
Accelerating achievement of the SDGs: International business and the deployment of traditional knowledge*

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Abstract

This paper explores traditional knowledge and its possible utilization by multinational enterprises (MNEs) in achieving the United Nation's Sustainable Development Goals, with a particular focus on Goal 13, Climate Action. We argue that traditional knowledge has been overlooked by business leaders and policymakers who have failed to explore its potential in tackling some of the "grand challenges" facing the global economy. We suggest that achievement of the Sustainable Development Goals could be accelerated with the active involvement of MNEs. The key issues are what sort of involvement should they seek and what challenges must be overcome. We also outline policies to support the wider dissemination of traditional knowledge through MNE involvement.

Keywords: climate action, cultural capital, multinational enterprises, SDGs, traditional knowledge

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1. Introduction

The current global economy is at a turning point, with economic, political and social anxieties increasingly apparent. These anxieties are fuelled by growing recognition of the immensely complex economic and social problems that the world faces and yet struggles to address, principal among them climate change, poverty and hunger, social inclusion, universal education and sustainable growth, all of which challenge the concept of sustainable prosperity, and how this might be achieved.

The 2015 United Nations resolution “Transforming Our World” reflected broad societal concern emphasizing sustainable development through 17 Sustainable Development Goals (SDGs) comprising 169 specific targets to be achieved by 2030. The SDGs draw together a wide range of actors – government, business and civil society – guiding both policy and strategy. Achieving the Goals implies the need to tackle complex “wicked problems” (Rittel and Weber, 1973). The defining characteristic of such problems is a lack of agreement on the precise nature of the problem and hence, its preferred solution.

We believe that one important source of relevant knowledge – traditional knowledge – already exists but is underutilized. Traditional knowledge refers to the practices of local communities developed from experience, gained over the long term and adapted to the immediate environment. Such knowledge is collectively owned, orally transmitted and practically focused with application to areas including agriculture, health care and environmental management. Its primary contribution is to facilitate adaptation to changing conditions. In this paper we explore the ways in which achievement of the SDGs, with a specific focus on climate change (SDG 13), could be accelerated through the mobilization of traditional knowledge. Utilization of traditional knowledge faces significant challenges, and we argue that international business, and multinational enterprises (MNEs) in particular, can play a key role in expanding awareness and application of this underutilized knowledge source.

These concerns are central to the future of business, and in particular, international business since MNEs play a critical role in global prosperity. They are major users of global resources, their investment decisions affect employment and growth opportunities, and their innovation efforts contribute possible technological and organizational solutions to many of the world’s problems. At the same time, such firms are seen as key participants in the continuation or worsening of many significant problems. They dominate many of the most environmentally damaging industries – mining, logging, agriculture, international travel, automobile manufacturing and electronics. Their marketing activities encourage ever-expanding consumption. Their significance in these problems has provoked broad responses. They face growing societal pressure, with responses such as the adoption of economic, social and governance reporting or corporate social responsibility activities.

They experience greater regulation, such as emissions targets, as well as calls from academic commentators for them to play a growing role in tackling these “grand challenges” (Buckley et al., 2017). Earlier work on MNEs and climate change (Kolk and Pinske, 2008; Rugman and Verbeke, 1998) examines the creation and reconfiguration of “green” firm-specific advantages. We suggest a possible extension of these ideas to explore new sources of environmental technologies that offer alternative approaches and policies for tackling climate change – in effect, dynamic capabilities at the firm level.

Evaluation of the contribution of traditional knowledge, and in particular traditional ecological knowledge (Berkes, 1999), coincides with a growing recognition of the human impact on the global environment. The 2021 Intergovernmental Panel on Climate Change (IPCC) report acknowledges the highest CO₂ concentration in 2 million years, the fastest rise in sea levels in 3,000 years and the lowest recorded level of Arctic sea ice in 1,000 years (IPCC, 2022). These results are widely experienced as global warming, with intense rain and flooding in some parts of the world and extreme heat, droughts and bush fires in others. Continuing melting of ice sheets and glaciers is pushing up sea levels, endangering low-lying areas.

Though scientific inquiry has established the seriousness of climate change, policy action to address the problem has been hampered by lack of agreement on effective and coordinated responses, particularly attempts to mitigate climate change. The limited progress has drawn attention to alternative perspectives on climate change and, in particular, complementary strategies that highlight adaptation. Traditional knowledge, embedded in the practice of adaptation to changing dynamics between humans and their environment, offers a crucial alternative perspective (IPCC, 2023). Although such knowledge systems are increasingly acknowledged, their adoption is often general and uncritical (Ford et al., 2016; Petzold et al., 2020). In part, this valuation may result from a view of indigenous people as primarily “victims” of climate change (Belfer et al., 2017): indeed, the negative impacts they face far outweigh their contribution to the problem (Althor et al., 2016). However, it is now broadly accepted that transformational policy change is urgently needed (Diaz et al., 2019) and that underpinning such change is a reconsideration of human values and world views that inspire and guide policy (Cameron et al., 2021).

Bridging traditional and Western knowledge (Mistry and Berardi, 2016) offers advantages in that the former brings valuable time-series observations based on large samples, involves practitioners as researchers and offers an inexpensive form of scientific corroboration (Moller et al., 2004). However, such interactions are often characterized by power imbalances (Wheeler et al., 2020); it is important to ensure community relevance and participation, and demonstrate benefits to the indigenous community as well as mutual capability building (Ball and Janyst, 2008). In many cases there is also an urgent need to help build indigenous leadership and capacity (Cameron et al., 2023).

This paper offers a conceptual contribution, examining the role that MNEs might play as intermediaries in mobilizing and applying traditional knowledge beyond its local context as well as the challenges that this role presents. It argues that MNEs would benefit from incorporating such knowledge in their strategies as they respond to growing regulative and social pressures. We also suggest that MNEs may be uniquely placed to address the challenges that come with attracting, protecting and combining traditional knowledge with modern science. For the sake of brevity and clarity we illustrate our arguments through the vehicle of climate action (SDG 13) as a primary SDG. The need for effective climate action has never been more urgent, with United Nations leaders now talking of “global boiling” rather than global warming.¹

The discussion is organized in seven sections. Following this introduction we discuss the SDGs, the primary framework for the global development agenda, and some of the reasons for the limited progress in achieving them. We then consider traditional knowledge, exploring its possible contribution to the Goals. Section four outlines the potential benefits to both MNEs and traditional communities of combining their resources. Sections five and six consider the challenges of utilizing traditional knowledge and the policy implications of these hurdles. The concluding section summarizes the contribution of the paper and highlights areas where further work is required.

2. SDGs: importance and complexity

As indicated above, the SDGs are aspirational goals for a prosperous, sustainable and equitable global economy. Achieving them presents numerous and complex challenges. Standard policy responses, whether the use of markets, regulation, outsourcing or private-public partnerships, have failed to provide effective solutions (Head, 2008). Rittel and Webber (1973) in their classic analysis of wicked problems identified the key features as a lack of agreement on both the cause and scope of the problem, as well as its solution. Divergence of views on causes and responses impedes consensus in discussion and policy approaches. This is readily apparent in the climate change debate where there is disagreement on causes (manufactured or natural, unique or cyclical) and even whether a problem really exists (Benestad et al., 2016). Climate action (SDG 13) is a wicked problem because it is actually a series of related problems (air pollution, water management, waste disposal, reliance on fossil fuels and so on), for which the costs and benefits of policy interventions are extremely difficult to evaluate, the impacts are spatially dispersed and any response creates significant equity issues (Head, 2008).

¹ Ajit Niranjana, “Era of global boiling has arrived” says UN chief”, *The Guardian*, 27 July 2023.

Contention over causes and solutions to problems such as climate change highlights the value of exploring alternative frameworks and approaches. Indeed, there is growing acceptance that conventional scientific approaches that focus on climate mitigation may not be sufficient. Modern science approaches are reductionist and place little value on the experiences of affected stakeholders (hence the significant involvement of younger people in the climate action debate). These problems may not be solvable from a pure engineering perspective (Schon and Reid, 1994). Engineering solutions may also have limited appeal in a pluralistic global society where some see such solutions as reductionist, underrating the complexity of natural and human-impacted environments. The underlying disciplinary basis of modern science promotes specialization and segmentation when more holistic approaches may be revealing (Lawrence, 2010).

A further argument for seeking new sources of knowledge on complex problems such as climate change is overcoming path dependency. Path dependency exists when successive policies are underpinned by similar goals, values and institutional structures. Policymakers become locked in to repeated responses to the same or similar problems and engineered solutions. Institutional arrangements define recent problems in similar terms, trust the same knowledge sources and rely on past analytical techniques. Stakeholder groups are consistently and narrowly defined, and solutions are evaluated using customary metrics (Parsons et al., 2019). In light of these arguments, we suggest that traditional knowledge, part of the cultural capital of a number of societies, has much to offer in the analysis of complex problems such as those the SDGs seek to resolve.

The argument for alternative approaches is compounded by the reality that attainment of the SDGs has not progressed at a rate sufficient to meet the planned time frame, and in some cases, including on climate action, progress has been reversed (United Nations, 2019). A number of impediments hamper progress. First, recent conditions – the COVID pandemic (van Zanten and van Tulder, 2018), conflicts in Europe and political uncertainty – have refocused attention to other areas. The United Nations reports that because of only modest international investment in the SDGs, the SDG funding gap in developing countries has increased from \$2.5 trillion in 2015 to more than \$4 trillion per year today.²

Second, the Goals themselves have been criticized as vague or simply aspirational,³ overly complex because of the interactions between them (ICS, 2022) and varying

² United Nations Conference on Trade and Development, “Global FDI momentum weakened in 2022 with downward pressure on projects after Q1. Decline expected for 2023”, *Investment Trends Monitor*, No. 44, January. www.unctad.org.

³ William Easterly, “The SDGs should stand for senseless, dreamy, garbled”, *Foreign Policy*, 28 September 2015.

in the attention or priority they attract (Yang et al., 2020), thus requiring a carefully coordinated policy response – something particularly problematic for developing economies (Saguin and Howlett, 2022).

A third impediment results from the challenges of defining and measuring progress towards SDG targets. In the case of SDG 13 (climate action), more than half of the indicators are still under development (UNEP, 2021). A number of countries see the data requirements of reporting progress as an imposition (Sachs et al., 2022), with some adopting alternative proxies or regional measures, both of which make evaluation of global progress difficult.

Fourth, implementation of the SDGs will require considerable investment in capacity building, particularly strengthening of institutions and governance. Developing countries may lack the capital to make such investments or the ability to attract and implement the necessary technologies (United Nations, 2019). They may also face powerful lobbying efforts by entrenched interests (Dunlap and McCright, 2010). As the United Nations observed, in 2017 among the most powerful global economic units (nation States and MNEs), 7 of the top 25 were industries based on fossil fuels (United Nations, 2019).

Finally, perhaps the greatest impediment to achieving the SDGs is a failure to recognize that they require transformational rather than simply incremental changes (Filho et al., 2020). SDG climate targets have not been fulfilled within any single nation (O'Neill et al., 2018), and on current trends, are unlikely to be achieved before 2092 (Sachs et al., 2022). Transformational change will require new partnerships, novel alliances and unconventional approaches (United Nations, 2019).

3. The nature of traditional knowledge

All societies generate cultural capital, which can be defined, following Thorsby (1999), as the stock of cultural value embodied in an asset. Beyond their economic value, such assets promote social and cultural creativity. Intangible cultural capital includes the ideas, beliefs, values and traditions that distinguish and unify a given group of people or society. It includes traditional knowledge that captures the skills, values and practices accumulated by societies through long and close interaction with their environment. It is holistic institutionalized knowledge, transferred orally, containing the observations and adaptations of previous generations and their connections to the natural environment. Traditional knowledge has aspects of the “knowledge commons” (Hess and Ostrom, 2007) in that the knowledge is collectively owned and applied by a communal group. This knowledge is sometimes referred to as indigenous knowledge where it has been accumulated by the original inhabitants of “settler societies” (Parsons et al., 2019). We use the terms traditional and indigenous interchangeably. Traditional knowledge is predominantly

tacit and is held internally by the affected group (Osunade, 1994), in part because of a lack of formal legal protection, which makes it vulnerable to appropriation. Its manifestation occurs through lifestyle adaptation in response to the changing local environment. While having particular relevance to the local ecosystem, some traditional knowledge may be of value in other locations.

The potential role of traditional knowledge in tackling complex problems such as achieving sustainable development is considerable, as it both augments and complements modern scientific approaches. As indicated above, analysis of wicked problems emphasizes the benefits of a variety of analytical approaches in problem definition and solution. Consensus on problems of this type is not likely to be reached simply as the result of further empirical evidence (Head, 2008). Differences between traditional knowledge and modern science enrich debates on the causes of and workable solutions to these problems. Traditional knowledge offers an alternative view of economic activity that embeds human activity within a cultural context, highlighting informal social rules that have long been used to reduce risk and provide assurance to members of a community. The resulting sense of stability and belonging are undervalued in modern or Western economic and scientific analysis (Sandbu, 2020). Traditional knowledge offers ways of increasing participation in policy formulation and implementation where alternative institutional arrangements such as joint ownership of projects are stressed. The holistic nature of traditional approaches to resource management also aligns closely with the SDGs, in particular highlighting the three Es of economics, environment and equity.

Traditional knowledge also serves to offset the shortcomings of modern science – the reductionist approach, discipline specialization, generalization of findings from limited data sets and emphasis on average as opposed to extreme values (Petzold et al., 2020). Furthermore, modern science focuses on climate change mitigation (stabilizing or reducing detrimental climatic changes) as opposed to adaptation, which underpins the application of traditional knowledge. Adaptation emphasizes a reduction of the detrimental impacts of climate change, providing the foundation for sustainability.

Adaptative strategies are strongly represented in traditional knowledge sources. Pastoralist societies have long practised stockpiling of emergency animal fodder, diverse herd composition to overcome extreme climate conditions and selective culling to ensure sufficient supplies for the strongest herd members. Nomadic movement reduces pressures on less productive land areas. Soil carbon can be conserved through mulching or the suspension of tilling. Traditional agroforestry enables a sustainable balance between the production of food crops and carbon retention through forestry. Forests also facilitate experimentation with shade-tolerant crops as average temperatures rise (Nyong et al., 2007). Limited progress towards agreement on mitigation policies (UNEP, 2022) has elevated the debate on adaptation, with the two strategies increasingly viewed as complementary.

There is growing acceptance of the need to rethink global sustainability, including a broadening of knowledge sources as well as conceptual approaches to its understanding; indeed, the present time could be seen a critical juncture in this debate (IPCC, 2022). The increasing incidence of events such as natural disasters (WMO, 2021), widespread public protests (Bugden, 2020) and radical changes in political leadership (Galaz et al., 2010) are all characteristic of this criticality. In addition, a number of settler societies (Australia, Canada and the United States, for example) are recognizing the value of traditional knowledge as they seek to redress historical grievances. High-level policy analysis also advocates greater consideration of traditional knowledge (IPCC, 2014).

Despite these positive developments, there has been limited adoption of traditional knowledge in climate policy, particularly in a formal way (Petzold et al., 2020). This reluctance to consider “de-Westernized” knowledge (Lim and Lee, 2018) has been attributed to several considerations. One is the belief that traditional knowledge lacks the scientific rigour and legitimacy of modern science derived from the most developed economies (Ellen et al., 2000; Stewart, 2019). Debate over this belief, which has been highly combative in places such as New Zealand,⁴ is misplaced. What is critical is an understanding of what distinguishes traditional knowledge from modern science: its holistic perspective, cultural immersion, practical nature and focus on acquiring knowledge (coming to know) as opposed to discovering or knowing as a specific endpoint. This latter aspect is illustrated by the focus of Mongolian pastoralists who highlight the quality (soft or hard) and specific locations of forecast rains, rather than simply the quantity (Sneath et al., 2011). Furthermore, traditional knowledge is transformed through a systematic process of observation, testing and revision. The belief that traditional knowledge is “unscientific” appears in some cases to be simply incorrect. Stellar scintillation has long been used by indigenous peoples around the globe to predict likely rainfall levels and wind speeds. The scientific basis of this highly effective technique is the way that changes in humidity and air density alter the colours and intensity of stars. For example, higher levels of atmospheric water absorb the green and red spectrums of light, making stars appear uncharacteristically blue (a change in the refractive index) (Sofieva et al., 2013).

Second, many of the values that underpin traditional knowledge appear inconsistent with capitalist economic thinking. Capitalism sees people as owners rather than custodians of resources. It has implanted a mechanical as opposed to an organic representation of the world, seeks to codify knowledge as a restricted and tradeable resource, and has formalized institutions (Busingye and Keim, 2009).

⁴ David Lillis and Peter Schwerdtfeger, “The Mataranga Maori-science debate”, 12 December 2021, New Zealand Centre for Political Research, www.nzcprr.com/the-mataranga-maori-science-debate.

It also imagines unbounded material progress achieved through technological and economic advancement. This world view hinders exchange of knowledge and policy insights between the two groups. Traditional knowledge may also suffer from a form of “cultural distance”. While cultural distance initially referred to differences in norms and values between countries (Hofstede, 2001), in the case of traditional knowledge it can also apply within a country. For example, historical restrictions on the use of indigenous languages, the decline of traditional schooling or the disparagement of indigenous knowledge could all contribute to an internal cultural separation, hindering the exchange of ideas.

Third, in the face of rapid climate change some argue that traditional knowledge is becoming obsolete and has little to offer in the current debates (Gomez-Baggethun, 2022). This view is based on a static interpretation of traditional knowledge and fails to recognize its dynamism, which focuses on adaptation and learning, both of which contribute to longevity. An example is provided by the application in New Zealand of Maori Mataranga (traditional knowledge) to tackle the contemporary problem of invasive weed growth on lake beds. The development of woven flax mats has provided a solution that stifles weed growth by cutting light levels while allowing native plants and fish species to recover. The flax mats – woven by local weavers, and thus providing valued employment – have replaced imported hessian mats made from jute.

In summary, we suggest that traditional knowledge offers a valuable and complementary knowledge source for securing sustainable global security and achieving the SDGs. There have been several calls to combine traditional and modern science knowledge (Brown et al., 2010; IPCC, 2014). We have argued that such complementarity could be invaluable in tackling the problems addressed by the SDGs. The critical question then is how to identify, mobilize, protect and commercialize such knowledge. The following section suggests potential benefits for MNEs in engaging with traditional knowledge and for holders of such knowledge in engaging with MNEs.

4. Benefits to MNEs and traditional communities

We believe that both MNEs and traditional or indigenous communities could benefit from a closer relationship in utilizing traditional knowledge, particularly knowledge relevant to climate action. We begin with the factors stimulating MNE interest in traditional knowledge. The first are the strong societal pressures that businesses now face to contribute to tackling global challenges, and in particular, to contribute to achieving the SDGs. These pressures are considerable and emanate from a wide range of stakeholders – employees, customers, financiers and industry regulators – raising the significant potential costs of failure to tackle climate concerns (United Nations, 2019).

MNEs would benefit from mustering traditional knowledge both directly and indirectly. Directly, MNEs' global spread means they face considerable risks and costs from climate change. Weather events affect locational choices, resource costs and availability, and supply chain reliability. Any mitigation of such risks is in the best interests of all firms, particularly the most global (Pinkse and Kolk, 2012). In addition, MNEs that are under considerable pressure to respond to growing environmental concerns are realigning their goals and strategies accordingly. Increasingly common are triple-bottom-line and environmental, social and governance reporting (Arvidsson and Dumay, 2021; Elkington, 1997) that considers environmental, social and business opportunities that a shift towards global sustainability could create (Business and Sustainable Development Commission, 2017). The SDGs provide a framework for achieving global prosperity that could be used to guide the transitions that society increasingly demands of MNEs. Combining modern and traditional scientific knowledge would better enable firms to achieve these goals as strategies for adaptation are developed. Social legitimacy would benefit from a commitment to pioneering novel technologies. Such strategies would be of particular appeal to MNEs that are engaged in the more environmentally sensitive sectors such as agriculture, mining and energy.

Indirectly, failure to reflect society's growing concern is likely to see MNEs facing significant costs and growing regulation as environmental mitigation standards for air pollution, water usage and waste minimization become more restrictive. Greater utilization of novel approaches, particularly those that offer sequential steps towards sustainability, could reduce the likelihood of reliance on extreme mitigation policies. Incorporating traditional knowledge could also contribute alternative organizational and governance approaches. Although historically privatization of common resources including land, broadcasting spectrum, seed genetics and even outer space has involved corporatization (Rowe, 2008), this is not inevitable and alternative ownership models are likely to be required when managing traditional knowledge. The experience that MNEs gain in developing organizational modes such as trusts, joint management and individual participation could facilitate a move from short-term financial gain to longer-term resource husbandry.

The mobilization of traditional knowledge would also provide opportunities for MNEs to realign their involvement with the SDGs. Evidence suggests that to date companies have emphasized only targets that they can affect within their operations and that focus on the reduction of harmful impacts (van Zanten and van Tulder, 2018). Worryingly, investment in climate mitigation in large-scale renewables has declined in recent years (UNCTAD, 2023). Applying traditional knowledge to some of the most challenging global problems would redress this imbalance and facilitate MNE involvement in promoting traditional knowledge.

Such engagement also needs to consider the costs of both acquiring such knowledge and integrating it with modern technologies. MNEs possess unique attributes that are needed for such an endeavour, including complementary resources and risk-management capabilities, organizational flexibility and relevant management experience. MNEs enjoy resources that are critical to the innovation, production and distribution of new technologies. Resource capital encompasses financial, technological and human capital that is firm-specific and highly specialized (Oliver, 1997). Its prior application provides the context to absorb new and novel technologies and to complement traditional knowledge, which may lack legitimacy beyond its indigenous purpose. Such resources are reinforced by institutional capital that supports industry infrastructure (sourcing, production and distribution facilities, skilled workforce and so on). Institutional capital also offers industry acceptance and legitimacy, crucial in the introduction of novel technologies and organizational forms. Incorporation of traditional knowledge within an existing organization or industry value chain enables the combination of the novel and the familiar.

MNEs are also well placed to assess the perceived usefulness of novel technologies. While MNEs may not be experts in traditional knowledge, their industry experience and legitimacy makes them experts in existing technologies (and their shortcomings), enabling them to both evaluate and broker insightful traditional skills. They are equipped to authenticate industry standards, evaluate performance and identify market opportunities, capabilities that may not be present within traditional society groups. In addition, their organizational form in stages of value adding (innovation, production, marketing, distribution and so on) enables them to cluster complementary expertise, thereby enjoying synergies that may be difficult to achieve in traditional societies.

Established MNEs are also well placed to evaluate the ease of use of adopted technologies. They are likely to have considerable experience in the management of commercialization risks, something that traditional societies often lack. Risk is high when resources are amorphous, their origin unclear and their continuing value uncertain (Lampel et al., 2000). Combining novel skills with existing technologies can provide risk mitigation, particularly where partner organizations offer corresponding capabilities. Furthermore, traditional knowledge is largely tacit and embodied in, or controlled by, a limited number of key individuals. Many MNEs have experience in dealing with intangibles, operating across diverse cultures and levels of economic development. This provides them with insights into how to manage cross-functional and cross-cultural teams both on-site and off-site. They also have considerable expertise in digital technologies which may be usefully applied to elements of traditional knowledge.

Their experience also extends to differing institutional logics, a key characteristic of traditional knowledge in its development, protection and commercialization. Experienced MNEs may operate in economies characterized by market logic,

State determination or tribal organization. This is valuable in that traditional societies may place limited reliance on market forces and instead, develop significant and complex social and tiered networks (Wellman and Berkowitz, 1988). More experienced firms are better placed to undertake the complex negotiations and adopt the distinctive ownership and governance structures that traditional groups may require. MNEs are malleable and have evolved in both their organizational structures and their boundaries (Buckley, 2011). Experience with intrapreneurship (Halme et al., 2012), open innovation (Huizingh, 2011) and crowd sourcing (Ghezzi et al., 2018) are all valuable in the mobilization of traditional knowledge.

Closer relationships with MNEs may also be beneficial for traditional communities. Although indigenous peoples comprise only about 6 percent of the global population, they protect 80 percent of the world's biodiversity and areas that form major carbon sinks. Closer relationships with market-driven partners such as MNEs – if such arrangements provide stronger protections than currently exist – could reduce the risk of misappropriation of traditional knowledge. Traditional knowledge is often seen as a “public good”, a shared heritage for which payment is neither necessary nor appropriate. In contrast, Western scientific efforts are typically afforded legal mandates.

Traditional communities would likely benefit in terms of capacity-building as they interact with a wider range of partner organizations and governance arrangements. Partner organizations such as MNEs may provide access to lower-cost finance, facilitating project adoption (UNCTAD, 2023). Indigenous knowledge would also benefit from closer links with Western science as traditional forms of climatic predictions now face greater uncertainty as a result of anthropogenic impacts on environmental developments (Ullah et al., 2023). There are also considerable emerging opportunities for traditional communities to engage in carbon markets and emissions trading schemes, areas where MNEs are likely to have relevant knowledge. The complexity of such markets places a premium on experience.

5. The challenges of assessing traditional knowledge

Despite these clear motivations and capabilities, the assessment and mobilization of traditional knowledge with outside partners is fraught with difficulties. These difficulties arise from the nature of the knowledge under consideration as well as inconsistencies between traditional groups and MNEs.

Significant conceptual differences exist between traditional and modern views of knowledge. Traditional communities see knowledge in a connected way: connected to people, places and environment. Such knowledge is localized, although there may be similarities across systems (Kolawole and Cooper, 2022). In contrast, Western knowledge is seen as disembodied, with a separation

between those who generate knowledge and those who use it. Western science also sees knowledge as universal and effectively value free, applicable in a range of localities (David-Chavez and Gavin, 2018). Traditional knowledge holders seek reciprocity, ensuring that knowledge does not involve trade-offs or harm to other areas of society. In contrast, trade-offs are acceptable to Western science. For example, highly nutrient-rich fertilizers may create problems for waterways through runoff, but this is often an acceptable cost of increased agricultural productivity.

Critical traditional knowledge is embedded at the community level. It is shared only with community members and remains largely tacit. It is not based on a separation between knowledge generators (scientists and researchers) and knowledge users (end users). Traditional knowledge is closely interwoven in the cultural and social context in which it was created and refined. In many cases it is gender based (Fernandez, 1994). This suggests the need to develop close contacts with members of traditional communities, an enduring process likely to show limited returns in the short term (Rajan et al., 1981). An array of traditional community members is likely to be involved in negotiations, and desired outcomes may differ between the parties. MNE management must avoid a perception of knowledge extraction, instead promoting one of co-evolution. It is likely that many traditional communities, already endangered by climate change, will be willing to share knowledge, if not from a commercial view, then with the view of assisting others. Full accreditation of traditional knowledge sources is essential, as in the past such knowledge has sometimes been misappropriated and its legal status is not always clear (Robinson et al., 2017).

These difficulties are compounded by the view of MNEs held by some traditional community groups. For many indigenous groups, MNEs are part of colonialist or imperialist processes, usurping land, mineral resources and trading opportunities at the expense of the original population (Gedicks, 2001; Macklem, 2001). MNEs' technological and economic resources make them unequal partners in the negotiation process. Similarly, their entrenched commitment to profit and shareholder return does not align with the values of most community groups. There is likely to be an initial lack of trust in any joint enterprise; these are significant challenges, considering the complexity of the SDG agenda and the absence of institutional arrangements for achieving cross-sector and multisector collaboration. These have been addressed elsewhere (Eweje et al., 2020; Heuer, 2011; Selsky and Parker, 2005; van Tulder and Keen, 2018). Although the oral tradition of knowledge sharing may appear to differ radically from the knowledge management practices of MNEs, this is not necessarily the case, with such stories fulfilling a key role in legitimizing new ventures to collaborating parties (Lounsbury and Glynn, 2001).

A further consideration is the impact of facilitating (or inhibiting) conditions. We have already noted key facilitating factors that result from the limited progress in achieving some of the SDGs and resultant pressures for change that international

businesses face. But there are also key impediments at the firm level that could restrict the move from motivation to intention. The first of these is the problem of stranded assets (Semieniuk et al., 2022). Stranded assets are those that become obsolete or uneconomic prematurely, as a result of technological change, policy shifts or changes in demand and social values. Effective climate action – by limiting CO₂ emissions – would mean a massive reduction in the use of fossil fuels and thus asset redundancy in the need for reserves and processing facilities, as well as downstream activities. Although policy actions such as regulation, carbon pricing and tax incentives can be used to discourage investment in such assets, radical changes in strategy are discouraged by the fact that many MNEs in the energy sector are vulnerable to this problem. The greatest risk of stranded assets is likely to result from strict mitigation measures, whereas the propagation of traditional knowledge focuses on adaptation and thus could be beneficial.

A second impediment likely to be experienced by mature MNEs is a result of their longevity. Established routines and ways of thinking become established within corporate cultures, and radical change is seen as a threat to an existing culture. Where the long-established business model has produced profits, there may be broader stakeholder concern about radical strategic change. Disruptive technological change may be seen as “competence destroying” (Anderson and Tushman, 1990). Our argument that combining traditional knowledge with modern science enhances adaptation (Reeder-Myers et al., 2022), could help to reduce such anxieties.

MNE management will need to adopt novel approaches to cross-sector collaboration and power-sharing, participatory decision-making and the allocation of returns. As the generators and users of knowledge are brought together, co-ventures can ensure the enhanced relevance and applicability of such knowledge. Closer relations may encourage trust-building as the credibility of both parties is observed, leading to a reevaluation of alternative scientific perspectives and the limitations of knowledge bias. However, such approaches are costly. They are time-consuming, requiring detailed face-to-face exchanges employing scarce competencies that develop slowly over time and require both transparency and confrontation of complex power dynamics. Given these costs, it may be worthwhile pursuing relationships through stages. Sutherland et al. (2017) suggest an initial focus on co-assessment, where knowledge is collated and assessed by the two parties with a view to establishing its validity and applicability. Such an approach could also help identify potential problems of “biocultural hysteresis”, where the combination of traditional knowledge and mainstream science proposes protectionist environmental policies that constrain future adaptation to environmental developments (Lyver et al., 2019). Resolving agreed knowledge deficiencies could result in a second stage, co-production. A staged approach is likely to be less costly and affords opportunities to develop trust and understanding.

While not wishing to underestimate the challenges involved, we believe that this critical juncture, which the United Nations has declared a “Decade of Action”, makes it imperative for such parties to initiate contact with a view to offering new ideas, values and approaches in tackling problems that Western science, economics and politics have failed to resolve.

6. Policy implications

As indicated in the preceding discussion, broadening the appeal of traditional knowledge is a complex task, one that would benefit from stronger policy in several areas. For example, intellectual property protection legislation has limited applicability to traditional knowledge. Patenting and other forms of knowledge protection focus on individual and corporate knowledge as private property, failing to address community transgenerational knowledge. Where there is no clear or single attributable “owner”, knowledge is already in the public domain and it is embedded within a living milieu, prevailing protective approaches appear inadequate. Western knowledge protection is heavily weighted towards new knowledge, often regarding older and traditional knowledge as unfettered collective heritage. The finite timespan of modern intellectual property protection is also at odds with the evolving nature of traditional knowledge. Protection of traditional knowledge requires a focus on control rather than ownership of knowledge, as well as a recognition of its collective sharing and development. Its foundation in alternative belief systems as opposed to simply a return on scientific input must be acknowledged. Differences in the way knowledge is diffused are a further complexity. Modern scientific knowledge, perceived to have universal appeal and application, is openly disseminated through a range of forums including conferences and journals built on a shared knowledge system. Traditional knowledge is varied, in both its sources and its potential application, relying on obscure linked networks when it is shared. As a result of historical injustices, any framework to protect traditional knowledge must also be based on the principle of free, prior and informed consent (UNCTAD, 2023).

Several international instruments recognize the value and uniqueness of traditional knowledge. Key among these are the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights, and the Declaration on the Rights of Indigenous Peoples. Although the Declaration covers a range of economic and intellectual rights, its focus is on individual rather than collective rights, which some legal theorists argue are not human rights (Donnelly, 1989). Furthermore, enforcement of the provisions of the Declaration resides with the State, and some States have been reluctant to extend all rights to indigenous populations. The Declaration on the Rights of Indigenous Peoples, article 31, states that “indigenous peoples have the right to maintain, control, protect and

develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions". The Declaration imposes a requirement for the state to uphold such rights. When first introduced in 2007 four nations with significant indigenous populations (Australia, Canada, New Zealand and the United States) initially opposed the Declaration. Since then, all four have reversed their decision and now endorse it. However, the Declaration is aspirational rather than a formally binding treaty. In some cases, such as China, which initially supported the Declaration, the authorities see no obligations once they declared that China has no indigenous peoples.

International trade and investment agreements also fail to offer adequate protection for traditional knowledge. The Agreement on Trade-Related Aspects of International Property Rights (TRIPS) encourages signatory states to develop patent protection but its criteria – any product or process must be new, nonobvious and capable of industrial application – are inconsistent with most traditional knowledge, which rarely is new, represents an inventive step or is applicable to industry. International investment agreements that could stimulate MNE interest in alternative technologies are also of limited value for traditional knowledge sharing. Nearly 90 percent of such agreements are older-generation agreements (prior to 2012) that do not emphasize climate action initiatives, often containing inconsistencies related to sustainable development. State regulatory discretion is unclear, resulting in numerous investor–State dispute settlement cases, many involving energy investors. The primary incentives that these agreements offer are either tax based or subsidies, loans and risk reduction mechanisms (UNCTAD, 2023). Reform of these agreements is urgently needed, and some of the reform proposals (e.g. flexible performance measures linked to development, reform or carve-out of investor–State dispute settlement, binding corporate social responsibility obligations for international investors) would certainly assist the co-assessment of traditional knowledge. Pleasingly, there have been a number of important government-driven initiatives in recent years. Canada's 2019 Impact Assessment Act requires the incorporation of indigenous knowledge and traditional practices in project evaluation to facilitate equitable and sustainable development.⁵ New Zealand began to integrate Maori knowledge into public funding initiatives in 2005 through its Vision Mātauranga initiative.⁶ One project reflecting this approach is the combination of indigenous knowledge and mainstream science to safeguard the country's food supply. The United States National Science Foundation recently launched a new Center

⁵ Impact Assessment Agency of Canada, "Guidance: Indigenous knowledge under the Impact Assessment Act", 3 March 2023, www.canada.ca.

⁶ New Zealand, Ministry of Research, Science and Technology, "Vision Mātauranga. Unlocking the Innovation Potential of Maori Knowledge, Resources and People", July 2007, www.mbie.govt.nz/assets/9916d28d7b/vision-matauranga-booklet.pdf.

for Braiding Indigenous Knowledges and Science, bringing together 57 indigenous communities and multiple institutions across a number of science disciplines.⁷ Such initiatives are important for complementing the private sector strategies we are advocating.

There are also strong incentives for action at the local level. In addition to protest action to limit adverse impacts on local habitats, more proactive work involves collating and recording traditional knowledge. For example, the Traditional Knowledge Revival Pathways projects of the Kuku-Thaypan community in Cape York, Far North Queensland, enable elders to use modern media technology to record and preserve traditional knowledge. The projects use a variety of media – film, print, database and geolocational – to create a broad network to develop training and educational initiatives, which have been shared with similar communities in other parts of Australia and New Zealand. Media documents and databases empower indigenous communities in their dealings with outside organizations and in the management of their own knowledge systems.

This example highlights an important initiative, both local and national, that of capacity-building. Indigenous communities are generally poorly prepared for dealing with outside organizations. Globally, more than 80 per cent of indigenous peoples are found in middle-income countries, but almost half of employed indigenous peoples have no education, compared with just 17 per cent of their non-indigenous counterparts, and the shortfall is even higher for women (ILO, 2019). The 2020 Agenda for Sustainable Development includes a commitment to increase educational access for indigenous peoples (United Nations, 2015), but there is an urgent need for a range of institutions, both public and private, to contribute to capacity-building within traditional communities. Equally important is the capability of private organizations, particularly MNEs, to engage with indigenous communities. MNE management, while typically having global experience, rarely interacts with traditional communities, and any such interactions are generally challenging. There are few opportunities for training for such collaboration. Capability development within MNEs must recognize the need to ensure meaningful, transparent and equal engagement of traditional communities in any discussion, adherence to the principle of free, prior and informed consent, and protection of traditional interests and knowledge. While it could be argued that MNE managers often possess experience with alliances and mergers and acquisitions, these activities are generally undertaken for competitive rather than cooperative reasons and may not provide an appropriate foundation.

⁷ “NSF announces new Center for Braiding Indigenous Knowledges and Science”, 7 September, www.nsf.gov.

These managerial and policy challenges suggest the benefits of considering alternative approaches, particularly in the protection of traditional knowledge. One neglected mechanism is trade secrets. Traditional knowledge has characteristics that align closely with widely accepted interpretations of what constitutes a trade secret: it has potential commercial value, it is known only to a limited number of people and reasonable steps have been taken to keep it secret. Traditional knowledge generally meets the second criterion and its integration within traditional culture, its oral tradition of sharing and its often sacred nature, is consistent with the third criterion. As trade secrets can apply to both technical and commercial information, they are likely to be particularly useful when traditional and modern knowledge are combined. Successful examples can be found in bioprospecting where, for example, modern cancer drugs such as paclitaxel are derived from natural sources, in this case the Pacific yew tree. Partners in the commercialization of traditional knowledge could explore non-disclosure agreements, particularly in the early stages of co-assessment. Trade secrets do not give protection from other agents developing the same product or process independently, even through reverse engineering, yet combining traditional and modern knowledge to create new products or processes could enable stronger protection through patenting. Many MNEs have both experience with trade secrets and the resources to defend or enhance them. They also have the resources to meet or develop industry standards for novel products and processes. What is key for MNEs will be public perceptions of firm legitimacy and social responsibility as they broaden policy and production options to form novel and fruitful partnerships that contribute to widely supported sustainability goals.

7. Conclusions

Our discussion addresses the possibility of accelerating achievement of the SDGs through the utilization of traditional knowledge. For ease of exposition, we have focused the discussion on Goal 13, Climate Action. We argue that traditional knowledge has been overlooked by both businesses and policymakers who have failed to explore its potential in tackling some of the “grand challenges” facing the global economy (Buckley et al., 2017). There is broad agreement that achieving the SDGs will not be possible without the active involvement of MNEs (Ghauri, 2022); the key issue is what sort of involvement they should seek and what challenges must be overcome.

We offer a contribution to this debate in several ways. First, we set out a way to move from the normative agenda of the SDGs framework to a strategic perspective enabling MNEs to make a substantial contribution to global prosperity and not simply reputational gains (Gneiting and Mhlanga, 2021). Traditional knowledge could offer significant benefits in the development of climate adaptation

strategies, an alternative to regulatory mitigation. Furthermore, a focus on the innovative characteristics of traditional knowledge enables its incorporation with the firm's value chain and not its marginalization as a function of corporate social responsibility or public relations (van Tulder and van Mil, 2022).

Second, we illustrate a route through which MNEs could revert from a reactive to a more proactive role in achieving the SDGs (Mio et al., 2020). The limited engagement of MNEs is seen as one reason for the slow progress in attaining the SDGs (van Tulder et al., 2021) and for the call in 2020 for a "Decade of Action". The nature of MNE investment will require change to more impact investment, intended to achieve social or environmental benefits as well as financial returns. Mobilizing traditional environmental knowledge would enable the rapid application of ideas that already exist, knowledge that would also contribute to the achievement of other SDGs including poverty eradication (Goal 1), reduced inequality (Goal 10) and partnerships (Goal 17).

A third contribution is in identifying an alternative route for MNEs to contribute to the SDGs. Whereas one way is to increase positive (and reduce negative) externalities associated with MNE activity (Montiel et al., 2021), we highlight a more direct and complementary route, that of mobilizing valuable new technological and institutional solutions. Our approach is consistent with the concept of externalities and could generate considerable technological spillovers as restricted technologies are used more widely.

Fourth, we embed our discussion within well-defined business concepts. We highlight the value of drawing upon partner resources, suggesting in this case positive synergies between traditional environmental knowledge and modern science (Cuervo-Cazurra et al., 2022). We also highlight the value of climate adaptation as opposed to mitigation. Our strategic perspective provides a path to future market opportunities and to the creation of new institutional arrangements that facilitate the multi-sector partnerships that must underpin achievement of the SDGs (Cornell et al. 2013; Sachs and Sachs, 2021).

Finally, we offer an alternative mechanism for governance of the global commons (biodiversity, land, atmosphere and the oceans). These are all areas that traditional knowledge recognizes as interlinked and unbounded by national borders. They are also areas where governance has failed: natural capital is being depleted in part because it lacks a broad definition and accurate pricing (Cole, 2015). The expanded application of the best elements of modern science and traditional knowledge offers alternative and adaptative governance and the opportunity to learn, essential in achieving the SDGs (Folke et al., 2005; Pahl-Wostl, 2009).

Although we offer a conceptual framework for increasing MNE effectiveness in making progress towards the SDGs, operationalizing these ideas will be challenging. There are challenges for policymakers in ensuring representation of

traditional knowledge in decision-making, in protecting such knowledge and in ensuring equitable interactions. There are significant opportunities for further work to provide practical guidance to MNE managers. The difficulties of cross-sectoral partnerships are well understood, but more work is needed in this area and particularly from the perspective of traditional knowledge holders. Similarly, new insights into acceptable institutional solutions for traditional stakeholders would assist the likelihood of knowledge being made available, the terms of such availability and the extent of application. Accepting the unique cultural contexts within which such knowledge is entrenched suggests that a wide range of studies will be required, drawing on a number of disciplines and geographies. It also suggests the value of cross-cultural research, something in which international business scholars have proficiency. Cross-industry analyses would be useful in identifying those MNEs most likely to seek engagement in projects of this nature. It may be that firms in the most climate-sensitive industries (mining, agriculture, resource processing and so on) are those with the most to gain, and also those requiring the most significant strategic adjustments. These are ambitious research needs but fundamental in achieving sustainable global prosperity.

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