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Understanding the long-term influence of EIA on organizational learning and transformation

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ABSTRACT

This research is an attempt to verify the notion postulated by Robert Bartlett and Lynton Caldwell that the full benefits of environmental impact assessment (EIA) would take decades to be realized. While EIA is intended to directly influence decision-making regarding new development proposals, the process is also expected to lead to organisational learning and transformation over time. Our aim was to examine the influence of EIA on a single Western Australian proponent with sustained experience in the process to understand how EIA is used within the organisation and to seek evidence of transformation of the organisation's purpose and mission. The research reviewed literature in order to identify key influences of EIA on organisations, along with semi-structured staff interviews and document analysis for the case study organisation. Ascertaining causality that involvement in EIA processes influences or effects organisational learning and transformation is a challenge in the face of other societal events. Document analysis and interviewee data indicates that the action-forcing nature of EIA did influence proponent behavior through the creation of internal processes seeking to ensure robust design of new projects that would satisfy environmental protection expectations, without the need to trigger formal EIA. Evidence of EIA values and thinking were apparent within internal documentation, including the evolving mission statement. Our research indicates that participation in the EIA process can positively influence organisational learning and transformation by guiding internal change for decision-making.

Keywords: Environmental impact assessment, organisational learning, organisational transformation

Highlights

- The long-term influence of EIA on a proponent organisation is investigated.
- EIA promotes internal organisational learning and transformation.
- Analysis of mission statements can indicate the influence of EIA on organisations.
- Organisations aligned with EIA values can reduce the need to engage in formal EIA.

1 Introduction

The immediate intended influence of environmental impact assessment (EIA) is to enhance decision-making of development proposals (Cashmore et al. 2008; Glasson et al. 1997; Sadler, 1996; Weston, 2000). Better decisions, better design, construction, implementation and ongoing management is intended to be delivered through EIA. There is a long history embracing many thousands of individual studies of the influence of EIA on development on a project-by-project basis. Less attention has been given to understanding the long-term influence of EIA on proponents of development and on other stakeholders in the process. Bartlett (1990) and Caldwell (1984) posited that understanding the influence of EIA would take several decades to be realized. This perspective provided the starting point for our research. We were especially interested in understanding the long-term influence of EIA on a proponent organisation with decades of engagement in the process.

EIA was originally conceived as an action forcing mechanism to give effect to the *National Environmental Policy Act (NEPA) 1969* goal of transforming behaviour of United States government agencies with respect to environmental practices and performance (Dreyfus & Ingram, 1976). Under s.102 (2)(c) of the NEPA Federal Government agencies were responsible for developing a detailed statement which addressed the (i) impact, (ii) adverse environment effects, (iii) alternatives, (iv) short term uses and long-term management, and (v) resource commitments involved in the proposed development action. Environmental Impact Statements (EIS) were conceived in response to this requirement with the sub-points of s.102 (2)(c) becoming topics to be addressed (Dreyfus & Ingram, 1976). These same (or very similarly expressed) expectations for EIA have been carried through into all EIA systems worldwide. Although the principle action-forcing mechanism is on proponents there are also ramifications for EIA regulators administering the process and other stakeholders involved. Importantly, the obligation for proponents to prepare an EIS requires contemplation of the consequences of the proposed action(s).

Compulsory participation in EIA and the subsequent thinking about future environmental consequences and mitigation of the effects of development begins to change people's thinking and behavior (Bartlett 1990). This in turn influences organizational learning and transformation (Bartlett, 1990; Bartlett & Kurian, 1999).

A number of studies have explored the role of EIA in individual and organisational learning. Key examples are provided in Table 1.

Table 1: Studies exploring the role of EIA in individual and organisational learning

Academic Citation	Research Focus	Results
Morrison-Saunders & Bailey, 1999	Examined the role of EIA in providing organisations for ongoing adaptive environmental management.	A strong connection was found between EIA process and ongoing environmental management for the six case studies.
Sánchez & Ortolano, 2001	Analysis of organizational learning during the design and implementation of the EIA program of the Colombia's Cauca Valley Corporation 1976-1993.	Organizational learning assisted the organization in meeting their goals, but didn't necessarily lead to an EIA process that included full disclosure and public participation.
Keysar & Steinemann, 2002	Investigation on the extent to which the US Army integrated EIA into strategic land use planning.	Successful integration requires a proactive approach, motivated by the benefits of applying EIA early in the planning process.
Annandale & Taplin, 2003	Based on a large survey of senior mining company executives in Australia and Canada in the late 1990s, this study assessed the influence of EIA on the planning and design of proposed new development.	Organisations recognise the benefits in undertaking EIA, viewing the process as a catalyst for incorporating environmental requirements into the early stages of project planning and design, mitigating future requirements to remedy environmental issues associated with an inadequately designed project once commissioned.
Fitzpatrick, 2006	Examined learning of individuals within key stakeholder organisations involved in the EIA process opportunities as a result of participation in EIA through two concurrent by geographically separate projects in Canada.	All participating organisations experienced learning outcomes that assisted to improve their representation in the EIA process.
Sinclair et al., 2008	Investigated the effect of public participation on individuals and organisations involved in EA from nine case studies (involving 16 studies) carried out in Canada from 1995-2006.	A number of organisations developed a more holistic perspective with individual behaviour shifting towards increasing sustainable outcomes.
Sánchez & Morrison-Saunders, 2011	Studied how the Environmental Protection Authority (EPA) in WA manages knowledge created through EIA and how this knowledge is utilised to increase future EIA and environmental management practice.	Knowledge management initiatives, even if informal, can be helpful for EIA agencies and are perceived to contribute to more effective EIA.
Diduck et al., 2013	Investigation of two-hydropower projects in Chamoli District of Uttarakhand, Indian Himalaya; examining how stakeholders viewed the projects' impacts, how local residents were involved and learning's from involvement.	Through their involvement, local residents awareness of the interconnectedness of social-ecological issues and of the need to balance multiple factors for sustainable development increased.

Academic Citation	Research Focus	Results
Sánchez & André (2013)	Survey of knowledge management initiatives and assessment of staff perceptions about knowledge creation within two Québec government agencies.	Both agencies knowledge management initiatives were perceived to contribute to more effective EIA.
Sánchez & Mitchell (2017)	Examining how, at a project level, stakeholders learn throughout the impact assessment process; potentially improving effectiveness and enhancing project sustainability.	<p>Three categories of learning outcomes were identified (1) acquisition of knowledge and skills, (2) developing new behaviors and (3) developing sustainability-oriented norms and values.</p> <p>A number of approaches were identified to achieve these outcomes including education and training, experiential learning, learning through public participation (social learning) and a 'learning organization approach'.</p>

Table 1 demonstrates how organizational learning occurs as a result of individual and organizational participation in the EIA process. Through shared knowledge and experience both proponents and decision-makers are likely to increase their consideration of environmental impacts in future projects. It demonstrates that transformation is possible with proponents likely to consider environmental impacts earlier and decision-makers likely to require increased environmental protection standards (Jay et al., 2007).

A key strength of EIA systems is the emphasis on implementation and management of proposals (Bailey, 1997) through approval condition setting to formalise mitigation measures and subsequent follow-up activities (Arts et al. 2001). By extension, the internal operations of organisations themselves and that of individual employees should also begin to change (Bartlett, 1990).

Bartlett (1990; p.88) describes how EIA can act as a catalyst for change, describing it as a 'worm in the brain' for individuals and organisations. In other words when individuals and/or organisations are forced to undertake a specific action/s they end up changing their thinking and behavior to be in line with that action. Ultimately this leads to changes within the organization's larger political and economic conditions which should subsequently be reflected in internal documents and structures of the organization; for example such as statements of purpose or mission statements (Goh & Richards, 1997). An organization's involvement in EIA can thus become a starting point for changing the current administrative state of an organisation from within by reshaping organizational behavior; i.e. both individual employee's values and

patterns of thinking and performance (Bartlett, 1990). This relates to the EIA process itself, which requires organisations to think a particular way (in line with EIA values) in accordance with specific requirements in order to meet the expectations of the assessing authority (Bartlett, 1997).

The aim of this research was to understand the long-term influence of EIA on organizational learning and transformation. It was an explicit attempt to verify the ideas postulated by Bartlett (1990) and Caldwell (1984) on how the influence of EIA would be realized over time. Following the call of Morrison-Saunders et al. (2015) to demonstrate the benefits of impact assessment for proponents, we focused upon the long-term influence of EIA on a proponent operating in Western Australia that had decades of experience with the well-established EIA process there. The key questions guiding this research were:

1. How is EIA used within the organisation?
2. What evidence is there that EIA features within the organization's purpose and mission?

2 Methodology

Our methodology incorporated a review of international literature and case study research involving semi-structured interviews and document analysis for a long-term proponent experienced in undertaking EIA in Western Australia. A review of the extant literature regarding the purpose and influence of EIA provided appropriate contextual information and identified previous research findings (Bloomberg & Volpe, 2008; Hay, 2012) to guide our focus.

Considerable research has previously been published on the influence of the Western Australian EIA process on organisations. This has revealed influence on:

- Project outcomes beyond the decision to proceed, including proponent behaviours for impact management during implementation and monitoring (Hollick, 1986; Bailey et al. 1992; Bailey & Saunders, 1988; Morrison-Saunders, 1996); some of which reported on EIA case studies involving the target proponent in this research.
- Policy and procedures to facilitate solutions to ongoing, new and emerging environmental issues (Bailey & Saunders, 1988; Morrison-Saunders & Bailey, 2009; Hayes & Morrison-Saunders, 2007; Middle & Middle, 2010; Jones & Morrison-Saunders, 2016).

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- Regulator, consultant and proponent behaviour and decision-making during design, planning and implementation of development proposals (Annandale & Taplin, 2003; Martin & Morrison-Saunders, 2015; Waldeck et al., 2003).

The prominent feature for the design of most of these studies was the input from a small number (one or two) of people within a given organisation (e.g. obtained through interviews) with the sample spread across multiple organisations. Our research took a different approach, by focusing on a single proponent (the Water Corporation of Western Australia) and drilling more deeply into the structural and procedural aspects to uncover evidence of the influence of EIA on organisational learning and transformation over time.

To understand organizational behavior, it is necessary to obtain the perspectives of individual employees that work within the organisation (Argote, 2011; Argote & Miron-Spektor, 2011; Goh & Richards, 1997; Wang & Ahmed, 2003). By focusing at the organizational level insights can be gained on how learning outcomes are distributed throughout an organisation and become imbedded within an organization's memory, thereby providing a means to understanding the influence of EIA processes (Fitzpatrick, 2006).

The Water Corporation (and previous incarnations) was identified as the target company for this research due to their sustained involvement in EIA in WA. Box 1 presents the Water Corporation profile.

Box 1. Water Corporation profile

Organisation - Government trading enterprise

Owner – State Government of Western Australia

Formed - 1st January 1996 under the *Water Corporation's Act, 1995*

Employees – 2,650

Asset base - \$36 billion (asset replacement value)

Main tasks – principal supplier of potable water (surface, groundwater and desalination), wastewater, drainage infrastructure; and bulk water for irrigation in Western Australia. Major infrastructure projects have been subject to EIA.

Area of operation – 2.6 million km² across the state of Western Australia

Website – www.WaterCorporation.com.au

Source: (Water Corporation, 2016).

Data collection methods utilised interviews and document analysis, focusing on the time period of 1996 – 2016. A total of 10 people were interviewed. A detailed profile of interviewees is not provided here due to concerns raised during the ethics approval process of the ease of identification of individuals within the group of water resource professionals working in a Western Australian context. Interviewees were employees that had been involved with EIA as part of their role (including a consultant specialising in providing EIA services to the Water Corporation for several years), or had other environmental management, sustainability and project planning and management functions. The typical roles of interviewees included project managers, environmental managers and environmental scientists.

The interviews were explicitly structured around the two research questions with a series of follow-up prompting questions, such as requests to provide examples or further explanation of initial answers provided.

By way of triangulation and to provide further insight, the document analysis included a review of the target organisation's website key strategic and operational documents utilising a similar approach as that used by Sánchez and Morrison-Saunders (2011). Each of the following key documents were reviewed for evidence of the organisation's mission statement, structure and internal operating procedures:

- Strategic plans;
- Statement of Corporate Intent; and
- Annual Reports.

The interviews and documents were analyzed with respect to key themes identified from the literature review.

An important assumption of this research is that a case study will provide a depth of data collection and analysis, focusing on relevant links and justifications to develop a detailed understanding of how EIA has influenced organisational learning and transformation within the target company (Sánchez & Morrison-Saunders, 2011; Stake, 2010; Wilson, 2012). It is acknowledged that interviewees were primarily from environmental roles and therefore some bias can be expected. The profile of interviewees did not appear to have any bearing on the results obtained; previous research of a similar nature within Western Australia (Martin and Morrison-Saunders, 2015) likewise found demographic characteristics of interviewees to have little or no bearing on explaining findings. While interviewing people outside of the organisation may have provided evidence to be contrasted with evidence from other interviewees, it was beyond the scope of this paper. However, the interviews and company

documents (i.e. the internal planning process and mission statement) provided a rich data set with which to address our aim. It was also beyond the scope of this paper to attempt to include case study projects via a systematic review of EISs prepared by the proponent in the research period. Initial readings of these documents found no suggestion of content that would point to evidence of organizational learning relevant to the internal transformation of the organisation. Much of the Water Corporation's EIA activity takes place outside of the formal (i.e. legal) EIA process that results in production of an EIS. This research therefore focused upon internal documentation regarding overall mission and internal operating processes that applies to all development activity and the perspectives of employees engaged with them.

This research is challenged by the difficulty in ascertaining cause and effect of involvement in EIA processes (a point acknowledged by other researchers – e.g. Kidd & Fischer, 2007; Bond et al. 2013) and the difficulty in measuring how participation influences or effects organisational learning and transformation. However, it was anticipated that the use of interview and document analysis research would provide valued observations and perspectives on the research aims.

In the discussion that follows, we firstly summarize key theories and ideas on the key influences of EIA on organisations followed by results arising from the case study interviews and documents.

3 Result and Discussion

As foreshadowed in the introduction to this paper, our review of the international literature on the influence of EIA on organisations can be approached in relation to three factors:

1. EIA as an action-forcing mechanism;
2. Influence of EIA on thinking and engagement with EIA principles; and
3. Influence of EIA on organizational learning and transformation over time.

3.1 EIA as an action-forcing mechanism

Originally conceived as an action-forcing mechanism, the EIA process requires organisations to think in line with EIA values in accordance with specific requirements in order to meet the expectations of the assessing authority (Bartlett, 1997). As a mandatory process, EIA requires attention to be paid to the effects of proposed action(s). It emphasizes the importance of defining implementation and management activities as part of the proposal (Bailey, 1997). This occurs via the

setting of approval conditions that formalise mitigation and monitoring activities to be implemented by the proponent (Arts et al. 2001). Annandale and Taplin (2003) reported that senior executives of proponent organisations saw the EIA process as motivation to integrate environmental design during the pre-planning stages in order to alleviate any future financial burden required to remedy an inadequately designed project.

These perspectives from the literature were evident within our case study organisation, which utilises an internal self-imposed mandatory planning process that we found to parallel the EIA process itself. Key comments from interviewees that illustrate this are provided in Box 2.

Box 2. Comments on internal mandatory planning processes*

- The potential impacts of a project are what drive change in the planning stage of any project [through the planning process]. Where possible, designs and alignments are changed to minimize the environmental impact. Appropriate actions are then undertaken under Part IV i.e. EIA or Part V i.e. license amendments or clearing permits of the Environmental Protection Act.
- EIA has played a *'very important role'* in the Water Corporation and is *'picked up in project management'*.
- *'This [planning process] is a very well defined process.* The activation phase of the planning process includes filling out an *'external approvals spreadsheet'* [plan] that looks at all types of approvals required for a project, including environmental'.
- *'I think our organisation tries to do the best that it can as a corporate citizen and we do spend a lot of time up here [scoping phase of the planning process] to come up to speed with the approvals required'*.

* italics denotes direct quotation; plain text denotes paraphrasing of interviewee remarks

It can be seen from these remarks that the Water Corporation has placed emphasis on these internal processes to ensure the possible impacts of new developments are considered up-front during the planning process. It is also clear that these processes align closely with the Western Australian EIA process. As a mandatory practice the planning processes in place act as an internal action-forcing mechanism employed by the Water Corporation to ensure the possible impacts of new developments are considered up-front during project planning. This occurs via the development of the external approvals plan, ensuring the project meets the requirements of legislation and associated regulations. This is reminiscent of the EIA process itself echoing Bartlett's (1997) perspective of EIA as an action-forcing mechanism requiring organisations to think in line with particular environmental values in accordance with specific requirements in order to meet the expectations of the assessing authority.

Importantly, participants noted that the organization has dealt with EIA repeatedly over a long period of time and indicated that this has led to evolution in thinking and practice within the organisation (Box 3).

Box 3. Comments on the evolution of EIA within the organisation

- *'It used to be that the EIA process... [was] just something you had to do to implement what you wanted, but this has changed now. We [the Water Corporation] have to consider the impacts and options prior to completing the process. The regulator expects this to be completed now'.*
- *This process has been in place 'for a long time. So the [regulator's] EIA guidelines outline all of that'.*
- *I think it really does come down to the responsible officer or the project manager for that bit of work...but in general people once they are aware of it [EIA], they tend to remember it, especially if it's a huge challenge to get those approvals.*
- *'I guess you always become more knowledgeable as you go forward but I suppose I always knew there was a process in place whereby I needed to get approval to clear. I think I've just become more aware of what that process is, to be able to do that, and how long it can take and what we need to do'.*

Participants noted the evolution of expectations regarding undertaking EIA; not only the expectations of the regulator, but also expectations of both individuals and of the organization itself. The internal Water Corporation planning process encourages EIA to be an integral element to project design and development within the organisation. This indicates a possible shift in EIA thinking from concentrating on the final approval stage, a common complaint regarding EIA practice in the international literature (Glasson et al., 1997; Sippe, 1999), to the earlier critical design stage advocated by authors such as Morgan (2012), Lawrence (2007), and Sippe (1999). This finding consistent with the expectations of Bartlett (1990) and Caldwell (1984) who predicted that participation in EIA could become a starting point for changing the current administrative state of an organisation from within by reshaping organizational behaviour i.e. both individual employees values and patterns of thinking and performance.

3.2 Influence of EIA on thinking and engagement with EIA principles

The influence of EIA would be fully realized if organisations change the way they think about environmental protection and management (Bartlett, 1990; Caldwell, 1984). The ultimate realization of this would be where EIA is not necessary for a new development proposal because the proponent has sufficiently taken on board key EIA thinking and principles to the extent that their proposals pose no significant

adverse environmental risk (i.e. the normal trigger for EIA). This is something we found to apply for many individual new development projects undertaken by the Water Corporation. Seemingly ironically or counter-intuitively, there was evidence that the Water Corporation actively seek to avoid doing formal EIA, but in the context of this research, this turned out to be a positive finding.

In the international literature concerns have been raised regarding proponents avoiding doing EIA (Weston, 2011). A classic example is the practice of 'salami slicing' whereby a proponent breaks down a large-scale project into several smaller undertakings each of which falls below screening threshold tests and therefore not triggering an EIA requirement (e.g. Enríquez-de-Salamanca, 2016). In the Western Australian practice of EIA, a distinction exists between formal and informal assessment processes (Government Gazette, 2012; Martin and Morrison-Saunders, 2015) with the key point of difference being around mandatory procedures that must be followed in formal assessments. As is the case internationally, Western Australian proponents seek to avoid triggering formal EIA, but because of the environment-centred screening process that applies, they must nevertheless engage effectively in key EIA thinking and principles in order to create projects that comply with environmental protection expectations.

Within the Water Corporation a proposed project is 'activated' when a specific need has been identified; e.g. the need for a new wastewater treatment plant in the face of growing urban areas. In order to meet this need within the timeframe identified by the organisation, there is motivation during the scoping phase of the planning process to minimize impacts in order to avoid lengthy legal process requirements that could delay the 'date of delivery'. This occurs as part of the internal risk assessment process for a proposed project (i.e. environmental impacts form a large component of organizational risk). Box 4 provides some interviewee responses illustrating this point.

Box 4. Comments on minimizing environmental impacts during the scoping phase

- Where possible designs and alignments are changed to minimize environmental impact.
- *The risk of each component would be identified without mitigation and then those 'nudging the red (high risk), [we would look at] what could be done to mitigate these, by design or construction?'. For example avoid running a new pipeline through a nature reserve 'when you have an option over the road for a little bit more cost and not waiting years for an approval that may never come. Lets do that'.*
- *'It's a bit like health and safety. The first thing you try to do is eliminate the risk. So if you*

can limit the risk in the design then you [do]’.

- *‘So I get my approvals at the scoping stage. So what happens at the scoping stage is that we reset the baseline. What we try and do is identify all of the improvements we need. If we identify that this [approvals process] is a long-term phase, do we [then] need to re-look at our alignment and design to get us away from clearing’.*
- *‘So say I’ve got a pipeline that runs from here to here and right in the middle is a wetland. My designer is going to go "I want this pipe to go from there to there" [through the wetland] because it’s nice and straight and it’s easy and that’s what we want to do and it costs the least amount of money. Then you get this environmental approvals process and it says, "okay there’s a wetland right in the middle of that, can we do something about that?“. Now I would never fight that, there’s no point even trying to do that. We need to go around it. I think that’s it just worth it. I look at it and think I reckon it’s worth it for me to go around that because even though this might cost another couple of hundred thousand [dollars] to go around...I might save a year because everyone’s going "you’ve avoided that, that’s great" ’.*

Internal funding ‘gateways’ also exist to ensure projects have obtained appropriate external approvals prior to funding for delivery. As one interviewee stated ‘I can’t get [internal] approval [for project delivery] until I have my [EIA] approvals in place’.

This topic can be identified as a positive consequence of the Western Australian EIA process. It indicates that the Water Corporation must be engaging effectively in key EIA thinking and principles. It suggests that they have already undergone transformation in order for their proposed developments to avoid formal EIA.

There is an underlying assumption in the international literature that legally binding EIA is a prerequisite for effective environmental protection (Gunningham et al., 1998; Cashmore et al. 2004; Jay et al., 2007). However, there is a real danger that the legal requirements for EIA (i.e. process and procedures to follow) could become the sole focus of attention rather than actual environmental performance and outcomes (Fairfax, 1978; Cashmore, 2004; Gwimbi & Nhamo, 2016). The EIA process promotes what Herbert Simon described in 1957 as satisficing behaviour, a concept of choice that centres on how alternatives are considered and evaluated by decision makers (Winter, 2000). Instead of looking at all possible alternatives available and choosing the best, satisficing behaviour focuses decision making towards pursuing and selecting among alternatives that satisfactorily meets minimum requirements (Simonsen, 1994).

In a Western Australian context, studies by Waldeck et al. (2003) and Dahlitz and Morrison-Saunders (2015) found the effectiveness of guidance material developed

by the Environmental Protection Authority appeared to be affected by the perception of users that materials were regulations or minimum standards rather than advice on which proponents then build upon. This emphasises the view expressed by authors such as Fairfax (1978), Boggs (1993) and Lawrence (2007) that EIA has the potential to focus attention on documentation (specifically the EIS) in order to meet minimum standards of compliance. It highlights the need to revisit the central aim of EIA, which is to create more sustainable forms of development through focusing greater attention on environmental issues (Cashmore, 2004).

It is apparent that the legal requirements for EIA are a strong focus for the Water Corporation as the interview comments in Box 5 demonstrate. At face value these comments might imply that the Water Corporation take a minimum requirements approach to EIA and environmental management of their projects. However, as previously discussed, we found strong evidence of proactive environmental behavior within the organization around project design. Further evidence of environmental and sustainability related transformation within the organization is discussed in the next section.

Box 5. Comments on the strong focus of legal requirements for EIA

- *Through each stage of the planning process, there is an aspect of impact assessment. Triggers can be internal [improve compliance or beyond compliance] or external [compliance to Acts and regulations].*
- *'There are minimum requirements that we [Water Corporation] need to kind of abide by in terms of compliance with regulations'.*
- *[The Water Corporation are] focused on making sure our EIA meets the compliance requirements of regulations and anything you know assessed off and comes off as environmental improvement that we'd like to see, through projects seems to be getting more of a backseat'.*

3.3 Influence of EIA on organizational learning and transformation

It has been suggested that individual and organizational learning is fundamental to EIA (e.g. Fitzpatrick, 2006; Jha-Thakur et al., & Kidd, 2009). Jay et al. (2007) describes the process of progressive learning, beginning with learning 'about' the assessment process to learning 'through' participation in the assessment process. The former focuses on determining meaning and the system of assessment while the later focuses on the results of the assessment process and how effective the process is in the delivery of increased environmental protection. Kim (1993) notes that a large

number of theorists from various fields of study including psychology, education and organizational theory have emphasized the importance of this link between understanding and practice.

Whether intentional or not, all organisations learn in order to survive (Argyris & Schön, 1996; Kim, 1993). A number of organisations consciously develop learning that is cohesive with their overall objectives leading to improved long-term business practices (Argote & Miron-Spektor, 2011; Kim, 1993). Although learning begins with the individual, for an organisation to achieve learning at an organizational level it must consciously integrate the learning of employees by linking the two aspects of learning (Kim, 1993; Wang & Ahmed, 2003).

It stands to reason that an organisation that undertakes multiple EIAs over a sustained period would want to increase their chances of approval by the assessing agency. For this to occur they would need to adapt their operations (via organizational learning and transformation) to align with EIA requirements. Internal processes required within an organisation to accumulate individual learning have been described as:

- Knowledge creation, knowledge retention and transferring knowledge (Argote, 2011; Argote & Miron-Spektor, 2011); and
- Information sharing, information interpretation and memory (Fitzpatrick, 2006).

It is clear that learning from participation in EIA must be absorbed into an organisation (Fitzpatrick, 2006). For an organization's learning process to be representative of their stated mission a clear understanding of the transfer process between individual and organizational learning is required (Kim, 1993). Organizational learning can then be facilitated by linking knowledge between different groups or departments and establishing opportunities for information exchange (Gazzola, Jha-Thakur et al., 2011).

If the values of an organisation are transformed over time via the action-forcing mechanisms within EIA, said changes should be encapsulated within important internal accounts of the organization's role and operations. Particularly pertinent here is an organization's mission statement which expresses the purpose and motivation of an organisation (Campbell 1997). An effective mission statement acts as a guide for employees and stakeholders, signifying the organization's culture through the definition of key values and standards of behavior (Campbell, 1997). A typical

mission statement includes (i) a vision and a statement of goals, (ii) a statement of mission and a self-definition; and (iii) an organization's philosophy and values (Braun et al., 2012). An examination of the mission statement towards more EIA language could indicate that EIA has had a positive affect on the organisation.

Document analysis of Water Corporation key strategic and operational documents identified a clear sense of evolution of the organization's Mission Statement as summarized in Table 1. There is a clear commitment to sustainability represented by the current purpose 'to provide sustainable management of water services to make WA a great place to live and invest' (Water Corporation, 2015; p.2). Earlier incarnations of the mission statement were more aligned to a business focus, with an evolving inclusion of environmental and then other sustainability factors as can be seen in Table 2. This transformation of the Mission Statement to sustainability language i.e. 'economic, social and environmental impacts' and 'sustainable management' could indicate the potential positive influence of participation in EIA. For example the evolution of the Water Corporation's mission statement can be juxtaposed with explicit engagement with sustainability as a policy strategy in Western Australia such as:

- The inclusion of Section 4(a) of the *Environmental Protection Act* in 2003, which are clearly sustainability principles that also formed the principles used by the Environmental Protection Authority when undertaking EIA (Environmental Protection Authority, 2004);
- The development of the State Sustainability Strategy in 2003 which aimed to incorporate social and economic considerations into government decision-making for major development proposals alongside the biophysical-oriented Western Australian EIA process (Jenkins et al., 2003); and
- Sustainability focus within the Water Corporation demonstrated by the development of the South West Yarragdee Water Supply Development, which when undergoing EIA was framed as a sustainability assessment (Pope & Grace, 2006).

While we are unable to definitively demonstrate a causal connection between EIA and sustainability policy in Western Australia and the evolving mission statement of the Water Corporation, our own sense arising from this research is that a case for this influence can be made. We found the internal documents and procedures adopted by the Water Corporation and what the interviewees repeatedly said to us to be compelling. For example, the internal mandatory planning process employed by

the Water Corporation includes such terms as "scoping", "significant impacts" "minimise impacts", "options" and "impact assessment". Interviewees also used such language as evident in the examples previously provided; all of which resonate strongly with terms employed in the Western Australian EIA process. For us this internal adoption of the language of EIA suggests at least influence of the process on the Water Corporation. In other words, we are of the view that long-term engagement with EIA has influenced the Water Corporation's organizational behavior and transformation. Previous EIA follow-up research involving specific project case studies of the Water Corporation and its earlier incarnations (e.g. Morrison-Saunders, 1996, 1998; Morrison-Saunders and Bailey, 1999) provide evidence of positive environmental behaviors by the organisation arising from participation in the EIA process. Our current research findings are complementary to these early findings, with further insight on how the influence of EIA would be realized over time in terms of organizational learning and transformation.

Table 2: Evolving Mission Statement of the Water Corporation's 1996 – present¹

Year	Purpose	Vision	Values
1996 - 1998/1999	To conduct a successful business, providing quality water and wastewater services to customers, to enhance their lifestyle and to support the future development of the state.	To be recognized as an excellent customer-oriented service organisation and as a world-class manager of water and wastewater services.	We will work together to: Satisfy our customers Respect people Always do better Act with integrity Respect the environment
1999/2000	Opportunity to invest in WA's future, nurture our environment, build on success, develop our business and surpass expectations.	To be Australia's leading water company and to create substantial new business.	None specified.
2000/2001	We deliver values to our customers and our shareholder by considering the economic, social and environmental impacts of the decisions we make.	To provide water services to the people of WA, both now and for future generations.	None specified.
2001/2002	Our Purpose is to provide sustainable management of water services to make WA a great place to live and invest.	Fulfill customer, community and governments needs; innovate to deliver quality, trusted water services; invest in empowered people, well-	None specified.

¹ Purpose, vision and values sourced from the following Water Corporation key strategic documents (1) Annual Reports 1996 - present and (2) Statement of Corporate Intent 2008 - present.

Year	Purpose	Vision	Values
		managed assets and growth.	
2003/2004	Our Purpose is to provide sustainable management of water services to make WA a great place to live and invest.	Our vision for sustainability equals sustainable management of water services to make WA a great place to live and invest.	None specified.
2004/2005	Our Purpose is to provide sustainable management of water services to make WA a great place to live and invest.	The Water Corporation will continue to plan and develop new water sources; and encourage the smarter use and re-use of water...while enhancing and protecting our environment...contributing to the State's economic future...and respecting the values of our community.	None specified.
2005 - 2008	Our Purpose is to provide sustainable management of water services to make WA a great place to live and invest.	We are committed to continuously improving the quality and value of water services with a focus on the following sustainability principles: Social, economic, environmental, ethics, stakeholder engagement and governance.	Business strategies: Focus on core business; Security through diversity; Change the way we think and work; Genuinely engage with our stakeholders; and Creating a great place to work.
2008 - 2012	Our Purpose is to provide sustainable management of water services to make WA a great place to live and invest.	There are three key areas of our Vision: <ul style="list-style-type: none"> • Water Forever, • Great Place; and • Zero Footprint. 	Our community Our responsibility The Future Delivery quality Supporting People
2012 – present	Our Purpose is to provide sustainable management of water services to make WA a great place to live and invest.	There are three key areas of our Vision: <ul style="list-style-type: none"> • Water Forever, • Great Place; and • Zero Footprint. 	One team Think safe, act safe Customer focused Value every dollar Future thinking Take personal ownership

4 Conclusions

Our primary motivation for this research was to attempt to verify the ideas postulated by Bartlett (1990) and Caldwell (1984) on how the influence of EIA would be realized over time. The research design and methods incorporated a review of international

literature and case study research featuring semi-structured interviews and document analysis. The results indicate that sustained involvement in the EIA process can influence organizational learning and transformation as demonstrated by our case study. This was demonstrated in relation to the three factors identified within the literature for EIA operating as an action-forcing mechanism, the influence of EIA on thinking through required engagement with EIA principles, and the influence of EIA on organizational learning and transformation.

Our research indicates that EIA can serve as an action-forcing mechanism that changes organisations involved in the process. The investigation of the Water Corporation supports the view expressed by Bartlett (1990,1997) that by aligning closely with the EIA process, organisations begin thinking in line with EIA values. This shift towards more EIA thinking and subsequent internal planning processes can assist organisations in transforming to meet the assessing authority requirements and expectations.

It is challenging to prove cause and effect of what prompts changes in organisational learning and transformation in light of the myriad societal events and influences (a conclusion previously reached by Bond and Morrison-Saunders 2013). It can often be easier to concentrate specifically on the direct benefits as a result of legally binding conditions, as indirect benefits are less definite and organisation specific. However, the evidence documented in our research indicates that participation in the EIA process can positively influence organizational learning and transformation by guiding internal change for decision-making.

Overall this research supports the thinking expressed by Bartlett (1990) and Caldwell (1984) that EIA is a subtle yet complex tool that has the potential to influence learning and transformation within organisations. It suggests that the direct and indirect benefits of EIA are complementary. As a result an organisation that is aligned with EIA values can potentially reduce the need for their participation in formal EIA processes into the future. In this regard, Bartlett's (1990) 'worm in the brain' concept would appear to work.

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