Scientific, community and Indigenous knowledge in impact assessment in Australia

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1. Introduction

Impact assessment (IA) legislation in Australia generally provides a broad definition of the 'environment', capturing biophysical, social and cultural aspects. This suggests the IA process should be informed by a similarly expansive range of inputs capturing scientific, community and Indigenous[3] knowledge. It follows that regulatory agencies, responsible for managing the IA process, should be competent in sourcing, understanding and using all three types of knowledge.

Government assessment officers commonly have a degree in science giving them an understanding of the scientific method and training and experience in using scientific data. It is the authors' observation that assessment officers are less proficient in using community and Indigenous knowledge. To test this hypothesis, the primary author interviewed senior government assessment officers to seek their views on the extent to which they and their staff were able to use the three knowledge types.

2. Method

Given time limitations that prevented an extensive survey of assessment officers, targeted 30 minute interviews with six experienced officers across Australia offered the advantages of:

- Drawing on decades of experience in IA in government (well over 100 years collectively)
- Allowing more in-depth discussion
- As participants held senior positions within their organisation, providing an individual and organisation-wide perspective.

3. Results

This section summarises the responses to the questions put to each assessment officer.

4.1. On a scale of 1 to 10, how well do you think each type of knowledge is currently considered in decision-making?

The responses are shown in Table 1. Respondents considered assessment officers were competent in using scientific knowledge. Indigenous knowledge was the least well considered. Notably, ratings for scientific and community knowledge were reasonably consistent but there was a very wide range for Indigenous knowledge. This reflects jurisdictional differences and is discussed further below.

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[3] Indigenous peoples in Australia include Aboriginal and Torres Strait Islander peoples. Collectively, they may also be known as 'First Nations' or 'First Peoples'. 'Indigenous' is generally not used and, if it is, is capitalised. This paper uses the term as it is applied globally and therefore refers to 'Indigenous' knowledge throughout.

Table 1: Interview ratings (out of 10)

Type of knowledge	Range	Average
Scientific	7-9	8.2
Community	5-7	6.6
Indigenous	1-9	5.1

4.2. Main barriers

Respondents noted the following as barriers to more effective use of community and Indigenous knowledge:

World view

A person's world view can be defined as 'the way they see and understand the world, especially regarding issues such as politics, philosophy, and religion' (HarperCollins, 2021). Several respondents thought most impact assessors have a western science worldview which may differ to that of a local community. Indigenous knowledge is based on a very different worldview which is far less familiar to impact assessors.

Identifying the appropriate group

Each jurisdiction in Australia has legislation that recognises which group has responsibility for land in a project location. However, responsibility for some areas may be contested and legal processes may have not yet decided which group should be recognised.

Timing

Timing is an issue for Indigenous engagement as Aboriginal and Torres Strait Islander communities generally require longer for their internal consideration of matters than the statutory IA process allows.

Proponents may also be reluctant to expose projects when they are at a conceptual stage. This can cause considerable stress to a community that may ultimately not be affected due to subsequent changes in project design.

Confidentiality

Indigenous knowledge may be confidential and may not be made available to the IA process. Handling confidential knowledge requires considerable sensitivity.

Communities may also be reluctant to share knowledge. For agricultural communities, this may be because of commercial reasons (e.g. farmers may have 100+ years of weather and soils data which they see as an importance asset that gives them a competitive advantage).

Effectiveness of engagement

Ineffective community and Indigenous engagement may prevent knowledge being provided to an IA, or the knowledge provided may be incorrect, misunderstood or only partially correct.

Capacity and consultation fatigue

The process is lengthy and can test the capacity of the community to contribute. This can have cumulative impacts in consultation. Some urban communities, in particular, have been subject to multiple projects in the same area. They feel that regulators and the industry are not listening to their

concerns as the same types of projects keep coming up. They feel they have already been impacted enough.

A problem with the proponent led model is that community members may be reluctant to talk to the proponent.

4.3. How could barriers be overcome?

Training and capacity building were considered important for overcoming these barriers. Training is discussed further below.

Embedding the need to consider Indigenous and community knowledge in legislation, departmental processes and IA scoping documents will force industry and assessment officers to build capacity and. raise the bar over time. Providing better guidance to proponents on how to seek and use Indigenous knowledge is also important.

Engaging with Indigenous communities is important. This should include personal contact, meeting with Elders and going out on Country. Indigenous groups have sometimes arranged cultural inductions. Respondents noted examples where companies and governments are providing support to help Indigenous groups feed into the IA process.

A respondent noted that, by understanding Indigenous values, it may also be possible to identify scientific criteria that will protect those values (e.g. water quality parameters). This will then enable monitoring to occur within a typical environmental management framework.

4.4. In your experience, do government assessment officers have the training and experience to be able to effectively use each type of knowledge?

Respondents all agreed that assessment officers had the training and experience to use scientific information, noting that most have a science degree or, if not, some other type of professional degree. However, assessment officers were not as competent in dealing with community knowledge, although this is more variable. Some assessment officers do have reasonable experience in this area.

The general view was that assessment officers lacked the training and experience to effectively use Indigenous knowledge.

4.5. In your experience, do consultants preparing EISs have the training and experience to be able to effectively use each type of knowledge?

Generally, respondents considered the same comments above regarding assessment officers applied to consultants.

4.6. How could these capability gaps be best addressed?

Training is important to increase capability in dealing with community and Indigenous knowledge. This includes at both the undergraduate level and in the workplace. Several respondents considered that the recognition and use of Indigenous knowledge is still not well addressed in undergraduate courses. It was also noted that no universities offer an impact assessment undergraduate qualification – generally, this is covered in a unit within an environmental degree.

Training in the workplace will help but there was a concern that there is a lack of suitable training courses on using Indigenous knowledge.

4. Discussion

The following discusses opportunities for improvement and issues that require further consideration.

5.1 Rational basis of IA system

Several respondents noted limitations in the IA system, with its focus on magnitude of impacts and risk assessment, in being able to consider Indigenous knowledge and the perspectives of Indigenous peoples. Australian IA process, to a large extent, follow what Morgan (2012) describes as the rationalist model of IA. Morgan (2012) notes that limitations with this model have:

> … encouraged the promotion of deliberative and collaborative approaches to planning and decision-making processes, including EIA itself: bringing stakeholders and communities into the processes, emphasizing the importance of communication as a means of negotiating consensus solutions that capture the values of those participants, and moving the professional technocrats from a controlling role to a facilitating role in the decision-making process

Such a process is more likely to meet the needs of communities and Indigenous peoples and recognise the knowledge they bring. It ensures they have a say in determining what information is relevant to decision-making and have greater ownership of the decision. Moving to this approach would require legislative and cultural change and development of a new set of skills by government assessment officers.

More likely is further incorporation of deliberative and collaborative approaches into a fundamentally rationalist approach to IA. Smith (2009) provides an example of using cultural information to define closure criteria for the Ranger uranium mine in the Norther Territory of Australia. Criteria can be developed that also utilise western scientific criteria. For example, Smith notes: ‘Closure criteria for keystone cultural plant species could conceivably be based around ecological criteria, on factors like abundance and distribution within the landscape and the capacity to develop self-sustaining populations’. Parameters could be developed to measure ‘the ease by which people can travel across the reconstructed landform to reach specific natural resources or areas of ceremonial or resource significance’.

5.2 Early and effective engagement

The statutory timeframes for consultation in IA processes are generally too short to allow adequate engagement with communities and Indigenous peoples. Governments in Australia encourage early consultation with affected groups and ongoing engagement throughout the process.

However, most IA legislation in Australia has minimal statutory obligations for consultation, simply requiring EISs to be made available for public viewing for varying periods (often around 6 weeks) rather than requiring any early or ongoing engagement. However, there are exceptions. An example is the Northern Territory *Environment Protection Act 2019*, which requires a more proactive approach to engagement with communities and Indigenous peoples. Notably, Section 43 of the Act states that a proponent has the following general duties under an IA process:

(a) to provide communities that may be affected by a proposed action with information and opportunities for consultation to assist each community's understanding of the proposed action and its potential impacts and benefits
(b) to consult with affected communities, including Aboriginal communities, in a culturally appropriate manner
(c) to seek and document community knowledge and understanding (including scientific and traditional knowledge and understanding) of the natural and cultural values of areas that may be impacted by the proposed action
(d) to address Aboriginal values and the rights and interests of Aboriginal communities in relation to areas that may be impacted by the proposed action.

5.3 Free, prior and informed consent

Free, prior and informed consent (FPIC) is a specific right that pertains to indigenous peoples and is recognised in the United Nations Declaration on the Rights of Indigenous Peoples. It allows them to give or withhold consent to a project that may affect them or their territories. FPIC enables them to negotiate the conditions under which the project will be designed, implemented, monitored and evaluated (FAO 2016).

It was noticeable that respondents who considered their jurisdiction was performing well in considering Indigenous knowledge in decision making justified their rating by referring to provisions in place that required the active involvement and agreement of Indigenous peoples in the IA process.

5.4 Training

Respondents considered there was a need to better train staff in understanding and applying Indigenous knowledge in IA. They also thought it was difficult to find suitable training courses.

This project didn't further explore the way in which such training could be provided. However, there would appear to be a role for professional associations, such as the Environment Institute of Australia and New Zealand (EIANZ), in facilitating such training. In 2020, EIANZ established an Indigenous Engagement Working Group to improve its engagement with Indigenous peoples.

Indigenous peoples would need to be involved in developing content for training modules to ensure it did present an Indigenous perspective (and compensated appropriately for their input, financially or through other means).

5.5 Further work

A deficiency of this study is it is based on interviews with a small number of practitioners, albeit highly experienced. It would benefit from a more comprehensive survey of impact assessment practitioners.

The study also only presents a regulator perspective. An obvious priority for further work would be to seek views from Indigenous peoples on whether they consider Indigenous knowledge is appropriately and adequately considered in the IA process.

While training in using Indigenous knowledge was identified above as a need, the content and delivery of this training require further investigation and consultation.

5. Acknowledgements

Thank you to the following for contributing their time and experience to this study: Dr Paul Vogel, Anthony Sutton, Andrew Querzoli, Geoff Ralphs, David Gainsford, Denis Snowdon.

6. Further information

A longer version of this paper is available on request from the primary author (lwilkinson@jbsg.com.au).

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