engaged.
2. **Embrace blended engagement methods.** Implement a balanced combination of online and offline engagement techniques that resonate with different audiences.
3. **Address and mitigate any personal or project-based hesitations**. Clearly articulate the goals, expected outcomes, and direct benefits of the project to potential participants. As already shared in the first point, add visual aids, like infographics, to simplify complex concepts.
4. **Engage with every group as equals**, valuing their expertise and considering intergenerational perspectives.

5. **Take a proactive approach to outreach** by posting information about your projects in locations where your desired audiences come together, such as local grocers or places of worship. Go out, meet people where they are, and understand the motivations and interests of your target groups.
6. **Facilitate participation in familiar settings** like community centers, libraries, or farmers markets, and guarantee that your engagement methods are easily accessible, including via services such as translation services or childcare provisions.
7. **For those not connected digitally, especially the vulnerable like seniors or those affected by poverty, ensure alternative avenues for involvement.** Cater to such groups by offering in-person options, such as tablets at local libraries, or incentives, such as travel reimbursements, and consider organizing engagement opportunities in their neighborhood.
8. **Bring more people around the table.** When setting up an inclusion strategy, it's important to define stakeholders and to engage people who aren't already around the table. This means bringing in multi-sector partners: NGOs, businesses, employers, local government officials, faith-based institutions, and community leaders. To do this effectively, it's essential to understand your community's values and to know who your trusted advisors in the community are. They can often point you in the right direction to addressing key gaps, such as where or when you offer a consultation period.
9. **Establish consistency and transparency in your engagement,** fostering trust for current initiatives and future endeavors.
10. **Personalize your engagement methods**. Be adaptable, innovative, and respectful. Embrace blended engagement methods and prioritize including every member of your city or community. Doing so allows you to connect with those often viewed as challenging to reach.

8.0 Creating Best Practices

A prominent case study demonstrating best practices in including indigenous community concerns is the "Jambi Huasi" initiative in Otavalo, Ecuador, where a collaborative effort between the local government, indigenous midwives association, and a community-led health center effectively integrated traditional indigenous knowledge into the healthcare system, leading to improved access, cultural sensitivity, and increased trust among indigenous populations towards healthcare providers.



Figure 5. Communications.

8.1 Key Elements of this Best Practice Case Study

Community-Led Engagement
The Jambi Huasi model prioritized direct involvement of indigenous community leaders and health practitioners, allowing them to identify key concerns and shape healthcare delivery based on their cultural understanding.

Respect for Traditional Knowledge
The initiative actively incorporated traditional medicine practices alongside Western medical approaches, validating indigenous knowledge and creating a more holistic healthcare system.

Cultural Sensitivity Training
Healthcare providers underwent training to understand indigenous customs, beliefs, and communication styles, fostering better patient-provider relationships.

Empowerment of Indigenous Women
The collaboration with indigenous midwives significantly empowered women in the community by providing them a platform to contribute their expertise and leadership in maternal and child health.

9.0 Positive Impacts of the Jambi Huasi Model[6,7]

Increased Access to Healthcare
Indigenous communities reported greater willingness to seek medical care due to the culturally appropriate approach.

Improved Health Outcomes
The integration of traditional knowledge led to better management of certain health conditions relevant to the community.

Community Ownership
Indigenous communities felt a stronger sense of control over their health decisions and actively participated in the healthcare system.
Important considerations when replicating this model

Building Trust
Establishing long-term relationships with indigenous communities based on respect and open communication is crucial.

Capacity Building
Supporting indigenous communities to develop their own healthcare leadership and expertise is essential.

Adapting to Local Context
The approach should be tailored to the specific cultural practices and needs of each indigenous community.

10.0 Best Practice Case Study: Solving Disparities in Indigenous Health in Ecuador

Despite these efforts, Ecuador's Indigenous people have inferior healthcare compared to the rest of the population. One barrier to healthcare is that Ecuador's Indigenous communities primarily live in the Amazon rainforest or the Andes mountains where hospitals are inaccessible. For Indigenous peoples in the Amazon, oil extraction near their land and water also puts them at risk for cancers, birth defects and other detrimental health consequences.

Additionally, Ecuador's Indigenous peoples have a health system that differs from Western biomedicine. Health, for the Quechua-speaking peoples of the Andes, is based on a concept of harmony in mind, body, community and environment. This holistic health philosophy emphasizes relationships with other people and the planet over the profit and technological advancement of Western medicine. Because of this worldview, many Indigenous peoples prefer traditional medicine over Western hospitals and clinics.

Indigenous peoples of the Andes also believe in illnesses such as mal aire (bad air) or mal viento (bad wind). People associate these conditions with physical symptoms including headaches, coldness, fatigue and diarrhea. These Indigenous groups believe supernatural forces cause mal aire and mal viento, requiring a curandero's (traditional healer) services. To diagnose

these illnesses, a curandero rubs a raw egg or guinea pig (cuy) over the patient and then examines the guinea pig's insides for abnormalities. To cure patients, a curandero performs a limpieza, or cleansing that may involve plants, guinea pigs, candles, holy water and/or cologne.

Jambi Huasi, Quechua for "House of Health," is a private clinic in Otavalo, Ecuador. Founded by Indigenous leaders in 1983, Jambi Huasi addresses healthcare inaccessibility and the desire for traditional medicine among Otavalo's Indigenous community. This clinic offers medical services with doctors trained in Western medicine as well as traditional medicine performed by Andean healers. Jambi Huasi's Western medical services include obstetrician-gynecologist care, pediatrics, dentistry and therapeutic massage. Jambi Huasi also offers traditional Andean medical services, including acupuncture, treatment for malaria, diagnosis using a guinea pig (un cuy), Andean pregnancy, birth and post-pregnancy services, and energy changes.

The clinic strives to meet the financial needs of its community. In its initial years, the clinic provided free services. While Jambi Huasi now charges for consultations, when a patient cannot pay, the clinic still offers pro bono medical care.

11.0 Respecting Indigenous Culture in Healthcare

According to Jambi Huasi administrator, Señor Darwin Tamba, Jambi Huasi is the only clinic in the area that provides both Indigenous and Western medicine. Because of this, Jambi Huasi emphasizes respect for Indigenous culture. Medical staff uses the community's native language, Quechua, to speak with patients. Staff also honor patient choices regarding medical care. Tamba estimates that about 60% of Jambi Huasi's patients request traditional Andean medicine while 40% request Western medicine.

In an interview with The Borgen Project, Tamba said that Jambi Huasi has achieved better care in the clinic, offering alternative medical services according to the needs of the diverse population while respecting their beliefs, their way of viewing diseases, their culture and their cosmovision.

As a small clinic, Jambi Huasi has faced financial difficulties, exasperated by the COVID-19 pandemic. However, it has already overcome immense challenges in its nearly 40-year history, including acquiring its own building and educating doctors about the legality of providing traditional medicine. Tamba is optimistic that the clinic will be able to expand in the future, serving more low-income Indigenous communities throughout Ecuador.

12.0 Hope for the Future of Indigenous Health in Ecuador

Providing inclusive healthcare involves both reaching underserviced populations and providing care in a way that aligns with that population's culture and values. By offering both Western and Indigenous medicine and listening to the Quechua community's needs, Jambi Huasi provides greater potential for its community to embrace sumak kawsay.

13.0 Indigenous Ecological Knowledge and Mining in the Northern Territory, Australia

Indigenous ecological knowledge may be considered as the sum total of ecological and cultural knowledge (including land management practices and resource use patterns) held by an Indigenous group. Until recently, there were few examples of the direct application of Indigenous ecological knowledge to mining in Australia. This case study highlights recent advances in applying that knowledge at all phases of mining projects. It represents only a small part of what is rapidly becoming an ongoing process. Driven by the need to address cultural matters related to environmental management and closure at the Ranger Uranium mine, Mirarr traditional owners and the Northern Land Council began a process that sought to tie together traditional ecological knowledge and engineering principles to develop mine closure criteria that were acceptable to both Mirarr and ERA, the operator of the mine. The process considered in detail Aboriginal consultation protocols, Western science, cultural heritage and differing worldviews, including metaphysical or spiritual concerns. Three key matters addressed

were whether the criteria were culturally acceptable, technically possible, and economically viable. The process was iterative: if a negative answer was provided to any of the questions, an alternative answer was sought. To achieve high-quality and appropriate outcomes, the consultation was driven by the Mirarr people and allowed for:

- Gender-related issues.
- Inter- and intra-clan rivalries.
- Cultural activities, such as ceremony, that influenced timing of discussions.
- Language and the interpretation of concepts that have no analogy in Mirarr culture.

The process was supported by interpretive walks across country and discussions on the area's history, which allowed the development of a detailed cultural map that expressed patterns of environmental (including cultural and social) use and land management practices. It was then possible to identify key areas for which a special focus was needed to develop closure criteria for the mine that were understood by and acceptable to the Mirarr people. This work continues, and the next stage is to identify and implement a set of monitoring values against which success in meeting the criteria can be measured. This process is accepted worldwide as leading practice because it successfully integrates two knowledge systems to provide practical outcomes. Although the mine closure phase was targeted, it can be readily adapted to provide input at all phases of mining operations, from pre-approvals and impact assessments through operations and well into the post-closure monitoring period[7,8].

14.0 What is Still Missing

Indigenous communities face a wide range of challenges including: land dispossession and lack of land rights, forced displacement, denial of cultural rights, inadequate access to basic services like healthcare and education, discrimination and marginalization, violence and human rights abuses, environmental degradation due to development projects, impacts of climate change, lack of political representation, economic disparities, and the threat of assimilation policies which often undermine their traditional way of life.

Much of the efforts on developmental constructions like in mining, have been on for compensating for the livelihood losses and on sharing economic benefits. It has been more of a political exercise as the agencies try to assuage the young people by offering jobs and a good life while the elders who are also concerned about protecting their roots, land, and culture are being frowned upon. It is an open invite to the indigenous community to join the majoritarian culture of growth, materialistic lifestyle



Figure 6. The challenges facing the indigenous community in the mineral reserve areas of Canada.

and alien customs. This is the area of concern. We must prioritize the following:

1. Rehabilitation, relocation, and resettlement in similar lifestyles for the indigenous community as in their perspective.
2. Restoration of the pride, restoration of the loss, and restoration of the culture and customs.
3. Promotion of the indigenous culture and custom as equal to the rest of the people or majoritarian culture.
4. Listening to the solutions to climate change as has been happening in their localities.
5. Globally, the state's participation in Indigenous welfare is decreasing as the government agencies pass it on to the companies to look into the aspects of community protection. This is not sufficient. The knowledge and understanding the governments can bring in such developments cannot be matched by the companies and as a reason, we see shoddy handling of such affairs.
6. Sensitization to the requirements of the Indigenous communities in the "other" peoples is also extremely important as that can bring down the angst and desperation in the communities so influenced.

The above is also fraught with dichotomies but there is scope of progress. The governments must start more avenues of scholarship and studies on the local people and should try to understand the Indigenous issues with more sensitivity. The common public also has a role; they must raise them to understand the issues of the indigenous people better and should understand their agonies (Figure 6).

15.0 Indigenous Justice Delivery System

Countries like India have several Indigenous justice delivery systems that operate alongside the country's official legal system[9] :

Tribal justice systems

These systems are based on the values and traditions of the tribes and are often separate from the official legal system. They may include village courts with elected members and laws that are based on customs and practices. For example, the Kondh tribe in Odisha uses a traditional judicial system called Niyam Raja, which prioritizes reconciliation and community harmony over punishment.

15.1 Informal Tribunals

These tribunals may include a chairman, a panchayat judge, and two lay members. The tribunals are informal and nonadversarial and emphasize conciliation. The judge makes legal decisions, and the District Judge can review those decisions.

15.2 Restorative Justice

This system is based on the idea that all parties should acknowledge the crime and that a process of atonement and reparation should be established to restore harmony to the community.

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