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Social Licence - Indigenous and Local Knowledge

Purpose: Information

Submitted by: CSAE Co-Chair



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CSAE Discussion Paper

Indigenous and Local Knowledge (ILK) Systems: Their relationship to negotiating social licence for innovative science and technology

At their 2015 meeting the APEC CSAE group undertook to consider the interface between ILK and contemporary scientific practice. An overview paper on the subject was submitted by Malaysia for reference by the group¹. In that paper, Professor Tan Sri Zakri Abdul Hamid outlined the changing international landscape of ILK, showing that it has been growing in international recognition since the early 2000s, particularly in response to issues of biodiversity loss and climate change. It has been the subject of reports by UN agencies including WHO and UNICEF.

The purpose of the present paper is not to duplicate past and ongoing discussions, but to start a discussion that places ILK in a distinct context where the mutual understanding of knowledge systems is crucial for the APEC economies: Negotiating social license for science and technology.

Framing ILK in this way broadens its scope of application to include not only recognition of the knowledge itself, but just as importantly, recognition of the distinct epistemologies and worldviews that underpin it and its implications for economic and social development. Thus, whereas elements of *knowledge* may be directly applied to addressing a problem (e.g. indigenous and local knowledge of water levels and currents, animal behaviour, migratory routes, seasonal changes, etc.), local and indigenous *epistemologies* must be considered and respected in proposing any solutions – especially solutions that employ non-local and non-indigenous technology. This work can be challenging, but starts with recognising that science itself is but one among many knowledge systems.

Background

According to the Maori² scholar Dr Mason Durie, indigenous epistemology – or way of knowing – is generally understood to be incommensurable with contemporary science because a classical scientific framework cannot accommodate the often spiritual or values-based sources of truth claims that are central to many ILK. Yet, as Durie pointed out in a paper presented to the 5th APEC ‘Research and Development Leaders Forum’ (2004)³, investment in indigenous scholarship in the past two decades has gone a long way to helping bridge the supposed incommensurability. He points to examples of Maori researchers whose work has helped to encourage the marriage of two worldviews. They have recognised that in most developed economies, indigenous people are

¹ Hamid, Zakri Abdul. Science and Traditional Epistemologies: Local and indigenous knowledge at the science-policy interface. Paper presented to the 3rd APEC Economies’ Chief Science Advisors and Equivalent Meeting, 12 October 2015. Kuala Lumpur.

² The indigenous people of New Zealand who preceded European colonization by some 600 years, arriving in New Zealand from Polynesia in ~1200 CE.

³ Durie, Mason. Exploring the Interface Between Science and Indigenous Knowledge. Paper presented to the 5th APEC Research and Development Leaders’ Forum, 11 March 2004. Santiago Chile.

accustomed to living at the interface of worldviews and epistemologies, where they are informed by science and by indigenous knowledge. “The challenge,” writes Durie, “has been to afford each belief system its own integrity, while developing approaches that can incorporate aspects of both and lead to innovation, greater relevance and additional opportunities for the creation of new knowledge” (Durie, 2004).

In the dozen years that have passed since Durie’s paper, ILK has been internationally recognised for the instrumental role that it plays in today’s most pressing international issues. Indeed, the IPCC Fifth assessment report referred to ILK as a major resource for adapting to climate change. Since that time, the UN Secretary General’s Science Advisory Board (SAB) has also undertaken to consider the issue of ILK at their meeting in Trieste May 24-25 2016. The SAB recognised the important role played by ILK in building resilience and responses in the context of the sustainable development goals. Science Advisory Board member Joji Carino, Director of the Forest Peoples Programme in the Philippines is charged with leading the Board’s development of a policy brief on indigenous knowledge and science for sustainable development.

The interface between ILK and science: a changing relationship

But just as the international view of (and respect for) ILK has evolved, so too has the interpretation of science changed in recent years. Whereas Durie and others pointed to a reductionist and positivist science that is largely incompatible with other knowledge systems, much of contemporary science itself now has embraced a much more integrated ‘systems thinking’ that is necessarily inclusive of multiple disciplines and inputs. This is particularly so when it comes to considering the nexus between science and society and between science and policy. In acknowledging uncertainty on one hand, and the need for a concerted multi-disciplinary approach to entrenched and complex problems on the other, science itself has nudged closer to achieving a level of compatibility with ILK.

These characteristics of what has been dubbed ‘post-normal’ science⁴ are seen most explicitly in areas where the science is still emerging and contested, where the problems are complex and where there is high public interest in an issue that demands political attention. Some of the best examples are the very areas where ILK has an important role to play: climate science; sustainability science, ecology; educational, sociological and community development research etc.

Adoption of new technologies is a fundamentally human (and not technological) process. For a proposed technological solution to take hold, it must be compatible with the worldviews and epistemologies of those at the forefront of and most affected by its application. This insight into the importance of ILK in both knowledge *production* and *application* has long been ignored by scientists and innovators, but there are signs of positive change.

For instance, there is a growing body of scholarship that recognises the post-normal aspects of much of today’s most needed science, and therefore the need for transparent and open approaches.

⁴ Funtowicz, S.O. and Ravetz, J.R., 1993. The emergence of post-normal science. In *Science, politics and morality* (pp. 85-123). Springer Netherlands.

Ideas such as co-production, co-design of research and the practice of “extended peer review committees” are increasingly being applied to consider not just the science but also its local relevance and resonance⁵.

However, the key challenge in co-production will always be to protect the integrity of the science on one hand, while on the other hand enhancing the knowledge base with locally resonant inputs.

Social License for Science and Technology

It can be assumed that S&T will play a key role in addressing the SDGs, but will the societal conditions be met? Much has been written about the role of ILK in addressing the SDGs, but this role should not be limited to strictly characterising the problems. ILK must necessarily be integrated into proposed solutions. Where solutions may involve the application of new and emerging technologies, compatibility with societal worldviews and ILK in particular will be essential.

In this, ‘technology’ is used in the broadest sense as the product of research and development. It could mean, for instance a middle-school health curriculum that has been shown successful in reducing the rate of childhood obesity in some communities; a rapid diagnostic device for communicable disease on the rise; or a genetic trait modification promoting rapid tree growth in industrially depleted riparian soils. Technologies will need to be acceptable and relevant locally before they can be applied or even tested for their applicability in addressing the SDGs

Social license has been described as “informal and intangible, existing outside the bounds of regulation, legislation and other formal requirements. It relies on a number of factors, including the perception that the community holds of the organisation and its activities, and meaningful communication strategies that facilitate ongoing engagement with the public.”⁶ Importantly, the nature of a social license can change. It is not a static one-off box to tick. Social license takes time and effort to gain and maintain.⁷

In the past two decades, there has been an increasing recognition of the importance of social license at the ILK/Science interface, but much of this has focused on the process of knowledge production alone. For instance, codes of practice and guidelines have emerged from Indigenous groups and funding councils (often in areas of health research) that work closely with indigenous and local groups.⁸ These types of documents have tended to provide a principles-based approach that

⁵ For instance

Bremer, Scott, and Silvio Funtowicz. 2015. “Negotiating a Place for Sustainability Science: Narratives from the Waikaraka Estuary in New Zealand.” *Environmental Science & Policy* 53: 47-59.

van Kerkhoff, Lorrae E., and Louis Lebel. 2015. “Coproductive Capacities: Rethinking Science-governance Relations in a Diverse World.” *Ecology and Society* 20 (1): 14.

⁶ Robertson, Diane 2016. Discussion paper on social licence for Data Futures Partnership NZ

⁷ Rahman, S., and Mohr, A. 2014. A Social Licence for Science: Capturing the Public or Co-Constructing Research? *Social Epistemology*, 28:3-4 pp. 258-276.

⁸ See for instance:

includes protection of tangible and intangible cultural properties, individual and collective privacy, culturally safe techniques (for instance in dealing with artefacts, genetic samples, sacred stories, etc.). In fact, the academic literature and practical guidance on “science’s social license to operate” is now quite detailed.

But social license for knowledge production and social license for knowledge application are distinct though related processes. That is, social license for solution-focused technologies are more likely to be negotiated if the process by which the technologies were developed integrates a demonstrated understanding of multiple epistemologies from the outset.

The pace of technological development is fast: this is so in the life sciences, instrumental and digital spaces and many of these will have the potential to have major impact on the SDGs. However as has already been seen, societies have reacted in different ways to some technologies and innovations. The raft of new technologies will require much greater attention to how social license is achieved in local contexts. Regional trade and economic development will be impeded if there is a less than coherent view of some technologies. As skills and knowhow diffuse more rapidly between economies in different states of development, issues of social licence will become more important. Yet at the same time technological imperialism will need to be avoided

APEC economies in particular are likely to have important lessons to share. This may be a topic that merits further sharing of experience and expertise for the APEC economies via the CSAE.

Australia’s Ethical Guidelines for Research Involving Aboriginal and Torres Strait Islander Peoples
<https://www.nhmrc.gov.au/health-ethics/ethical-issues-and-further-resources/ethical-guidelines-research-involving-aboriginal->

See also the OCAP Principles promulgated by the Centre for First Nation Information Governance:
http://fnigc.ca/sites/default/files/docs/ocap_path_to_fn_information_governance_en_final.pdf