# Assurance of Natural Resource Management: A Case Study

by

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A thesis submitted to Macquarie University in fulfillment of the requirement for the degree of Doctor of Philosophy in the Faculty of Business and Economics

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# Statement of Authentication

This thesis is submitted to Macquarie University in fulfillment of the requirements for the Degree of Doctor of Philosophy by publications. The work presented in this thesis is an original piece of research and has not been submitted for a higher degree to any other university or institution. The source of information used and the extent to which the work of others has been utilised is acknowledged below and in the thesis. Ethics Committee approval has been obtained (Reference number: 5201100574).

Where the included papers have been co-authored, I have attached certificates attesting to my contribution to these papers. The following summarises my particular contribution to the joint papers in this thesis:

**Paper 1**

Martinov-Bennie N. and Hecimovic A. (2010) "Assurance of Australian Natural Resource Management", *Public Management Review*, Vol. 12(4), pp. 549–65.
Conception: 85%, Writing: 85%

**Paper 2**

Hecimovic A. and Martinov-Bennie N. "The Multidisciplinary Audit Team: Diversity Challenges for NFI Assurance" conferenced in 2016.
Conception: 90%, Writing: 90%

**Paper 3**

Hecimovic A. and Martinov-Bennie N. "Audit Reporting on Non-financial Information: One Audit Two Report", as at October 2016 in 3rd round revisions at *Accounting, Auditing and Accountability Journal.*
Conception: 90%, Writing: 90%

Specific contribution of joint author Professor and Principal Supervisor Nonna Martinov-Bennie include: Discussion of conceptual ideas underpinning the papers, reviewing and editing paper drafts.

Signed

Angela Hecimovic
10th February 2017
Sydney, Australia

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*"Forget about the fast lane. If you really want to fly, just harness your power to your passion" ~ Oprah Winfrey. And complete a PhD ~ Angela Hecimovic*

# *Dedication*

I would like to dedicate this thesis to my FAMILY.

To my daughters – Monika and Klaudia, in the hope that one day they too can believe that they can achieve anything they put their minds and hearts to.

To my better half – Frank. You are my inspiration and the reason for my positive approach to life. You trusted and believed in me all along and taught me never to give up. Your practical advice, unconditional love and undeniable support throughout this journey I will always cherish.

I love you all and thank you.

"*I love to see a young girl go out and grab the world by the lapels. Life's a bitch. You've got to go out and kick ass*".

— *Maya Angelou*

# Assurance of Natural Resource Management: a Case Study


## *Abstract*

The thesis is set within the context of growing adoption of independent assurance of non-financial information (NFI) by organisations, with the specific subject matter focus on assurance of natural resource management (NRM). The Australian Government has invested significant resources in NRM programs. For example, in the state of New South Wales, a region covering over 800,628 square kilometres, Government funding totalled $1,042 million during the period from 2004 to 2010. This significant investment coincided with the establishment of a statutory organisation in 2003, the primary responsibility of which was to provide independent assurance in relation to whether ongoing investment achieved improvements in the condition of natural resources across the regions.

This thesis responds to the calls for research (e.g., Adams *et al.,* 2014; O'Dwyer *et al.,* 2011; Power, 2003) into assurance practices within NFI contexts by exploring various aspects of the development and implementation of assurance processes and practices emerging within organisations. The thesis is by publication format and comprises three inter-related but distinct papers, each framed around the key elements of assurance practice, utilising a longitudinal (six year) case study with data collection from multiple sources.

The first paper, titled "Assurance of Natural Resource Management", sets the scene and explores the challenges of the case study organisation in developing an audit framework to guide its legislated NRM audits at a time when NFI assurance standards on specific subject matter were limited and more tailored to the private sector. The findings suggest the development of such guidance is complex and acknowledge a lack of consensus as to the 'best practice' in NRM and NFI assurance. The findings also challenge assumptions that accepted assurance concepts developed for the financial audit context, such as audit scope, assurance levels and materiality, are transportable to non-financial assurance and our public sector case context.

The second paper titled "The Multidisciplinary Audit Team: Diversity Challenges for NFI Assurance" draws upon resource diversity theory from social psychology and Power's (2003) theoretical perspectives on emerging non-financial audit practices to examine multidisciplinary audit teams (MATs) in practice. The study explores how the MAT's composition and diverse member subject matter knowledge and various aspects of team dynamics shape assurance processes (e.g., gathering and assessing audit evidence) in practice. The findings suggest that the challenges and complexities of managing the team, understanding the diverse mindsets of team members, including effective communication between members, are not to be underestimated if the diversity benefits of MATs are to be realised.

The third paper titled "Audit Reporting on Non-financial Information: One Audit, Two Reports" examines the construction of the NRM audit report over a three year period. The analysis is framed around the key audit report elements drawing upon Power's (2003, 2004) theoretical insights on NFI audits in addition to literature from NFI assurance, public sector audits and Fiske's (1990) communication theory. The findings suggest that

for the audit report to be of communicative value, it needs to identify clearly the audience, audit objectives, scope, content and level of assurance at the beginning of the audit process.

The empirical evidence from the three papers contributes to contemporary NFI and public sector audit and assurance literature and to our understanding of NFI and performance assurance practice. More specifically the case study context illustrates how NRM assurance practice has developed in the presence of specific legislative requirements but limited practical guidance. The case study findings have significant practical implications for public and private sector assurors in developing their NFI assurance practices and frameworks and in managing multidisciplinary audit teams.

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## Abbreviations and Acronyms

| | |
|---|---|
| A1 | ECO NRM Analyst 1 |
| A2 | ECO NRM Analyst 2 |
| AE | Independent Audit Expert |
| ANAO | Australian National Audit Office |
| ASAE | Australian Standard on Assurance Engagement |
| ATM1 | Audit Team Member 1 |
| ATM2 | Audit Team Member 2 |
| AWP | Audit Working Paper |
| CMA | Catchment Management Authority |
| D1 | ECO Director 1 |
| D2 | ECO Director 2 |
| D3 | ECO Director 3 |
| ECO/ECOLOGY | Pseudonyms for Case Site *'NRC'* |
| GHG | Greenhouse Gas |
| GRI | Global Reporting Initiative |
| IAASB | International Auditing and Assurance Standards Board |
| ISAE | International Standard on Assurance Engagement |
| MAT | Multidisciplinary Audit Team |
| ML | Management Letter |
| NFI | Non-financial Information |
| NRC | Natural Resources Commission |
| NRM STD | Natural Resource Management Standard |
| NRM | Natural Resource Management |
| NSW | New South Wales |
| PM | ECO Project Manager |
| STD | Standard |
| TL1 | Lead Audit Team Leader 1 |
| TL2 | Lead Audit Team Leader 2 |
| TL3 | Lead Audit Team Leader 3 |
| TL4 | Lead Audit Team Leader 4 |
| TL5 | Lead Audit Team Leader 5 |
| VFM | Value for Money |

# CHAPTER 1

# INTRODUCTION

### *1.1 Background, Research Context*

The last two decades have witnessed unprecedented global growth in organisations within both the public and private sector reporting on non-financial information (NFI) (WBCSD, 2016; Adams *et al.,* 2014; O'Dwyer *et al.,* 2011). For the purposes of this thesis, NFI reporting encompasses: corporate responsibility on environmental, economic, governance and social performance; public interest concerns; and reporting as a result of legal and regulatory changes. NFI is not presented in monetary terms and except for the Water Accounting Standards Board's recent implementation of *Water Accounting Standards* 1 and 2, is not generally based on accounting standards. NFI can be quantitative, such as in tons of GHG emissions, or qualitative, such as an organisation's impact on the condition of plant and animal species in an environment. As NFI reporting continues to gain momentum, so does the significance of providing independent assurance of NFI. Assurance usually describes the methods and processes employed by an assurance provider to evaluate an organisation's public disclosures about its performance as well as underlying systems, data and processes against suitable criteria and standards (WBCSD, 2016). It follows, therefore, that independent third-party assurance of key NFI has the potential to increase the credibility and reliability of disclosures and contribute to the overall value that NFI reporting can provide to both an organisation and its stakeholders (de Villiers *et al.,* 2016; ICAEW, 2016; Cohen and Simnett, 2014; KPMG, 2013; O'Dwyer *et al.,* 2011; Ball and Grubnic, 2007; O'Dwyer and Owen, 2005). Deegan *et al.'s* (2006) examination of NFI assurance reports suggests certain attributes need to be present, including assuror independence, qualifications and unambiguous NFI assurance reports, to enhance the credibility of disclosures and the assurance practice itself.

Whilst a number of prior academic studies (within private and public sector contexts) have scrutinised the assurance of NFI practice, they have primarily focused on analysing the content of assurance statements. Issues examined have included the relationship between the assurer and assured (Perego, 2009; Mock *et al.,* 2007; Francis, 2004), the varied approaches taken by assurance providers in regard to objectives, reporting criteria, scope, timing and coverage of NFI assurance engagements (Zorio *et al.,* 2013; Frost and Martinov-Bennie, 2010; Deegan *et al.,* 2006, b; O'Dwyer and Owen, 2005; Deegan, 2002; Deegan *et al.,* 2002; Ball *et al.,* 2000; Bebbington *et al.,* 1999; Owen *et al..* 1997) and more recently assurance implications for stakeholders (Bepari and Mollik, 2016; Manetti and Toccafondi, 2012; O'Dwyer , 2011; O'Dwyer and Owen, 2007). Others have examined issues relating to the technical competence, expertise and independence of the assurance provider (e.g., Mock *et al.,* 2007; Simnett *et al.,* 2009; Deegan *et al.,* 2006; O'Dwyer and Owen, 2005; Park and Brorson, 2005) raising questions over assurer independence, guidance from assurance standards and the extent to which assurance can be effective in improving the credibility of a largely subjective body of NFI (O'Dwyer and Owen 2005; Simnett *et al.,* 2009). The significant differences identified by prior studies, including the nature, scope and quality of NFI assurance statements and practice, particularly in a private sector context, is not surprising given its rapid emergence (WBCSD, 2016; KPMG, 2013; ANAO, 2005) and lack of common practices and standards.

More recently NFI assurance research (Kim *et al.,* 2016; Hay, 2015; Green and Taylor, 2013; Huggins *et al.,* 2011), in the context of greenhouse gas (GHG) assurance, provides insights into how multidisciplinary teams work together and how auditors respond to the discipline specific expertise of others. For example, the results of the Kim *et al.* (2016)

study suggest that financial expertise auditors rely overly on the judgments made by science expertise auditors with implications for the effectiveness of such teams.

In addition, the analysis of international NFI assurance trends suggest that users have only limited understanding of the assurance statements, the assurance process and the conclusions reached by assurors (O'Dwyer and Owen, 2007, 2005). In order to legitimise assurance practice, O'Dwyer (2011) and others (Bepari and Mollik, 2016; O'Dwyer *et al.*, 2007; Boele *et al.,* 2005; O'Dwyer and Owen, 2005; Power, 2003) suggest that assurors need to engage with key stakeholders in order to meet expectations and build credibility of NFI assurance.

### *1.2 Research Motivation*

Against this milieu, there is an opportunity to facilitate "a deeper understanding of the complexities underpinning NFI assurance actual practice" (O'Dwyer *et al.,* 2011, p. 33) by providing a real life organisational perspective through analysis of detailed empirical data from a case study. With limited research to date examining the practitioner and organisational perspective of NFI assurance dynamics, this study is motivated by the following. First, it seeks to understand how NFI assurance practice, in particular within complex subject matter such as natural resource management (NRM), can inform practitioners when implementing new NFI subject matter assurance practices. For example, about what factors are important in constructing specific guidance for complex NFI subject matter and how to best translate such guidance on assurance process(s) into practice. Second, as the multidisciplinary audit team (MAT) structure is relatively new to audit research and its implications for team performance are rather unknown (Kim *et al.,* 2016; Trotman and Trotman, 2015), it seeks to provide insights into how multidisciplinary teams contribute to the perceived credibility of the NFI assurance

practice. Third, our case site provided a unique opportunity for examining various aspects of NFI assurance practice given that its specific NFI subject matter audits were, to our knowledge, the first of their kind both in a private and public sector context. Analysing the case study organisation's process of developing different aspects of the NFI assurance practice for the first time and understanding its impact on the outputs and outcomes of the assurance engagement has implications for future performance/compliance audits and enables others to identify potential factors to consider in enhancing the value and effectiveness of their NFI assurance practice.

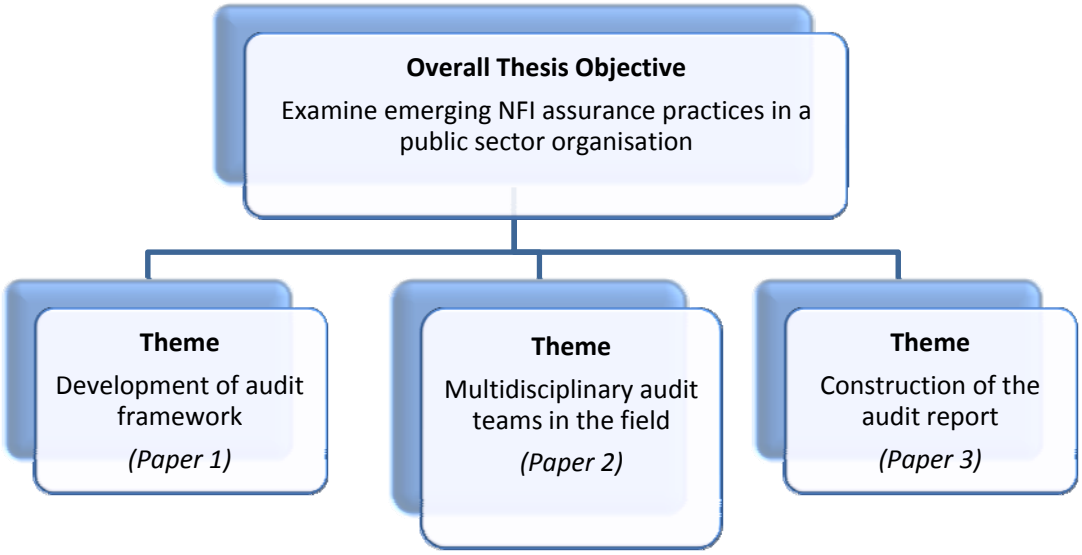
In comparison to the well-established financial audit methodology and practice, the challenges in providing NFI assurance identified in this thesis are not confined to just the different attributes of the NFI assurance engagement but also the processes that lie within, and it is this that the study seeks to understand. More specifically, this thesis investigates the processes of adapting assurance standards/guidelines and operationalising them specifically to a NRM audit context; understanding the process in the deployment and management of multidisciplinary teams and the process of the construction of the audit report.

### *1.2.1 Research Purpose and Objectives*

The overall objective of this 'by publication' thesis is to explore, from an assuror perspective, various aspects of the development and implementation of audit and assurance processes and practices emerging within an Australian public sector organisation. This research provides much needed empirical insights, within the context of a specific public sector Australian organisation, into the emergence and development of specific non-financial NRM assurance framework and practices, and related practical challenges and lessons encountered by the case study organisation as an independent third

party assuror. To achieve this overall thesis objective, each of the thesis papers addresses themes in the NFI assurance process, as depicted in Figure 1. These themes are elaborated on when outlining the key aims of each paper in Table 1 in Section 1.5.

**Figure 1: Summary of Overall Thesis Objective and Paper Themes**




### *1.3 Research Design*

The methodology utilised is a longitudinal (six year) case study of a public sector organisation responsible for NRM in the Australian state of New South Wales (NSW), an area covering over 800,628 sq km, that is three times the size of the UK, holding over a third of Australia's population. The exploratory case study method was deemed as most appropriate given the case site organisation could not identify existing audit standards, guidelines and practices to adopt in their specific NFI assurance role and context. The case study method allowed us to delve into and explore the real world at an organisational level (Scapens, 1990), investigating how the case study site developed its audit framework, methodology and process and how they learned as they reviewed their actions and their practices evolved over time.

In approaching the case site organisation for access, remaining aware of their expectations throughout the journey was essential as they too "will gain access to the best available knowledge in auditing (given audit experience of the researchers) and be collaborating in building the body of knowledge" (see Project Charter, Appendix B). The research focus was on emphasising the importance of attempting to understand their world through the understandings of those enmeshed in its creation (Stoner and Holland, 2004).

Given that relatively little is known about how organisations develop their assurance processes in relation to NFI subject matter and the issues encountered, an exploratory case study method is an ideal approach. This approach draws on multiple sources of evidence to investigate what *actually* occurs in organisational practice, rather than remaining at the more abstract level of formal guidelines, objectives or policies. The use of multiple sources allows for analysis and reflection by triangulating the descriptions and interpretations from different stakeholders and data in the case to examine how and why things get done (Stake, 2005; Scapens, 2004; Yin, 2003). In-depth insights, for example into how the NFI audit report within the case site developed, evolved and is continually transformed, are fundamental in understanding how NFI assurance advances and how the audit findings are communicated to the various stakeholders.

### *1.3.1 Data Collection*

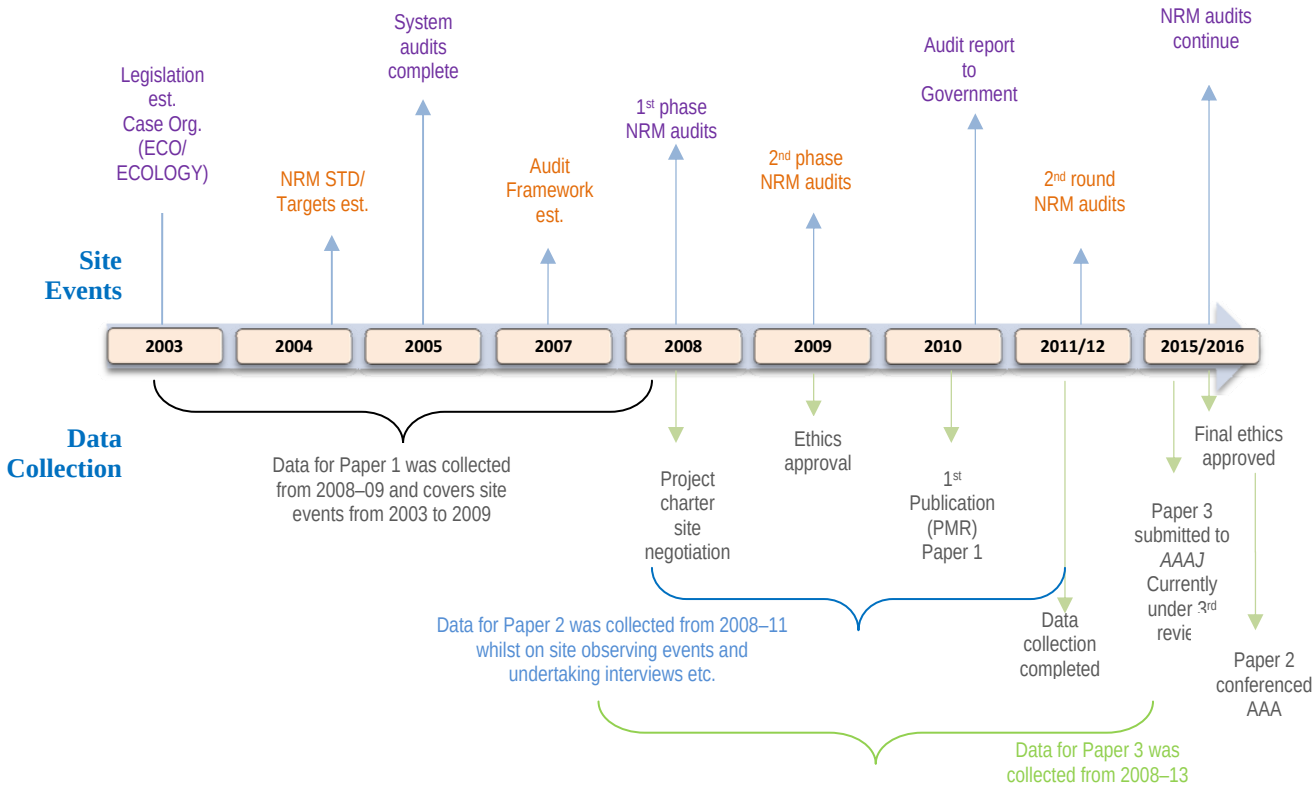
Data for this study was collected from several sources over a six year period and in some instances beyond this timeframe as indicated in Figure 2. In addition to publicly available reports, the case study site also provided access to internal documents, including audit working papers, audit reports, management letters and meeting minutes. As is characteristic of the case study method (Stake, 2005), extensive time was spent on site

observing critical executive and board meetings and attending a number of field audits. Semi-structured interviews were conducted, with non-directional questions posed in a climate of uncertainty, being conscious as researchers that the case site was also developing and learning 'on the go'. These interviews and informal discussions were with key internal and external stakeholders, such as case study site staff, external NRM audit team leaders and an independent audit expert. Chapters Four (Paper 2) and Five (Paper 3) provide further details on data sources and coding utilised. Given the different stages of the PhD, the case organisation has been identified by pseudonyms 'NRC' in Paper 1, 'ECO' (Paper 2) and 'ECOLOGY' (Paper 3).

### *1.4 Case Study Timeline*

The timeline in Figure 2 provides further context to the case site events and data collection period. Each of the papers in Chapters 3 to 5 further elaborates on these events and the implications for the case organisation's assurance practice. The case study organisation was established in 2003 and is independent from the Government. Its responsibilities include recommending statewide standards and targets for NRM issues and undertaking audits of the effectiveness of the implementation of NRM plans in achieving compliance with those statewide standards as detailed in Chapter 3 (pp38-41). In addition, Chapter 4 (pp68-70) provides more detail on the NRM audit function and its audit teams' profiles. Chapter 5 (pp125-129) provides further context of the case organisation's communication of audit findings.

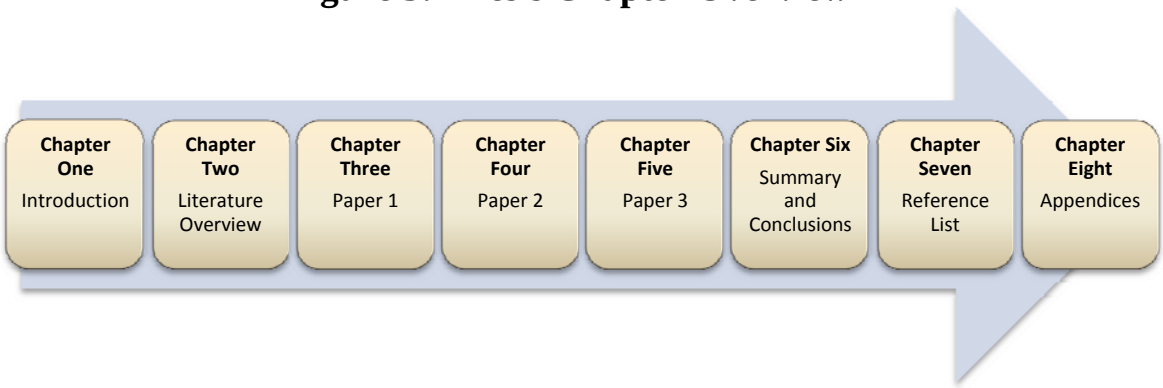
## Figure 2: Case Study Site Timeline




### *1.5 Overview of Thesis Chapters and Papers*

The thesis is divided into eight chapters as depicted in Figure 3.

## Figure 3: Thesis Chapter Overview




Chapter One provides the research context with the focus on NFI assurance research to date and existing current gaps in the literature, the overall thesis objective, specific aims of each of the three papers and research approach applied. Chapter Two provides a

roadmap to the relevant literatures and theories, summarising their relevance and how they are covered within each paper.

Chapters Three, Four and Five consist of the three papers: Paper 1, which has been published; Paper 2, which has been presented at a conference; and Paper 3, which is in the publication process. Each paper examines discrete selected themes of the assurance process including, NFI audit guidance (i.e., audit framework') development (Paper 1), deployment and management of multidisciplinary teams in providing the assurance (Paper 2) and the challenges in constructing the audit report (Paper 3). The three papers are presented in Table 1, which outlines their main aim and a number of sub-aims, followed by a summary of each paper in Sections 1.5.1 to 1.5.3).

Chapter Six summarises the overall findings with discussion on the contributions, limitations and suggestions for future research. The full reference list and appendices with relevant source documentation follow.

**Table 1: Overall Thesis Objective and Paper Aims**

| **Overall Objective:** Examine emerging NFI assurance practices in a public sector organisation |
|---|
| **Paper 1:** Martinov-Bennie, N. and Hecimovic, A. (2010) "Assurance of Australian Natural Resource Management", *Public Management Review*, Vol. 12, No. 4, pp. 549–65. |
| **Aim:** Examine the development of an **'audit framework'** to guide the NRM audits. |
| **Paper 2:** Hecimovic, A. and Martinov-Bennie, N. "The Multidisciplinary Audit Team: Diversity Challenges for NFI Assurance". |
| **Aim:** Examine the deployment of multidisciplinary teams and how the multidisciplinary team composition, diverse member subject matter knowledge and management of teams shape the assurance practice. |
| **Paper 3:** Hecimovic, A. and Martinov-Bennie, N. "Audit Reporting on Non-financial Information: One Audit, Two Reports". |
| **Aim:** Examine the construction of the audit report and how key aspects such as audience, objective(s), scope, etc, were determined. |

### *1.5.1 Paper 1: Assurance of Natural Resource Management*

This paper traces the development of appropriate guidance (i.e., audit framework) for an Australian public sector organisation embarking on meeting its legislated responsibility of carrying out audits of NRM practices and performance, a new and challenging field of audit. The evidence suggests that the development of such a framework is complex, involving significant research, development and innovation in which the current array of existing standards and guidance on sustainability and audit were of limited value. This paper sets the scene and provides insights into the development of an appropriate subject matter specific audit framework.

### *1.5.2 Paper 2: The Multidisciplinary Audit Team: Diversity challenges for Non-financial Information Assurance*

This paper examines how the MATs' composition, management and diverse member subject matter expertise shape the assurance practice and quality of outputs. The findings, using evidence from the initial audits over a two year period, suggest that the complexities in understanding the diverse mindsets of team members, managing MATs and effective communication between members are not to be underestimated if the diversity benefits of MATs are to be realised.

### *1.5.3 Paper 3: Audit Reporting on Non-financial Information: One Audit, Two Reports*

This paper examines the construction of the audit report over a three year period and how key aspects such as audience, objective(s), scope and so on were determined. The analysis is framed around the key audit report aspects drawing upon Power's (2003, 2004) theoretical insights on NFI audits in addition to the NFI assurance literature, public sector audits and Fiske's (1990) communication theory. The findings suggest that for the audit report to be of communicative value it needs to clarify its audience, audit objectives, scope, content and level of assurance upfront in the process. The construction of the audit report and identified complexities in determining these key audit report aspects need to be in consideration of the implications for the case organisation's multi-stakeholder environment.

## *1.6 Conclusion*

Together the findings from the three papers suggest that despite the increase in NFI assurance practice and its perceived value of enhancing credibility of NFI and transparency of the assurance process to stakeholders, concerns still exist about the ability of NFI assurance to enhance and promote these outcomes (Cohen and Simnett, 2014;

Huggins *et al.,* 2011; O'Dwyer *et al.,* 2011; Adams and Evans, 2004; O'Dwyer and Owen, 2005). Chapter 2 summarises some of these concerns in addition to providing a brief overview of relevant literature and theories utilised in each of the papers.

# CHAPTER 2

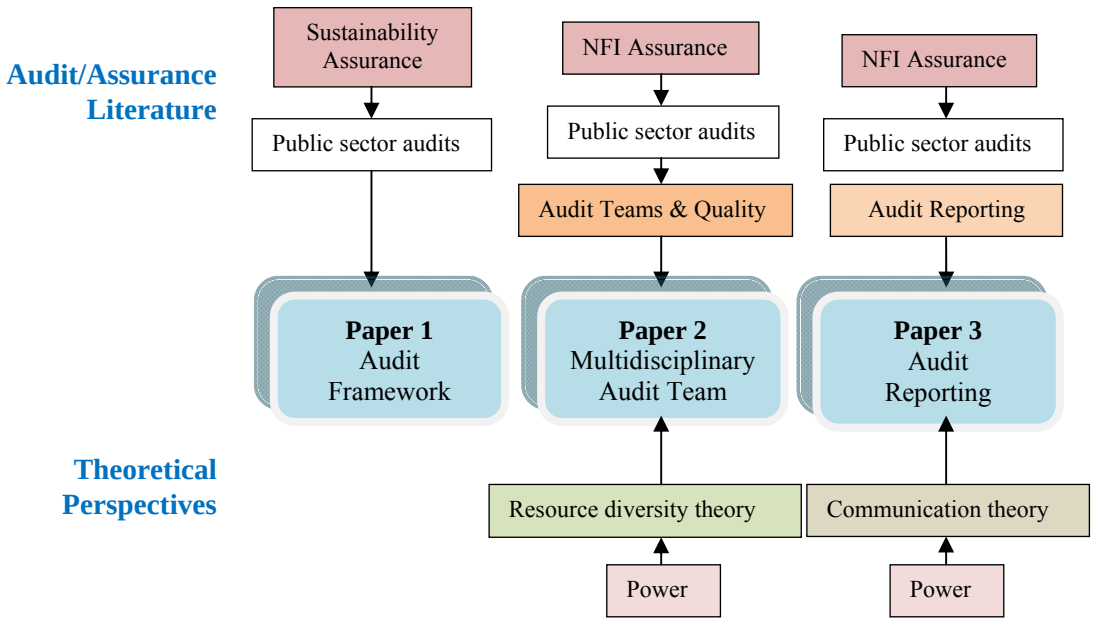
# LITERATURE

# OVERVIEW

### *2.1 Introduction*

Given the evolving state of NFI assurance practice and its specific subject matter ranging across various research literatures, a number of perspectives have been utilised to understand and analyse the empirical data in this thesis. The use of "complementary theories" in this thesis has the potential to "capture the greater complexity" of the phenomenon under study (Cohen *et al.*, 2008, p. 183). This chapter is organised according to two main themes: audit and assurance literature (Section 2.2); and theoretical perspectives (Section 2.3) with Figure 3 providing a roadmap of the main themes, elements within each and their application to each paper.

**Figure 3: Literature/Theory Roadmap**




Whilst Figure 3 shows some overlap of literature and theories utilised across the three papers, they are tailored towards the specific aims and subject matter examined in each paper. The initial Paper 1 makes reference to 'sustainability assurance', which has since been referred to as 'NFI assurance' in Papers 2 and 3. This change reflects the extant

literature, which recognises that 'sustainability assurance' is one aspect of the broad NFI assurance literature (see Paper 2 Introduction; notes 1, 2). The following sections provide the key themes from the most relevant literature and theories utilised in each of the papers.

### *2.2 Audit/Assurance Literature*

In order to understand and analyse the emerging assurance and audit practices in the NFI setting of NRM within a public sector context, commencing with the NFI assurance literature is a logical starting point (Section 2.2.1). This overarching literature is utilised in all three papers, supporting the analysis of different aspects of the assurance process addressed by each paper. Similarly, literature insights from public sector audits are relevant to each paper given the case study examines a public sector organisation (Section 2.2.3). In addition, the proceeding subsections summarise specific relevant literature on audit teams and audit quality for Paper 2 (Section 2.2.3) and audit reporting for Paper 3 (Section 2.2.4).

#### *2.2.1 Assurance of Non-financial Information*

'Assurance',[1] is defined by the Australian Auditing Standard on *Assurance Engagements Other than Audits or Reviews of Historical Financial Information 3000* (ISAE/ASAE 3000) as an attestation engagement, whereby the independent assurance practitioner obtains sufficient appropriate evidence to express a conclusion in the assurance report, that is. In the context of this study, the conclusion is designed to enhance the degree of confidence of the intended users about the subject matter information and this definition

[1] 'Assurance' refers to the expression of a conclusion that is intended to increase the confidence that users can place in a given subject matter or information. Audit/review are both types of assurance engagements. An audit provides a reasonable level of assurance typically on historical financial information whereas a review provides a limited (moderate) level of assurance.

is representative of the case organisation's legislated requirement to provide audit on specific subject matter, that is, NRM. In operationalising this role, the case organisation's development of its audit methodology was initially informed by various standards, such as ASAE 3000, which are prominently featured in the earlier NFI assurance literature[2] (relevant to Paper 1).

Despite the calls for mandatory NFI reporting and assurance (see, for example, Adams *et al.,* 2014), there have been relatively few studies of mandated NFI assurance (for example, Ackers and Eccles, 2015; Marx and van Dyk, 2011; Ackers, 2009). Whilst many studies have analysed the content of NFI assurance statements (i.e., output of assurance), mainly within a voluntary assurance private sector context (see, for example, Kend, 2015; Mori *et al.,* 2014; O'Dwyer *et al.,* 2011; Simnett *et al.,* 2009; Deegan *et al.,* 2006), the underlying processes are still not well understood and remain under researched (see, for example, Farooq and De Villers,2017; O'Dwyer *et al.,* 2011; Kolk and Perego, 2010; Ball and Grubnic, 2007). Previous studies on NFI reporting, relevant in particular to Paper 3, have highlighted a significant variation in the assurance report format, content, level of assurance, report length and assurance standards applied by various audit providers (Junior *et al.,* 2014; Sierra *et al.,* 2013; Zorio *et al.,* 2013; Perego and Kolk, 2012; Frost and Martinov-Bennie, 2010; Mock *et al.,* 2007; Deegan *et al.,* 2006; O'Dwyer and Owen, 2005; Dando and Swift, 2003;Wallage, 2000). Such concerns have led to calls by both academics and practitioners for "more customized and informative narratives in assurance reporting" (O'Dwyer *et al.,* 2011, p. 1) and more dialogue with the various stakeholders placing reliance on the assurance reports (Bepari and Mollik, 2016;

[2] Within this thesis the term non–financial information (NFI) report and assurance is used to refer to reporting/assurance that includes: sustainability reporting, which covers environmental, economic, governance, ethics, human capital, health and safety, and social reporting; information in annual reports, such as the Directors' Business Review/Corporate Governance Statement; reports to regulators, such as reports to government on compliance and reporting public interest concerns.

GRI, 2013; O'Dwyer *et al.,* 2011; Edgley *et al.,* 2010; Bebbington *et al.,* 2009; Manetti and Becatti, 2009).

There is limited NFI assurance literature relevant to MATs, with research to date providing some insights into the use of financial versus environmental auditor providers (see, for example, Edgley *et al.,* 2010; Simnett *et al.,* 2009; Deegan *et al.,* 2006; O'Dwyer and Owen, 2005). These studies provide initial recognition of the divergent nature and approach to NFI assurance between these different providers and recognise that 'subject matter' knowledge and relevant skills are essential for effective assurance outcomes (see, for example, Cohen and Simnett, 2014; O'Dwyer and Owen, 2005). In particular, O'Dwyer's (2011) notable case study of two Big Four professional service firms provides evidence that NFI assurance practice is shaped by practitioners' diverse backgrounds and training. Understanding how multidisciplinary assurance teams work in practice is still under researched, as it requires going deep into the field and collecting data about 'real' practices (Malsch and Salterio, 2016, p. 17).

More recently, the specific NFI subject matter assurance standard ASAE 3410 *Assurance Engagements on Greenhouse Gas Statements* addresses the need to integrate experts (for example, from engineering and scientific backgrounds) into the audit team. However, it provides no guidance on how practitioners from diverse backgrounds function together in the MAT setting. Emerging research into greenhouse gas assurance suggests that MAT members' diverse skillsets, experience, knowledge and mindset (i.e., distinct perspective) have the potential to result in effective assurance and contribute to assurance quality (Green and Taylor, 2013; Huggins *et al.,* 2011). Nevertheless the MAT structure is still relatively new to NFI literature and its implications for assurance team performance and audit outcomes (Trotman and Trotman, 2015). Given there is no specific NFI audit literature framework and literature, for the purposes of this thesis it was

deemed necessary to consider MAT attributes framed within the audit quality context literature (see Section 2.2.3).

### *2.2.2 Public Sector Audits*

Whilst literature insights from public sector audits is relevant to each paper, given that the case study site is a public sector organisation, it is also worth noting that our NFI assurance context has both compliance and performance legislated aspects.

Public sector NFI assurance practice is still perceived as lagging behind the corporate private sector with its attempts at NFI reporting/assurance perceived as 'patchy' and GRI public sector supplement concepts difficult to apply in practice (Adams *et al.,* 2014; Dumay *et al.,* 2010; Lynch, 2010; Ball, 2004). This is despite the public sector's potential to have a greater impact on NFI reporting and assurance than the corporate sector due to its responsibility over vast geographical regions (ICAEW, 2012; Ball and Grubnic, 2007; English and Guthrie, 2000) and internal factors (e.g., investment initiatives) in specific entities where environmental sustainability and reporting is a core element of its mission (Lodhia *et al.*, 2012; Lodhia and Jacobs, 2013; Dumay *et al.,* 2010).

The Australian National Audit Office (ANAO) has traditionally been responsible for conducting financial, compliance and performance audits of all public sector entities at a Commonwealth level, with their audit reports commonly providing additional commentary, including, for example, best practice, recommendations and advice on cost reduction in order to improve auditee performance (ANAO, 2012; Barrett, 2011; Guthrie and Parker, 1999). Similarly, at a state level directly relevant to our study, the New South Wales Audit Office also adopts the auditing standards applied by the auditing profession in their audits of entities based on themes such as 'health', 'education' and 'environment' on a project basis. However, in NSW and other Australian states, there have been no

specifically targeted 'NRM audits' to help improve investment in natural resources prior to the establishment of the case study organisation under study in this thesis.

Prior literature has placed various labels on public sector performance audits of NFI such as 'Value for Money' (VFM), 'Comprehensive' and 'Efficiency' audits. Parker and Jacob's (2015) review of public sector performance audits highlights a number of complexities including identifying the key performance audit report audiences targeted, requirement to employ language minimising technical jargon and the need for "shorter reports that would deliver simple answers to complex issues" (p. 19). They also suggest there is an expectation across a broad range of stakeholders that performance audit reports provide tougher criticisms and more adverse findings and therefore require increasing attention to audit report design (relevant to Paper 3). It is also argued that given public sector organisations' responsibility over geographic regions and the opportunity to report on the performance of ecosystems and regions, they have the optimal conditions to achieve better sustainability performance than private sector organisations in terms of providing evidence on economy, efficiency, effectiveness and contributing to the 'learning' assurance process (Adams *et al.,* 2014; Lodhia and Jacobs, 2013; Ball and Grubnic, 2007).

Parker and Jacobs (2015) also comment on a tendency for performance audits to be 'compliant' based focusing on controls to produce outcomes (Parker *et al.,* 2008; English, 2007; Pollitt, 2003; Jacobs, 1998; Guthrie, 1992). Compliance audits focus on how entities comply with legislation, rules and policies. However, compliance audits can contribute to performance audits such as VFM (Goolsarran, 2007; Olsen, 2005) by not (merely) assisting the entity to identify and enforce compliance failures but also helping management improve compliance (Parker, 2003). Others suggest public sector organisations often struggle in determining what types of audits would be best suited for

assessing performance in terms of providing value for money, and opinions also differ over the extent of compliance orientation to be included in performance audits (Grönlund *et al.,* 2011; Pollitt *et al.,* 1999; Lonsdale, 2008). In reality, the public sector has been reporting on NFI for decades (Parker *et al.,* 2008; Barton, 2005), however, performance measurement and to some extent compliance adherence has primarily been utilised as an internal information tool rather than reporting to a wider stakeholder group (Ball and Grubnic, 2007; Herawaty and Hoque, 2007).

### *2.2.3 Audit Teams and Quality*

A number of prior studies, within the financial audit context, have examined various audit *team* attributes considered to be imperative to audit quality. The attributes studied include: the impact of audit firm tenure and industry sector on audit teams' production efficiencies (Libby, 1995; Libby and Luft, 1993; Trotman and Yetton 1985; Trotman *et al.,* 1983); auditor knowledge gained on–the–job working in a team setting (Westermann *et al.,* 2014); impact of task-specific training in specialised areas on auditor performance (Libby, 1995); influence of client characteristics on the structure of the audit team (Sanders *et al.,* 2009; Pratt and Jiambalvo, 1981); impact of senior auditor experience on less experienced auditors (Libby, 1995); knowledge transfer through auditor interactions embedded in the audit team processes (Geisler, 2007), how the team setting assists individuals to learn (Westermann *et al.,* 2014; Hill, 1982); and the impact on team efficiencies of audit team experience and knowledge gained from working on a number of clients within the same industry (Moroney, 2007; Libby and Luft, 1993). Some aspects of this research are of relevance to our research context of examining MATs and their impact on the NFI assurance outcomes and team performance.

Whilst there is some debate in the literature as to whether audit team attributes are more important drivers of audit quality than audit firm attributes (Carcello *et al.,* 1992), research suggests that team attributes such as knowledge, technical competency, ethical standards of the audit team and partner industry experience are perceived to be important drivers of audit quality (Kilgore *et al.,* 2011; Zerni 2008; Schroeder *et al.,* 1986; Beattie and Fearnley, 1995). Recent research supports this view that delivery of a high quality audit is critically dependent on the composition of audit teams and their leadership (Persellin *et al.,* 2015).

With limited comparative studies of the impact of team attributes on audit quality specifically within the NFI and MAT context, recent research on greenhouse gas assurance engagements (Kim *et al.,* 2016; Green and Taylor, 2013) also draws on factors considered in the financial audit context. Green and Taylor (2013) explore perceptions of GHG assuror quality and suggest that, like financial statement audits, the quality of GHG emissions statement assurance hinges on the quality of judgments made by the individuals on the assurance team.

### *2.2.4 Audit Reporting*

Prior research on financial audit reporting suggests that users are sensitive to changes in terminology (Bailey *et al.,* 1983), wording (Houghton and Messier, 1991) and to increased information provided in the audit report (Innes *et al.,* 1997), all of which are relevant to our examination of the case organisation's process in construction of the audit report (Paper 3). Cohen and Simnett (2014) suggest the communicative value of NFI assurance audit reports in terms of how intended users interpret and react to the assurance is determined in how auditors establish legitimacy with external audiences. The research to date also suggests that the potential benefit of audit reports is somewhat limited in practice. Constrained opinions, excessive length, restricted wording, and lack of clarity

contained in assurance statements are encouraging diametrically opposing user interpretations (Chen *et al.,* 2016; Camilleri, 2015; O'Dwyer *et al.,* 2011; Power, 2003b; Shore and Wright, 2000).

### *2.3 Theoretical Perspectives*

This section briefly summarises aspects of theoretical perspectives from Power (Section 2.3.1) in addition to resource diversity (Section 2.3.2) and communication theories (Section 2.3.3) from social psychology utilised as a lens for the purpose of data analysis in Papers 2 and 3.

#### *2.3.1 Power's Theoretical Insights into Non-financial Information Assurance*

Power's (1997, 1999, 2000) theoretical insights into NFI audits utilised in Papers 2 and 3 are relevant to this study, given his focus on public sector audits (in the UK) and the growing influence of financial auditors as they move into a broader audit arena, particularly NFI assurance service provision. This context has direct relevance to our study of mandated NFI audit assurance within a public sector context.

The accountant's expansion into NFI assurance has been partly facilitated by and reliant upon the ability of accountants to translate the concepts and terminology underpinning traditional financial audits into NFI audit arenas (Free *et al.,* 2009, Simnett *et al.,* 2009; Power, 1997, 1999). Power (1997, 1999, 2000) explores this assumption of transporting financial audit concepts within the context of the diversity of audit teams required for NFI assurance. Power maintains the complexity of coordinating these different functional specialties within a MAT context can be underestimated, as it is often mistakenly assumed that the discrete technical practices of different disciplines will remain intact when working with other disciplinary experts. Additionally, the leaders of these MATs, often accountants, may undermine other relevant expertise in an effort to

claim exclusive control over new audit domains (Abbott, 1988). The nature of the interactions between auditors, auditees and existing audit (or assurance) knowledge (Power, 1995), the perceived boundaries of audit (or assurance) knowledge in NFI reporting and the role and credibility of external specialists who might fill any expertise deficit in sustainability assurance (Power, 1999) are essential if audit efficiency is to be realised (refer Paper 2).

Power's theoretical perspectives on audit reporting (1997, 1999, 2003a, 2004) provide our study with a more specific view of the reporting process. Power (2003a) views audit as a practice where individuals (i.e., stakeholders) need to trust reported information and he argues that for this to occur, an accountability relationship between an agent and a principal must exist. This relationship and its success, Power argues, is also contingent upon clear audit objectives in the audit report as ambiguity of objective(s) risks "being attached to different goals" (Power, 1999, p. 6) and open to different interpretations by stakeholders who place reliance on the audit report (refer Paper 3).

### *2.3.2 Resource Diversity Theory*

Fiedler's (1986) resource diversity theory provides a theoretical lens through which we examine the dynamics of MATs and their potential to provide quality NFI assurance, by drawing on their members' diverse education and backgrounds. Insights from this theory, including the concept of 'diversity', which refers to "differences between any individuals on any attribute that leads to the perception that another person is different from self" (van Knippenberg *et al.,* 2004, p. 1008), suggest that differences in knowledge, expertise and perspectives promote higher quality, more creative and innovative outcomes (van Knippenberg and Schippers, 2007). For instance, task conflict as a consequence of diversity may have a positive impact, where differences in team members' viewpoints,

ideas and perspectives can result in an improved approach to the task at hand (van Knippenberg and Schippers, 2007; van Knippenberg *et al.,* 2007; Porter and Moffitt, 2006).

Horwitz (2005) also argues that functional diversity provides team members with access to a range of expertise, thinking and resources that would otherwise not be available if members were from the same functional background. Whilst there is some support for the argument that team members' expertise relates positively to team effectiveness and efficiency (Pieterse *et al.,* 2011; Horwitz, 2005), the evidence suggests this is dependent upon the elaboration of task relevant information. Team members need to be tolerant of diverse perspectives and integrate them into positive outcomes (van Knippenberg and Schippers, 2007). The commitment to collaborate, reflect and learn potentially leads to innovation and creativity if managed appropriately. This is akin to the notion of a 'transdisciplinary' team with real potential for integration of shared mindsets/perspectives in developing new knowledge (Burritt and Tingey-Holyoak, 2012). The 'transdisciplinary' team concept, however, differs from a multidisciplinary team approach in which members from diverse disciplines work in parallel to address a common problem without necessarily creating new shared knowledge.

However, negative impacts on team dynamics and performance may also stem from diverse disciplines (such as accounting, science and law) with different frames of reference, language and interpretation of information (van Knippenberg *et al.,* 2007; Ainsworth, 2006; Van Someren *et al.,* 1998). Prior evidence suggests organisations find it difficult to realise and manage the potential of diversity in teams given differences in broader skills between members and the need for members to exchange, communicate and share their perspectives and knowledge (Van Der Vegt and Bunderson, 2005).

### *2.3.3 Communication Theory*

Aspects of communication theory are relevant to audit reporting (both in the private and public sectors) as the audit report is essentially a communication channel for the audit outcome expressed (opinion) on whether the auditee's information (financial and/or non-financial) is fairly presented based on evaluated audit evidence. According to communication theory, the audit report, as a mechanism, is viewed as a goal-directed activity allowing organisations to "build trust, credibility and manage uncertainty" (Stephens *et al.,* 2005, p. 391). Since the audit report is the most visible output of the audit process, providing insights into the potential communicative value of the report is critical if its aim is to meet various stakeholders' needs.

Paper 3 utilises Fiske's (1990) interpretation of communication theory – an extension of Shannon and Weaver's (1949) communication model – to appraise the case study's NFI audit report development process. Shannon and Weaver's model suggests that the 'source' of communication is critical between the 'sender' (i.e., assuror) and 'receiver' (i.e., stakeholders) and that certain 'noise' in the communication channel (i.e., audit report) must be understood to improve the communication. In the literature this is referred to as the 'process' school of thought, which views communication as a linear process with the focus on the transmission of messages between sender and receiver. Fiske (1990) supports this earlier view of communication and suggests that providing more detailed information in the 'channel' (i.e., in our context, the audit report) should improve its communicative value (Mock *et al.,* 2013a; Hasan *et al.,* 2005). However Fiske extends the 'process' view to include a 'semiotic' perspective of communication by also focusing on the relationship between the source, the receiver and the text to determine the meaning of the communication. Fiske suggests that more human factors, such as predicting the effect of data on the receiver (i.e., various stakeholders), in terms of the interpretation and

inferences drawn need to be considered. Fiske also views differences in how receivers interpret data as an impediment to effective communication of intent of the sender's message.

### *2.4 Conclusion*

The three papers in this thesis address some of the gaps in the audit/assurance literature and apply theoretical perspectives as discussed above.

Paper 1 examines the process of determining the meaning of assurance in a specific mandated NFI assurance context and provides insights into the actual practice of constructing specific NFI subject matter (i.e., NRM) assurance guidance given limited practical guidance/standards and agreement on best practice in NFI assurance generally (Adams *et al.,* 2014; Cohen and Simnett, 2014; O'Dwyer *et al.,* 2011; Kolk and Perego, 2010; Ball and Grubnic, 2007; Deegan *et al.,* 2006).

Paper 2 examines how MATs' composition, diverse member subject matter knowledge and team management shapes assurance practice. This paper contributes to our understanding of how diverse members of NFI assurance MATs work together and how they are best managed. Prior literature on financial audit teams suggests that quality audits depend critically on the composition of audit teams, leadership (Persellin *et al.,* 2015) and on individual auditor judgments. This is also echoed by recent studies on utilisation of multidisciplinary audit teams in GHG assurance engagements (Kim *et al.,* 2016; Green and Taylor, 2013). Our findings add to this limited research to date and suggest that diverse team members' contributions and roles need to be communicated, managed and continually reviewed to ensure diversity benefits are realised (van Knippenberg *et al.,* 2007) and audit outcomes achieved.

Paper 3 examines the construction of the audit report and how key aspects such as audience, objective(s), scope, and so on are determined. Fiske's (1990) adaption of

communication theory suggests that providing more detailed information in the 'channel' (i.e., in our context, the audit report) should improve its communicative value (Mock *et al.*, 2013a; Hasan *et al.*, 2005) and promote more dialogue with various stakeholders (O'Dwyer *et al.*, 2011). However, our case study data suggests that the potential benefits of audit report communication are somewhat limited in practice with constrained opinions, excessive length, unclear wording and so on (Chen *et al.*, 2016; Camilleri, 2015; O'Dwyer *et al.*, 2011; Power, 2003b; Shore and Wright, 2000) and illustrates the complexity of attempting to meet the diverse needs of multiple stakeholders.

# CHAPTER 3

# PAPER 1

## Assurance of Natural Resource Management

**Conference proceedings**

6th Asia Pacific Interdisciplinary Research in Accounting Conference 2010, Sydney, Australia, 13 July 2010.

1st International Conference on Sustainable Management of Public and Not For Profit Organisations 2009, University of Bologna, Forli, Italy, 3 July 2009.

**Publication**

*Public Management Review*, Vol. 12, No. 4, pp. 549–65.

**Date** 10th February 2017

## Co-Author's Statement

**Paper 1**

Martinov-Bennie N. and Hecimovic A. (2010) "Assurance of Australian Natural Resource Management", *Public Management Review*, Vol. 12, No. 4), pp. 549–65.

**Principal Author**

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Professor Nonna Martinov-Bennie

**Statement**

I undertook research at the NSW Natural Resources Commission with Professor Nonna Martinov-Bennie as my Principal Supervisor. As a result of this research, Professor Martinov-Bennie and I presented the findings for Paper 1, initially at the 2009 SMOG Conference in Italy and then at the 2010 APIRA conference in Sydney. The paper that is included in the thesis is a double blind peer reviewed and published version from the *Public*

*Management Review* journal. The paper was published in 2010.

Angela Dijana Hecimovic's contributions to the paper were:

- concept development;
- conducting interviews, attending meetings, collecting data;
- data analysis;
- write the first draft of paper;
- rewrite of all subsequent paper drafts;
- development of final paper based on conference and reviewer feedback.

Professor Nonna Martinov-Bennie's contributions to the paper were:

- discussion of conceptual ideas underpinning the paper;
- input and guidance into structure of paper;
- reviewing and editing all paper drafts, including final journal submission.

**Declaration *Principal Author***

I, Angela Dijana Hecimovic, the Principal author of the aforementioned paper, declare that I have contributed to all sections of the paper as indicated above. My

contribution to the paper represents approximately 85% of both the conceptualisation and writing effort required for its publication.

Signature
10th February 2017

Witness

10th February 2017

**Declaration *Co-Author***

I, Nonna Martinov-Bennie, the co-author of the aforementioned paper, declare that I have contributed to all sections of the paper as indicated above. My contribution to the paper represents approximately 15% of input into conceptual ideas underpinning the paper, reviewing and editing paper drafts as required for its publication.

Signature
10th February 2017

Witness

10th February 2017

# ASSURANCE OF AUSTRALIAN NATURAL RESOURCE MANAGEMENT

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## Abstract

This article traces the challenges encountered in the development of appropriate guidance for an Australian public sector organization embarking on meeting its legislated responsibility of carrying out audits of natural resource management practices and performance, a new and challenging field of audit. The evidence suggests that the development of such guidance is complex, involving significant research development and innovation in which the current array of existing standards or guidance on sustainability and audit were of limited value.

## Keywords

Audit standards, environmental performance audit, natural resource management

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## INTRODUCTION

The heightened interest in recent years in sustainability reporting has been accompanied by an increase in independent assurance of these reports (Dumay et al. 2009). While the research and literature examining assurance of sustainability reports is not as extensive as that examining the amount and type of sustainability reporting, it has nonetheless considered a variety of issues. Many aspects of assurance reporting and practice, not unlike issues surrounding sustainability reporting, are still widely debated.

Managerialism or managerial capture of sustainability reporting (Bebbington et al. 1999; O'Dwyer 2001; Deegan 2002; Deegan et al. 2002; Adams and Evans 2004; O'Dwyer and Owen 2005; Gray 2006; Dumay et al. 2009) is one of the issues subject to debate, with claims that organizations use 'sustainability' reports selectively to boost their reputations in pursuit of economic benefit (Gray 2006). The use of independent external assurance is considered by some as a mitigating factor in minimizing the potential for managerial capture (Ball et al. 2000; Deegan 2002; O'Dwyer and Owen 2005).

The question of who should be conducting and providing the assurance on sustainability practices and reports (Deegan et al. 2006; O'Dwyer and Owen 2007) is another issue in the debate about assurance. Evidence suggests that international accounting firms, particularly the 'Big 4', various specialist consulting firms and certification bodies are the three primary providers of sustainability assurance for private companies (CorporateRegister.com 2008). Studies to date have examined issues of technical competency and expertise, as well as independence of the assurance provider (e.g. O'Dwyer and Owen 2005; Park and Brorson 2005; Deegan et al. 2006; Mock et al. 2007; Simnett et al. 2006).

Although unresolved issues remain, there is general consensus that assurance adds (or has the potential to add) to the (perceived) credibility and quality of sustainability reports (O'Dwyer and Owen 2007) and improvement to the operations and risk management of an organization's sustainability practices (CorporateRegister.com 2008). The assurance debate and research on sustainability reporting and assurance has mainly focused on the private sector, but less so in relation to the public sector (Farneti and Guthrie 2009). Assurance of environmental audits in the public sector has received little attention to date, although the public sector, by definition, is the custodian of large tracts of public land, the guardian of air and water quality and also the stock of native flora and fauna within defined boundaries.

The aim of this article is to provide insights into the challenges faced when a public sector organization embarks on audits of regional public sector bodies responsible for planning for and investing in improved sustainability of natural resource use and management ('environmental performance audit').[1] The organization responsible for the audits was required to construct specific guidance as to the audit objectives, the scope, evaluation criteria, a common understanding of what constitutes audit evidence,

audit processes and methodology as well as reporting context and format to ensure quality and consistency across all audits. The experience of the Australian public sector organization reported in this case study suggests that development of such guidance for an environmental audit is a complex process which involved 'significant research, development and innovation, as NRM [natural resource management] auditing is a new and challenging field' (NRC 2008 and 2009 Audit Reports for all individual 'Catchment Management Authorities' (CMAs): 4). The existing array of international standards and guidelines on sustainability and assurance, together with a lack of consensus as to what constitutes 'best practice' proved problematic and of limited value. More importantly, the current focus of the existing standards and guidelines on the private sector further restricted their relevance. The process of translating the available standards and guidelines into actual practice given this case study organization's complex responsibility for providing advice on natural resource management,[2] as well as auditing NRM practices and performance was also problematic.

This article is structured as follows. Section two provides a brief background to international standards and guidelines on sustainability assurance. In section three the research methods are outlined, including details about the case study organization. Section four provides an analysis and discussion of the challenges associated with the development of the organization's specific environmental audit standard/guidelines (referred to as an audit framework in the remainder of this article). The final section provides conclusions, including discussion of limitations and potential further research.

## BACKGROUND TO INTERNATIONAL STANDARDS AND GUIDELINES ON SUSTAINABILITY ASSURANCE

The growing interest in sustainability reporting in both public and private sector organizations has been accompanied by several initiatives undertaken to develop guidelines for the reporting of sustainability practices and outcomes (Dumay et al. 2009); the most notable to date being the sustainability reporting guidelines of the Global Reporting Initiative (see GRI 2006). However, other bodies have developed guidelines, including, Organization for Economic Co-operation and Development (OECD 2006), the World Bank (WBG 2007), AccountAbility (2008a, 2008b) and United Nations (UNGC 2008), but from differing perspectives and using different processes. The aim of these initiatives can be summarized as the need to develop organizational sustainability practices that are cognizant of the needs of the present, without compromising the needs of future generations (GRI 2006: 2).

There are numerous national and international standards concerning private sector financial auditing and several international attempts at providing guidance on sustainability and non-financial assurance.[3] Two of these (the International Standard on Assurance Engagement (ISAE) 3000, and AccountAbility's AA1000AS) are discussed below to illustrate the tenor of the existing standards and guidelines.

While the key international reporting guidelines outlined in this section have been put forth as complementary to one another rather than mutually exclusive, they have often been applied in a 'pick and mix' manner, without following the full guidance of either but referencing both (e.g. AA1000AS and GRI). Some may consider this to be a positive development, while others claim that this 'falls short of the rigour many stakeholders might expect' (CorporateRegister.com 2008: 13). This is not surprising given that some (e.g. Adams 2004) identify the development of authoritative consistent standards or frameworks to guide the process of assurance of sustainability reports as a critical issue in order to ensure that organizational, stakeholder and public expectations are met, lending credibility to the reports. On the other hand, Coyne (2006: 29) suggests that 'the proliferation of guidelines and standards, and their inconsistent coverage of the core principles of sustainability, remain a key reason why many organisations have opted to create their own principles'.

The International Standard on Assurance Engagement (ISAE) 3000 of the International Auditing and Assurance Standards Board (IAASB) was released in December 2003. ISAE 3000 provides (mandatory) guidance for professional accountants for performing assurance on non-financial engagements. The focus of ISAE 3000 is not specific to a type of non-financial assurance engagement and is consequently broad in order to accommodate the inherent complexities of various subject matters, criteria and evidence in non-financial information assurance engagements. There appears to be growing recognition that such a broad standard may be of limited use to specific types of assurance, such as environmental performance audits, and it is likely that future standards may specifically target assurance of specific subject matter such as sustainability reports (IFAC 2003). The work currently being undertaken by the IAASB's International Task Force to develop an assurance standard on global carbon emissions is a move in this direction (Simnett et al. 2008).

AccountAbility's AA1000AS was the first internationally published sustainability assurance standard in 2003, with a recent update in 2008. The assurance standards are part of the AA1000 Series, which also include the AA1000 AccountAbility Principles Standards (AccountAbility 2003, 2008a) and the AA1000 Stakeholder Engagement Standard (AccountAbility 2005). These standards revolve around the principles of materiality, responsiveness and the underlying foundation principle of inclusivity.

While traditional audits of financial statements are thought to provide a high (i.e. reasonable) level of assurance (Roebuck 2000), there is arguably less ability to provide such a level of assurance on non-financial information such as sustainability reports. The IAASB standards identify two levels of assurance (i.e. high or reasonable for audits and moderate or limited for reviews), while the AccountAbility standards propose two types of engagements: Type 1 (AccountAbility Principles) with a conclusion as to the nature and extent of adherence to AA1000APS; and Type 2 (AccountAbility Principles and Performance Information),[4] which also includes a conclusion as to the reliability of the sustainability information disclosed. This lack of consensus and common terminology is compounded by the fact that sustainability reports often contain non-

financial qualitative information on which it is inherently more complex to provide a higher level of assurance. Further, the information systems used to capture the information in these sustainability reports are not geared towards reliable measurement of the information required.

The second issue relates to the difference between traditional financial audits, which are typically audits of compliance, while the assurance of sustainability reports tends to involve both compliance and performance components. This aligns more with the broader scope of audit engagement in the public sector. For instance, Australian public sector audits include the mandated responsibility to undertake performance audits (Parker and Guthrie 1991; Guthrie and Parker 1999), which have in recent years been extended to the provision of assurance in sustainability reporting (McPhee 2007). The main issues for the Australian National Audit Office (ANAO) in providing assurance on public sector sustainability reporting, according to the (then) Auditor-General, are the 'lack of mandated standards for a systematic process as well as the paucity of evaluation criteria for verification of this information' (ANAO 2005: 7).

To summarize, there are no universal international frameworks or standards used for the preparation of non-financial information reports (e.g. sustainability reports) and there is no single authoritative framework or a set of standards for providing assurance on these. This article aims to contribute to contemporary debate by providing insights as to the challenge encountered by one Australian public sector organization in constructing its audit standard (referred to as audit framework) and practices in undertaking its legislated responsibility of performance audits and evaluation of NRM.

## RESEARCH METHOD

In order to provide insights into the implementation of environmental performance auditing in a public sector organization, this research uses the case study method. This method has been used often in the social sciences (Fontana and Frey 2005), more recently in accounting (Bedard and Gendron 2004) and auditing studies (Humphrey 2008). This study uses a single longitudinal case study method in order to examine a specific phenomenon within a context, place and time; that is, the development of an environmental performance audit framework from 2006 until early 2009 at the case study organization, the Natural Resources Commission. Referred to in this article as the Commission, this organization is an Australian public sector organization, located in the state of New South Wales. It provides advice on NRM to the state government. The focus of the research is the period from late 2006 to early 2009 when the data were being collected for the study reported here. Where appropriate, earlier context (2004–5) is provided. The case study method was chosen as it incorporates the use of a range of media, in this case, internal documentation, observations, semi-structured interviews, external documentation (see Yin 2003).

The researchers had unrestricted access to internal and external documents, planning and audit meetings, 'the field' (i.e. the corridors of the Commission where many informal discussions took place) and organizational participants. Also, the researchers interviewed Commission staff and stakeholders.

## The Commission case study

The Commission was created by an Act in 2003 to provide advice on NRM for the social, economic and environmental interests of the people of the state. The primary purpose of the Act was to establish an independent body with broad investigating and reporting functions. In exercising its responsibilities, the Commission's independence from both the Government and the CMAs (catchment management authorities), together with its broad investigating and reporting functions, is critical to its mandate to undertake audits of the effectiveness of regional authorities' 'Catchment Action Plans', in compliance with statewide targets and standards for NRM. Some of the specific Commission functions under the Act include:

- to recommend statewide standards and targets for NRM issues;
- to recommend the approval of action plans of authorities that are consistent with statewide standards and targets adopted by the Government for NRM issues;
- to undertake audits of the effectiveness of the implementation of action plans in achieving compliance with those statewide standards and targets; and
- to undertake audits of action plans and other NRM issues as required by the responsible Minister.

The Commission and its audit responsibility are relatively contemporary, which makes the research organization an ideal site for contributing to the understanding of the dynamics involved in developing an audit framework for providing assurance on NRM to the Government and the public. The ambiguity and lack of agreed objectives, standards, processes and 'best practice' in non-financial information assurance including sustainable NRM allows for in-depth exploration by the researchers of motivations, challenges, complexities and tensions faced by the Commission in developing its formal audit framework.

Central to the NRM was the establishment of thirteen regional authorities covering the entire state as the primary means for the strategic delivery of funding from the state and Commonwealth governments to help land managers improve and restore the natural resource condition across the state.

During 2005, the Commission developed (in collaboration with thirteen regional authorities) a statewide standard and targets to guide the work of the authorities in managing their responsibilities through a consistent approach to NRM to achieve the Government's overarching goal of 'landscapes that are ecologically sustainable, function

effectively and support the environmental, economic, social and cultural values of our communities' (NRC 2007: 1). The standard and targets are a key aspect in the Commission's development of its regional model and in assisting the regional authorities to improve adaptively their performance in a dynamic, uncertain and complex social-ecological system.

The Standard for Quality Natural Resource Management (the Standard) (NRC 2007) recommended by the Commission in 2005 and adopted by the Government in 2006 aims to promote 'quality practice' in NRM and requires the authorities to comply with the Standard in all areas of their business including the development of its strategic plan for NRM referred to in the Standard as the action plan. The Standard sets out seven auditable outcomes of quality NRM for authorities to meet (see Table 1).

Table 1: The seven components of the standard

| |
|---|
| Collection and use of knowledge<br>Required outcome: Use of the best available knowledge to inform decisions in a structured and transparent manner |
| Determination of scale<br>Required outcome: Management of natural resource issues at the optimal spatial, temporal and institutional scale to maximize effective contribution to broader goals, deliver integrated outcomes and prevent or minimize adverse consequences |
| Opportunities for collaboration<br>Required outcome: Collaboration with other parties to maximize gains, share or minimize costs or deliver multiple benefits is explored and pursued wherever possible. |
| Community engagement<br>Required outcome: Implementation of strategies sufficient to engage meaningfully the participation of the community in the planning, implementation and review of natural resource management strategies and the achievement of identified goals and targets. |
| Risk management<br>Required outcome: Consideration and management of all identifiable risks and impacts to maximize efficiency and effectiveness, ensure success and avoid, minimize and control adverse impacts. |
| Monitoring and evaluation<br>Required outcome: Quantification and demonstration of progress towards goals and targets by means of regular monitoring, measuring, evaluation and reporting of organizational and project performance and the use of results to guide improved practice. |
| Information management<br>Required outcome: Management of information in a manner that meets user needs and satisfies formal security, accountability and transparency requirements. |

Source: www.nrc.nsw.gov.au (accessed June 2009).

The statewide targets for NRM (see Table 2) embedded in the state plan[5] set out agreed long term aspirational goals and activities adopted by the Government in 2006. Each of the thirteen action plans contain targets that address regional NRM priorities, which subsequently contribute to the achievement of the statewide Targets.

The Commission is independent from both the Government and the authorities with the responsibility of delivering a 'Standard for Quality NRM' (the Standard) and the 'statewide Targets' (Targets) for NRM which the Government has embedded into the state plan. Under the Act, as part of the accountability structure surrounding the regional bodies, the Commission is required to audit the effectiveness of the implementation of action plans as measured by each authority's compliance with the Standard and contribution towards NRM Targets. The standard and targets also provide criteria for the audits. However, it needs to be recognized that at this early stage of their developmental cycle the authorities' performance of delivery and contribution to the statewide targets in terms of measurable outcomes in NRM may not be observable for some years, and that 'while state-wide and authority level monitoring

Table 2: Statewide targets for natural resource management

| |
|---|
| Biodiversity |
| 1 By 2015 there is an increase in native vegetation extent and an improvement in native vegetation condition. |
| 2 By 2015 there is an increase in the number of sustainable populations of a range of native fauna species. |
| 3 By 2015 there is an increase in the recovery of threatened species, populations and ecological communities. |
| 4 By 2015 there is a reduction in the impact of invasive species. |
| Water |
| 5 By 2015 there is an improvement in the condition of riverine ecosystems. |
| 6 By 2015 there is an improvement in the ability of groundwater systems to support groundwater-dependent ecosystems and designated beneficial uses. |
| 7 By 2015 there is no decline in the condition of marine waters and ecosystems. |
| 8 By 2015 there is an improvement in the condition of important wetlands, and the extent of those wetlands is maintained. |
| 9 By 2015 there is an improvement in the condition of estuaries and coastal lake ecosystems. |
| Land |
| 10 By 2015 there is an improvement in soil condition. |
| 11 By 2015 there is an increase in the area of land that is managed within its capability. |
| Community |
| 12 Natural resource decisions contribute to improving or maintaining economic sustainability and social well-being. |
| 13 There is an increase in the capacity of natural resource managers to contribute to regionally relevant natural resource management |

Source: www.nrc.nsw.gov.au (accessed June 2009).

and evaluation programs are being implemented, data from these programs are not yet available' (NRC 2008 and 2009 Audit Reports for all individual CMAs: 4).

To ensure that the Commission can undertake its responsibilities its organizational structure allows access to leading experts in sustainable development, agriculture, auditing, environmental science and education, providing solid foundations for independent perspectives, knowledge and advice on NRM. The Commission complements its internal knowledge and expertise by engaging with other stakeholders including authorities, various other government agencies, environmental groups, landholders, scientists, academics, practitioners and consultants.

## DEVELOPMENT OF AN ENVIRONMENTAL PERFORMANCE AUDIT FRAMEWORK

As outlined above, the Commission's legislated responsibility includes audits of the effectiveness of the implementation of action plans in achieving compliance with the Standard and contributing towards the Targets, as well as other NRM issues as required by the Premier of the state.

During its first year of operations in 2004, the Commission developed its recommendations for the Standard and Targets. Such guidelines have never been developed before within the NRM context in Australia and required considerable effort in terms of the Commission's available resources. The development of the Standard and Targets involved preliminary consideration of the audit aspect with the resulting draft audit framework (NRC 2005) mapping out a ten-year audit process plan with a number of specific phases and milestones. This initial draft recognized that the audit process would involve compliance auditing, performance auditing and evaluations of the authorities by the Commission but did not provide specific details. Given the early stage of the authorities' activities, there was an acknowledgement that the performance component would not be able to be undertaken until a later stage. The following comment from Commission staff member A[6] reflects this early stage of audit role development: 'the role of audits was thought of, we did not map out the process, methodology which is the difficult part'.

As part of their responsibility to recommend the approval of action plans, during 2005 and 2006 the Commission undertook audits, referred to as 'systems reviews' which was considered 'a more friendly terminology' (Commission staff member B) and a more appropriate label given the purpose and nature of these initial audits. These system reviews, which were not part of the specific Commission legislated audit responsibility, focused on regional authorities' early compliance against the Standard including corporate governance, adaptive management, risk assessment and systems in place. The reviews were primarily checklist-based and conducted by external systems experts in conjunction with Commission staff (i.e. experts on the Standard).

The initial systems reviews provided the Commission with a detailed risk profile of each authority and progress ranking scale against each component of the Standard.

Although these compliance audits were not carried out as part of its mandate to undertake audits under the Act, they provided useful feedback to the Commission on different NRM and audit skills required to undertake reviews and audits of the authorities and their action plan implementation and that further formal development of the audit construct and the draft audit framework was required. The internal documents from this period and discussions with Commission staff indicate that ensuring access to appropriate level of (both in-house and external) audit expertise, different stages of maturity of authorities, different stakeholder expectations of the 'systems review', and authorities'/stakeholders' feedback in the process were important lessons taken on board by the Commission. The acknowledgement of the complexity of the nature of the audits of NRM is summed up by Commission member 1[7] 'I think you can simply say that . . . what we are dealing with is a different ball game . . . and brings about a whole new set of challenges for the auditor.'

Subsequent to the 2005/6 systems reviews with a highlighted appreciation of the complexity of the audit function under the Act and the uniqueness of the authorities' context, the Commission appointed in September 2006 its own specialist audit experts to progress 'audit' within the Commission context. At this time the Commission commenced further development of its Standard audit methodology, overseeing the choice of audit providers and of the audits themselves.

The aim of having a formal audit standard (audit framework) was to operationalize 'audit' in the Act (interview with Commission staff member C) and to provide a statement of concepts and standards applicable across all Commission audits. The audit framework was to be initially informed through various existing international and national assurance standards, including Institute of Internal Auditors Australia Standards (2007), International Standards for the Professional Practice of Internal Auditing and related Practice Advisories effective 2007; Standards Australia (2003) ISO 19011:2003 Guidelines for quality and environmental management systems auditing; Standards Australia and Standards New Zealand (2006); Delivering assurance based on AS/NZS 4360:2004 Risk Management, Handbook 158–2006; Auditing and Assurance Standards (ASAs, AUSs)[8] and Guidance statements. However, given the nature of the Commission and its specific responsibilities under the Act none of these standards were considered by the Commission's audit experts to be directly adoptable for the purpose of auditing the effectiveness of the action plans implementation against the Standard and Targets.

Faced with this challenge, the Commission began to develop its own audit standard referred to as 'Audit Framework' to fit the Commission's context. 'International and Australian auditing standards were considered and professional auditors were asked for input at certain points of the project' (Big 4 report, internal document). A decision was made at this point for the audit framework to be based around the key concepts abstracted from the various standards (including ASAs, AUSs, ISAE 3000, GRI and AA1000AS). The seven key concepts were risk, significance (rather than materiality), auditability, auditor competence, evidence, procedural fairness of reporting, stakeholder involvement and collaboration. These

were debated within the Commission and externally with consultants to ensure an appropriate alignment with the Standard.

The tailoring of these concepts proved to be more involved than initially anticipated as many of the concepts were developed with financial statement audits in focus, rather than the Commission's legislative responsibilities. The practicalities of operationalizing these, for example 'what does stakeholder collaboration mean and at what level?' (interview with Commission staff member C), were challenging. The framework development and finalization was a very transparent process involving continuous internal consultations as well as several workshops and input from key stakeholders and public sector audit experts including authorities, and Australian governments and their respective agencies (e.g. ANAO, Department of Environment and Conservation and Department of Natural Resources Auditors).

In addition to the extensive consultation with stakeholders, the draft audit framework was also peer reviewed (in late 2007) by leading practitioners in internal auditing, environmental performance audit reporting (including academics), and exposed to public consultation through the Commission's website and distribution lists. This extensive external consultation raised several issues with respect to the parameters of stakeholder involvement, the need to integrate the concept of 'materiality' into risk assessment/evaluation process, audit timetabling, audit scope and the frequency of the audit framework review (Commission internal documentation). Feedback received from the external consultations was addressed in the final draft of the audit framework (evidenced by the comparison between the draft exposed for peer review, submissions received and the final document). The importance of strong alignment of the Commission's audit approach adopted in the audit framework with the various existing audit and assurance standards in order to 'give the audit credibility and be defensible under scrutiny' (stakeholder feedback letter, internal document) was evidenced by the peer reviews and other feedback received.

The final audit framework was finalized and published in December 2007. It outlines the Commission's overall approach to auditing the implementation of the action plans including four key features; the first that audit work will be designed to assess whether the implementation of action plans is leading to on-ground improvements in natural resource condition by assessing compliance with the Standard and using hard data to verify progress towards statewide targets. The second, that a risk-based approach will be used to focus and tailor the nature of audit work, and to inform the frequency of audits. The third, that each action plan will be audited at least once every three years; however, audits may be more frequent where the risks to effective action plan implementation are assessed as high. The fourth feature was that commonly accepted audit methods will be adopted to ensure the rigour of the audit process and effective communication of audit findings and conclusions. The framework also recognizes that the audit teams need to include appropriate Commission staff, audit experts and natural resource experts.

The relevance and appropriateness of the use of the audits and the audit framework was tested during the first audits of seven of the authorities during 2008 (and final six audits in 2009). It is important to note that the audit framework and the audits were the first of their kind in Australian NRM and together with the standard and the targets they have proved to be relatively resilient as an accountability structure for the authorities, as noted at the conclusion of 2008 audits by Commission staff member C 'Standard, the targets and the audit remain the three pillars' that underlie the Commission's operations.

The use of the audit framework proved challenging both in the context of its use by external providers, its application to field audits and in meeting the needs of the Commission. The challenges and lessons from first audits were reflected upon at the time by the Commission member 2 'process and how it works is a complicated and creative process'. The external audit providers also faced challenges in applying the specific concepts of the audit framework, namely the application of risk, materiality, auditability and audit evidence. The initial audits also revealed that the skill set of audit providers, the meaning and availability of evidence and mixed functionality and the use of Commission staff with external audit consultants bring additional complexities that require further consideration in either the audit framework, the scoping of the audits or in supporting audit methodology. As Commission staff member C notes, 'the operational concepts identified in the audit framework catapulted the Commission and its consultants into auditing at a hasty pace during 2008'. The limited time frame for the initial audits, imposed by the need to report to the Government and outside of the Commission's control, meant the Commission had to adopt a 'build while we work approach rather than draft it, apply it, refine it' which would have been the preferred strategy (Commission staff member C).

The application of the audit framework during the audits in 2008 also highlighted a further need to revisit the concepts of performance versus compliance audits, as well as the applicability of the word 'audit' under the Act within the Commission context. The interpretation of 'audit' under the Act within the audit framework and the initial audits may be potentially too narrow given the nature of NRM. The experience of the initial audits suggest that the Commission can provide only limited assurance or an evaluation on some matters and is unable to provide 'audit' (i.e. reasonable/high assurance) across all NRM issues. 'Commission needs to determine level of assurance it will require under the audits . . . any audit framework will need to be designed with that goal in mind' (Big 4 report, internal document). Whether the language of the Act needs to be interpreted from 'audit' to 'assessment' or 'assurance' is debatable and is an issue to be considered during the review of the audit framework in early 2010 upon completion of all thirteen individual authority audits. An alternative conclusion based on the lessons from the initial audits may be that it is not the 'audit' definition itself and the audit framework that need to be revised, but rather the role and the scope of the audit need to be re-examined before undertaking future audits. The following comment alludes to such an alternative 'audit not the standalone product tool . . . need to head towards

strategic analysis to government and audit tool should support this' (Commission member 3). Perhaps the scope of the audits needs to be narrower (i.e. specific tasks and/or components of authorities' NRM responsibilities) to provide better defined inputs to support the Commission's broader performance evaluation of improvements in NRM and natural resources condition across the state. This implies a recognition of the role of auditing in process improvement and that findings from a performance audit can be the basis for adjusting policies, priorities, structures and processes, and in creating more effective and cost beneficial activities (Penini and Carmeli 2010).

The audit framework, as would be expected, received some criticism post completion of the initial round of audits by some external audit providers and Commission staff. As one external audit provider notes 'audit framework . . . there were problems with the definition of effectiveness, benchmarking' (External audit provider 1). These comments, together with all other lessons learnt from the initial round of audits, will be considered in the revision of the audit framework and the Commission's deliberation before undertaking the next round of audits in 2010. However, it is clear that, as with other current sustainability/non-financial information assurance standards, it was never meant to be a standalone product and needs to be supported by a rigorous audit methodology/manual tailored specifically to NRM and action plan context. Although an audit framework should be broad enough to provide the overall meaning and audit context, meet the changing needs of the Commission audit requirements, provide scope and basic guidelines that will withstand the changing maturity of the authorities, the political processes and the diverse stakeholder needs, it nevertheless needs to resolve some fundamental questions addressed above.

## CONCLUSIONS

The aim of this article was to provide insights in the emerging area of environmental performance auditing. The particular issue analysed is the development of a relevant environmental performance audit standard or 'audit framework' within a specific organizational context. The methodology utilized is a longitudinal (three-year) case study of a public sector body responsible for NRM in an Australian state. Given the nature of auditing in this new and challenging field clear standards of audit practice have not yet been developed or adapted and the development of the audit standard and conduct of the audits by the case study organization involved significant research, development and innovation. The case study data suggests that translating a legislated environmental performance audit into practice is a complex process even when the audit scope and specific performance criteria (e.g. the Standard and Targets) are predetermined. Our major finding is that the various international and national standards and guidelines on audit and assurance were of some use in providing broad principles but proved to be of limited assistance in operationalizing these principles within a specific NRM audit context. The case study analysis suggests that the current

quest by various international bodies to provide universal assurance standards and guidance is perhaps not realistic in relation to complex and organization-specific subject matter.

In conclusion, the investigation of the case study organization indicates that the regulators' and audit standard setters' future efforts should perhaps focus on clarification of the key underlying concepts – namely the appropriate scope, the meaning of assurance in terms of non-financial information context such as sustainable NRM practices and reporting and whether the levels of assurance, concepts of audit evidence, materiality, risk and so on, which are accepted and applied for financial information audits are in fact relevant and transportable to these types of audit and public sector context.

We acknowledge the limitations of the study, which as with most case study research, lies in a lack of underlying theory and use of multiple methods of data collection, bringing together multiple perspectives (Cooper and Morgan 2008).The other concerns relate to generalizability of the findings and replicability of the research as the case study organization will change over time. However, the ability of the case study methodology to provide in depth insights into an area of much needed research is well suited to the research reported here.

Research into assurance of sustainability is still only at its infancy (O'Dwyer and Owen 2005) and future research needs to address many other issues not explored in the current study, such as independence and level of management control over the assurance process. Although not reported in this article, the audits did highlight this potential tension as the Commission is both a judge and advocate for the authorities. Another issue in need of further research is the distinct approach and the degree of assurance provided by environmental consultants versus accountants. This is an aspect that the Commission had to address in its tenders and its choice of providers for both
2008 and 2009 audits. This issue, including the development of and choice of selection criteria for audit providers, will be explored and reported in a future study. The other important aspect that needs future research and will also be analysed within the context
of this case study in future articles is the development of audit methodology and the challenges of determining an appropriate content, format and level of assurance in the audit reports.

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## NOTES

1 The 'use of environmental' in the context of this case study encompasses both natural resource management (NRM) and sustainability definitions. It could be argued that the audits of natural resource management and performance, referred to in the article as environmental performance audits, have broader scope as they deliver economic, social and environmental outcomes.

2 A healthy landscape under a NRM approach has the ability to adapt to climate change, promotes thriving rural, coastal and metropolitan communities, healthy river supplies for agricultural and urban usage, primary production that is competitive in national and international markets and the promotion of an ecologically sustainable environment.

3 Assurance is an expression of an opinion (conclusion) designed to enhance the degree of confidence of the users about the outcome of the evaluation of measurement of a subject matter against criteria. Assurance is the broadest concept, which includes audit and review, that is, different levels of assurance.

4 These were an addition in the revised AA1000AS 2008 in an effort to bring the standard in line with ISAE 3000 (see AccountAbility 2008c).

5 The state plan sets out clear Targets for all of government's responsibilities, and the statewide Targets for NRM make up Priority E4 of the state plan.

6 'Commission staff member' refers to full time staff (i.e. programme managers and natural resource analysts).

7 'Commission member' is a reference to the Commissioner and/or Assistant Commissioners (i.e. governing body).

8 Australian Auditing and Assurance Standards and Guidelines (ASAs, AUSs, AGSs) are adapted from the International Federation of Accountants (IFAC's) Standards (ISAs).

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# CHAPTER 4

# PAPER 2

## The Multidisciplinary Audit Team: Diversity Challenges for Non-financial Insurance Assurance

**Conference proceedings**

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## Co-Author's Statement

**Paper 2**

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**Statement**

I undertook research at the NSW Natural Resources Commission with Professor Nonna Martinov-Bennie as my Principal Supervisor. As a result of this research, Professor Martinov-Bennie and I presented the findings for Paper 2 at the 2016 APIRA conference in Melbourne and at the 2016 AAA Conference in New York.

Angela Dijana Hecimovic's contributions to the paper were:

- concept development;
- conducting interviews, attending meetings, collecting data;
- data analysis;
- write the first draft of paper;
- rewrite of all subsequent paper drafts;
- development of final paper based on conference and reviewer feedback.

Professor Nonna Martinov-Bennie's contributions to the paper were:

- discussion of conceptual ideas underpinning the paper;
- input and guidance into structure of paper;
- reviewing and editing all paper drafts, including final journal submission.

**Declaration *Principal Author***

I, Angela Dijana Hecimovic, the Principal author of the aforementioned paper, declare that I have contributed to all sections of the paper as indicated above. My contribution to the paper represents approximately 90% of both the conceptualisation and writing effort required for its publication submission.

Signature
10th February 2017

Witness

10th February 2017

**Declaration *Co-Author***

I, Nonna Martinov-Bennie, the co-author of the aforementioned paper, declare that I have contributed to all sections of the paper as indicated above. My contribution to the paper represents approximately 10% of input into conceptual ideas underpinning the paper, reviewing and editing paper drafts as required for its publication submission.

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10th February 2017

Witness

10th February 2017

**The Multidisciplinary Audit Team: Diversity Challenges for NFI Assurance**


## Abstract

This study is set within the context of growing adoption of independent assurance of non-financial information by organisations. The study utilises a single case study to examine multidisciplinary audit teams (MATs) in practice. The MATs investigated are composed of experts from environmental/engineering science and accounting within a public sector non-financial subject matter assurance context. Data was collected from numerous sources with unlimited access to internal and external documents, including audit work papers. In addition semi-structured interviews were conducted with audit team members, supplemented by informal discussions, observations of meetings and audit field visits. The data was analysed by drawing on resource diversity theory from social psychology in addition to Power's (1997, 1999, 2003) theoretical perspectives on the traditional auditor's extension into non-financial assurance. The findings suggest that whilst specific subject matter expertise is deemed essential, understanding and communicating such expertise within and between MATs is vital for the perceived success of its performance in delivering audit outputs. Too much diversity may impede on this performance. Understanding the deployment and management of a multidisciplinary team with different disciplinary perspectives is timely given the increasing demand for diverse non-financial subject matter assurance.



## Keywords

Multidisciplinary audit team, non-financial information, assurance, natural resource management

## 4.1 Introduction

Assurance[1] not only plays a crucial role in adding credibility to reported non-financial information (NFI) but also has the potential to drive improved organisational performance (Simnett *et al.,* 2009). There has been an increasing trend of private sector adoption of NFI assurance[2] with a significant number of organisations voluntarily pursuing external assurance (Cohen and Simnett, 2014; KPMG, 2013). In contrast, whilst Australian public sector organisations have been subject to 'Auditor Generals'[3] performance audits since the 1970s, there has been recent criticism that this type of NFI assurance is heavily focused on accountability and control, rather than being more evaluative and 'educational' for the auditee in terms of effective outcomes (Parker and Jacobs, 2015; Pearson, 2014; Parker *et al.,* 2008). Others also suggest that the public sector has been relatively slow to implement sound independent NFI assurance practices given its broad range of stakeholders and increasing global pressure to improve performance, and in spite of the equal need for transparency and accountability in the public sector as in the private sector (Adams *et al.,* 2014; Farnetti and Guthrie, 2009; Parker *et al.,* 2008).

The motivation for this study stems from the growing recognition that complex NFI assurance requires diverse expertise and needs to be undertaken by a multidisciplinary

[1] 'Assurance' refers to the expression of a conclusion that is intended to increase the confidence that users can place in a given subject matter or information. Audit and review engagements are both types of assurance engagements. An audit provides a reasonable level of assurance typically on historical financial information whereas a review provides a limited (moderate) level of assurance.

[2] Within this paper the term non–financial information (NFI) report and assurance is used to refer to reporting/assurance that includes: sustainability reporting, which covers environmental, economic, governance, ethics, human capital, health and safety, and social reporting; information in annual reports such as the Directors' Business Review/Corporate Governance Statement; reports to regulators such as reports to government on compliance and reporting public interest concerns. Whilst NFI is not necessarily presented in monetary terms nor based on accounting standards, it potentially has a significant financial impact. It can be quantitative, such as in tons of GHG emissions, or qualitative, such as in an organisation's impact on the condition of biodiversity.

[3] The Australian National Audit Office's (ANAO) role is to drive accountability and transparency in the Australian Government sector through quality evidence-based audit services and independent reporting to Parliament, with the aim to improve public sector performance.

audit team (MAT). The NFI subject matter MAT is made up of individuals from various educational and functional backgrounds and typically includes members from the accounting, engineering, scientific and legal professions (Huggins *et al.,* 2011; O'Dwyer *et al.,* 2011). Regardless of sector, there is recognition that the choice of assurance provider (assuror) and audit team members is critical to the effectiveness of the assurance function (Andon *et al.,* 2014; Edgley *et al.,* 2010; Malsch and Gendron, 2011; O'Dwyer *et al.,* 2011). A number of earlier studies (in a private sector context) have examined broader characteristics of NFI assurance, including data assured (Deegan *et al.,* 2006), assurance provider choice (Simnett *et al.,* 2009; O'Dwyer and Owen, 2005) and challenges of accounting-trained auditors seeking legitimacy in new assurance spaces (Kim *et al.,* 2016; Andon *et al.,* 2014; Green and Taylor, 2013; O'Dwyer, 2011, O'Dwyer *et al.,* 2011; Power, 1997, 2003, 1999). However, relatively little is still understood about NFI assurance practice and, in particular, the use of MATs in the field and the factors that contribute to their effectiveness in delivering audit outcomes (Kim *et al.,* 2016; O'Dwyer *et al.,* 2011; Power, 1999, 2003). Some attention has been given to this growing area in relation to preliminary greenhouse gas (GHG) assurance engagements research (Kim *et al.,* 2016; Green and Taylor, 2013; Huggins *et al.,* 2011), which suggests that the complexity and scientific nature of the data being assured requires practitioners from a broad range of educational backgrounds outside the traditional accounting discipline. This study examines this emerging field in more depth.

While research into the use of MATs in auditing is in its infancy it has been well documented in the psychology literature, in particular, where members from different healthcare professions with specialised skills and expertise collaborate to recommend treatments for patients (Fay *et al.,* 2006; Van Der Vegt and Bunderson, 2005; Lapsley,

1997). The MAT members described in this literature have some common functional ground (Fay *et al.,* 2006) that is, in medical science, whereas the MAT members in our case study comprise practitioners from distinctive disciplines and functional areas (e.g., scientific, financial), thereby encompassing a more diverse knowledge base. We also distinguish the MATs under study from those undertaking GHG assurance and those in public sector performance audit teams. Firstly, the GHG subject matter auditing standard suggests the integration of both accountant and non-accountant practitioners at various stages of the assurance engagement, where members move in and out of the MAT as required, similar to consultants (Boritz *et al.,* 2014). The tendency with public sector performance audits is to outsource audit engagements, whereby potential contractors are evaluated based on the types of expertise, audit methodology and audit plan to be used by the contractors in the engagement (Chong *et al.,* 2009). Generally, performance audits require a wide range of disciplines drawing on expertise and training from experts in a relevant field on an ad hoc basis (Parker and Jacobs, 2015). In contrast, the MATs under study were formed specifically for the NFI assurance engagements (i.e. new teams with diverse experts), with all team members fully participating during the full duration of field work stage of the engagement. The intention was for the MATs to work collectively as a team, integrating members from distinct disciplines, with the case organisation developing the audit methodology to guide the assurance engagements.

This study also responds to Power's (2003) call for much needed in-depth understanding of audit practices within new contexts by specifically exploring how MATs were formed, managed and functioned in the field. Power's concern about the expansion of 'audit' into public sector arenas through regulation in the UK has direct relevance to our study of mandated NFI assurance in a public sector context. We use a

case study approach to explore a public sector organisation's experience of undertaking a complex specific subject matter audit requiring MATs with diverse expertise (e.g., environmental, scientific, accounting/audit) and which bring together collective knowledge, expertise and perspectives that members may not have been exposed to on their own. Our case study site provided a unique opportunity for investigating MATs within a 'new' NFI context where MATs have been engaged for the first time. Our empirical findings contribute to the academic literature on MATs and their effective use in performance/compliance audits in both public sector and private sector organisations.

This study makes a number of contributions to our understanding of engaging MATs in practice by exploring the dynamics of MATs in a novel and specific NFI assurance context, namely natural resource management (NRM). By exploring the need for MATs and, in particular, the case organisation's selection criteria for determination of successful contractors to form the MATs, we provide evidence that whilst subject matter knowledge and performance audit expertise was highly desirable, understanding the auditees and working collaboratively within the audit team were just as important. This has implications for assurors likely to utilise and work with individuals with subject matter specific expertise in such team settings. The study also examines the composition of MATs and the change in composition over subsequent audits in terms of members' skills such as performance auditing, NRM and systems knowledge. In addition to providing descriptions of MAT composition, the study examines the case organisation's experience of using MATs and adds to the limited research on how MATs with diverse team members work with each other and how they are best managed within a NFI assurance context. How MATs are deployed and managed has implications on how diverse expertise/knowledge impacts the MAT's performance in terms of meeting assurance

objective(s). For example, our findings suggest that the diverse distinct mindsets[4] of accountants, scientists and engineers have the potential to enhance assurance engagement performance, especially in terms of gathering and assessing evidence. However, the coordination of different expertise, understanding the various perspectives and the emphasis on communication between experts within the audit team in practice, is not to be underestimated. The MATs explored in this study are not a homogenous pool of professionals with the same training, backgrounds and understanding of audit evidence, the preconceived notion that multidisciplinarity contributes positively to team outcomes is challenged (Funnell and Wade, 2012; O'Dwyer, 2011; Fay *et al.,* 2006) and providing evidence that management of MATs has direct implications on the effectiveness of the assurance engagement.

An unintentional aspect and contribution of the study is observing the evolution of the MAT from 'group' to 'team', thereby providing insights into the applicability of the traditional 'audit team' concept to MATs within a NFI context. This distinction between audit 'team' and audit 'group' dynamics has implications for the group/team effectiveness in practice, especially where the word 'team' is applied haphazardly by management without much thought as to the disciplinary nature and control of teams, and how team attributes need to be clearly understood for benefits to be realised (Kozlowski and Ilgen, 2006; Katzenbach and Smith, 1993b).

The remainder of this paper will proceed as follows. Section 4.2 provides an overview of the relevant literature, the theoretical approach and overall research questions adopted to examine the dynamics of MATs in the field. We discuss the research method

[4] Distinct 'mindset' refers to one's perspective or disposition that predetermines one's reaction to situations. For example non-accountants perceive that the way financial auditors approach the judgment of data is influenced by "a structured, inflexible mentality", which "constrained the ways of thinking about approaching the data" (O' Dwyer, 2011, p. 1251).

and provide the case study context in Section 4.3 and analyse the case findings in Section 4.4. Section 4.5 concludes the paper with a summary, contributions, limitations and future research opportunities.

## 4.2 Theoretical Framework and Development of Research Issues

Organisations, including assurance firms, are increasingly amalgamating the diverse backgrounds, knowledge and expertise of staff within work team structures in the expectation that this will improve the performance of the team, the manager and the organisation (Murphy *et al.,* 1992). With this in mind and given the limited prior empirical research on MATs within the NFI assurance context, in this section we draw upon insights from various academic literatures relevant to the study of the MAT.

### *4.2.1 Public Sector Organisations and Non-financial Information Assurance*

Extant literature on new public management, whilst focusing on managing for outcomes (Adams *et al.,* 2014; Lapsley, 1997; Hood, 1995), also suggests that public sector organisations are being pressured to 'marry' private sector models/techniques with public sector accountability/transparency and are encouraged to audit NFI reporting from a compliance perspective for both internal and external stakeholders (Herawaty and Hoque, 2007; Bevir *et al*., 2003; Ittner and Larcker, 1998). In Australia, public sector auditors (at both state and federal levels) follow Australian auditing and assurance standards (ASAs and ASAEs), and in a NFI context they comply with the requirements of the Standard on Assurance Engagements (ASAE) 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information* and ASAE 3500 *Performance*

*Engagements.*[5] Prior literature also suggests that given public sector organisations' responsibility over geographic regions and the opportunity to report on the performance of ecosystems and regions, they have the optimal conditions to achieve better sustainability performance than private sector organisations in terms of providing evidence on economy, efficiency and effectiveness (i.e., on the use of public resources) and contributing to the 'learning' aspect of the assurance process (Adams *et al.,* 2014; Ball and Grubnic, 2007).

Prior studies have recognised that performance audits require a wide range of disciplines and skills, however, have focused on two aspects: the financial auditor's undertaking of these audits in the public sector; and how expertise and training from experts in a relevant field is drawn on as required (Pearson, 2014; Lonsdale, 2000; Guthrie and Parker, 1999; Leeuw, 1996; Guthrie, 1992). Nevertheless, the impact of performance auditing and, in particular, the use of MATs in the public sector is still a 'poorly explored territory' empirically (Morin, 2008, p. 719). The current study aims to fill this gap by investigating the use of MATs in assurance of NFI in a public sector setting.

### *4.2.2 Non-financial Information Assurance*

In contrast to literature on financial audit teams and the implications for audit effectiveness, the literature on NFI assurance teams to date is limited to discussion of the classification of assurance providers as either environmental consultants or financial auditors (Mock *et al*., 2007; Mock *et al.,* 2013; Deegan *et al.,* 2006; O'Dwyer and Owen, 2005). This provides some understanding of the divergent nature, scope and approach to

[5] Australian Auditing Standards are equivalent to International Standards on Auditing (ISAs).

assurance between the two groups (Edgley *et al.,* 2010) with evidence suggesting that consultants tend to evaluate the processes, while accountants/auditors prefer to verify the underlying systems and the accuracy of the reported NFI information (O'Dwyer and Owen, 2005). Nevertheless with accounting firms now providing over 60% of the NFI external assurance worldwide (KPMG, 2013), there is growing recognition that 'subject matter' relevant skills are essential for effective assurance (Cohen and Simnett, 2014; Martinov-Bennie and Hoffman, 2012; O'Dwyer and Owen, 2005). The increased demand for NFI subject matter assurance has provided impetus for accountants/auditors to broaden their content knowledge in order to be able to undertake NFI engagements, which often requires working with other experts and the use of multidisciplinary teams. O'Dwyer's (2011) case study of two Big Four professional service firms explores complexities in transferring traditional audit techniques and mindsets to new assurance areas. The study provides evidence the practice is shaped by practitioners' diverse backgrounds and training and MAT practice is still evolving.

The introduction of the first NFI specific subject matter auditing standard ISAE/ASAE 3410 *Assurance Engagements on Greenhouse Gas Statements*, issued by the International Auditing and Assurance Standards Board (IAASB) in June 2011,[6] in addition to the revised (December, 2013) ISAE/ASAE 3000 *Assurance Engagements Other than Audits or Reviews of Historical Financial Information*, recognises that NFI assurance is likely to require the involvement of multidisciplinary teams. Consequently ISAEs/ASAEs 3410 and 3000 address the need for the assurance practitioner to integrate experts, for example, in engineering or environmental science, into various stages of the engagement. While these standards provide some guidance on practitioners' responsibilities when identifying,

[6] Australia's equivalent standard ASAE 3410 *Assurance on Greenhouse Gas Statements*.

assessing and responding to risks of material misstatement in NFI engagements, little is known about how practitioners from such diverse disciplines work together in a multidisciplinary team setting in practice. Some emerging research in the GHG assurance context suggests that MAT members' diverse skillsets, experience, knowledge and mindset (i.e., distinct perspective) result in effective assurance and contribute to assurance quality (Green *et al*., 2017; Borghei *et al.,* 2016; Green and Taylor, 2013; Huggins *et al.,* 2011). The use of MATs in GHG assurance lies in the premise that the team members' broad range of skills, expertise and mindsets are essential to undertake these types of complex assurance engagements (Huggins *et al.,* 2011). Nevertheless this MAT team structure is new to audit research and the implications for assurance team performance are relatively unknown (Trotman and Trotman, 2015; Green and Taylor, 2013). Our study adds empirical evidence, to the literature by exploring how one organisation deployed MATs with a broad range of skills and expertise, highlighting the complexity of group dynamics and management of MATs within NFI assurance context.

### *4.2.3 Audit/Assurance Quality and Team Attributes*

The IAASB's *Framework for Audit Quality* (issued in February 2014) recognises 'audit quality' is a complex multidimensional concept and "there remains little consensus about how to define, let alone measure, audit quality" (Knechel *et al.,* 2013, p. 385). However, the framework recognises that certain engagement team attributes, such as appropriate values, ethics and attitudes, sufficiently knowledgeable and experienced members, application of rigorous audit process and quality control procedures, and timely reporting and interaction with key stakeholders will promote audit quality. A number of prior studies within a financial audit context have examined various audit *team* attributes

considered to be imperative to audit quality. The attributes studied include the impact of audit firm tenure and industry sector on audit teams' production efficiencies (Libby, 1995; Libby and Luft, 1993; Trotman and Yetton, 1985; Trotman *et al.,* 1983), auditor knowledge gained on-the-job working in a team setting (Westermann *et al.,* 2014), impact of task-specific training in specialised areas on auditor performance (Libby, 1995), influence of client characteristics on the structure of the audit team (Sanders *et al.,* 2009; Pratt and Jiambalvo, 1981), impact of senior auditor experience on less experienced auditors (Libby, 1995), knowledge transfer through auditor interactions embedded in the audit team processes (Geisler, 2007), how the team setting assists individuals to learn (Westermann *et al.,* 2014; Hill, 1982), and the impact of audit team experience and knowledge gained from working on a number of clients within the same industry on team efficiencies (Moroney, 2007; Libby and Luft, 1993).

Whilst there is some debate in the literature as to whether audit team attributes are more important drivers of audit quality than audit firm attributes (Carcello *et al.,* 1992), research suggests that team attributes, such as knowledge, technical competency, ethical standards of the audit team and partner industry experience, are perceived to be important drivers of audit quality (Kilgore *et al.,* 2011; Zerni, 2008; Schroeder *et al.,* 1986; Beattie and Fearnley, 1995). Recent research supports this view that delivery of a high quality audit depends critically on the composition of audit teams and their leadership (Persellin *et al.,* 2015).

With limited comparative studies of the impact of team attributes on audit quality specifically within the NFI and MAT context, recent research on GHG assurance engagements does attempt to draw on factors considered in the financial audit context (see Kim *et al.,* 2016; Zhou *et al*., 2016). Green and Taylor (2013) explore perceptions of

GHG assuror quality and suggest that, like financial statement audits, the quality of GHG emissions statement assurance hinges on the quality of judgments made by the individuals on the GHG assurance team. Furthermore, in Kim *et al.*'s (2016) experimental research setting, traditional auditor participants were required to respond to a simulated multidisciplinary team. Their findings expose assuror participants' (i.e. financial auditors) bias in their processing and evaluation of audit evidence by conforming to the judgment of the senior with a science background, highlighting concerns about the quality of GHG assurance and over reliance on subject matter expertise within the team. Our study whilst similarly drawing on factors considered in financial statement audits, contributes to the scant research literature, by providing empirical evidence of how MATs in a public sector context are deployed and managed and the important factors that need to be considered to ensure quality NFI assurance engagement outcomes.

#### *4.2.4 Power's Theoretical Perspectives on NFI Assurance and Multidisciplinary Audit Teams*

The accountant's expansion into NFI assurance has been partly facilitated, and is reliant upon, the ability of accountants to translate the concepts and terminology underpinning traditional financial audits into NFI audit arenas (Free *et al.,* 2009, Simnett *et al.,* 2009; Power, 1997, 1999). Power (1997, 1999) reflects on the growing influence of auditors as they move into areas of wider influence and NFI assurance service provision and claims we still do not know enough about the audit process, let alone the evolving use of MATs in practice and how members within MATs work together. Power (1997, 1999) maintains the complexity of coordinating these different functional specialties within a MAT context can be underestimated, as it is often mistakenly assumed that the discrete

technical practices of different disciplines will remain intact when working with other disciplinary experts. Additionally, the leaders of these MATs, often accountants, may undermine other relevant expertise in an effort to claim exclusive control over new audit domains (Abbott, 1988). The nature of the interactions between auditors, auditees and existing audit (or assurance) knowledge (Power, 1997, the perceived boundaries of audit (or assurance) knowledge in NFI reporting, and the role and credibility of external specialists who might fill any expertise deficit in sustainability assurance (Power, 1999) are essential if audit efficiency is to be realised.

Historically, accountants/auditors have attempted to sustain specific sets of practices in new audit arenas such as environmental audits (Power, 1997, 2003), efficiency audits (Radcliffe, 1999) and e-commerce assurance (Shafer and Gendron, 2005; Gendron and Barrett, 2004). They do so by reference to their independence and universality and by promoting portable context–free sets of 'good' audit practices accepted as directly relevant to these new arenas. Power (2003) asserts this abstraction of context-free audit practices has allowed accountants to claim expertise in audit domains outside of financial auditing. However, Power (1999) suggests that for the accounting profession to be relevant and competitive it needs to tailor and expand its knowledge to these new contexts (Power, 1997, 1999). Whilst our study does not examine the expansion of expertise of the financial auditor into new contexts per se, we explore how audit (accounting) experts and subject matter experts work together in the field in a specific NFI context. Our study examines team diversity within a MAT context in practice and provides insights into how members with diverse mindsets including financial auditors work together.

### *4.2.5 Resource Diversity Theory and Multidisciplinary Audit Teams*

An extension of Fiedler's (1986) resource diversity theory provides a theoretical lens with which we examine dynamics of MATs and their potential, via their members' diverse education and backgrounds, to provide quality NFI assurance. Insights from this theory, including the concept of 'diversity', which refers to "differences between any individuals on any attribute that leads to the perception that another person is different from self" (van Knippenberg *et al.,* 2004, p. 1008), suggests that differences in knowledge, expertise and perspectives promote higher quality, more creative and more innovative outcomes (van Knippenberg and Schippers, 2007). For instance, task conflict as a consequence of diversity may have a positive impact, where differences in team members' viewpoints, ideas and perspectives can result in an improved approach to the task at hand (van Knippenberg and Schippers, 2007; Kozlowski and Ilgen, 2006; Porter and Moffitt, 2006).

Horwitz (2005) also argues that functional diversity provides team members with access to a range of expertise, thinking and resources that would otherwise not be available if members were from the same functional background. Whilst there is some support that team members' expertise relates positively to team effectiveness and efficiency (Pieterse *et al.,* 2011; Horwitz, 2005), the evidence suggests this is dependent upon the elaboration of task relevant information. Team members need to be tolerant of diverse perspectives and integrate them into positive outcomes (van Knippenberg and Schippers, 2007). The commitment to collaborate, reflect and learn potentially leads to innovation and creativity if managed appropriately. This is akin to the notion of a transdisciplinary team with real potential for integration of shared mindsets/perspectives in developing new knowledge (Burritt and Tingey-Holyoak, 2012). The transdisciplinary team concept, however, differs from a multidisciplinary team approach where members

from diverse disciplines work in parallel to address a common problem without necessarily creating new shared knowledge.

However, negative impacts on team dynamics and performance may also stem from diverse disciplines (such as accounting, science and law) with different frames of reference, language and interpretation of information (van Knippenberg *et al.,* 2007; Ainsworth, 2006; Van Someren *et al.,* 1998). Prior evidence suggests organisations find it difficult to realise and manage the potential of diversity in teams given differences in broader skills between members and the need for members to exchange, communicate and share their perspectives and knowledge (Van Der Vegt and Bunderson, 2005). This study extends this literature by exploring MATs in the field and their required competencies, how are they best managed and whether diversity of team members does lead to better team performance and outcomes. We also provide evidence on whether such MATs operate like a 'group' or 'team' and whether this matters.

## 4.3 Research Method and Case Study Context

### *4.3.1 Research Method*

This study employs a single case study method within the context of NFI assurance. An exploratory case study method is the most appropriate approach as it not only utilises multiple sources of evidence but allows for subsequent analysis and reflection by triangulation of the evidence (Stake, 2005; Scapens, 2004). The primary source of data consisted of semi-structured interviews and audit field/meeting observations over a three year period. Data analysed in this study (see Appendix 1 for Coding) was collected from

several sources with unrestricted access to internal and external documents including audit working papers, audit reports, management letters, meeting minutes and publicly available reports. As characterised by the case study method, extended time was spent on site to attend, observe and record critical executive meetings in addition to attendance at a number of field audits. The semi-structured interviews and informal discussions were conducted with key internal and external stakeholders, such as the case study organisation staff, external NRM consultants, audit experts, government agency and community group representatives. Those selected to be interviewed (see Appendix 1) were considered as vital to shaping the development of the MATs. Procedural reliability was gained by making sure all meetings and interviews were recorded with consent, transcribed and supplemented with field notes. The data was analysed drawing on resources diversity theory and team performance literature, in addition to Power's (1997, 1999, 2003) perspectives on NFI assurance.

### *4.3.2 Case Study Context*

The case study site, hereafter referred to as ECO,[7] is a state public sector organisation in Australia, independent from the Government and is seen as a leader in NRM.[8] ECO consists of a small team of 14 staff comprising NRM analysts, environmental consultants, scientists, ex–financial auditors, engineers and administration staff. Its unique

[7] To protect the identity of the interviewees, it was deemed necessary to keep the case study organisation anonymous. Similarly, interviewees are referred to by code. See Appendix 1 for further explanation.

[8] NRM refers to the management of natural resources such as land, water, soil, plants and animals, with a particular focus on how management affects the quality of life for both present and future generations. NRM issues are inherently complex as they involve ecological and hydrological cycles, climate, animals, plants and geography. A change in one may have far reaching and/or long term impacts on another, which may be irreversible. In addition to the natural systems, NRM is also about managing various stakeholders and their interests, policies, politics, geographical boundaries, economic implications and so on. This results in conflicting stakeholder priorities.

collaborative approach allows for further access to experts in areas such as financial auditing, academia, agriculture and environmental science.

ECO's role is to present the Government with independent advice on NRM and to assess progress against stated NRM policies and NRM targets. To assist ECO with assessing NRM progress, the Government, in collaboration with ECO, designed an overarching 'NRM Best Practice Standard' (hereafter NRM Standard) that defines the required levels of benchmarks for various components of NRM practice such as risk management. In addition to this NRM Standard, the Government's overarching aspirational goal of "*resilient, ecologically sustainable landscapes functioning effectively at all scales and supporting the environmental, economic, social and cultural values of communities*" (NRM STD, p. 1) is also guided by state-wide NRM targets. These targets cover biodiversity, water, land and community themes and provide means for tracking progress in NRM. With multiple stakeholders and high cost ($2 billion will be invested up till the 2017 year end) of NRM, it is crucial that NRM investments stand up to public scrutiny.

The Government's regional model for NRM divides the state into a number of uniquely landscaped regions, allowing regional communities to have direct input into how their unique landscapes (native vegetation, water, coastal and flora) are managed. The NRM Standard is mandatory for each region to follow and report on, utilising their partnership with their communities/government agencies to develop a 'Plan' that demonstrates its strategy to comply with the NRM Standard. Underpinning this NRM model is an innovative framework that promotes rigour, accountability and continual improvement of each region's NRM performance. This is achieved by ECO utilising the NRM Standard and targets together, as criteria against which NRM performance of each

region can be assessed. In particular, ECO is mandated by legislation to audit the effectiveness of the implementation of each region's Plan and its compliance with the NRM Standard and targets, therefore, a combination of performance (targets) and compliance (NRM Standard) audit. It is worth noting here that ECO is an independent body not only from the Government but from the regions.

Whilst ECO's NRM audits are mandated, the legislation provides no guidance or specifications on the practicalities of how to audit and/or report on each region's NRM performance. Given the lack of guidance, ECO developed the NRM 'Audit Standard' or framework (distinct from NRM Standard) to guide the audits. This audit framework was initially informed through various existing international and national assurance standards. Its development focused on operationalising the mandated *audit* requirement and provided a statement of concepts and standards applicable across all NRM audits (Martinov-Bennie and Hecimovic, 2010). Against this setting of a mandated NRM audit requirement, there are many complexities in understanding the expertise and contribution required from each audit team member as well as determining the appropriate structure and quality controls. Research issues, such as, required audit team competencies, how can how MATs can be managed, and whether diversity of audit team members leads to better team performance, are important to consider in seeking a better understanding of MATs in practice and their value in NFI assurance.

### 4.4 Case Analysis and Discussion

> *The field of the environmental audit is one in which existing knowledges are both transferred and transformed, in which a new configuration of expertise is constructed by the realignment of a particular portfolio of competencies*
> (Power, 1997, p. 142).

Reflecting on the theoretical insights from prior literature, resource theory and Power's theoretical perspectives, the analysis of data and discussion of findings is framed around the following key aspects: Section 4.4.1 addresses the need for MATs; Section 4.4.2 analyses the ECO MAT composition; Section 4.4.3 discusses management of MATs in practice; Section 4.4.4 analyses team diversity and communication; and Section 4.4.5 explores the MAT's transition from a *group* to a *team* and its implications for the NFI assurance engagement.

### *4.4.1 Need for MATs in Non-financial information case study context*

NRM is complex and requires understanding of how actions impact all natural resources including biodiversity, water, native vegetation, salinity, soil, coastal protection and marine environment. Consequently, NFI assurance on NRM (in contrast to financial data) potentially involves greater use of professional and scientific judgment when evaluating evidence, given the diverse knowledge required to assess NFI data (O'Dwyer, 2011), thereby lending itself to a team of individuals from various backgrounds with a broad range of skills. It is widely accepted that environmental auditing requires a multidisciplinary audit approach consisting of scientists, engineers, lawyers and accountants (Power, 1997). ECO's intention from the outset was to provide a new approach for NRM accountability,[9] recognising that NRM knowledge[10] and a multidisciplinary team approach to NRM audits are essential. This understanding of the need for a broad range of skills was articulated at the early stages of the planning process as illustrated by the following:

[9] Accountability refers to (i) the allocation and acceptance of responsibility for NRM decisions and actions and (ii) the demonstration of how these responsibilities have been met (Lockwood *et al.,* 2010).
[10] Understanding of the best available information and research for NRM (Lockwood *et al.,* 2010).

> *… audit team requires members with clear understanding of how individual actions impact across all natural resources.* (A1)

> *…we did not know how we were going to do audits but we knew we needed number of experts from various disciplinary backgrounds to form the team structure.* (A2)

> *… if we are going to look credible, it's an important function [audit] and we have to get the mix of skills and knowledge right within the audit team.* (CEO)

Taking these views into consideration and the early realisation that ECO did not have the required broad range of audit skills in-house, combined with the absence of relevant assurance standards and specific subject matter guidance in its NRM legislated context, made it necessary for ECO to engage outside expert assistance to undertake its NRM audits. ECO adopted a longer term approach to utilising outside experts with a goal of building a group of skilled auditors across a range of disciplines. To achieve this, a tendering process was undertaken to identify suitable individual contractors who would form the MATs bringing the required range of expertise.

To ensure the effectiveness of this approach in achieving its audit objectives, ECO made a decision to undertake the audits in two phases. The initial first phase audits (five audits) were undertaken by three different MATs sourced from three successful tender contractors with lead auditors (i.e., contractors) spread across each team in addition to a mix of members from various technical and audit backgrounds (see Table 2). All three of the MATs in the first phase audits were project managed by an ECO staff member with systems expertise. Their specific responsibilities included (i) observing audit site visits and providing expertise on the region, (ii) monitoring and managing the various contractors on the audit team, and (iii) providing technical guidance on such matters as the audit criteria. The first phase NRM audits were the first to utilise the Audit Standard and audit methodologies (as outlined in Section 4.3) and were primarily used as a

learning tool for the second phase audits. This approach was championed by the CEO: "*audit debriefs are a valuable way of celebrating our successes and learning from our mistakes before we embark on stage two*". True to the original intention of having two phases of audits, ECO incorporated lessons from the initial audits into the second phase including:

> *… the importance of having detailed understanding of the auditees, need for a team of people with the right skillset to do the audits, documenting lessons formally and the benefits of a high performing team that knows the subject matter to create amazing insights and innovation in NRM thinking.* (CEO)

The evidence supports ECO's view that the NRM subject matter being assured needs to rely on scientific and technical evaluations and to engage MAT members with different expertise traditionally outside the accounting discipline (Cohen and Simnett, 2014):

> *I have a science background, a science degree and a Masters of Environmental Science. I have been working in that space for fifteen or so years. I started getting auditor work actually not through natural resource management even though that's my original training. It was more through the greenhouse gas area...ECO knew of my experience ...particularly because I started working in forestry and carbon prints probably starting nine, ten years ago...so my experience was highly regarded in terms of my scientific background and its suitability to NRM audits*. (TL4)

*4.4.1.2 Audit tender selection criteria*

To ensure appropriate knowledge and skills of MATs an internal ECO tender evaluation team designed tender selection criteria. These audit provider selection criteria used for the initial (first phase) audits were "*experience of the audit team members*" as most important, with "*understanding of the task*", "*experience of the audit provider*" and "*working with the auditee*" considered to be of equal weighting. These selection criteria were reviewed after the initial audits and amended for the second phase audits with "*experience of the audit team members*" and "*working with the auditee*" criteria weighted significantly higher to ensure better understanding of the regions (auditees) by the MAT.

This supports the audit quality literature that "*sufficiently knowledgeable and experienced team members*" is key for promoting audit quality (Kilgore *et al.,* 2011; Zerni, 2008). In addition to the above criteria (see Table 1), accounting for a combined rating of 75%, ECO also considered tender cost, which was allocated 25% of the total tender evaluation rating.

**Table 1: Multidisciplinary Audit Team Selection Criteria**

| **1st Phase NRM Audits** | **2nd Phase NRM Audits** |
|---|---|
| 1. Experience of individual team member | 1. Experience of individual team member |
| 2. Understanding of the audit task | 2. Experience of the audit provider* |
| 3. Experience of the audit provider* | 2. Experience of working with auditee* |
| 3. Experience working with auditee* | 3. Understanding of the audit task |
| 4. Working with ECO | 4. Working with ECO |
| 5. Availability | 5. Availability |
| 6. Cost (25%) | 6. Cost (25%) |
| **same number reference denotes criteria with equal weighting rating* | |

Before further exploring the dynamics of MATs in practice, it is worth elaborating on ECO's assessment of the first phase audit tenders and the reasons why some contractors were highly rated and others fell short of expectations. The factors contributing to high rating in terms of the best mix of audit skills were:

> *clear understanding of scope and capacity to meet ECO expectations and timeframe, appreciation of technical difficulty, NRM experts shown and explained on team proposal.* (PM1)

In contrast, the factors contributing to poor rating included:

> *unclear if they have NRM experience, did not demonstrate an appreciation for working collaboratively with ECO staff, audit team displayed pure "audit" focus but no specific NRM specialists and did not demonstrate how NRM condition change would be assessed and integrated into audits* (PM1).

Some tenders also fell short by not elaborating on the personnel to be deployed within their teams and their skillset. Not surprisingly, the tender process assessment of desired

team skillset (see Table 2) not only focused on the essential requirement of NRM/subject matter expertise, but also required a commitment to collaborative approach and collective team output. As Kozlowski and Ilgen (2006) suggest, for this to occur an understanding of a shift from working as a contractor to one that appreciates working with ECO as part of a MAT is required, also echoed by PM1:

> *while assurance skills are being sought, it is the knowledge and understanding of natural resource management that is seen to be adding the real value from audit and this can only occur if we are teamed together … it's a totally different contracting model to what we were used to in public sector audits.*

ECO's experience supports the current debate concerning the necessary skills and competencies of MATs. For example ISAE/ASAE 3000 recognises that competencies in both assurance and the related subject matter are necessary to undertake NFI assurance but does not inform the debate in the literature (Cohen and Simnett, 2014; Huggins *et al.,* 2011; Simnett *et al.,* 2009) as to whether assurors from accounting backgrounds have sufficiently diverse backgrounds necessary to complete these engagements. Pflugrath *et al.* (2011) argue that it is much easier to acquire subject matter expertise than assurance expertise. However, our data suggests finding assurors with specific NRM and regional knowledge is problematic but highly desirable. An external contractor with NRM evaluation experience comments on this in hindsight after the first phase audits:

> *the external arrangement was to have an NRM expert and an audit/assurance expertise and what is missing in that is the audit expertise in the business of understanding the regions. You have got high level understanding but not necessarily business understanding so you are asking them [auditees] a lot of 'DERR' questions.* (TL1)

The above comment suggests that an effective MAT composition is one with skilled and competent auditors and experts in NRM that "*could understand what they are looking at and reach consistent conclusions across audits*" (AE) but this is not possible without having a good knowledge of the auditees (i.e., the regions). This is reflected in Table 1,

which rates the experience of the individual team member (i.e., Criterion 1) as of prime importance and experience of working with auditees being elevated to the second most important criterion in second phase audits.

Resource diversity theory suggests that the resources of each team member (in terms of knowledge and expertise) contribute to the overall success of the team with a diversity of the resources promoting creativity and decision-making capacity (Fiedler, 1986; Fiedler and Garcia, 1987; Horwitz, 2005; van Knippenberg *et al.,* 2004). ECO's approach of selecting individual members with different disciplinary backgrounds in anticipation that their differences in knowledge, expertise and perspectives would supplement their capacity to audit the regions and contribute to the success of the audit team is reflected in the following comments:

> *… commercial audit thinking and specialised skillsets are contracted in to form the audit teams [by ECO] as we work towards a collaborative development between a mix of specialists in the audit team driving the audit process.* (D1)

> *… whether they [ECO] were good at it or not ... but they meant it...the continuous learning environment, where .... in a normal contracting relationship, you are not necessarily going to share all the performance difficulties. Here in the set up audit teams with varying skill levels, it was all, lay everything out on the table every day and we are all sort of .... we are all sharing .... we would go round and round listening to everyone's perspective from judgments on evidence to risk assessments ...* (TL1)

ECOs approach supports prior team literature, which indicates that a broader range of skills (Cohen and Bailey, 1997) fosters a positive relationship to actual work group performance (Horwitz, 2005; Jehn *et al.,* 1999), although whether such diversity in educational or functional backgrounds is effective in undertaking team tasks is hard to assess in practice (Jehn *et al.,* 1999; Milliken and Martins, 1996). The MATs employed by ECO comprised a significant diversity of skills and experience (see Table 2), including project management (PM1/2), systems auditors (TL2) and financial audit experience

(PM1, D3, A1), scientific/environmental auditors (TL3), field-specific and local generalist NRM expertise (TL1) and government audits (A2).

**Table 2: Multidisciplinary Audit Team Composition and Areas of Expertise**

| 1st Phase<br>NRM Audit Teams | Expertise | 2nd Phase<br>NRM Audit Teams | Expertise |
|---|---|---|---|
| ECO Project Manager | Audit/accounting<br>environmental assurance<br>internal audit<br>project management | ECO Project Manager | Risk management<br>project management<br>law |
| Lead Auditor Team 1: | Project management<br>NRM evaluation<br>performance audits | Lead Auditor Team 4: | Scientist<br>environmental assurance<br>project management<br>GHG assurance |
| Other Members Team 1:<br>*(6 members)* | *Skillset covered in Team 1:*<br>systems audits<br>financial audits<br>NRM evaluation<br>corporate governance<br>performance audits | Other Members Team 4:<br>*(7 members)* | *Skillset covered Team 4:*<br>systems audits<br>NRM evaluation<br>scientist<br>GHG audits<br>accounting<br>IT specialist |
| Lead Auditor Team 2: | Performance audits<br>law | Lead Auditor Team 5: | NRM evaluation<br>anthropology |
| Other Members Team 2:<br>*(5 members)* | *Skillset covered Team 2:*<br>systems audits<br>water and government<br>environmental audits<br>internal audits<br>accounting<br>NRM evaluation | Other Members Team 5:<br>*(6 members)* | *Skillset covered Team 5:*<br>systems audits<br>water audits<br>accounting<br>NRM evaluation |
| Lead Auditor Team 3: | NRM evaluation<br>environmental scientist | | |
| Other Members Team 3:<br>*(5 members)* | *Skillset covered Team 3:*<br>systems audits<br>NRM evaluation<br>law<br>performance audits | | |

*4.4.2 Composition of MATs*

For the first phase audits the successful audit contractors brought in three different Lead Auditors (TL1, TL2, TL3), each managing one of the three audit teams. Each team consisted of a number of diverse staff from the contractors' own firms and/or contracted in from the Lead Auditors' firms and were complemented by ECO staff (see Table 2 and Section 4.4.1). For example, Team 1 with six members (excluding the Lead Auditor with strong project management and performance audit experience) included members with background experience across systems/financial/NRM and performance audits. This high level of assurance skills between team members, in particular performance audit skills, was evident across both Teams 1 and 3 in the first phase audits. However in contrast, second phase audits included MATs that were slightly smaller in number, consisting of members with a high level of systems and NRM expertise but no apparent strength in performance audit expertise. This seems at odds with traditional audit literature (Westermann *et al.,* 2014; Carcello *et al.,* 1992); suggesting team size and composition is influenced by greater complexity and assurance level required. However our case supports (refer also Sections 4.2.1–4.2.2) those views from the social psychology literature that suggest large teams (first phase audits) may lack social integration and the ability to reach consensus regarding processing large amounts of diverse data, which has negative impacts on team effectiveness (Horwitz, 2005; Jehn *et al.,* 1999). ECO's director sums up its experience with the audit teams and their diverse educational/functional backgrounds to achieve output (i.e., get audits completed and issue audit reports) but not the outcome in terms of knowledge building:

> *… large team greater disparity of skills ... [ECO] integration and knowledge sharing did not necessarily work as they did not really know which discipline will come up with skills – issues as audit had rigour in terms of execution*

> *rather than rigour of knowledge building … learning to build a canon of [ECO] knowledge. The transfer of the consultants' knowledge not only into the audit, but across the whole team may not have been achieved.* (D1)

Despite D1's retrospective views above, with the first phase audits, the control of these 'hybrid teams' remained with ECO with each of the three MATs being project managed by the same ECO project manager (PM1). This approach was intentional to ensure that each MAT could presumably "*integrate audit and NRM knowledge*" (TL1) and this was not perceived as problematic as "*there was never a problem with how the ECO staff participated as audit team members as long as the lead auditor had control of the audit*" (TL2).

ECO's CEO also acknowledged the challenges around integrating and managing suitably skilled and experienced MAT assurance practitioners:

> *… the operating strategy of not refining the skillset that you don't need, then specialist skills are taken straight off the shelf when required did cause issues where in first audits private sector skillsets created big tensions…audits not looking to change given the auditors knowledge in complex projects, and there is some knowledge of cause and effect, they have technique to probe, look for signals within NRM, what is driving the system until you learn about the system and it is this learning of the systems that clashed with the auditors …*

This may partly be due to the notion that the meaning of the task is derived in part "from the social meaning of the occupational group to which the people who perform them belong" (Kirkham and Loft, 1993, p. 503). It also demonstrates Power's (1997) concern that the experts from various disciplines compete to promote and negotiate their relevant perspective and expertise.

*4.4.2.1 Learnings from first phase audits*

After the first phase audits, one of the ECO directors reflected on a number of challenges in terms of managing the MATs that needed to be addressed before the second phase of audits. These primarily included a need for "*better communication channels between and within audit teams*", more time dedicated to "*understanding the audit context*" and "*understanding the skillsets of the audit team*". For better planning, building team capacity and successful conduct of the audits, communication between the ECO Project Manager and the lead auditors of each team was seen as critical. Given the potential value of diverse perspectives to creating value and benefit for team outcomes, such as increased information, enhanced problem-solving ability, constructive conflict and debate (Cox, 1993), it was not surprising that communication and managing diverse team members' approaches to audit evidence was high on the debrief agenda of the documented learnings from the first phase audits. As one ECO director (D2) remarked: "*I think it's rich that we hold different views*" but there was also recognition that such diversity also brings risks which need to be managed:

> *the skills mix of the team is an ongoing risk that we have got to manage through the process.* (A1)
>
> *… so the skills they were bringing were non audit skills. So the ability of the team to be able to nail and solve particular audit concepts was a long process ... we had a whole lot of bottlenecks.* (PM2)
>
> *… mix of skills created an even greater need for clarification.* (PM1)
>
> *… we [ECO] did not socialize the objectives on the first audits … that is recruit team members that get what we want to achieve.* (D2)

The above comments highlight the essential role of communication in dealing with the complexity and interface between auditors. A role that was not done well by ECO on the

initial audits given the mix of MAT members' functional backgrounds and skills. The following comment summarises the experience:

> *need to project manage …'better at managing auditors'… method of engagement is the first key … we need to get smarter in how we (ECO) employ individual team members … who you get to manage the auditors needs to be qualified, in control to meet the objective.* (D2)

The need for clear communication in setting the expectations and sharing the necessary background knowledge at the beginning of the audit process was also not done well as per one of the lead auditors:

> *ECO have a hybrid process that they have developed which I think is commendable but it needs to be clear, people have different expectations on board and we have had to re–jig some of our approaches because you can talk about how to ride a bike for ages but as soon as it is pushed and you are on it [the audit] things change … first phase audits were based on you guys needs to go out there, get into the field and do some interviews with auditees … too much expectation on what the experts should know … you should have this significant body of knowledge before you even enter the field and ask the right questions.* (TL2)

This and other references to a 'hybrid' process describes the utilisation of combining the ECO staff knowledge and experience of the selected external experts in each MAT and the belief that this approach will have "*benefit of shared information for ECO to get their knowledge of the field and better traction*" (TL2) when providing assurance. However this belief was not unanimous as another lead auditor and ECO analyst caution:

> *the audit team members have various levels of knowledge, some have worked a number of years [in NRM context] and know how the regions and NRM works and there are other broader implications of the hybrid approach, it assumes both challenges to the external consultant and ECO [as the assurance provider] but my experience is that it leaves much more shared information for the contractors than ECO as they lose their participatory role in the audit process …* (TL1)

> *risk that ECO will lose the expertise gained by the audit team and I am not sure that the ECO staff will benefit in the long run.* (A1)

*4.4.2.2 ECO leadership changes in second phase audits*

The learnings from first phase audits were implemented by ECO in the second phase of audits. This included ECO becoming an 'observer' rather than an active participant by contracting out all audit work for second phase audits across two contractors. This change meant that the ECO Project Manager (i.e., PM2) project managed the MATs, providing technical advice only to the teams and their leaders as required. This change in ECO role, according to one lead auditor, allowed ECO to "*more effectively draw upon the contractor's experience and better access the range of diverse skills and experience present in a multidisciplinary team*". This approach enabled and provided clearer differentiation in roles between ECO and the audit contractors, including expectation of audit scope and the expected quality of the audit work and reports. The key lessons, as reported by the ECO Project Manager, were "*to improve team expertise, in particular in relation to audit context, audit experience and NRM*". For example, interpreting the audit findings from the various teams and subsequently producing an audit report in the first phase audits was challenging and consequently the ECO Project Manager made certain that for the second phase audits there were "*sufficiently skilled writers on teams to produce outputs*" (PM1).

The ECO MATs' ability to draw on resources in terms of members' diverse expertise relied on the premise that the audit team members would share information to allow for better decision making. However, according to van Ginkel and van Knippenberg (2008), team members often fail to exchange information and integrate shared information into their decisions. This was very much the case with ECO. Lessons learnt from the first phase audits highlighted a need for ECO to clarify communication channels between and within the audit teams:

> *… the conflict was there in the first audits because right from the start, ECO explained what was expected from contracting experts. Now this is what they said, yet in the field we were we were teamed together. Now, there were some problems with that as we really had no clear understanding of how it will work as we were all used to a different contracting model ... this team set up was new to us.* (TL2)

In addition, it became clear that to utilise the MAT expertise as a group, better knowledge of NRM audit context and the regional diversity in landscape and NRM projects was needed. For instance, projects in one region, such as clearing vegetation from hillsides, and allowing stock direct access to creeks, can increase productivity, but it may also give rise to gully erosion, therefore the auditors need to be clear on their judgment and project decision-making priorities, in alignment with the NRM Standard. Another key audit team lesson was to "*allow more time for planning and building team capacity*" (AT). An external audit expert (AE) summed up the experience after both audit phases:

> *... audit is only going to be as good as the knowledge of the people that are going to do the audit. The audit teams and perhaps a lot of the ECO staff were new and did not have enough intimate knowledge of on the ground operations, business issues that really needed to have to be able to audit...perhaps the assumptions that everyone had about the level of knowledge, about what was really happening in terms of NRM was not there ... we have started to build that knowledge ... not just about the audit process but it's also about knowing the business ... knowledge is incremental, we have a lot to learn and the audit process will become more and more efficient.*

### *4.4.3 Management of MATs*

As outlined in Section 4.2.5, resource diversity theory, from the perspective of information/decision-making processes, proposes that differences between team members' disciplinary knowledge, expertise and perspectives has the potential to expand the available information in the team (Pieterse *et al.,* 2011). ECO's management strategy to utilise the diverse MAT expertise was by "*having expertise in project management and ECO will then project manage using expertise from other parts in order to exchange*

*knowledge and skills between contractors and ECO*" (AT). The aim of the project management strategy was to:

> *allow [ECO] to maintain its relationships with the auditees, build knowledge about their NRM business and with more emphasis given to team work and team reporting*. (D2)

The success of the management of the MATs was critical given the CEO's concern about value of the audits to ECO: "*how do we get value out of your contractors? How do we run these projects with skilled external contractors as a team and learn collectively?*" However, this knowledge transfer between MAT members is dependent upon them understanding each other's roles and expertise and how this is communicated. The need to learn about each other's roles in the ECO MAT context was recognised: "*contractors to be reviewing and analysing the adequacy of skills at various points in time through the process*" (A1), but proved to be problematic given the short time frame (approximately 22 days per audit) and that these MATs were 'newly' formed teams (i.e., many members have not worked with each other previously). Although formal communication and debriefing was planned after each audit, it often did not eventuate due to lack of time as TL2 asserts:

> *When we did the audits, the feeling was it was a huge amount of work in a short amount of time. I think we travelled 1200 kilometres in four days and that's not including all the interviews. We tried to have chats with the other lead auditor and we were encouraged to talk to each other [by ECO PM1] and learn from each other…you are not just collecting all the evidence and reporting the findings..you need support along the way.*

There was a proactive attempt to overcome this in ECO's project management strategy in overseeing the second phase audits including:

> *clear responsibility for decision making; one managed for running the project and one channel for communication to promote clear and consistent messages; core project team members have specially designed roles; and access to technical specialists on a needs basis.* (PM1)

One of the lead auditors (TL1) suggested in an audit debrief document, based on the view that recognising and promoting diverse skills begins with ECO "*embedding its own staff deeper into the audit teams, more networking, more team reporting*". Upon reflection on managing the MATs, the ECO project manager notes:

> *… what we learnt from that process [audits] was invaluable and that meant that technically, we were working to end up under an assurance provider type model. Internally, we [ECO] were only going to have to develop the expertise to manage the contractor, the audit teams....and management in terms of quality and management in terms of logistics. So, staff–wise, we only needed to assume that expertise level and rely on the constant renewal of external expertise coming in from the successful contractors.* (PM1)

Sustaining and addressing the challenges that come with a MAT approach requires considerable planning and communication before the team is even formed. ECO's approach to NRM audits, "*without getting drawn into focusing too heavily on being audit specialists or leading the development of new methodologies*" (CEO), failed to recognise the complexity of managing the MATs, especially the importance of communication across and within each of the audit teams. Their project management role struggled to balance their "*involvement in on the ground audit work with the need to get the audits done*" (A2). This was further exacerbated with the second phase audits when ECO decided to contract out all the audit work to MATs but still retained control over the scope, required quality processes, guidance for contractor's judgments on the objectives and expected audit quality output. Given the issues of ECO's management of MATs in both phases of the audits, the challenge remains as to how best to manage mainly externally resources MATs more efficiently and effectively in the future.

However ECO's strategy of utilising two phases of audits and 'in the field' experience of a continual 'audit–rethink–re-do' process and their own knowledge and skills is consistent with Power's (1997) notion of existing knowledges (from traditional financial

audits) being transferred and transformed to create new expertise and competencies. As one ECO Director (D1) reflected:

> *… it was supposed to be the process of one audit–rethink–re–do, renegotiate contract for the next audits (second phase)…audit design of framework in the first place was a failure on our part … we are good at consulting skillset and getting the expertise in and in the past this skillset was leading the project instead of the need for generic problem solving skills …*

Our study illustrates ECO's struggle in constructing a new type of NRM assurance practice. ECO's strategy of "*taking specialist skills straight off the shelf*" when required proved problematic as noted by D2:

> *… breakdown intellectual process in the audit framework to work with the auditors didn't happen … building that bridge to the auditors never happened.*

An observation by audit team leaders during the second phase audits also highlights the need for providing more direction and proactive management of MATs:

> *… the relationship between the lines of enquiry [targets] and the standard was not clearly articulated by ECO … they were expecting more information and ECO needs to recognise what was involved and there needs to be the proper guidance and resources to collect evidence.* (TL4)

> *I enjoyed having the ECO staff on the audit team because I think it gave a bit of an understanding. I think to some extent, they sit in their ivory tower and see how the regions should be operating out in the world without any understanding of the reality of what the region's face on a day to day context and the pressure they are getting from all sorts of directions.* (TL5)

Despite the above challenges, question remains as to whether the MATs could have been managed better to result in a more efficient audit. ECO's approach to NRM audits and the strategy of project managing suggests that the managing the MAT was ambitious given the complexity of MAT members' skills and diverse expertise .

*4.4.4 Team Diversity and Communication*

According to van Ginkel and van Knippenberg (2008) despite greater resources held within groups and the premise that they share information to allow for better decision making, team members often fail to exchange and integrate the information into their decisions. Within the ECO case context the communication between the different MAT contractors was apprehensive:

> *… it was continually implied that the other contractors were not having any hassles in the field … I almost rang you [TL5] because I kept getting the message that you weren't having any problems with this, so why were we?* (TL4)

Heterogeneous expertise and various disciplinary backgrounds may also increase conflict and tension within the team and potentially complicate internal communication and hamper coordination (Horwitz, 2005). This was evident in the case of ECO where some MAT team members struggled to develop a shared understanding of the audit task at hand (example evaluating evidence):

> *a number of debates per month between the auditors I guess ... So, there were some disagreements around some of those issues, what evidence meant but probably a lot of those more difficult issues around scales and those sorts of things I think, were being worked through. That's not to say that everything was perfect ...* (TL3)

A team member with many years of experience in environmental audits also struggled not only with the audit task but with the tensions that were created by ECO in joining audit contractors "*because of the totally different contracting model and the problem we had with the team thing was that there was no definition to the team*" (ATM2). ECO's perspective at the time is reflected in one director's comment that "*auditors don't like to share*" (D2).

According to team diversity theory the distribution of knowledge facilitating coordination among team members develops a 'transactive memory' where members can better anticipate each other's behaviour and hence work more smoothly together. ECO's CEO was well aware of the tensions between ECO MAT members and the NRM experts and suggests there was not only a breakdown in communication but rather:

> *the socialisation did not happen … we [ECO] did not meet the auditors halfway … conversations about our own skillset, governance, issues with NRM complexity just did not happen … the socialisation needs to happen so we [ECO] do not replicate the skillset, instead work more efficiently as a team.*

*4.4.4.1 Different frames of reference*

In this study, some lead auditors struggled with the continuous learning environment and the unclear objectives on the initial audits. As ECO had no prior knowledge of the team members in each MAT, that is, no transaction memory to start with, this needed to be developed through careful management and skillful communication. Our data suggests that ECO underestimated this need in terms of its style of leadership and direction as discussed in Section 4.5.

Social psychology literature (Mannix and Neale, 2005; Wegner, 1987; Fiedler, 1986; Kerr and Bruun, 1983) suggests the benefits of the educational/functional background of a MAT may be outweighed by the negative impact of diverse frames of reference, use of different language and different interpretations, which could potentially threaten the decision making process:

> *… there was me as the lead auditor (TL1) ... I had ECO analyst with NRM and environment audit experience and she was sort of helping out with aspects of the lines of enquiry. I had two 'Contractor X's' people that are contractors involved in NRM and performance audit … so effectively, the way I approached it was to divide it up in to the lines of enquiry and go about it that way. So, I had someone to drive each one. So, we had good*

> *resources to do the audits ... however given our different backgrounds there was always someone saying "Oh ... you didn't do it this way" and "you're not looking at the evidence as per the framework ... you're doing it differently"… so at times there was a lack of understanding or varied ability in terms of understanding even just the standard.*

The different frames of reference by MAT members is also evident in ECO's audit debriefs: "*on one hand auditors from a financial background come in here and they are truly fixed on every word … everything is locked in*" (A1), whereas for the auditors with a scientific background their "*fundamental scientific process is to put your hypothesis up, check it, change it, check it, change it all the time*" (ATM2). The various approaches need to be better considered according to a former financial auditor now on staff at ECO. This sentiment was shared by another audit team member who went on to say that:

> *those with a financial audit background where everything is compliant or not … able to trace back this evidentiary trail which is fine when you are auditing bank statements but when you are auditing a region that can't find documents themselves…what sort of evidence does one look for?* (ATM1)

There were also difference expectations by individual MAT members of each other:

> *If you know the auditor is from a local government background, you would expect them to be engaging well with local government and to be able to manage complex political environment. If they are in private sector, expect them to be demonstrating other skills but have more difficulty in the public sector.* (Ex-financial auditor, TL1)

The diversity in thinking and educational background also meant that some team members' work approach did not fit ECO specifications. For example there was debate regarding the use of narratives to elaborate on audit evidence:

> *I have been there quite a few times with the audit team members who have wanted to write in a narrative first up ... they wanted to get it out of their head and write something about the region. We have rejected their work. That is not properly referenced to the conclusion.* (PM1)

From an auditor's point of view, the issues encountered in the field related to their diversity in knowledge, analysis, thinking and their application to the evaluation of audit evidence:

> *We needed to get people to do more analysis before they went into the field so that they had documentation, a rough profile of regions… knowledge had to be more focused and of course this was variable with the knowledge of the team. So, we had good resources to do the audits ... and then we'd split off and go our different ways.* (PM1)

The issues above were echoed by Lead Auditor, Team 1 in Phase 2, supporting claims from the team effectiveness literature (Cox, 1993) that for a team to reach agreement to arrive at a decision (in our study evaluating audit evidence), it is essential at the start to build knowledge of who knows what by inviting team members to voice and discuss their areas of expertise:

> *the really sharp edge for me is how to combine on the ground project information, accumulate measures of resource improvement which you know are going to be spotty with the other components of the region and their evaluation practices and there are going to be a whole lot of issues … what we actually did was split the field work, tried to develop an understanding of the regions' projects and what they were trying to achieve, how they structure their on ground services, found this was unpredictable and unless you could look at their files and documentation, it was hard.* (TL3)

Power's (1999) asserts that the use of MATs in NFI assurance relies upon enrollment of practitioners from diverse disciplines to not only form MATs, but develop trust and understanding between team members. This is supported by a lead auditor's (scientific background, TL3, Phase 2) comments that "*there needed to be a certain level of trust between the ECO and the auditors*" and for the MAT to be effective, there needed to be better consideration of what evidence is important to collect and "*affiliate different approaches for different auditors*" in the field. This led to the retrospective comment:

> *we need to work out what the things are that we should be doing in audits... rather than driving around looking at projects we would have got a lot more out of spending more time in the offices and interviewing people.* (TL3)

This reiterates the different understandings of audit tasks and evidence between the expert areas within MATs. The challenges of dealing with MAT members with diverse differences in educational backgrounds and perspectives are illustrated by TL2:

> *… our problem with our NRM expert is that he is exactly the opposite of an auditor. He is in love with his subject, eminently qualified … But, to get a step by step logical assessment of,* "*Is this fence in the right place, is it this, is it this*"*?, is just impossible. So, the big part of our challenge in the field is that NRM people just don't think in an audit type framework.*

In summary, the ECO case illustrated that understanding of different expertise/perspectives within MATs and ensuring communication between experts within the MAT in practice are laden with challenges that may potentially have been offset with understanding the difference between how 'groups' and 'teams' operate as elaborated on in the next section.

### *4.4.5 MATs Transition from a 'Group' to a 'Team'*

An unexpected finding from our observations of the MATs in our case setting was their evolution from a 'group' to a 'team' between the two audit phases. This distinction has implications for determining functionality and in applying this knowledge to understand and evaluate the performance of teams/working groups in respect to how they work best in practice (Kozlowski and Ilgen, 2006; Kozlowski and Bell, 2003; Marks *et al.,* 2001). A 'team' for instance is considered in the literature to be a "*small number of people with complementary skills who are committed to a common purpose*" (Katzenbach and Smith, 1993a, p. 112) and differ from a 'working group' as they require both 'individual' and 'collective work-products' (i.e., real contribution of team members). Thereby a team is considered more than the sum of its parts. With this in mind 'teams' are most effective when they "produce discrete work-products" (p. 112) via joint member contributions.

Consequently an 'audit team' label is used to describe the set of traditional auditors, such as in financial audits, who are assigned collectively to plan and execute the audit, including interpretation of the results of audit procedures and in producing an opinion (Rudolph and Welker, 1998; Solomon, 1987). In the financial audit context, much of the interaction among team members occurs under the auspices of what traditionally has been a hierarchical assemblage of individuals (e.g., graduates, seniors, supervisors, managers and partners) structured along industry lines, such as financial services, energy, natural resources and so on. This traditional use of teams in financial auditing is synergistic with prior literature which suggests that team processes develop and unfold over time (McGrath, 1991) and conflict between members who have limited tolerance of differences can negatively impact team effectiveness (Cheater *et al.,* 2005; Gorman, 1998).

In contrast to the 'team', a 'working group' is a function of what its members do as individuals, with the focus on individual accountability and the sharing of information and perspectives in order for each member to perform their job better (Kozlowski and Ilgen, 2006; Katzenbach and Smith, 1993b). A common misconception is that 'groups' become teams over time and that a 'team' is just any group working together, without understanding their attributes and how they work (Rich *et al.,* 1997; Katzenbach and Smith, 1993a).

In analysing the ECO MATs' transition from group to team we apply the team versus group differentiation model of Katzenbach and Smith (1993a) to the NRM assurance context. Table 3 summarises the key differences between groups and teams, given the extant literature consensus that all teams are groups, but not all groups are teams (Katzenbach and Smith, 1993a).

Therefore, the MATs under study are analysed below in terms of the attributes of leadership (Section 4.4.5.1), accountability (Section 4.4.5.2), work-product (Section 4.4.5.3) and meetings (Section 4.4.5.4). This follows Katzenbach and Smith's (1993a) attributes as outlined in Table 3, to determine how the MATs evolved and whether it matters to their functionality.

**Table 3: Difference in Attributes between Groups and Teams**

| Attributes | Working Group | Team |
|---|---|---|
| Leadership (Section 4.4.5.1) | Strong, clearly focused leader | Shared leadership roles |
| Accountability (Section 4.4.5.2) | Individual accountability | Individual and mutual accountability |
| Accountability (Section 4.4.5.2) | Groups' aims in line with broader organisation | Specific team purpose |
| Work-products (Section 4.4.5.3) | Individual work-products: Discusses, decides and delegates | Collective work-products: Discusses, decides and does real work together |
| Meetings (Section 4.4.5.4) | Runs efficient meetings | Open–ended discussion, active problem–solving meetings |
| Work-products (Section 4.4.5.3) | Measures its effectiveness by influence on others | Measures by assessing collective work-products |

Source: adapted from Katzenbach and Smith (1993a), p. 113.

### *4.4.5.1 Leadership*

Leadership is considered in the team literature as a point of leverage for enhancing team effectiveness (Kozlowski and Ilgen, 2006) in terms of affecting team processes and outcomes. By facilitating team learning goals commensurate with current team capabilities, monitoring team performance (and intervening as necessary), and as the team disengages from action, the leader can diagnose performance deficiencies and guide process feedback (Kozlowski and Ilgen, 2006). With the first phase audits in this study, the leadership role intentionally remained with ECO rather than the successful contractor,

which is consistent with the features of a working group. The 'Project Manager' role rested with ECO including the overall audit accountability and "*leading the direction of the communication with audit stakeholders, reviewing audit findings, reaching conclusions, and in providing additional [ECO] staff skilled in systems and NRM*" (AT).

Given the multidisciplinarity of the team, the evolving nature of the task and complex subject matter, the project managing or leadership was always going to be critical but complex as illustrated below:

> *NRM auditing is complex, evolving and there is a high likelihood ECO will need to make more use of these hybrid teams that include a variety of technical specialists…efficient and effective use of different specialties becomes a much more complex supervisory task.* (TL2)
>
> *The problem we had in the whole team thing was that there was no definition to the team ... there was no decision ... no one understood what he wanted [ECO CEO] ... The project director's job was to bring the audit to fruition ... yet no one understood what he wanted ...* (TL1)
>
> *They [ECO directors] don't understand that form follows function … Director had in his head what the function was, but nobody had extracted that ... and then determine what the form was.* (TL1)

A further observation highlights the difficulties faced by MATs in terms of leadership and its consequence on the effectiveness of members working together:

> *ECO's role was not always clear [in audit team]. The perception was "We [ECO] don't want to take the leadership because if it doesn't work, it will be attributed to our leadership"…the audits were marred by this … what is the role of the ECO ... and that affected the team…things never happened because there were obviously very different understandings between the different expert areas, yes? So the auditors had very different views to the subject matter experts and the two never met.* (TL2)

Given the above difficulties encountered during first phase audits, the leadership role for the second phase audits was reconsidered with ECO taking a 'back seat' as an observer with the leadership roles shared between the two lead contractors (Teams 4 and 5). This change resulted in a structure more closely aligned to a traditional audit team. By ECO

moving to leadership roles shared between the two contractors, with a stronger audit framework and parallel development of fieldwork methods (in evaluating data) on the second phase audits, it allowed for better collaboration and "*understanding of how we optimize the use of resources*" (CEO), that is, "*access the range of skills and experience present in a multidisciplinary audit team*". However this change in ECO role according to an external audit expert (AE) exposed ECO to political risks and loss of expertise:

> *audit teams have knowledge at varying levels, some have worked a number of years. I would encourage ECO in the future to have more of a participatory role in the audit process, I do not favour the option of a contractor walking in and they will lose the expertise and I am not sure that ECO will benefit in the long run … I think that even with an experienced team you are assuming a body of knowledge that you can build upon.*

Given the complexity of NRM and the unique regional landscapes under audit, one ECO director (D1) summed up how important it was to understand the required expertise within the MATs: "*to be a good delegator you really need to have specialist knowledge and you are required to know what expertise you need*". Another director (D2) added to this issue of leadership of MATs: "*if you don't have the expertise yourself you become part of the contractor team…then you can influence the process and learn from the experts*". These views suggest that lack of expertise in the leader brings about tension in the team and diminishes the effectiveness of MATs.

Another ECO director (D3) went on to elaborate on the need for more direction from ECO staff to ensure MATs effectiveness adopted in Phase 2 audits:

> *… I think in hindsight we could have been more directive, not something that a consultant is comfortable given our terms of reference but in Phase 2 audits we said "you are not going to get what you want to get with this line of evidence" … so we basically said we need to follow a more traditional audit performance path and we did that for about 3 steps … and took off to the bushes again, lacking leadership from ECO …*

In our case context ECO strived to constantly provide structure (framework and NRM Standard) and guidance for the audit team and members to adhere to the task. Directive leadership by ECO was considered necessary as the task was deemed complex and needed constant learning and evaluation. An external NRM auditor (TL1) sums up ECO's role and the leadership difficulties after the second phase audits, suggesting the issue was both lack of knowledge and lack of participation:

> *ECO are heavily engaged and their involvement is solid, they do not sit around, they have done some long hours and hard work ... most do not know the operational industry, for performance auditing you need to know the industry and you need to know the parameters, you need to know the funding cycles, the legislation, the difficulties in field, as a consultant you would expect to be briefed on this very clearly by ECO staff… we were both floundering, yet the involvement of the ECO staff is an absolute must!*

With respect to the leadership approach adopted by ECO in Phase 2 audit and irrespective of the label of team or group, the most common criteria in assessing the effectiveness of the leader are individual perceptions (Katzenbach and Smith, 1993a). Based on the above reflections and our observations in the field, ECO's leadership approach in both first phase and second phase audit were both fraught with challenges. These findings support Power's (1997, 1999) view that coordinating members with different functional specialties is complex. This complexity was exacerbated in both audit phases by ECO's lack of understanding of MAT members in terms of who knows what (in terms of educational and diversity in knowledge), and how it affects members' understanding of the audit task. Whilst there is some support in the literature (Katzenbach and Smith, 1993a; Fiedler, 1986) that shared leadership can have a positive influence on team performance, the ECO case experience suggests that for this to occur MAT members need to spend more time together to acquire common knowledge about each other's working

abilities (transactive memory), which will assist in more effective coordination of team members' actions and responsiveness to leadership directions.

*4.4.5.2 Accountability*

The ultimate accountability for the first phase audits rested solely with ECO's project manager, including preparing audit reports for auditees and the Government. However the assurance providers' role in the second phase audits shared the accountability responsibility with ECO, as the contracts stipulated that "*their role is to deliver audit reports to [ECO] in a professional and constructive way*". This tension between ECO's overall final accountability to Government and auditees for the audit outcome/output and audit contractors having to deal with (and being responsible for) process and auditees is reflected in the following observation by one of the external lead auditors (TL3):

> *the role of the [ECO] person in the team was always shifting. So, in the first audit, they were audit teams with embedded contractors. Then we (contractors) wanted this independence so we can't be seen to be part of the audit team. So then when a contractor was auditing on ECO's behalf...but then we* [ECO] *had to take responsibility for our relationship with the regions.*

Although during the second phase audits the accountability was operationally shared between ECO and external lead audit partners, requiring both individual and mutual accountability, this shift in accountability between audit phases is somewhat superficial, as the Government viewed only ECO as accountable for the NRM audits and their work-products (i.e., audit reports), suggesting in practice the attributes of accountability were more aligned with work group rather than the structure of a team. Resource diversity theory also suggests that team members are more likely to buy into the audit task if the leader is non-directive rather than directive (Fiedler and Garcia, 1987).

*4.4.5.3 Work-products*

Determining whether the diverse team members are committed to perform as a 'collective' team to produce collective work-products relies to some extent on the way members work towards a common purpose. With the first phase audits, "*there was an absence of clear criteria to test in the field making these early audits searches in the dark*" (PM1). The audit report (the work-product), was prepared by ECO based on their interpretation of the individual audit teams' working papers, thus predominantly an individual rather than collective output. Part of the learnings from first phase audits was that ownership and commitment to the task evolves over time. Consequently, to achieve greater ownership of the audit task and outcome, including the preparation of the audit reports, the second phase audits were restructured in terms of accountability and leadership roles with each of the two MATs managed by a different experienced contracted lead auditor. This approach is outlined by D1:

> *… who you get to manage the auditors needs to be qualified, in control to meet the objective, and deliver the audit outcomes within ECO time frames and in accordance with the contract.*

However concerns as to whether each MAT member understood and agreed with the end work-product appeared to be a continuing issue:

> *What were we actually auditing against? In determining what is good and whether these regions had performed or not ... what was considered to be good performance? There was no definition of that. What happens in here ... everyone in here thinks they agree and that they all have a common picture ... until you put the product in front of them and they all say,* "*No, that's not the picture I had*". (TL1)

This suggests that regardless of the leadership and accountability approach, for MATs to function as effective teams, sufficient time needs to be devoted to shaping and agreeing on common understanding about specific team processes and work-products, otherwise

team members become confused, leading to mediocre performance at best. ECO's leadership approach in the first phase audits (akin to a work group), in comparison to their shared leadership role in the second phase (akin to a team) is also mirrored with the attributes of work-products.

*4.4.5.4 Meetings, discussion and effectiveness*

ECO's collaborative approach to NRM was heavily reliant on stakeholder involvement through meetings, including audit project briefings, debrief meetings and meeting with auditees, especially during first phase audits as they were considered very much a 'pilot'. However there were different perspectives on the efficiency and usefulness of these meetings. One lead auditor (TL3) commented:

> *we would have meetings with say twenty people … everyone was wanting a say and [ECO] directors would take a day to look at it and there was no decision.*

Another lead auditor (TL2) commented:

> *I was in a workshop for two days training people before they went out in the field. We had an hour left on day two and we still hadn't got to the training component. We were going round and round in circles about standard and ... that was painful.*

Regardless of these views, meetings were essential for ECO in delivering its audit aims to the contractors, and to the auditees for communication and deliberation of protocols, performance and NRM evaluations. The use of meetings by ECO for clarification of aims and responsibilities is demonstrated by the following quote from ECO project manager in a pre-first phase audit meeting:

> *the lead auditor will be working with ECO to produce audit reports, develop documented operational procedures and review the audit framework. We*

> *[ECO] will publish and sign off audit reports containing the work of the audit teams.*

However, as a result of the learnings from the initial phase audits, the ECO directors were not involved with the second phase audit meetings. Instead the contractors could request briefings on specific issues allowing them to work with ECO to resolve any issues quickly. Meetings continued to be run by ECO against well-prioritised agendas and decisions were implemented through specific individual assignments and accountabilities much like work groups. Consequently it was common for the ECO Project Manager to share information in meetings and make decisions to enable others to complete their specific individual aspect of the audit. ECO's approach to collaboration and meetings was aligned more to managing a work group rather than a team and meant that "*further collaborative development between the mix of specialists is required as we [ECO] are not benefiting from all the expertise within the audit groups*" (PM1). Thus, ECO in future will need to make the choice between utilising meetings to improve the effectiveness of the work group or adopting a real team approach in which MAT members are more autonomous and trust in others, as noted by TL1: "*I think there needed to be a certain level of trust between the ECO and the lead auditors. So, if you are engaging with the auditors, you have to have a degree of trust that they know what they are doing in managing their teams*". Our case highlights that to facilitate effective teams, thought needs to be devoted to team composition, training, development and leadership, with a required shift from individual level perceptions to collective constructs (Kozlowski and Ilgen, 2006).

### 4.5 Concluding Insights

The aim of this study is to contribute to the limited literature to date, extending our understanding by investigating MATs in NFI assurance and a specific subject matter context, namely NRM. The case study provides insight into how MATs operate in practice and how experts from diverse disciplinary backgrounds (auditors, scientists, NRM experts, etc) collaborate (or otherwise) and bring their perspectives to the audit process. Evidence from the case study suggests that the understanding and communication of each other's level of expertise between MAT members is essential for effective audit process, gaining new perspectives and richer audit outcomes. Lack of clear communication between the team members with different perspectives, language and interpretation inhibits collaboration and leads to increased tensions, thus limiting the transfer of ideas among team members. Our case study organisation also illustrates that with team members avoiding rather than confronting conflicting opinions the diversity benefits and full realisation of MATs' effective performance is inhibited.

The diverse background of team members has the potential to bring new energy, perspectives and strength to the team. However, this requires thoughtful planning prior to the team being formed. Resource diversity theory suggests that experts with deep knowledge in one subject may be inclined to lose perspective as they cannot see other external factors. This limits innovation and narrows the possibilities of finding good solutions to any problems. The experience of ECO illustrates that one does not need to be an expert of everything but rather needs to be able to collaborate with other disciplinary members within the team and understand their distinct mindsets, a key attribute of audit quality.

Our case study findings suggest two main aspects of MAT dynamics that need to be established, communicated and managed by the leader/project manager from inception and continually reviewed as the assurance engagement progresses, that is, team members' contribution and team members' roles. The leadership approach is a critical aspect of managing MATs to enable professional team members to fully participate and engage with other experts with an open and collaborative mindset in order to facilitate better outcomes.

This study also provides evidence of the MAT's transition from a 'group' to a 'team'. ECO's MATs transitioned from functioning as 'work groups' in the initial first phase audits to 'teams' in the second phase. Their experience suggests that management and consideration of specific aspects of group versus team dynamics is essential to realise MATs' effectiveness in practice.

Research into NFI assurance practices and the utilisation of MATs is still in its infancy. Evidence from our case study organisation allows for important empirical insights into this emergent field and adds to our understanding of the NFI assurance practice in the field. Although this study examines MATs from the organisation's (ECO's) perspective, future research may further explore individual MAT members' and auditees' perspectives of the MAT dynamics. Our findings are limited to ECO but contribute to the literature and to assurors that are exploring use of professionals from various disciplines in their audit teams. Future research could extend this study by examining MATs within other specific subject matter contexts such as GHG emissions and water accounting.

Most of the challenges outlined in this study are expected at the initial stage of utilising MATs. However, this study's unique finding is that while it is relatively easy to

form a MAT getting the individual experts to work together is challenging and organisations need to balance caution with their enthusiasm for functional diversity.

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**Appendix 1: Source and Coding of Data**

| **Data Source** | **Abbreviation Code** | **Legend** |
|---|---|---|
| *Public Documents* | STD | NRM Standard |
| | | |
| *Internal Documents* | AWP | Audit Working Paper |
| | AT | Audit Tender Document |
| | | |
| *Interviewees/Meeting Discussions* | CEO | ECO CEO |
| | CHAIR | ECO Chairperson |
| | D1 | ECO Director 1 |
| | D2 | ECO Director 2 |
| | D3 | ECO Director 3 |
| | AE | Independent Audit Expert |
| | PM1 | ECO Project Manager Phase 1 |
| | PM2 | ECO Project Manager Phase 2 |
| | TL1 | Lead Audit Team Leader 1 |
| | TL2 | Lead Audit Team Leader 2 |
| | TL3 | Lead Audit Team Leader 3 |
| | TL4 | Lead Audit Team Leader 4 |
| | TL5 | Lead Audit Team Leader 5 |
| | ATM1 | Audit Team Member 1 |
| | ATM2 | Audit Team Member 2 |
| | A1 | ECO NRM Analyst 1 |
| | A2 | ECO NRM Analyst 2 |

# CHAPTER 5

# PAPER 3

## Audit Reporting on Non-financial Information: One Audit, Two Reports

**Conference proceedings**

American Accounting Association Annual Meeting, Chicago, Australia, 12 August 2015.

Accounting and Finance Association of Australia and New Zealand Conference, Perth, Australia, 9 July 2013.

36th Annual Congress of the European Accounting Association, Paris, 6–8 May 2013.

**Publication Update**

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**Date** 10th February 2017

**Co-Author's Statement**

**Paper 3**

Hecimovic A. and Martinov-Bennie N., "Audit Reporting on Non-financial Information: One Audit, Two Reports".

**Principal Author**

Angela Dijana Hecimovic

**Co-Author**

Professor Nonna Martinov-Bennie

**Statement**

I undertook research at the NSW Natural Resources Commission with Professor Nonna Martinov-Bennie as my Principal Supervisor. As a result of this research, Professor Martinov-Bennie and I presented the findings for Paper 3 at the 2013 AFAANZ Conference in Perth and the 2015 AAA conference in Chicago. Professor Nonna Martinov-Bennie also presented the paper at the 2013 EAA conference in Paris. The paper that is included in the thesis is double blind peer reviewed and is currently in third round revisions at *Accounting, Auditing and Accountability Journal*.

Angela Dijana Hecimovic's contributions to the paper were:

- concept development;
- conducting interviews, attending meetings, collecting data;
- data analysis;
- write the first draft of paper;
- rewrite of all subsequent paper drafts;
- development of final paper based on conference and reviewer feedback.

Professor Nonna Martinov-Bennie's contributions to the paper were:

- discussion of conceptual ideas underpinning the paper;
- input and guidance into structure of paper;
- reviewing and editing all paper drafts, including final journal submission.

**Declaration *Principal Author***

I, Angela Dijana Hecimovic, the Principal author of the aforementioned paper, declare that I have contributed to all sections of the paper as indicated above. My contribution to the paper represents approximately 90% of both the conceptualisation and writing effort required for its publication submission.

Signature
10th February 2017

Witness

10th February 2017

**Declaration *Co-Author***

I, Nonna Martinov-Bennie, the co-author of the aforementioned paper, declare that I have contributed to all sections of the paper as indicated above. My contribution to the paper represents approximately 10% of input into conceptual ideas underpinning the paper, reviewing and editing paper drafts as required for its publication submission.

Signature
10th February 2017

Witness

10th February 2017

## Abstract

**Purpose** – This study explores the process of the construction of the audit report by a public sector organisation within a non-financial information (NFI) audit context.

**Design/methodology/approach** – We use a single longitudinal case study method with data collected from multiple sources, including semi-structured interviews, informal discussions, observations of meetings and internal and external documents, including audit work papers. In analysing the data we draw upon communication theory and Power's theoretical perspectives of the audit reporting process.

**Findings** – The findings provide insights into the challenges in determining the appropriate stakeholder audience, objective, level of assurance, content and format of audit reports in a complex non-financial subject matter context.

**Research limitations/implications** – The evidence was analysed from an assuror's perspective. Future research may examine the users' perceptions of the communication value of the non-financial audit report.

**Practical implications** – The paper's insights into one organisation's challenges of developing appropriate reporting practice(s) within a 'new' NFI context have practical implications for the development of emerging assurance practices of other NFI both in public and private sector.

**Originality/value** – This paper is one of very few studies to use a longitudinal case study approach to examine comprehensively how audit reporting practice develops in a complex non-financial subject matter context.

**Keywords** – assurance, audit, audit report, natural resource management, non-financial information

## *5.1 Introduction*

The audit report[13] is the prime tool used by organisations to communicate with stakeholders about the credibility, reliability and relevance of reported information. External assurance[14]

[13] In Australia, the document compiled by the assuror of non-financial information (NFI) is typically referred to as 'Statement' rather than report. According to Standards Australia 2010, an 'assurance report' describes the assurance process and results, whereas an 'assurance statement' outlines the assurance process and provides a statement or opinion about the level of assurance that can be placed on the organisation's sustainability performance. This too is not consistently applied as many assurance providers do not make the distinction between report and statement. For the purposes of this study, audit report/assurance report is utilised and any reference to 'financial' audit report will be explicit.

[14] Within this paper the term non-financial/sustainability reporting and assurance is used to refer to reporting that considers the social, environmental, and economic and governance impacts of an organisation's activities. Many terms have been used in the academic and professional literature, such as reporting of non-financial information, corporate social responsibility, corporate accountability, environmental, social and governance, stakeholder management and KPMG's latest use of 'Corporate

increases stakeholders' confidence in the quality of the organisation's non-financial performance data, making it more likely that the information will be used for decision making (GRI, 2013) and potentially adding value when communicating to a wider stakeholder group. The audit report also provides an opportunity to improve the transparency of the audit process, including insights into audit procedures, evaluations and audit conclusions. Therefore, it is not surprising researchers including Adams *et al. (*2014), O'Dwyer *et al. (*2011) and Power (2003a) call for in-depth insights into the audit process within new audit contexts. Using a longitudinal case this study explores the process of the construction of the audit report by a public sector organisation within a non-financial information (NFI) audit context, namely natural resource management (NRM) subject matter. Our findings make a contribution to the academic literature on performance audits in public sector organisations as well as NFI assurance practice in public and private sector organisations.

Organisations, whether in the private or public sectors, choose to have their NFI reports assured for various reasons, from seeking to improve their credibility, to making their reports more reliable for stakeholders and to improving operations (O'Dwyer *et al.,* 2011; Frost and Martinov-Bennie, 2010). However, despite this motivation and the apparent growth in independent assurance of NFI, the audit reporting processes and practices are not well understood either in private or public sector contexts. A study examining the sustainability assurance reports of Australian Stock Exchange (ASX) 100[15] companies noted inconsistent audit report formats, objectives and assurance levels across engagements and assurance providers, which diminished the comparability and usefulness of the reports (Frost and Martinov-Bennie, 2010). Although our study investigates performance reporting assurance in the public sector mandated context, there are nevertheless key similarities between auditing in the public and private sector. These include auditors following the same Standards (e.g., ASAE/ISAE 3000

Responsibility' reporting (KPMG, 2013). The NFI audit engagement in our context, as with all audits, is one type of assurance engagement.

[15] ASX 100 companies refers to the Australian Stock Exchange's top 100 companies by market capitalisation.

*Assurance Engagements Other than Audits or Reviews of Historical Financial Information*), having responsibility for providing a level of assurance on NFI and the expectation to be fully independent of the management of the entities they audit. The dual reporting obligation to Government and wider stakeholder audience in our public sector mandated audit context also allows for understanding the dynamic nature of NFI assurance at a time of a push towards mandated NFI reporting and assurance in both sectors in recognition of the potential benefits in promoting socially responsible managerial practices (Ioannou and Serafeim, 2015; Eccles and Krzus, 2010; Simnett *et al.,* 2009).

As NFI assurance is commoditised as a product, NFI audit reports need to walk a fine line between being comprehensive accounts of what was done by the assurer, yet remaining accessible to and being targeted at a wide range of stakeholders with different needs (Adams *et al.*,2014; Adams, 2004) as illustrated by this study. For this reason NFI assurance reports are not easy to craft, even though some of their basic content is defined by the various assurance standards.[16]

This study makes a number of contributions to understanding NFI and performance assurance reporting. First, we explore the construction of the audit reporting processes and determination of the key aspects of the audit report including audience, scope, objective, format and level of assurance. By doing so, we identify challenges in practice. Second, investigating NFI assurance within the NRM specific subject matter is timely given the significant government funding[17] of large NRM programs broadly aimed at securing healthy and productive landscapes. In addition, the NRM audits (under study) were the first of their kind in Australian natural resources management with no blueprint for constructing the audit reporting processes or audit report. The size of Australia and the magnitude of environmental issues presents an enormous challenge in terms of not only delivering tangible impact through NRM programs but also in measuring NRM

[16] As defined, for example, in the 'assurance report content' section in both the International Standard on Assurance Engagements (ISAE) 3000 and Australian equivalent, ASAE 3000.

[17] $27 million has been invested in NRM projects in the state of NSW for 2015/16 and $1,042 million was invested during the period from 2004 to 2010 (Minister for Primary Industries, May 2015, ML).

programs' impact on the condition of natural resources or trends of land degradation at the landscape scale (ANAO, 2012; Conacher and Conacher, 1995). Third, audit practice is increasingly seen as a key instigator to performance improvement – however the impact of performance auditing in the public sector is still a "poorly explored territory" empirically (Morin, 2008, p. 719). This study contributes empirical evidence to public sector performance audit research. Fourth, the study contributes to the debate on the communicative value of audit reports and provides insights from practice on the evolving form, content and intended perceived meaning of audit reports generally and on NFI specifically. Finally, the content and format of NFI audit reports is generally not standardised with current NFI assurance practice utilising a diverse range of guidelines. These include GRI guidelines and specific assurance standards (e.g., AccountAbility1000 Assurance Standard (AA1000AS), International Standard on Assurance Engagements (ISAE) 3000) and subject matter specific standards (e.g., International Organization for Standardization (ISO) 14064-3 and ISAE/ASAE 3410 for greenhouse gas assurance). Thus, a better understanding of the process of assurance reporting in the NFI context in practice has the potential to inform the continuing development of audit standards/guidelines on the content of NFI and performance audit reports generally and within the NRM context specifically.

The remainder of this paper proceeds as follows. Section 2 provides an overview of audit reporting and communication issues predominantly from the NFI assurance and public sector performance literature. In Section 3 we discuss the research method and provide the case study context, and analyse and discuss case findings in Section 4. Section 5 provides further useful insights into NFI audit reports, draws out implications of the case study findings and identifies potential limitations of the study and future research opportunities.

### *5.2 Prior Literature and Research Issues*

To provide a theoretical framework for understanding and analysing the process of the construction of the audit report in our case study, in this section we draw upon insights from various academic literatures including assurance of NFI (Section 5.2.1), public sector auditing (Section 5.2.2), NRM subject matter complexity (Section 5.2.3), communication theory (Section 5.2.4) and Power's theoretical insights into NFI audits (Section 5.2.5).

#### *5.2.1 Assurance of Non-financial Information*

Despite the growing number of independent assurance reports of NFI, the practice itself is still not well understood (Perego and Kolk, 2012; O'Dwyer *et al.,* 2011; Kolk and Perego, 2010; Ball and Grubnic, 2007). Previous studies of assurance practices and reporting have highlighted a significant variation in the assurance report format, content, level of assurance, report length and assurance standards applied by various audit providers (Mock *et al.,* 2013; Frost and Martinov-Bennie, 2010; Mock *et al.,* 2007; Deegan *et al.,*2006; O'Dwyer and Owen, 2005; Park and Brorson, 2005; Dando and Swift, 2003). The findings of these prior studies reflect Power's (1994, 1997, 1999, 2003b) broader concerns with new assurance forms, which he claims lack communicative meaning given the current lack of agreement on assurance objectives, standards, processes and best practice. These concerns have led to calls by both academics and practitioners for "more customized and informative narratives in assurance reporting" (O'Dwyer *et al.,* 2011, p. 1; Power, 2003a, 2004) and more constructive communication with stakeholders to facilitate the relevance of NFI disclosed in reports and assurance statements (GRI, 2013; Bebbington *et al.,* 2009).

The majority of NFI assurance research to date explores voluntary assurance practices in the private sector (Mock *et al.,* 2013; O'Dwyer *et al.,* 2011; Paulo, 2009; Mock *et al.,* 2007; Deegan *et al.,* 2006; O'Dwyer and Owen, 2005). There have been only a few case studies of a mandated

NFI assurance environment context despite the growing use and relevance of this practice and calls for mandatory NFI reporting and assurance (Ioannou and Serafeim, 2015; Adams *et al.,* 2014).

### *5.2.2 Public Sector Auditing*

To date the corporate private sector has dominated the development of the NFI and assurance reporting agenda (Farneti and Guthrie, 2009; Ball and Bebbington, 2008; Ball and Grubnic, 2007), with the public sector assurance practice still perceived as lagging behind. Even though the GRI's public sector supplement encourages, and provides guidance for, the expansion of sustainability reporting into the public sector, attempts at NFI reporting/assurance by public sector organisations have been 'patchy' with GRI concepts difficult to apply in practice (Adams *et al.,* 2014; Dumay *et al.,* 2010; Lynch, 2010; Ball, 2004). This is despite agreement that the public sector is important, accounts for 40% of all economic activity and, as a result, has more potential to impact on sustainable development and reporting than the corporate sector (Ball and Grubnic, 2007; English and Guthrie, 2000). It is argued that accountability is the common objective of public sector reporting (Parker and Jacobs, 2015; Bebbington *et al.,* 2009; Gray *et al.,* 1995) with the expectation of increased transparency given its broader stakeholder audience and its incentive to report and account for public sector organisations' impact on the environment, social welfare and economic prosperity (Funnell and Cooper, 1998).

The Australian National Audit Office (ANAO), and more specifically to our case study site the NSW Audit Office (AO), performance audits are often mandated under legislation and their audit reports commonly provide additional commentary including, for example, best practice, recommendations and advice on cost reduction in order to improve auditee performance (Barrett, 2011; ANAO, 2012). Whilst prior literature has placed various labels on public sector performance audits of NFI such as 'Value for Money' (VFM), 'Comprehensive' and 'Efficiency'

audits there has been a tendency for performance audits to be 'compliance' based, focusing on controls to produce outcomes (Parker *et al.,* 2008; Jacobs, 1998; Guthrie, 1992). In reality the public sector has been reporting on NFI for decades (Parker *et al.,* 2008; Barton, 2005), however performance measurement has primarily been utilised as an internal information tool rather than reporting to a wider stakeholder group (Ball and Grubnic, 2007; Herawaty and Hoque, 2007). This may in part be due to performance audits being conducted to determine economy, efficiency, effectiveness and good management practice in relation to public policy (Pollitt *et al.,* 1999) with ongoing tension between the concepts of 'efficiency' and 'effectiveness'.

Parker and Jacobs' (2015) review of public sector performance audits provides interview evidence from Auditor Generals past, highlighting a number of complexities with performance audits. They include identifying the key performance audit report audiences targeted, requirement to employ language minimising technical jargon and the need for "shorter reports that would deliver simple answers to complex issues" (p. 19). They also suggest there is an expectation across stakeholders that performance audit reports provide tougher criticisms and more adverse findings and therefore require increasing attention to audit report design. This is relevant to our context of NFI assurance where there is both a compliance and performance component to the audits under study. At a recent conference attended by one of the researchers a former auditor general from the ANAO claimed that "we [public sector] have done performance audits as assurance activities for many years as well as financial audits, even though some say we were deficient in these audits" (ANCAAR, 2015). The former auditor general also supported the need for auditors in the public sector to have a strong understanding of audit methodology and pay more attention to the audit report communication and messages conveyed to government and wider stakeholders. The former auditor general further suggested that the private sector can learn from the public sector audit experience that "if you want more assurance, one way of getting that is to have performance audits" (ANCAAR, 2015), which will actually allow independent investigation and appraisal of the explanation as to what lies behind performance.

### *5.2.3 Natural Resource Management Subject Matter Context*

Australian NRM is influenced by four governance levels – federal, state/territory, local and regional – with each level creating its own policies, plans and legislation. This makes for a complex governance environment, costly to run through overlapping, redundant or conflicting policies, and which has often been criticised for its complexity and confusion in terms of NRM project focus, maturity and impacts of projects (Hajkowicz, 2009; Zilberman and Waibel, 2007). NRM is about people managing landscapes to sustain the needs and values of communities, within the biophysical limits of our natural systems and becomes a balance between maintaining, restoring and protecting landscapes and how we use them to support various stakeholders' aspirations. Although NRM programs are diverse in terms of their specific focus with the broad aim of securing healthy and productive landscapes that supply multiple environmental and social services, the size of Australia and the magnitude of environmental problems present challenges (Conacher and Conacher, 1995). These challenges are not confined to whether NRM programs are delivering tangible results but include auditors' difficulty in measuring and reporting on the impact of programs on the condition of natural resources or trends of land degradation at the landscape scale (ANAO, 2012). ANAO audits, similar to the European and US context (Hanley *et al.,* 2012; Latacz-Lohmann and Hodge, 2003) reveal persistent problems of ineffective targeting, monitoring, evaluation and reporting of NRM expenditure, and challenge Australia's natural resource program managers in answering the question: what did we get, or will we get, for our money?

The public sector literature specific to audits of NRM programs and governance, indicates that a major obstacle is linking expenditure to outcomes (Curtis *et al.,* 2014; Weinberg and Claassen, 2006; Falconer and Saunders, 2002) and developing credible scientific models that link the investment activity (e.g., tree planting) to the outcome (e.g., improved water quality).

Defining landscape treatment-response models will involve an enormous scientific effort and consideration of stakeholder needs. For example, some suggest that a tonne of sediment withheld from a river is not necessarily what stakeholders value but rather their interest is in the increased value of agricultural production, the preservation of aquatic biodiversity or the improved recreational amenity of the creek (Hajkowicz, 2009; Weinberg and Claassen, 2006). Whilst some argue for increased use of monetary valuation techniques such as choice modelling (Bennet and Sylph, 1998), others suggest that many intangible environmental and social goods cannot be measured in dollar units and decisions can, instead, be informed through non-monetary valuation metrics (Hajkowicz, 2009). However the key principle for VFM in NRM reporting in all government procurement is to ensure proper use of resources. This is no different in our case context where regional bodies develop NRM plans, procure investment and coordinate implementation of on-ground NRM strategies. NRM assurance in our case study (in contrast to prior national ANAO audits, which focused on specific programs such as 'Landcare', and 'Caring for Our Country') is undertaken by a specific body legislated to undertake audits and report on the effectiveness of the implementation of NRM Plans at a state level, a new holistic approach to NRM.

Whilst NRM is based on an adaptive approach to resource planning, management and sustainable use of natural resources, an 'effectiveness' evaluation (i.e., audit) of NRM programs is complex mainly due to limited audit evidence and difficulty in measuring outcomes (Hajkowicz, 2009). For example, actual outcomes may be influenced by issues such as political agendas, drought or land-use changes that are outside the control of auditees. Difficulties in NRM measurement are also influenced by the vast sources of quantitative/qualitative data, models or complex statistics in an environment where understanding ecological relationships and processes are still evolving. Whilst the audit report has the potential to convey information to assist stakeholders in decision making, it becomes even more important that the evaluation

information (i.e., of NRM performance) presented is clear, concise and appropriate for its communicative purpose.

### *5.2.4 Communication Theory and Audit Reports*

Audit reporting (both in the private and public sectors) is essentially a communication channel for the auditor to express his/her view (opinion) on whether the auditee's information (financial and/or non-financial) is fair based on evaluated audit evidence. Communication is viewed as a goal-directed activity allowing organisations to "build trust, credibility and manage uncertainty" (Stephens *et al.,* 2005, p. 391). Since the audit report is the most visible output of the audit process, the communicative value of the report cannot be divorced from the process from which it stems. Our study examines the process of constructing the NFI audit report and considerations in determining key elements of the report in an attempt to meet various stakeholder needs.

This study utilises Fiske's (1990) interpretation of communication theory – which is an extension of Shannon and Weaver's (1949) communication model – to appraise the case study NFI audit report development process. Shannon and Weaver's model, suggests that the 'source' of communication is critical between the 'sender' (i.e., assuror) and 'receiver' (i.e., stakeholders) and that certain 'noise' in the communication channel (i.e., audit report) must be understood to improve the communication. In the literature this is referred to as the 'process' school of thought viewing communication as a linear process with the focus on the transmission of messages between sender and receiver. Fiske (1990) supports this earlier view on communication and suggests providing more detailed information in the 'channel' (i.e., in our context, the audit report) should improve its communicative value (Mock *et al.,* 2013; Hasan *et al.,* 2005). However, he extends the 'process' view to include a 'semiotic' perspective of communication by also focusing on the relationship between the source, the receiver and the text to determine the meaning of the communication. He suggests that more human factors, such as predicting the effect of data on the receiver (i.e., various stakeholders) in terms of the interpretation and

inferences drawn, need to be considered. Fiske also views differences in how receivers interpret data as an impediment to effective communication of the sender's intent of the message.

Prior research on financial audit reporting supports Fiske's (1990) communication theory insofar as it suggests that users are sensitive to changes in terminology (Bailey *et al.,* 1983), in wording (Houghton and Messier, 1991) and to increased information provided in the audit report (Innes *et al.,* 1997). Similarly, recent research by Cohen and Simnett (2014) into NFI assurance practice suggests the communicative value of assurance audit reports is their role in establishing legitimacy with external audiences both in terms of how intended users interpret and react to the assurance. However, this potential benefit is somewhat limited in practice with constrained opinions, excessive length, restricted wording and lack of clarity contained in assurance statements encouraging diametrically opposing user interpretations (O'Dwyer *et al.,* 2011; Power, 2003b; Shore and Wright, 2000).

In the current study, the channel is the NFI audit report and the receiver(s) are the various stakeholders. The communicative value of the channel (audit report) is contingent upon whether the receivers' (users) needs have been met and intended message is conveyed. In contrast to the traditional financial audit report, where the needs of the investor are clearly prioritised, NFI assurance has a broader stakeholder audience and determining key users and their needs is likely to be complex (O'Dwyer *et al.,* 2011). We utilise Fiske's (1990) communication theory in the analysis of the construction of audit reports by breaking it down into key elements (i.e., audience, objectives, etc) in order to understand the process.

### *5.2.5 Power's Theoretical Insights into Non-financial Information Audits*

Complementary to communication theory, Power's theoretical perspectives on audit reporting (1997, 1999, 2004, 2003a) provide our study with a more specific view of this communication process. Power's (2003b) articulation of an 'audit explosion' largely focuses on the expansion of

audit into public sector arenas in the UK where audits were imposed with regulatory backing. This context has direct relevance to our study of mandated NFI audit assurance within a public sector context. Power views audit as a practice where individuals (i.e., stakeholders) need to trust reported information and he argues that for this to occur an accountability relationship between an agent and a principal must exist. This relationship and its success, Power argues, is also contingent upon clear audit objectives in the audit report as vagueness in objective(s) risks "being attached to different goals" (Power, 1999, p. 6) and open to different interpretation by stakeholders who rely on the audit report.

The theoretical approaches of both Fiske and Power provide a useful framework for investigating the extent to which NFI assurance reporting developed by the case study organisation investigated in this study promotes the type of communication to which it formally aspires, thereby providing insights into the audit reporting process and how it can be improved going forward. Such multiple perspectives may be appropriate to examine different aspects of NFI assurance (Cohen and Simnett, 2014).

### *5.3. Case Study Context and Research Method*

This study uses a single, in-depth longitudinal case study method to provide richer insights into emergent NFI assurance reporting practices. Given that relatively little is understood about how organisations develop their assurance processes of NFI subject matter, an exploratory case study method is an ideal approach to determine what *actually* occurs in organisational practice, rather than remaining at the more abstract level of formal guidelines, objectives or policies (Gibb and Wilkins, 1991). The use of multiple sources allows for analysis and reflection by triangulating the descriptions and interpretations from different stakeholders and data in the case to examine how and why things get done (Stake, 2005; Scapens, 2004). In-depth insights into how the NFI audit reporting practices within the case site developed and continually transformed advances

understanding of NFI assurance practices and how the audit findings are communicated in an audit report to the various stakeholders.

### *5.3.1 Case Study Site Context*

The case study site, hereafter referred to as ECOLOGY,[18] is a state public sector organisation in Australia and is considered a leader in NRM. ECOLOGY is independent of the Government (with respect to governance and accountability) and all other stakeholders including auditees. It consists of a small team of approximately 14 staff comprising NRM analysts, environmental consultants, scientists, environmental auditor, ex-financial auditors, project managers, engineers and administration staff. ECOLOGY is governed by a board consisting of a CEO, Chair and five Directors. ECOLOGY views its consultative approach to NRM audit as transparent and collaborative with input from outside experts in agriculture, environmental science and auditing. ECOLOGY uses its access to these experts to facilitate and provide independent perspectives, knowledge and advice on NRM. This collaborative approach was also instrumental in ensuring that each audit team, comprised of ECOLOGY staff and contracted experts, possessed the relevant expertise required to undertake the audits. The capacity to provide independent perspectives is essential to its operations, given that ECOLOGY's overall role is to advise the Government in terms of what is working or not working in NRM, and on reporting progress against stated policies and targets. To assist ECOLOGY with monitoring and evaluating regions' NRM progress towards achieving NRM improvements and targets, the Government, in collaboration with ECOLOGY, designed an overarching 'NRM Best Practice Standard' (hereafter NRM Standard). The NRM Standard defines the required benchmarks for various components of NRM practice, such as community engagement, risk management and information management. In addition to the NRM Standard, the Government has sought to embed its overarching aspirational goal of "resilient, ecologically sustainable landscapes

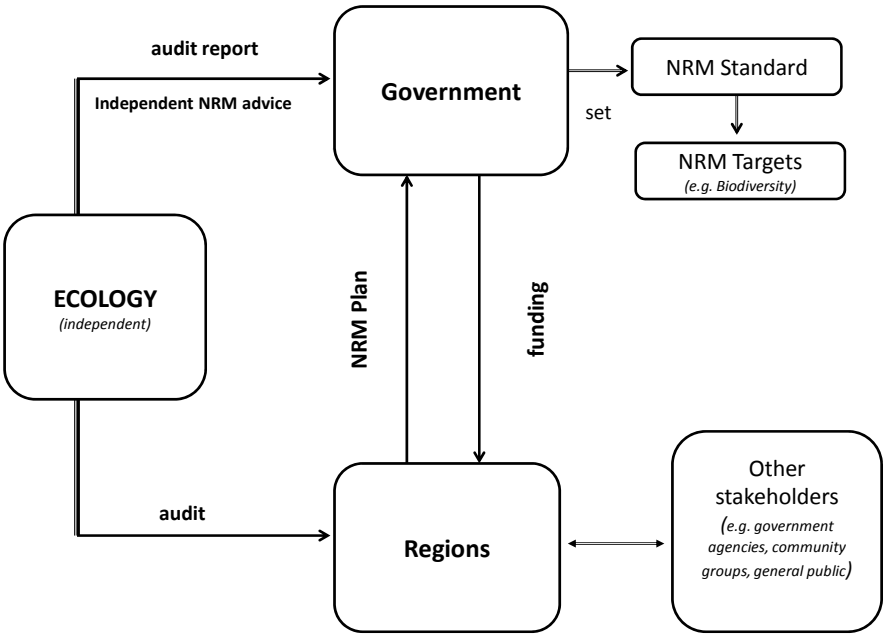
[18] To protect the identity of the interviewees, it was deemed necessary to keep the case study organisation anonymous.

functioning effectively at all scales and supporting the environmental, economic, social and cultural values of communities" (NRM Standard, 2005, p. 1) in its State-wide targets. These State-wide targets provide focus, coordination and a means for monitoring progress of each region's strategies and projects (NRM Plan) against the region's contribution towards the targets of biodiversity, water, land and community themes. For example, a specific biodiversity target focused on whether the region has in a given timeframe achieved an increase in native vegetation, native fauna species and a decrease in the impact of invasive species.

The Government's regional model for NRM divides the state into a number of regions that are classified according to geographical landscape. This classification allows regional communities to have direct input into how their landscapes (native vegetation, water, coastal and flora) are managed. Each region must follow and report on their progress towards the NRM Standard. To this end, each region is required to work in partnership with its communities and Government agencies to develop a 'NRM Plan' that demonstrates its strategy to comply with the NRM Standard. Each region's NRM Plan must also include regional targets that align with the Government's aspirational state-wide targets. The NRM Standard and regional targets provide criteria against which NRM performance of each region can be evaluated.

ECOLOGY's mandated role is to audit how effectively each region's NRM Plan has been implemented and whether it complies with the NRM Standard and is achieving its targets. ECOLOGY remains independent from both the Government and regions (auditees) (see Figure 1). Legislated ECOLOGY functions include "to undertake audits of the effectiveness of the implementation of NRM Plans in achieving compliance with those statewide standards and targets; and to undertake audits of NRM Plans and other NRM issues as required by the responsible Minister" (NRM Standard, 2005, p. 1).

**Figure 1: ECOLOGY Case Context**




*5.3.1.1 Audit Mandate*

Although there is a legislative requirement for ECOLOGY to undertake NRM audits, the legislation does not specify how the audit should be conducted or findings reported. The legislation in itself is not sufficient to drive audit processes that realise the mandated audit objectives in practice. ECOLOGY therefore developed the NRM 'Audit Standard' or framework (distinct from NRM Standard) to guide the audits. This audit framework was initially informed by various existing international and national assurance standards and its development focused on operationalising the mandated 'audit' requirement and to provide a statement of concepts and standards applicable across all NRM audits (Martinov-Bennie and Hecimovic, 2010).

The audits were undertaken in two phases over three years where the lessons from first pilot audits were reflected upon and learnings applied into the second phase audits. The initial

mandated audits were conducted by audit teams consisting of ECOLOGY staff members together with contracted experienced NFI audit specialists. Whilst key role of the audits was to "to undertake audits of the effectiveness of the implementation of NRM Plan in achieving compliance with the NRM Standard" (Martinov-Bennie and Hecimovic, 2010, p. 6) *and* achievement toward targets, they were also seen as a tool in driving regions' continuous improvement in NRM. The audits are part of the adaptive management cycle and are designed to provide regions with a focus for their ongoing improvement in NRM as illustrated in Figure 2.

**Figure 2: ECOLOGY Model for Adaptive Management**

The broad NRM mandated audit function necessitated ECOLOGY develop appropriate audit practices and processes including audit reporting. This provided a setting with a potential for a wide range of audit processes and reporting practices to emerge with different implications for the subsequent communication and recommended actions. The specific focus of the current study is the audit report, the formal output of the audit process (Power, 1997).

### *5.3.2 Research Method*

Data for this study was collected from several sources over a six-year period. The researchers, in addition to publicly available reports, also had access to internal documents, including audit working papers, audit reports, management letters and meeting minutes. Given that relatively little is understood about how organisations develop their assurance processes of NFI subject matter, an exploratory case study method is an ideal approach as it uses multiple sources of evidence to determine what *actually* occurs in organisational practice (Power and Gendron, 2015; Yin, 2003; Scapens, 2004). As is characteristic of the case study method (Stake, 2005), we spent extensive time on site observing critical executive and board meetings and attended two field audits (covering five days). We also conducted 11 semi-structured interviews (approximately two hours each in duration) and many informal discussions with key internal and external stakeholders, such as ECOLOGY staff, external NRM audit team leaders and an independent audit expert. To ensure procedural reliability, most meetings and interviews were recorded (with consent) and transcribed, and supplemented with comprehensive field notes. Findings were triangulated by using available public/internal reports and multiple perceptions (Stake, 2005) from various stakeholders to clarify meanings and interpretations, and by teasing out knowledge by cross-examining interviewees and exploring further issues as they arose. Drawing upon prior literature in Section 5.2 and the generic elements of an audit report, the analysis of transcribed interviews and meeting data were undertaken in an iterative fashion, which allowed us to read the interview transcriptions several times and to go back and forth to check previous findings. Making sense of the data in this way allowed us to explore new themes to develop the narratives in Section 5.4 with illustrative quotes included when discussing the case findings. Appendix 1 summarises the sources and coding of data that are utilised in Section 5.4.

### *5.4. Case Analysis and Discussion*

*Audits are not passive practices but strongly influence the environments in which they operate.* (Power, 1994, p. 48)

This section of the paper presents the case analysis of deliberations and resulting decisions made by ECOLOGY on various aspects of the reporting process – what drove those decisions, how they were formulated and how they developed into the final audit report. The analysis and discussion is framed around the generic key audit report elements and is presented as follows: Section 5.4.1 addresses audit report audience, Section 5.4.2 analyses the construct of the audit report objective(s), Section 5.4.3 examines the development of audit report scope and criteria and Section 5.4.4 discusses the audit report format, content, use of language and level of assurance.

#### *5.4.1 Audit Report Audience and Audience Needs*

According to Power (2003a), for the audit report to be relevant it should be written with the needs of the audience in mind. Therefore the first issue explored in Section 5.4.1.1 is who is the audience, a key question also asked by the ECOLOGY CEO: "*the question then is what the audit report should contain and who the primary audience for the audit report is?*" The needs of the audience are addressed in Section 5.4.1.2.

##### *5.4.1.1 Audience*

Given the Government's mandated requirement for an NRM audit, predictably ECOLOGY directors agreed that the Government rather than the auditees (i.e., the regions) constituted its primary audit audience (i.e., the 'audit client'):

> *we are producing the report for the Government not the auditees.* (D1)
>
> *our duty is to audit the regions and advise the Government how they are progressing. That is what our statutory duty is.* (D2)
>
> *we are creating an audit report for the Government.* (D3)

Whilst the financial audit literature clearly identifies shareholders as the primary users of the audit report (Simnett, 2012; Deegan *et al.,* 2006), there is an increasing recognition in the NFI literature that NFI reporting and assurance is intended for a broader audience (Parker and Jacob, 2015; O'Dwyer *et al.,* 2011). In the case of ECOLOGY, this broader audience extends to multiple stakeholders, including different levels of Government, regions, landholders, community groups, public and employees. Given the NRM multiple stakeholder context and ECOLOGY's mandate, the importance of stakeholders other than Government was clearly acknowledged:

> *this report is not just going to the Minister, it is going to be available to a lot of stakeholders … equally important how those stakeholders perceive those audit reports.* (AE)

ECOLOGY expressed particular concern that the NRM regions (i.e., auditees) were also considered an important audience and key users of the audit report:

> *we want to come up with a thing* [audit report] *that is also substantial for the regions … I'm just unsure I suppose in my own mind about how we are going to do that.* (D3)
>
> *Generally with audits, it is not this complex [audience identification]. You would generally have the region and you would report to them, but this is not the case. They are not the end. You have to report to the Government also …* (AE)
>
> *[ECOLOGY] may carry out an audit against a regional auditee … then the report you have goes to the Minister … also goes to the auditee.* (D1)

ECOLOGY also grappled with the various other important stakeholders in addition to Government and regions (i.e., auditees):

> *these findings can illustrate what's happening to that region overall, rather than the auditee who is just one of the players in that region.* (D1*)*
>
> *… from an outsider's perspective there is a key customer under the legislation [the Government], but in reality there are actually multiple customers … as we go through the audit report process, we need to consider this as there will be different levels of reporting ...* (D2)

Apart from discrete stakeholder interest groups, the importance of the public generally was also recognized, especially as the NRM Standard (STD) specifies that

> *[ECOLOGY] will report publicly and so will be available to inform all stakeholders with an interest in the findings*[19]
>
> *… rather than putting the focus on the region and reporting on their NRM, you need to realise a mosaic of different players and outsiders, the public may just be interested in what is happening in a region …* (AE)

With the acknowledgment of the importance of the need to report to multiple NRM audiences came the realisation that one audit report may not meet the different needs of the multiple stakeholders. This sentiment is echoed below by the ECOLOGY CHAIR:

> *I don't know but ... we are auditing at one level … what we [ECOLOGY] really needed to do was deliver both to give some comment or report to Government, as well as to try to help the regions ...* (CHAIR)

ECOLOGY staff and other directors were similarly concerned with the ability of ECOLOGY's audit report to meet stakeholder expectations:

> *The question seems to me that we [ECOLOGY] are asking...and I think that it's something we need to resolve...to be clear about what our expectations are with the regions and what they are expecting from the audit and report… that comes out again and again … real things about what our expectations are for the regions at this stage of their maturity, if you like.* (D3)

ECOLOGY's continual questioning of its primary audit report audience(s) reflects the complexity of the process when dealing with multiple audiences with diverse needs within a NFI context:

> *… I had to write Government as the prime audience and we were just playing with the secondary and tertiary audiences. But, it wasn't until we had done that that he [CEO] and I realised that [D3] was off the page and that our audit provider contractors were off the page ... in terms of priority and audience needs* (ATM1).

The case study data illustrates the types of challenges encountered in prioritising the audience in a multi-stakeholder environment while maintaining reliance, reputation and legitimacy

[19] Examples of such 'findings' perceived to be of interest to community investor groups and landholders is that 90 per cent of all audited projects had achieved their expected short-term outputs, whether the planting of native vegetation in a specific riparian zone or the fencing of conservation areas to keep stock out (AR-B).

(O'Dwyer *et al.,* 2011; Ware and Linkugel, 1973). In ECOLOGY's case, reputation and legitimacy was contingent upon its ability to receive support not only from the Government but also from the auditees and other stakeholders (e.g., public). The political sensitivity and concern around NRM made it imperative for ECOLOGY's CEO and directors to balance the needs of various audiences and to ensure that the audit report was not only responsive to public concerns, but also maintained relationships between ECOLOGY and the auditees. This placed ECOLOGY in a difficult situation of 'walking a tightrope' between maintaining its credibility through the delivery of some 'hard-hitting' reports on behalf of the taxpayer and the Government and proving its usefulness to audited regions (Bowerman *et al.,* 2003). Given ECOLOGY was established by the Government to be innovative in its approach to NRM, including NRM audit, it was essential that it maintained its independent role and met the Government's expectations. ECOLOGY's struggle in prioritising audit report audiences was coupled with the difficulty in meeting the perceived needs of various stakeholders. This was summed up by an external audit provider who, in hindsight, reflected that:

> *what ECOLOGY wanted in terms of audit reports was something for ... on one hand political and on another public and another for the regions, a dual purpose.*

#### *5.4.1.2 Audience needs*

Within the audit context, the key role of the audit report (i.e., communication) is establishing authenticity with external audiences (O'Dwyer *et al.,* 2011; Simnett *et al.,* 2009). Fiske (1990) views communication as a process by which one person affects the behaviour or state of mind of another, therefore to understand the shape and informative nature of audit report communication, one must break down and understand the user(s) (i.e., the receivers) and their specific needs.

The needs of the Government (i.e., the audit client) were perceived by ECOLOGY to be for the audit report to evaluate/conclude on regions' performance:

> *Government wants all of that information on how the region is progressing.* (D3)
>
> *Government might really want to make sure that the money has been well spent and that they [region] haven't just wasted it. You know, that they are actually achieving the objectives.* (AE)
>
> *the Premier wants to know, is this an organisation that is performing.* (D2)
>
> [the Government needs to] *evaluate whether planning, project implementation and other [NRM]-related activities … are reaching the quality benchmarks set by the Standard.* (STD)

However, the perceived needs of the Government were different from those of the regions (auditees), which were about improvements/recommendations, and education about NRM:

> *to improve the region and make recommendation for NRM.* (D1)
>
> *monitoring and evaluating [auditee] business function.* (AP1)
>
> *[audit report is] designed to educate the regions on how we have assessed against the standard and report on progress to targets.* (CEO)

Whilst the needs of the Government and auditees were given consideration, ECOLOGY also recognised its own needs and perceived the audit to be an opportunity to gain adequate knowledge of the regions:

> *develop understanding [by ECOLOGY] of the [auditee]projects and what they were trying to achieve, how they structure their on ground services.* (AP2)

After much discussion and input from various parties, including consultants, NRM experts and other vested stakeholders, ECOLOGY reached consensus in relation to issue two different audit reports: a separate report for each of the regions (i.e., auditees) and one summarised report to the Government. The audit reports for each region were not addressed to any particular audience/stakeholder, but were titled '*Audit Report/Region*', a common practice in multi-stakeholder contexts (O'Dwyer and Owen, 2005), with the ability to cover multiple audiences and their needs. The report to regions extended beyond the auditee to the various other stakeholders, such as state agencies, landholders, industry groups and other community groups. The summarised audit report to the Government was addressed 'to the Government' but was also

aimed at the general public interested in NRM. Further discussion on the differences between the two different audit reports is provided in Section 5.4.4.

In summary, ECOLOGY's significant investment in the process of identifying its key audiences and their different needs supports both communication theory (Fiske, 1990) and Power's (2003a) argument that audit is valueless unless specific stakeholder needs have been addressed and communicated in the audit report. However, as illustrated by the case study, the users of NFI are not a homogeneous group and understanding their needs and meeting their expectations has implications for the audit process itself as well as the information ECOLOGY communicates in the audit report.

### *5.4.2 Audit Report Objective(s)*

In this section we focus on understanding the overall objective(s) of the audit within the context of ECOLOGY's NRM audit responsibilities. As outlined in Section 5.3.1, the legislated objective of assuring the "effectiveness of NRM" focused on two aspects.

Firstly, ECOLOGY's legislated objective was to report to the Government on whether the regions' "*NRM Plan is implemented effectively – that is, in a way that complies with the NRM Standard and therefore best practice*" (AR-A, TAR). This mainly compliance component of the audit required the auditors to report on each region's outcomes against the various mandated components of NRM best practice as outlined in the NRM Standard and in Figure 2 (STD).[20] For instance, for ECOLOGY to be able to assess regions' compliance against component 'determination of scale', regions were required to provide evidence of how they were addressing NRM issues at the "*optimal spatial, temporal and institutional scale to maximise effective*

[20] NRM Best practice components include: collection and use of knowledge; determination of scale; opportunities for collaboration; community engagement; risk management; monitoring and evaluation; and information management.

*contribution to broader goals, deliver integrated outcomes and prevent or minimise adverse consequences*" (STD, p. 17). An example of this compliance aspect is an evaluation of whether each region followed specific procurement procedures for specific grant-related[21] NRM expenditures selected by ECOLOGY's audit team.

Secondly, the legislation required ECOLOGY to "*test the contribution of the regions' NRM actions against accurate measurements of landscape-scale changes in natural resource condition that help achieve the targets*" (AR-C) – a performance aspect. As outlined in Section 5.3.1, these targets cover biodiversity, water, land and community themes with a number of sub-targets under each theme. For example, one of the biodiversity targets is to improve the native vegetation condition of the region's land area by a specified amount in the next three years.

The audit providers interpreted the legislated audit mandate as: "*ECOLOGY had two purposes for audits – provide accountability and drive continual NRM improvement*" (AE). Similarly, the staff and some of the directors also considered ECOLOGY's legislated audit objective responsibilities to include "*adaptive management'* aspect of NRM as per the ECOLOGY strategy of '*planning, implementation, audit and response*" (STD):

> *… Government's intent of ECOLOGY's legislated audit role – and the communication of its audit findings in an audit report – is twofold, to enhance the credibility of NRM reporting and to identify and recommend action [adaptive learning] to be undertaken by the regions.* (CHAIR)

The specific adaptive management objectives to be met by the audits in addition to the legislated objectives agreed upon by ECOLOGY included:

> *provide information to the region that actually improves their performance.* (CEO)
>
> *If I were the Government the first thing that I would want to know is how much money has the region invested in native vegetation? Where did the money come from? I would like the overall picture upfront.* (D1)
>
> *educative tool, assisting the regions with continual improvement in NRM.* (CHAIR)

[21] Each region attracts funding from a range of grants that differ in terms of the specific natural resource issues they target, the timeframes of their funding cycles and their reporting compliance requirements.

> *the audit report should provide suggested actions and recommendations for the region to take up.* (D3)

However this agreement about adaptive management and continuous improvement objectives was not unanimous and was initially opposed by some directors:

> *I don't think we have a statutory duty to audit the regions and advise the regions. Our duty is to audit the regions and advise the Government how the region is progressing.* (D1)
>
> *we are not the internal auditors of the region.* (D2)
>
> *if we get into the business of advising the regions, it places ECOLOGY in a potential conflict of interest.* (D2)

The difficulty in meeting multipurpose audit objectives and the concern as to whether the audit process would be robust enough to support an audit report opinion on such different objectives was summarised by an NRM analyst:

> *give some comment or report to the Government, as well as try to help the regions … its incompatible … we don't have the ability to meet either of those requirements with what we have done in this technical form of audit process.*

Similar to the audit report audience determination process, ECOLOGY finally reached a consensus that the different objectives could not be met by one audit report. The only way to meet different objectives for different audience needs was by addressing these in separate audit reports; an overall report to the Government and separate individual audit reports for each region. The audit objective articulated in the final audit report to the regions was to: "*promote a greater understanding of the region's performance and to guide the region in continued improvement*" (AR-B), as also illustrated below from AR-C audit report extract:

> *this audit assessed the effectiveness of Region AR-C in promoting resilient landscapes that support the values of its communities … to lead to the aspirational goal of resilience.*

The audit objective in the audit report to the Government was to "*test NRM performance*" (GOV) by not only assessing how well the regions are building resilient landscapes through promoting the targets and complying with the NRM Standard (see Section 5.3.1), but the audits also aimed to identify best NRM practice by obtaining:

> *a snapshot of resource condition across the state and to see if there are any discernible trends against the target and how well is the region applying best practice adaptive management to their business practices.*

The tense discussions on what to report, how many audit reports should be produced and, most importantly, whether the audits would actually meet both the legislated and additional objectives reflect the complexities of the NRM context and are similar to the issues encountered in determining the audit report audience. From the perspective of communication theory, the case study experience strongly illustrates that clearly understanding and conveying audit objectives relies upon much consideration in the construction of the channel (i.e., NFI audit report) and the perceived value of the information to be communicated to the receivers (i.e., the various stakeholder(s)).

Power's (1997, 1999) view that audit is as much an idea as it is a concrete practice is also reflected by our case study, as ECOLOGY's determination of audit objectives became part of an evolving political process. Power (2003b) suggests that audit is a practice aimed at shaping accountability, trust and control. ECOLOGY's process of determining key audience and audit objectives as a tool to maintain or even build trust and credibility between itself and the Government as well as the auditees reflects Power's (1997, 1999) perspective of the process. As D1 argued prior to the commencement of the initial audits: "*audit is designed as a relationship with the regions [auditees]*".

ECOLOGY's finally agreed upon multiple objectives were not pre-determined but rather emerged during the progress of the initial audits. ECOLOGY's aspiration for clarity and consensus on audit objectives and complex process of agreeing on objectives additional to those mandated by the legislation supports Power's (2003a) view that auditing can only really exist where there is a clear 'verifiable assertion' or objective. The case study experience context also supports communication theory (Fiske, 1990), which anticipates clarity of objectives to be essential for accurate transmission of messages (i.e., intended information included in the audit report) to take place. ECOLOGY's process of not clarifying all the audit objectives prior to

undertaking the initial audits made the process of communicating these in the audit report problematic:

> *there are a lot of mixed messages and confusion ... because the purpose of audits wasn't determined up front.* (AP1)

The CHAIR summed up the experience after the first three regional audits: "*[ECOLOGY] did not socialise the objectives on the first audits*", indicating that these initial audits were problematic given the lack of consensus on objectives prior to the audits. This concern with the lack of understanding and consensus as to the multiple audit report objectives is summarised by AP1:

> *That's the part of the problem with the audit report. These people here don't decide what it is that they want. They don't understand that form follows function. Determine the function and then you have the form. What they [ECOLOGY CEO] do is determine the form and then somebody says,* "*No, that's not what we want*" *because it doesn't suit their function but no one has determined what the function is. That's exactly the problem we have here on the first audits.*

In addition to the agreed audit objectives of providing assurance on NRM investment, driving continual improvement in regional resource allocation, adaptive management learnings and educating the public audience on NRM, ECOLOGY too got more out of the audits than anticipated. The CEO reflected after the initial seven audits that the "*audits themselves [were] not helpful to some regions but audits did reveal important information for ECOLOGY*". This suggests that an unintended but useful audit objective for ECOLOGY was to get to know the regions and their 'business'. The knowledge gained during the audits was critical in meeting ECOLOGY's responsibilities as the leader in NRM. The CEO's comment affirming "*we always saw audit as a tool*" supports the importance of the audit process for ECOLOGY itself.

ECOLOGY's continuous process of coming to an understanding of its multiple audit objectives supports Power's (1997) view that an audit is an iterative process of conceptualisation and practice – a view that audit is a part of a "*broader organisational learning process rather than an empty ritual of verification for merely disciplinary purposes*" (Power, 1997, p. 145).

This is also illustrated by ECOLOGY's need to understand the 'business' of the regions, its collaborative and adaptive approach to NRM and the development of the audit reporting process:

> *It was supposed to be the process of one audit–rethink–re-do, renegotiate contract for the next three audits … audit design of framework and articulating our objectives in the first place was a failure on our part.* (CHAIR)
>
> *[ECOLOGY] were legislatively tasked with undertaking audits ... but the product they wanted was not an audit. What they wanted was something different but they were using audit tools to produce. So, we descended into a situation of total and utter chaos, frankly.* (AP1)

The above suggests that for the audit to be constructively engaged in organisational and social learning there needs to be "a constant preparedness to redesign" (Power, 1997, p. 145) and dismantle the audit process. The willingness of ECOLOGY directors to question and untangle the competing objectives at the beginning, during and towards the end of the initial audits demonstrates how this redesign can occur at the organisational level even in a legislated mandated context.

### *5.4.3 Audit Report Scope and Criteria*

In this section we focus on the 'scope' and 'criteria' elements of the audit report and examine how ECOLOGY defined what aspects of NRM will be audited and what rules (i.e., criteria) auditors will use to assess evidence against. Some frustration with the clarity of the audit scope and criteria was evident prior to the initial audits:

> *work out what the hell they [ECOLOGY] want before they get someone to provide assurance. They needed to have criteria that you were auditing against. They needed to have a scope and that meant the criteria ... and with that, what is good and what is bad? What is the benchmark? … needs to be sorted before we start auditing.* (AP1)

ECOLOGY quickly realised during planning of the initial audits that it needed to narrow the audit scope given the number of NRM guidelines, the relative immaturity of information system capture and data availability:

> *... need perhaps to be clearer about the audit objectives, about the scope of the audit, about expertise required ... issues of audit evidence which I think is something that needs to be also thought about before we go anywhere ... maturity of the CMA's need to be factored in.* (AE)

After some deliberation and consultation ECOLOGY made a decision to limit the audit scope to 'biodiversity', with a specific focus on native vegetation. In contrast to alternate areas of scope such as water, the choice of biodiversity was based on a number of reasons. First, the existence of relatively mature management frameworks to capture data was a consideration. Second, narrowing the audit scope to 'biodiversity' ensured availability of adequate auditable evidence to support conclusions. Third, the specific focus on native vegetation allowed the audits to contribute to multiple other NRM targets, such as river health, soil condition and species habitat – that is, it provided an opportunity to evaluate across a number of resource areas simultaneously.

The scope of the assurance engagement (what is included and what is not) is essential for determining audit evaluation criteria (IAASB, 2012). In this context, ECOLOGY had to determine what evidence needed to be gathered to allow conclusions to be drawn about the effectiveness of the region's NRM activities in complying with the NRM Standard and each region's performance towards NRM targets. ECOLOGY selected four specific biodiversity audit criteria for each audit to address. These were selected on the basis of being considered "*key to a region in achieving multiple NRM outcomes and contribution to the targets*" (AE). Once again, the key determinant ECOLOGY used in selecting each criterion was the availability of audit evidence. Each of the overall four criteria was considered by examining a number of specific elements (sub-criteria). For example, Criteria 4 "*is the region effectively using adaptive management?*" (see Table 1) evaluated a number of sub-criteria, such as how does the region document best practice in adaptive management (NRM approach by learning from management outcomes), how developed are the region's monitoring, evaluation, reporting and management systems, and so on. These audit criteria were used to determine whether the region (auditee) was

carrying out the relevant NRM activity in compliance with the NRM Standard. The audit evidence gathering and analysis was focused on the four criteria presented in Table 1.

**Table 1: NRM Audit Criteria Summary**
***(under each criterion there are at least four sub-criteria as illustrated with Criterion 1 below)***

| **Audit Criteria** | **Criteria Description** |
|---|---|
| **1** | Is the region effectively prioritising its investments? |
| **2** | Are the region's vegetation projects contributing to improved landscape functions? |
| **3** | Is the region effectively engaging its communities? |
| **4** | Is the region effectively using adaptive management? |
| | |
| **Audit Criterion 1** | Is the region effectively prioritising its investments? |
| **Sub Criteria** | *Does the region have a commonly understood definition of what constitutes resilient landscapes in their region?* |
| | *Does the region have a system that ranks investment options?* |
| | *Does the region have a system that ensures short and long term investment priorities are consistent with each other and integrated with other planned NRM targets?* |

The initial draft of the audit report did not communicate the scope of the audit. The independent audit expert noted that: "*there was no actual context or background to the audit and scope of the audit*" and suggested that as the NRM standard and targets cover a number of areas, it was essential to inform the audience why only native vegetation was examined and which criteria were used to establish regions' effectiveness in working towards the NRM targets. ECOLOGY CEO agreed that the decision to narrow the scope needed to be clear in the audit report:

> *So just a thought on the content and scope of the audit report ... these are reports on a narrowed down scope ... our mandate is the effective implementation to audit the effectiveness of the implementation of those NRM Plans and regions' compliance with the standards and targets … since we have chosen to audit primarily the regions effectiveness in relation to resilient landscapes and vegetation … I am not sure how clear it is in the audit report?*

D2 similarly concurred about the importance of communicating the criteria in the audit report given the importance of holding regions accountable for how they spend funds on NRM in terms of complying with the NRM Standard and in reaching the NRM targets:

> *... the context of the various [criteria] are really important because a lot of the problems we [ECOLOGY] are facing at the moment is the politicians just don't understand the issues that deal with natural resource management, the level of scientific understanding.*

Power (1999), in the context of public audits in the UK, suggests that the idea of audit and what it can or might deliver expresses the aspirational dimensions of the practice(s), dimensions which are not always closely linked to actual operational capacity. He also suggests that many performance indicators may be produced but are not audited, and that there is more of an audit 'mess' than a coherent 'audit society'. Our case illustrates that NRM is complex in terms of dealing with natural resource variability, multiple stakeholders at different scales, incomplete NRM knowledge, and non-linear relationships between NRM investments and outcomes. This makes it difficult to measure and evaluate NRM performance of regions, especially as their operational activities often cover multiple rather than one performance measure or criterion. This tension between what can be audited and objectively evaluated against the criteria is best summarised by AP1:

> *regions are spending an enormous amount of time trying to split up something that is essentially a NRM activity. Like ... this fence that fences off the river bank so the cattle don't knock the river bank down ... how much of that contributes to water quality, and how much of that contributes to soil erosion, and how much of that contributes to biodiversity? They come up with these figures that then people add up and say, "Oh, look. This contributes this much to this"… another aspect of the audits when they started to try and score people on the basis of the audit reports ... there are so many exercises where we try to make subjective assessments look objective.*

Fiske's (1990) communication theory outlined in Section 5.2.3 suggests there may be factors that affect data transferred (e.g., audit conclusions) to the receiver (i.e., various stakeholders) in terms of the interpretation and inferences drawn from the channel (i.e., audit report). He suggests 'semantic noise', that is, a distortion of meaning occurring in the communication process,

confuses the intention of the sender and limits the usefulness of the communicative value of information. This potential for 'semantic noise' is illustrated by ECOLOGY's lack of context and clarification in not relaying its decision to limit scope to biodiversity in the first draft of the regional audit report. This potential for 'semantic noise' and misinterpretation of the information by users was articulated by the independent audit expert:

> *when I was reading the reports, I was wondering if someone reading it might say, "Well, why did you look at that particular aspect? Was it because it was just a pragmatic decision or ..." … Or it may be because that's the most common, significant commonality across the regions. I would have liked to see some justification about "why" so you are not open to criticism. Why didn't you look at that?* (AE)

The content of the audit report can be rendered irrelevant in the presence of 'semantic noise' and not effectively communicated with understandable language and messaging. ECOLOGY attempted to overcome such problems by identifying these issues in the initial drafting of the audit reports and making a concerted effort to address them.

### *5.4.4 Audit Report Level of Assurance, Format, Content, Use of Language*

Power (2003a, 2004) suggests that audit reports are much less valuable than they might be due to their style and variations. In particular, according to Power (2003a) the length of the audit report and how the content is communicated needs to be balanced with the interests of readers and users and its intended message. In this section we examine how ECOLOGY communicated the 'assurance level', 'audit opinion' and determined the 'format', 'content', and 'language' elements of the audit report.

#### *5.4.4.1. Regions' audit report level of assurance and audit opinion*

Individual regional audit reports did not articulate a level of assurance or an overall audit opinion. Nor did ECOLOGY express an opinion (such as effective or not effective) for each of

the audit criteria. ECOLOGY's intention was to provide 'limited' assurance on performance aspects and 'reasonable' assurance on compliance aspects or what ECOLOGY termed 'credible assurance'. Instead of articulating actual level of assurance and a conclusion, ECOLOGY used a range of qualitative statements to communicate its audit findings such as:

> … *region had a clear definition of resilient landscapes that included community values. This definition was largely shared by the Board, staff and stakeholders* … (AR-C)
>
> … *while the region had a system to rank its investment options, this system was not robust or effectively documented* … (AR-B)
>
> … *region's lack of monitoring and evaluation had also reduced its ability to evaluate and adaptively manage its projects to promote more effective progress towards the NRM targets* … (AR-A)

Whilst such statements include comments about regions' compliance with the NRM standard and performance against targets and are intended to provide "*an overall picture of performance to demonstrate progress towards targets*" (NRM expert), it is left up to the users to interpret level of assurance and form a conclusion. ECOLOGY believed the level of assurance was conveyed through its description of the nature and extent of the audit procedures performed (e.g., site inspections, interviews with regional members and other stakeholders), details of which were included in the audit reports. Therefore, presumably, the higher the level of assurance, the more rigorous the assurance process in terms of audit evidence obtained to support statements with regard to regions' performance. Recent research on NFI assurance suggests that users still have difficulty assessing and discerning the extent of assurance provided in assurance reports (Church *et al.,* 2008) whether its explicitly stated or not. The decision by ECOLOGY not to articulate the level of assurance in regions' audit reports or conclusions on regions' performance (i.e., audit opinion), however, did prove problematic as it created what Fiske (1990) refers to as 'semantic noise' and issues with comparability of performance across regions as discussed in Section 5.4.4.2).

### *5.4.4.2 Regions' audit report format and content*

In terms of audit report format, one of the CEO's key concerns was the length of the audit report:

> *… this report is starting to grow and as we start to add more information, we are growing the report out to 60 or 70 pages. I am concerned about that. I think the audit report should be no more than 20 pages per region if we can possibly achieve that …*

This concern echoes Fiske (1990), who suggests that we can delete about 50 per cent of the words and still have a usable language capable of transmitting understandable messages to users. However given the ambitious and multi-purpose objectives of the audit report, ECOLOGY was unable to limit the audit report to 20 pages. The final reports for each region were on average 47 pages in length. One of the reasons for the length of the audit report was that in addition to criteria, scope, methodology and audit findings, the reports also included illustrative case studies and recommendations for improvement in NRM performance. The inclusion of recommendations in each region's audit report is common practice in the public sector context (ANAO, 2012), promoting stakeholder dialogue and future improvements in NRM. Interestingly four of the 13 regions did not agree with all of ECOLOGY's recommendations suggesting some "*regions were not convinced by the reported findings*" (PD). Power (2003) attributes this type of reluctance by auditees in the public sector context to a lack of trust in the audit process and reported findings, which can have critical implications for the future of those audited. In addition to recommendations, the inclusion of case studies communicated more information to the stakeholders about the uniqueness of each region, its challenges and achievements. As the independent audit expert commented:

> *I actually really like the case studies in the regional audit reports as it brought home what the region is about and what they are actually doing. On the whole it is quite a good document, very valuable and has lots of information.* (AE)

The NRM audits and audit reports are *"one tool"* (NRM expert) to verify and assure that effective NRM projects are being delivered. The audit report narrative provided stakeholders

with a view of each region's NRM performance against each audit criteria via case studies and recommendations. This was also seen as part of the learning process, with each region closing the audit reporting loop by responding back to ECOLOGY on the recommendations for NRM improvement. Thus the initial audits of each region also served as a benchmark against which their future performance could be assessed over time.

The customised and extensive narratives in each region's audit report contributed to building the overall picture of the performance of each region (see Table 2) as well as across regions. Many regions, for example, received positive comments about how well they delivered projects (Audit Criteria 1) and generally negative comments about their adaptive management practices (Audit Criteria 4). The recommendations in each region's audit report also provided a basis for further communication and dialogue to occur between ECOLOGY and the region. Regions responded to, and agreed overall with, approximately 90 per cent of ECOLOGY's suggestions for improvements/actions. This type of response to recommendations from the 'receiver(s)' according to Fiske (1990) is essential for effective communication given feedback (i.e., response) is the transmission of the receiver's reaction back to the sender.

#### *5.4.4.3 Regions' audit report language*

Part of the communicative value of the report depends on whether the stakeholders can interpret and make sense of the reported audit findings. With respect to language, ECOLOGY Project Director (PD) noted: "*I think the audit report needs to be in a language that is actually understandable and has some kind of meaning for the readers*". An independent audit expert concurred:

> *… have issues with the resilient landscape [one of the lines of inquiry/audit criteria] from the reader's perspective after reading three reports, I had no idea what that meant … two of them [regional audit report] say very clearly that there is no common understanding of what that actually means. So if they [regions] don't understand what it is, how is anyone else, including the Government is supposed to understand?* (AE)

ECOLOGY did address these comments in relation to the initial draft reports and revised the final audit reports to ensure the use of clearer language understandable by its broader audience, providing support for Parker and Jacob's (2015) findings of the requirement to minimise technical jargon in audit report design.

#### *5.4.4.4 Government audit report level of assurance and audit opinion*

Power (2003a) laments that the use of somewhat constrained opinions and lack of level of assurance articulated in assurance reports may suggest a lack of genuine critique of the auditee's performance in the name of accountability. ECOLOGY's audit function is part of the NRM accountability structure and its audit report to the Government attempts to provide an overall view on the regions' performance. Whilst the level of assurance was assumed and never clearly articulated in ECOLOGY's report to the Government, unlike the regional audit reports it did include ratings against each of the four audit criteria (see Table 2). These ratings were perceived as controversial as AP1 argued:

> *very limited level of assurance … not defendable by another person … judgments seem minimal so, if you look at the first seven audits … ECOLOGY spent one day out in the field and had an opinion on AR-A's performance … and that's the level of opinion?.*

The inclusion of the controversial rating of regions' performance was never discussed in any meetings within ECOLOGY or with external audit staff. The unintended consequence of the inclusion of these ratings was that the Government utilised the audit report to "*to evaluate the regions against each other which was not the original intent*" (D3) and AP1 agreed "*there was no suggestion during the audit process that they [ratings] were going to be used to determine their funding*".

**Table 2: Individual Regions' Overall Performance Independently Rated against Audit Criteria**

| Region | Audit Criteria 1 | Audit Criteria 2 | Audit Criteria 3 | Audit Criteria 4 |
|---|---|---|---|---|
| A | negative | positive | mixed | negative |
| B | positive | positive | positive | mixed/positive |
| C | mixed/negative | positive | positive | mixed/negative |
| D | mixed/negative | positive | positive | mixed/negative |
| E | negative | positive | positive | mixed/negative |
| F | negative | mixed/negative | mixed/negative | negative |
| G | negative | mixed/negative | negative | negative |
| H | mixed/positive | mixed | mixed/positive | mixed/negative |
| I | mixed/positive | positive | mixed/positive | positive |
| J | mixed | mixed/positive | mixed/positive | negative |
| K | negative | mixed/negative | mixed/negative | negative |
| L | mixed/negative | positive | positive | mixed/negative |
| M | negative | mixed/positive | mixed/negative | negative |

Power (2003) suggests that the audit verification process and subsequent opinion should increase stakeholder trust in the reporting process. However, as PD reflects after the initial audits, for this to eventuate in the case study context: "*audiences for the ECOLOGY reports may not yet see an* "*assurance*" *value of the audits to support public reporting and accountability*". This in part may be attributed to ambiguous communication of each regions' performance and ratings that are not reconcilable with individual regions' audit reports. As one of the directors protested:

> *the concern I have is that the overall opinion on the 'effectiveness' of the region is not stated in the region's audit report, but we have stated it in the audit report to Government* (D1).

The same director claimed:

> *the regions and the Government need more brash advice ... the opinion is supposed to come to a point, as a reader of the report, I want someone to have made sense of NRM performance and tell me.*

D2 agreed with D1:

> *this mismatch [between different audit reports] regarding opinion, no opinion is a concern and I would like us to be consciously aware of that.*

The regions' unanticipated resistance to some of the recommendations in the regions' audit reports, as well as the controversial use of ratings in the audit report to the Government, provides evidence that audit report communication can have negative consequences for the auditor/auditee relationship and the perceived value of the audit as acknowledged by ECOLOGY's CEO: "*I believe that there is an opportunity and requirement as we move forward for auditors to manage the relationship with auditees and mature that relationship*".

### *5.4.4.5 Government audit report format and content*

The independent audit expert noted: "*there is no real prescribed format and it is up to you [ECOLOGY] to decide what is relevant as long as you cover what your mandated responsibility is*". There were different views about the appropriate content and length of the report to the Government. Some directors argued that the Government audience only needs a brief summary, stating:

> [the] *report that goes to the Government should be brief as possible.* (D1)
>
> *I think the Government wouldn't cope too well with a 30 to 40 page report, they would struggle to get through that.* (D2)
>
> *the report needs to be a simple, lean structure.* (D3)

D1 also made the following suggestions on format: "*I think there should be an executive summary up front and there should be a list of acronyms and abbreviations and a map of the region audited up front*". The use of appendices to curtail the length of the audit report while providing some detailed information of potential interest was also considered: "*the Government would probably be interested in general observations about the regions and these could be placed in the appendix*" (D2).

Ultimately the audit report for the Government was summarised into seven pages and included an opinion of the regions' achievement in NRM as a collective, as well as a rating for each region's performance against the four criterion (see Table 2) and an overall opinion on each

regions' NRM performance (see Table 3). The audit report included a short narration on each regions' invested values, their challenges, regional landscape, planned strategies and ECOLOGY's overall opinion (rating) on the performance of the region. This was in contrast to the individual regional audit reports, which contained summarised conclusions of regions' performance against each of the criteria. Whilst the legislated brief was for ECOLOGY to report on the "*effectiveness of NRM*" and on each region's NRM performance and "*compliance with the targets and NRM Standard*", it is questionable whether this was effectively communicated in the audit reports given the lack of clear articulation and standardisation of the language used to describe the performance across the regions as discussed in Section 5.4.4.6 below.

#### *5.4.4.6 Government audit report language*

NRM is complex as it deals with interactions between people and natural landscapes with their associated ecologies (Cilliers *et al.,* 2013). The complexity of NRM is further characterised by technical concepts and language where technical information is often used for assessing the condition of natural assets (e.g., land, water, biodiversity), for monitoring purposes and for informing management actions (Seymour and Ridley, 2005). The selected scope of biodiversity is multifaceted by nature given it is intermeshed with social systems, which typically have a range of stakeholders with very different values, expectations and timelines.

The complexity of measuring and evaluating NRM performance in a consistent manner is reflected by differences in the language used to describe the individual auditees' performance (see Table 3). Measuring and evaluating change in natural resources as a direct result of NRM investment is challenging (Cilliers *et al.,* 2013) and this was also the case for ECOLOGY. Fiske (1990) suggests that analysis of wording, descriptions and ratings highlights that communication is triangular. Communication through language relies on the interrelationships between the auditor/audit client (Government), the text within the audit report and the inferences drawn by

the reader of the audit report. Therefore clarity of the audit terminology will have a direct effect on the meaning attributed to the audit report and its communicative value. Table 2 illustrates an analysis of the audit findings reported in each region's audit report against each audit criteria using language as a barometer of performance. However, this analysis, undertaken by an NRM audit expert and independently validated by one of the researchers, does not enable a meaningful comparison of performance across regions.

The inconsistent use of terminology in the audit reports also makes comparison between the individual regions (i.e., Table 2) as well as with performance reported to the Government (see Table 3) difficult and somewhat subjective. For example a "*very high level of effectiveness*" noted for Region G in the audit report to the Government (Table 3), does not correspond to Region G's performance in its individual report, which indicates the region is below par in respect to performance against all audit criteria (i.e., negative, mixed/negative, negative, negative). These discrepancies in terms of language and ratings between individual audit reports (Table 2) and the Government audit report (Table 3) were surprising given the audit report to the Government was meant to be a summarised version of the individual regional reports. Inconsistent use of language throughout each of the reports as well as between reports – for example, is 'very high' the same as 'high level' (see Table 3) – has the potential to distort the interpreted meaning by the different users including ECOLOGY's intention regarding the reported findings and ratings applied to NRM performance. This supports Fiske's (1990) view that this type of 'semantic noise' associated with language and meaning is a real roadblock to effective communication as the reception of the message at its destination (i.e., various stakeholders) confuses the intention of the sender (i.e., ECOLOGY).

**Table 3: Regional Performance Ratings (extract from 'Audit Report' to Government)**

| | |
|---|---|
| Region A | The REGION demonstrated a **medium overall level** of effectiveness in implementing the region's NRM Plan, **performing well** across most areas of enquiry. |
| Region B | The REGION demonstrated a **high level of effectiveness** in implementing the region's NRM Plan. |
| Region C | The REGION demonstrated a **high level of effectiveness** in implementing the region's NRM Plan showing particularly strong performance in delivering projects and community engagement. |
| Region D | Overall, the REGION is performing **fairly effectively,** and its **performance is consistent** with the overall trend of **better performance** in delivering projects and engaging the community. |
| Region E | The REGION demonstrated a **very high level of effectiveness** in implementing the region's NRM Plan, with a **particular strength** in community engagement. |
| Region F | The REGION demonstrated **a fair level of effectiveness** in implementing the region's NRM Plan. |
| Region G | The REGION demonstrated a **very high level of effectiveness** in implementing the region's NRM Plan, and notably showed the **highest level of performance** in adaptive management. |
| Region H | The REGION demonstrated **a high level of effectiveness i**n implementing the region's NRM Plan, showing consistently good performance across all areas of enquiry. |
| Region I | The REGION demonstrated a **significant improvement from its first audit, now having a high level of effectiveness (previously fair)** in implementing the region's NRM Plan, with **particular strengths** in prioritisation and adaptive management. |
| Region J | The REGION demonstrated a **medium level of effectiveness** in implementing the region's NRM Plan, and **performed consistently** with the statewide **trend of stronger performance** in engaging communities and delivering projects. |
| Region K | The REGION demonstrated a **significant improvement from its first audit**, now having a high level of effectiveness (previously fair) in implementing the region's NRM Plan, with particular strengths in prioritisation and adaptive management. |
| Region L | The REGION demonstrated a **medium level of effectiveness** in implementing the region's NRM Plan, and performed consistently with the statewide trend of stronger performance in engaging communities and delivering projects. |
| Region M | The REGION demonstrated a **fair level of effectiveness** in implementing the region's NRM Plan, and performed consistently with the state-wide trend of stronger performance in engaging communities and delivering projects. |

Power (2004) claims that audit reports and audit opinions (in this case no opinion in regional reports) are much less valuable than they might be, and that we need to really question "what is the knowledge that audit is delivering" (Power, 1997, p. 16). In the case of ECOLOGY the regions did perceive some value in the audit reports. For instance, the audit report delivered 'internal usefulness' and education on NRM to its audience and continual improvements via recommendations made to the regions. However, the value of continual improvements was viewed as separate from the contribution of assurance. As noted by an NRM expert:

> *Regions seem to have accepted that the audit report can help them, improve how they do their work but yet there is little sign yet that the assurance value of the audits is recognised.* (AE)

The audit opinion in the Government report was considered to be 'bland' by a NRM expert, a reflection of Power's (2003a) concern that the audit is less valuable when there is no clearly

articulated opinion. ECOLOGY's failure to clearly articulate the level of assurance provided also raised a question as to whether credibility and trust was achieved in the reported information.

It is interesting that despite the rigorous and wide-ranging collaboration and discussion throughout the audit process about ensuring the audit report met the needs of the various stakeholders, it was in the end utilised by the Government as an overall performance benchmark for further investment in the regions. This was not an objective or outcome considered by ECOLOGY but it supports Power's (1997, 2003a) argument that audit is not a passive practice and is much more than a self-evident response to problems of principal–agent accountability. ECOLOGY's PD echoes Power's sentiment: "*they [audits] are not just reviews and they are not performance reporting…they are something more than that*". In ECOLOGY's case, the key stakeholder, the Government, was able to override the objectives of the reporting body (ECOLOGY) and utilise ECOLOGY audits and ratings not only to determine the allocation of NRM funding but also to close two underperforming regions, merging them into other regions. This unintended consequence, but politically convenient use, of the audit report by the Government meant that "*regions are negative about future audits*" (EA).

### *5.5 Further Discussion and Conclusions*

Power (2003b) questions the ability of new forms of assurance, such as NRM audits, to deliver transparency and promote dialogue, accountability, trust and credibility given the opacity of the audit process. The aim of this study is to contribute to understanding of this process by providing evidence of NFI assurance reporting 'in the field', utilising an in-depth longitudinal case study in the context of a complex NFI subject matter of NRM. The study identified a number of challenges faced by the case study organisation in circumstances when guidance from both the legislation and the current standards on assurance of complex NFI subject matter is relatively limited. As a leader in NRM, ECOLOGY was conscious of the need to communicate the audit

process and audit findings in the most appropriate way to its various audiences. In addition, the audit process and the audit report were also considered a tool for facilitating continuous improvement in NRM by the individual regions.

By exploring the construction of the audit reporting processes, ECOLOGY's case experience suggests that in order for the audit report to be of communicative value a number of concrete considerations, including clear identification of audience(s), audit objective(s), scope and level of assurance, need to be agreed upfront. Our study not only illustrates how much collaborative work had to be done by ECOLOGY to develop its audit reporting processes but also reveals the complexity of ECOLOGY's multi-stakeholder environment. The case study experience supports the notion that understanding the needs of the intended user(s) is challenging but critical for the audit reporting process to ensure relevance and communicative value (Power, 2003a, 2004). The evidence also provides support for the notion that the perceived value-add function of the audit is determined in the eyes of the targeted audience and whether its needs are met (Adams *et al.,* 2014; O'Dwyer *et al.,* 2011) with ECOLOGY proactively considering the perceived needs of the Government, regions and other stakeholders in its process of developing the audit reporting practices and final audit reports.

The case study evidence also highlights ECOLOGY's sensitivity about its reputation and legitimacy, which it considered was contingent upon the audit report communication. This supports Fiske's (1990) view that the perceived communicative value to the receivers (i.e., the various stakeholder(s)) is determined by their ability to clearly understand the conveyed audit objectives in the construction of the channel (i.e., NFI audit report). ECOLOGY's willingness, in light of limited legislative guidance, to untangle the competing audit objectives at the beginning, during and towards the end of the initial audits similarly supports Power's (1994, 2003) view that 'audits are not passive' and can be 'redesigned' at the organisational level even in our legislated mandated context. ECOLOGY's experience also questions whether inclusion of more information in the audit report, such as narratives, case studies and recommendations, provides

stronger explanatory power and enhances user understanding of the assurance process (O'Dwyer *et al.,* 2011). Power (2003a) cautions that for this to occur, stakeholders need to trust reported information.

This relationship between the assuror (ECOLOGY), audit client (Government), auditee (regions) and other stakeholders is also contingent upon stakeholder involvement in the assurance process and whether audit objectives and audit findings risk promoting various interpretations by stakeholders (O'Dwyer and Owen, 2005). Power's (2003a) emphasis on trust being essential to the auditor/auditee relationship resonates with Fiske's (1990) claim that relationships can only exist through two-way constant communication. ECOLOGY's experience illustrates the importance of the quality of such two-way communication and stakeholder involvement to ensure that the audit process and the audit report do not have unintended negative consequences on trust and auditor/auditee relationship: "*ECOLOGY and the regions were close before the audits commenced*" (AP1) but this was not the case after the audits. ECOLOGY's experience echoes Power's (1994) argument that the auditees' power and involvement in the assurance process is limited in a mandated context as the performance audit process seems to be more about bringing to light poor performance rather than focusing on stakeholder engagement. The findings have implications for the extent of reliance stakeholders may place on NFI assurance reports as a communicative tool. ECOLOGY CEO admitted post audits that their strategy in understanding and communicating the audit engagement was problematic: "*we didn't collectively explain how what was reported might be used by decision makers*". This breakdown of communication and consequential impact on the relationship between ECOLOGY and its key stakeholders is problematic as in Power's (2003a) view such a relationship between the principal stakeholders (e.g., Government, regions, public) and the reporting agent (ECOLOGY) is critical for any meaningful dialogue and communication. The impact of the audit reports not being aligned with ECOLOGY's initial intentions resulted in impairment of the relationship between ECOLOGY and the auditees and their role as an independent NRM advisor.

In terms of our contribution to understanding NRM audits, the first of their kind in Australian NRM context, our case highlights the role of the audit report as an educative tool and in promoting dialogue about continual improvement of the auditee's performance.

The case also provides empirical evidence of the difficulties in aligning the language of the audit report to the desired meaning. The 'bland' and inconsistent language/terminology in ECOLOGY's audit reports reflects criticisms of performance auditing that the 'grey neutral wording' is a way of 'sugar-coating' audit findings given the nature of the relationship with the auditees as well as the Government (Power, 1997, 2003a). Whether the audit 'pulls punches' depends in large part on the degree of autonomy the assuror is afforded under legislation (English and Guthrie, 2000). Despite ECOLOGY trying to balance its roles as an independent NRM advisor and auditor with both the Government and the regions, the unexpected 'punch' of the audits was the closure of two poorly performing regions. The Government's use of the audit report to redistribute funding and to 'dissolve' two of the regions, was considered not to be the purpose of the audits by either ECOLOGY or the regions (or auditors) throughout the audit reporting process.

A limitation of this study, apart from the usual case study method limitations of reliability, validity and generalisability (Parker and Northcott, 2016; Flyvberg, 2006), is that this study explored only one element of the NFI assurance practice – specifically the construction of the audit report process from the assuror's perspective. Future research may examine the perceived communicative value by external audiences both in terms of how intended users (e.g., Government, community groups and landholders) and auditees interpret and react to the assurance process and the report. Future research may also elicit views of Government officials, and other stakeholders, such as regional board members, as to whether the delivered audit report(s) achieved the intended objective(s) and the audit findings enabled improvement in NRM practices. We encourage future studies to explore developing audit reporting practices within other specific NFI subject matter areas.

The key focus of our study was to explore the various aspects of constructing the NFI audit report. The case study evidence indicates that audit reporting must be undertaken with a clear purpose, especially in a multi-stakeholder environment with diverse needs and supports the importance of stakeholder involvement to ensure clarity and common understanding of these. Our case study illustrates that whilst structure and language of the audit report are important considerations, they are not enough in and of themselves to clearly articulate audit findings or make the audit process transparent to users. Our case study challenges the notion that, in a complex multi-stakeholder NFI context such as NRM, a 'one size fits all' audit report approach is viable to meet diverse stakeholder needs.

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**Appendix 1: Source and Coding of Data**

| **Data Source** | **Abbreviation Code** | **Legend** |
|---|---|---|
| *Public Documents* | STD | NRM Standard |
| | TAR | NRM Targets |
| | AR-A | Audit Report- region A |
| | AR-B | Audit Report- region B |
| | AR-C | Audit Report- region C[1] |
| | GOV | Audit Report to Government |
| | | |
| *Internal Documents* | AWP | Audit Working Paper |
| | ML | Management Letter |
| | | |
| *Interviewees/Meeting Discussions* | CEO | ECOLOGY CEO |
| | CHAIR | ECOLOGY Chairperson |
| | D1 | ECOLOGY Director 1 |
| | D2 | ECOLOGY Director 2 |
| | D3 | ECOLOGY Director 3 |
| | AE | Independent Audit Expert |
| | PD | Project Director |
| | AP1 | Audit Team Leader 1 |
| | AP2 | Audit Team Leader 2 |
| | ATM1 | Audit Team Member 1 |
| | ATM2 | Audit Team Member 2 |

# CHAPTER 6

# SUMMARY AND CONCLUSIONS

### *6.1 Introduction*

This thesis is motivated by the increasing demand for NFI assurance and consistent calls for more in-depth understanding of NFI assurance practice in the field (Cohen and Simnett, 2014; O'Dwyer, 2011). With limited research engaging directly with NFI assurance practices, combined with a lack of transparency into audit practices in general, this thesis contributes to the research to date by exploring one organisation's construction of its assurance processes and practices including development of guidance/audit framework for its specific legislated audit mandate (Paper 1), deployment and utilisation of multidisciplinary audit teams (Paper 2) and audit reporting (Paper 3). This chapter summarises the major findings of each paper in Section 6.1, the overall contributions/implications to NFI assurance practice in Section 6.2, the limitations of this thesis in, Section 6.3, and provides scope for future research in Section 6.4.

A review of the extant NFI literature reveals a number of concerns with NFI assurance practice including independence of the assurance provider (e.g., O'Dwyer and Owen, 2005; Deegan *et al.,* 2006; Simnett *et al.,* 2009), perceptions of the credibility of NFI assurance (e.g., O'Dwyer and Owen, 2005, 2007; Farnetti and Guthrie, 2009; Deegan *et al.,* 2006) and evidence of the lack of consistency between assurance reports (Kolk and Perego, 2010; Simnett *et al.,* 2009), making it difficult for stakeholders to understand and make comparisons. Whilst it is often assumed in prior literature that the traditional financial auditor has the relevant assurance skills and experience that can be readily transported into the NFI assurance engagement context (Cohen and Simnett, 2014; Green and Taylor, 2013; Huggins *et al.,* 2011), many aspects of NFI assurance practice are evolving with increasing numbers of assurors competing in this market. This thesis by publication examines a number of such evolving NFI assurance aspects within

a specific organisational and subject matter context. First, how does an organisation make sense of the existing array of guidance (for example, ASAE 3000 (ISAE 3000) and AA1000AS) and apply them to their mandated NFI assurance to develop an 'audit framework' to guide its NRM audits (Paper 1)? Second, we examine the deployment of multidisciplinary teams and ask how does multidisciplinary audits team composition, diverse member subject matter knowledge and management of teams shapes assurance practice (Paper 2)? Third, we examine the construction of the audit report and ask how re key aspects such as audience, objective(s), scope and so on determined (Paper 3)?

Data for this study was collected using a single longitudinal case study method, within an Australia public sector organisational context as outlined in Section 1.3. Having access to a variety of data sources including internal and external documentation (e.g., government reports), semi-structured interviews, meetings and audit field observations in real time, enabled exploration and analysis of the case study site constructing its NRM assurance practices over time. The case analysis was framed utilising a number of theoretical lenses, including that adopted by Power (1997, 1999, 2000, 2003), and resource (e.g., Kozlowski and Ilgen, 2006) and communication (e.g., Fiske, 1990) theories supplemented by relevant NFI assurance (e.g., O'Dwyer, 2011; O'Dwyer and Owen, 2005, 2007) and public sector performance audit literature (e.g., Parker and Jacobs, 2015; Pollitt *et al.,* 1999). This use of multiple theories and prior research allowed for an open exploratory approach creating a 'dialogue' between the various data (Broadbent and Laughlin, 2004) and allowing the additional perspectives to capture the NFI assurance practices (Cohen *et al.,* 2008). This approach of utilising multiple theories contributes to theory development in auditing research by providing a broader base from which to explain field observations (Malsch and Salterio, 2016;

Cohen *et al.,* 2008), and simultaneously has the potential to interpret and make sense of an audit phenomenon in a way that modifies or challenges the existing understanding of this phenomenon (Gendron, 2013; Gendron and Barrett, 2004). Section 6.2 below summarises the findings of the three stand–alone but interrelated papers while Section 6.3 outlines the contribution and potential implications for NFI assurance practice.

### *6.2 Findings*

**The first paper of this thesis titled** "**Assurance of Natural Resource Management**" is critical to understanding the context of the overall thesis and the process of how the case organisation translated the legislated NRM audit requirement into practice. Paper 1 examines how the public sector organisation developed specific guidance regarding objectives, scope, criteria and methodology ('audit framework') for its NRM audits, a topic which has to date received relatively little attention (Farnetti and Guthrie, 2009). Findings in Paper 1 also highlight the 'Commission's' process of unpacking the meaning of 'audit', its related 'performance' and 'compliance' components and different levels of assurance, within its specific mandated NRM context. In doing so, the NRM audits undertaken by the case organisation were the first of their kind in Australia with no prior 'blueprint', a lack of consensus as to the best practice(s) in NFI (and NRM) assurance, and a mix of various assurance standards developed for the private sector context with limited relevance to the specific requirements and subject matter of the mandated NRM context. Whilst standards such as ASAE/ISAE 3000 and AA1000AS provide broad NFI assurance guidance, they do not speak to specific assurance subject matter. The findings based on our case study organisation (referred to as the 'Commission' in Paper 1) suggest that such a general approach is limited in accommodating the inherent

complexities of NFI specific subject matter such as NRM. Whilst a number of existing assurance/audit standards including ASAE 3000 (see Paper 1 for others) informed the development of the case organisation's own audit framework, tailoring and operationalising concepts such as risk, materiality, auditability and evidence adopted from a financial audit context was problematic. Nevertheless, it was perceived by the case organisation and its advisors that building upon these standards and concepts was necessary to ensure rigour in the NRM audit processes and outcomes.

Making new subject matter areas such as NRM 'auditable' is complex and a resource intensive process. In the case study site, the need to develop a subject matter specific audit framework suitable to the audit mandate and NRM Standard and targets is consistent with Power's view. The case study site evidence suggests that there needs to be more innovation/learning with NFI assurance, as relying on the comfort created by selectively borrowing institutionally accepted techniques from financial audit practice is not sufficient or always appropriate.

**The second paper of the thesis titled** "**The Multidisciplinary Audit Team: Diversity Challenges for Non-financial Information Assurance**" examines the case organisation's (referred to as ECO in Paper 2) deployment of multidisciplinary teams and how team composition, diverse members' subject matter knowledge and management of teams shape assurance practice. This paper draws on Power's (2003) perspectives as well as resource diversity theory to analyse the data.

Recent experimental studies (Kim *et al.,* 2016; Huggins *et al.,* 2011), within a GHG assurance context, suggest that assurance quality relies on the quality of judgments made by individuals in the multidisciplinary teams. Paper 2 extends prior research of MATs to a different NFI assurance context (i.e., NRM) and provides a number of additional

insights to the limited research to date. Firstly, our findings suggest that the diverse backgrounds and expertise of individual team members need to be understood and communicated to all members prior to the commencement of audit work to ensure benefits of diverse expertise are realised. Secondly, the role of leadership in promoting collaboration and consideration of diverse backgrounds and distinct mindsets within and between MATs is critical. For instance, in our case setting, with leadership and accountability remaining with the ECO project manager on the early audit engagements, the MATs functioned as a 'work group' rather than a 'team'. This has implications for how MAT members engage with the audit task and each other, limiting the potential benefit from each other's expertise. This and other findings in Paper 2 (See Section 4.4.5) suggests that different attributes of a 'work group' and 'team' have implications for determining effectiveness of MATs and what constitutes better practice for delivering specific outcomes under different assurance contexts.

**The third and final paper of the thesis titled** "**Audit Reporting on Non-financial Information: One Audit, Two Reports**" examines the construction of the audit and its key aspects, such as audience, objective(s) and scope in a complex non-financial subject matter context. Whilst prior literature suggests NFI assurance is intended for a broader audience (Parker and Jacob, 2015; O'Dwyer *et al.,* 2011; Deegan *et al.,* 2006), actualising this in practice is problematic. For example, our findings in the case organisation (referred to as ECOLOGY in Paper 3) support the importance of understanding multiple NRM audiences and that the varied needs of different stakeholder groups (audiences) may not be met by the same audit report. This is an important consideration if assurance is to add credibility to the reported NFI (Parker and Jacob, 2015; Adams *et al.,* 2014; O'Dwyer *et al.,* 2011) and assist in the continual

improved performance of the auditee (Perego and Kolk, 2012; Park and Brorson, 2005). The findings also support O'Dwyer's (2011) view that the perceived value-add function of NFI assurance and communicative value of audit reports is determined by the targeted audience.

Similarly, the case study data suggests that determination of audit report objective(s) is a complex process even in a legislated context. ECOLOGY board and management spent considerable time and resources in deliberating various audit objectives and whether the audits and resulting reports needed to deliver on some or all of the multiple objectives. ECOLOGY's willingness to explore and question competing objectives on a continual basis (i.e., at the planning stage, during and towards the completion of the audits), supports Power's (1997) view that NFI audits need to be a ritual of learning and awareness in order to untangle the audit in this context and determine audit objectives.

As with most NFI engagements, the agreed scope and criteria for the audits was prescribed by the relative immaturity of the systems and limited availability of relevant data. This third paper investigates the process of narrowing the audit scope to 'biodiversity' and a number of specific criteria and how ECOLOGY considered it imperative to communicate its choice and reasoning in the audit report.

In summary, the findings suggest clear identification of audience(s), audit objective(s), scope, criteria, as well as achieved level of assurance is critical to guide the audit process and ensure the communicative value of the audit report. The findings also support Fiske's (1990) view of communication and that minimising distortion of meaning (i.e., 'semantic noise') and inferences drawn from the audit report, is contingent upon a number of factors including use of language and format that is "actually

understandable and has some meaning for readers" as well as clear articulation of audit opinion and level of assurance (see Paper 3, Section 4.4.1.3).

### *6.3 Contribution and Implications*

The above findings and those discussed in more detail in each of the three papers provide a number of contributions to the current NFI literature and understanding of NFI assurance in practice. Firstly, the case study method responds to calls for further research in the field (Cohen and Simnett, 2014; Parker and Jacob, 2015; Adams *et al.,* 2014; O'Dwyer *et al.,* 2011, Power, 2003) and provides a window into 'organisational reality'. The insights gained from multiple sources of data have implications for practitioners engaging in complex NFI subject matter assurance. For instance, Paper 1 describes the case organisation's process of operationalising its NRM audit mandate and the limitations of existing auditing standards in relation to specific NFI subject matter such as NRM. These findings are of relevance to regulators and audit standard setters regarding the potential for further clarification and guidance on such assurance concepts as risk, materiality, audit evidence and suitable criteria tailored to the complexities of NFI. The overall findings have relevance not only to practitioners/assurors but also their audit clients that embark on this type of audit engagement. At the time of writing Paper 1, it was suggested that future NFI assurance standards targeting specific subject matter areas similar in nature to the International Standard on Assurance Engagements (ISAE) 3410, Assurance Engagements on Greenhouse Gas Statements would be useful.

The findings of Paper 2, whilst limited to the experience of the case organisation, inform assurors of the key issues to consider when engaging professionals from diverse educational backgrounds as part of their NFI assurance teams. The MAT structure and

its implications for assurance team performance is relatively unexplored (Trotman and Trotman, 2015; Green and Taylor, 2013). Our findings suggest that ability to capitalise on the diversity of audit team members requires a clear understanding and expectation of individual team members' contribution and roles from the outset of the assurance engagement. For this to occur, the leadership role is critical in facilitating the team's performance and desired quality audit outcomes.

The analysis of the functions and attributes of these MATs utilising Katzenbach and Smith's (1993a) framework, provides evidence that not all groups function as teams (Rich *et al.,* 1997). The case organisation's selection and management of its MATs provide insights into the transition of this group of experts from initially functioning as a 'work group' into working as a 'team' over the period of a number of audits.

The exploration of the construction of the audit reporting process (Paper 3) highlighted the importance of clarity and consensus about key aspects of the audit reporting process including audience(s), scope, objective(s) and criteria, as well as how the process and the findings are to be communicated in the audit report. The findings have implications for how much stakeholders may rely on NFI assurance reports as a communicative tool. The study informs other assurors of the collaborative effort required in determining key audit report aspects to facilitate reporting with clear objectives, especially in a multi-stakeholder environment with diverse needs. The case study site also highlights the role of the audit report as an educative tool, one that has the potential to promote dialogue about continual improvement of the auditee's performance.

ECOLOGY's NRM audits and reports were the first of their type in an Australian public sector performance audit context. Analysis of its experience highlights the

complexity of constructing audit practices and processes in a new NFI context despite the diverse range of guidelines and assurors in the current market. The next section outlines the inherent limitations and direction for future research.

### *6.4 Research Thesis Limitations*

Like all academic studies, this research thesis by publication has a number of limitations, which in turn offer several directions for future research. Whilst each individual research paper contained in this thesis outlines a number of limitations relevant to each paper's focus on a specific aspect of the NFI assurance practice, this section takes a broader view, thereby expanding on the limitations.

Despite responding to calls for case-based studies to provide an 'insider' perspective (O'Dwyer and Owen, 2007, p.92) on the NFI assurance process, the focus on one particular organisation within the Australian public sector context, whilst providing descriptive empirical evidence, was not intended to further develop theory nor draw generalisations. However the rich insights from the case study have some potential for transferability of the findings to other contexts. Whilst our context examined specific aspects of the NRM assurance process, it is plausible that similarities may emerge in other NFI settings (within both public and private sector context). This exploratory case study provides insights from the assuror's perspective on how ECO's NRM assurance practice was shaped, providing an initial 'benchmark' for purposes of comparability and further understandability of different NFI contexts (Scapens, 2004).

The case study method is fraught with challenges in terms of difficulties in finding participating organisations, overcoming ethical gatekeepers, labour intensive data collection and analysis with no generally recognised structure for qualitative case study

papers (Scapens, 2004; Stoner and Holland, 2004). For example, a limitation of case studies may be the question of how do we and the readers of this thesis know that we have 'captured' subjects' valid reflections on the assurance process and how have we managed researcher bias. We attempted to address this limitation with recording case interviews where appropriate (apart from casual 'kitchen area' conversations), reliance upon independent analysis of the transcripts when differences in interpretation and analysis of transcripts arose between me and my PhD supervisors. Whilst a perceived limitation with case studies is evidence pertaining to participants' reflections after the fact, this was balanced with researcher's attendance at key ECO meetings as well as a number of audits, thereby allowing for development of theoretically informed explanations from direct observations of ECO's construction of its NRM assurance practice. Full independent coding such as that offered by software such as NVivo was considered but not deemed practical in this case study analysis as I preferred to have an informal 'organic' approach to exploring and analysing the data. This was achieved by re-reading transcripts in full and linking the themes manually, that is 'sense making' from multiple data sources including semi-structured interviews, observations at meetings, informal discussions and documents, without the risk of losing data and meaning.

The choice of theoretical perspectives utilised in the Papers 2 and 3, drawing upon a broader set of perspectives from social psychology and Power (1997, 1999, 2003), allowed linking several conceptual thoughts, without placing reliance on existing theory constructs utilised in prior NFI assurance literature such as legitimacy theory (Stoner and Holland, 2004). This approach was made possible by the use of semi-structured interviews allowing flexibility to pursue new lines of inquiry as appropriate and 'letting

the data speak'. This enabled freedom when analysing and understanding the empirical data at a time when future research into NFI assurance is encouraged to follow research questions and experimental research methods adopted in financial audit research (Cohen and Simnett, 2014; Huggins *et al.,* 2011).

### *6.5 Suggestions for Future Research*

The overall theme of NFI assurance practice in this thesis centered around a number of selected themes namely: assurance standards and guidance (Paper 1); multidisciplinary audit teams (Paper 2); and audit reporting (Paper 3). The selection of these themes was informed by the main stages of an audit process, the timing of data collection during the initial introduction and implementation of the audits and data availability. Future research may further explore other aspects of the audit process such as concepts of risk, materiality and the nature of the evidence collection within the NFI context. The perceptions of different individual audit team members about the different aspects of the audit process and the practical complexities of the assurance engagement may shed further light into MAT dynamics.

Future research exploring 'insider' perspectives from various other stakeholders such as auditees and their views of the audit process and its outcomes, the perceived quality of the audits and communicative value of the NFI audit reports (relevant to Paper 3 findings) would make an important further contribution to current research.

Future NFI assurance research could also explore the impact of the assurance on auditees and users. Investigation of the potential of NFI assurance to drive improved performance of auditees is an important future research area, particularly as non–accountant assurors in our study viewed assurance, and their role within it, as part of an

innovative process instilling change in auditees' practices (Kim *et al.,* 2016; Huggins *et al.,* 2011; O'Dwyer, 2011; O'Dwyer and Owen, 2007). Additionally, understanding the impacts of NFI assurance on the audit client (the Government in our case), auditees (i.e., regions) and broader stakeholder (e.g., community) groups is vital given claims by some researchers that NFI assurance practice can also play a role in restricting visibility of NFI (O'Dwyer, 2011; Gray, 2010; Hopwood, 2009; Milne and Gray, 2007), thereby questioning the credibility of the assurance practice.

### *6.6 Concluding Reflection*

Yin (2003) and Scapens (2004) suggest, like many others, that "case study research is remarkably hard" (Yin, 2003: p. 26), that it has been treated as 'soft research' and criticised as too descriptive. However, the case study is also defined by both as an empirical enquiry where the boundaries and understandings between phenomena and context are not clearly evident and one looks for details of interaction. By attending many hours of meetings where decisions are made, debated, shaped, compromised or discarded, this study provides insights into 'real practice' as advocated by Malsch and Salterio (2016).

This exploratory case study approach is appropriate and timely given the current state of knowledge of NFI assurance practice and limited guidance on specific subject matter assurance. Overall, the case study findings indicate that innovation in new assurance practices and the auditability of new forms of NFI may be somewhat restrained by an extensive dependence on financial audit training and familiar techniques.

At a time where accounting research has been criticised as disconnected from practice (Malsch and Salterio, 2016; O'Dwyer, 2011), case studies such as this represent

a strong opportunity to not only build on knowledge of NFI assurance practices but for accounting academics to make better connections with practitioners, and build bridges between the academy and the real world.

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# APPENDICES

**Disclaimer**

Please note that the candidate initially commenced the PhD at the University of Sydney and transferred to Macquarie University in 2011.

# Appendix A

*Sydney University Ethics Approval*

The University of Sydney

NSW 2006 Australia

**Human Research Ethics Committee**
www.usyd.edu.au/ethics/human
**Manager: Gail Briody**
Telephone: (02) 9351 4811
Fax: (02) 9351 6706
Email: gbriody@usyd.edu.au
**Deputy Manager: Marietta Coutinho**
Telephone: (02) 9036 7566
Email: mcoutinho@usyd.edu.au

**Human Secretariat**
Telephone: (02) 9036 9309
(02) 9036 9308
(02) 9036 7274
Facsimile: (02) 9036 9310
**Mailing Address**:
Room 313, Level 3, Old Teachers College – A22

18 August 2008

Dr. N. Martinov-Bennie
Discipline of Accounting
School of Business
Building H69
The University of Sydney

Dear Dr. Martinov-Bennie

Thank you for your correspondence received on 6 August 2008 addressing comments made to you by the Human Research Ethics Committee (HREC). After considering the additional information, the Executive Committee at its meeting on **14 August 2008** approved your protocol entitled ***An Investigation of Auditing and Assurance Sustainability Reporting and Practices within a Case Study context: The Evoluation of Assurance Framework and Methodology within the Natural Resources (NRC) milieu***.

Details of the approval are as follows:

***Ref No.:*** ***08-2008/11169***

***Approval Period:*** ***August 2008 to August 2009***

***Authorised Personnel:*** ***Dr. N. Martinov-Bennie***
***Mrs. A. Hecimovic***

The HREC is a fully constituted Ethics Committee in accordance with the *National Statement on Ethical Conduct in Research Involving Humans-March 2007* under *Section 5.1.29*

The approval of this project is **conditional** upon your continuing compliance with the *National Statement on Ethical Conduct in Research Involving Humans.* We draw to your attention the requirement that a report on this research must be submitted every 12 months from the date of the approval or on completion of the project, whichever occurs first. Failure to submit reports will result in withdrawal of consent for the project to proceed.

**Chief Investigator / Supervisor's responsibilities to ensure that:**

(1) All serious and unexpected adverse events should be reported to the HREC as soon as possible.

(2) All unforeseen events that might affect continued ethical acceptability of the project should be reported to the HREC as soon as possible.

(3) The HREC must be notified as soon as possible of any changes to the protocol. Al changes must be approved by the HREC before continuation of the research project. These include:-

- If any of the investigators change or leave the University.
- Any changes to the Participant Information Statement and/or Consent Form.

(4) All research participants are to be provided with a Participant Information Statement and Consent Form, unless otherwise agreed by the Committee. The Participant Information Statement and Consent Form are to be on University of Sydney letterhead and include the full title of the research project and telephone contacts for the researchers, unless otherwise agreed by the Committee and the following statement must appear on the bottom of the Participant Information Statement. *Any person with concerns or complaints about the conduct of a research study can contact the Senior Ethics Officer, University of Sydney, on (02) 9351 4811 (Telephone); (02) 9351 6706 (Facsimile) or gbriody@usyd.edu.au (Email).*

(5) Copies of all signed Consent Forms must be retained and made available to the HREC on request.

(6) It is your responsibility to provide a copy of this letter to any internal/external granting agencies if requested.

(7) The HREC approval is valid for four (4) years from the Approval Period stated in this letter. Investigators are requested to submit a progress report annually.

(8) A report and a copy of any published material should be provided at the completion of the Project.

Yours sincerely

**Dr P Beale**
**Chairman**
**Human Research Ethics Committee**

cc: Mrs. A. Hecimovic, Discipline of Accounting, School of Business, Building H69
The University of Sydney

Encl. Approved Participant Information Statement
Approved Consent Form

# Appendix B

*Project Charter*

natural resources commission

PROJECT CHARTER

# Collaboration on audit research with University of Sydney

## Background and issues

The NRC is required by legislation to audit the implementation of catchment action plans (CAPs). The NRC could not identify existing audit practices to adopt for this work and has begun development of credible natural resource management (NRM) audit methodologies and systems.

The NRC reviewed a number of existing audit methodologies, including those used to audit environmental management and sustainability reporting, and those used in assurance auditing and internal auditing. The resulting *Framework for auditing the implementation of catchment action plans* (the Audit Framework) explains the NRC's risk-based approach to auditing the implementation of CAPs.

The NRC is continuing to develop audit systems (procedures and documentation) to support this approach and expects significant development to occur during the first few audit engagements.

Prof Nonna Martinov-Bennie and Prof James Guthrie from the University of Sydney peer-reviewed the Audit Framework, and have proposed a PhD research project studying the development of the audit methodology. By collaborating with such a project, the NRC will gain access to the best available knowledge in auditing and be collaborating in building the body of knowledge. Many NRM experts will appreciate academic rigour being applied to auditing related to their field.

This project sits within the *Catchment Action Plan Reviews and Audit Program* (D08/3728). The strategy for the Program includes establishing credible NRM audit methodologies and systems to help drive improvement in the quality of CMAs' reports on their *actual performance* (by establishing a transparent flow of credible assurance on CMA performance reporting).

## Objective(s) and scope

The objective of this project is to maximise the benefits from University of Sydney research into the development of the audit methodology, through collaboration.

The benefits from the research will include:

PROJECT CHARTER

- accelerating the development of NRM audit methodology through peer review
- accelerating the establishment of an NRM audit industry through building a body of knowledge
- enhancing the credibility of the NRC's audit program with a range of stakeholders (auditees, auditors, investors, NRM experts and NGOs) through academic rigour
- enriching the development of NRC staff through ongoing contact with audit academics

## Key performance indicators

- the timeliness and quality of input into *CAP Review and Audit Program* (assessed by the Commission)
- government and stakeholder feedback on research findings and academic (through our reporting function for Progress towards state-wide targets)
- timeliness and quality of project management, teamwork and analysis, in line with NRC project management guidelines and Dealing with Complexity toolkit (assessed by the Program Manager and Executive Director)

## Key stakeholders (list only)

The client for this project is the Commissioner.

Key stakeholders are:

- University of Sydney
- CMAs
- NRM auditors
- NRM experts
- NRM investors (including Australian and NSW Governments)

## Other relevant projects

- Audit Engagements
- Reporting on progress towards targets
- Audit Manual project
- Audit Framework Review

PROJECT CHARTER

## Overall approach

The NRC will assist Angela Hecimovic, and the University of Sydney, to study the development of our audit methodology over a two to three year period.

This will include:

- consenting to observation of NRC meetings and review of NRC documents
- seeking peer reviews to support NRC decisions regarding the audit methodology
- consenting to academic reports and papers about NRC work

### Steps to deliver this project

The research should produce relevant academic reviews and papers that are timely and support the NRC to move between the stages along the path of NRM performance reporting and audit development (see Table 1 below).

**Table 1: Path of NRM Performance Reporting and Audit Development[1]**

| Stage | Performance Reporting | Assurance |
|---|---|---|
| Immature | Multiple reports of parts of CMA performance to meet needs of specific audiences | No assurance |
| Developing | Standardised performance reporting meeting needs of many audiences | Limited assurance |
| Maturing | Standardised performance reporting meeting needs of many audiences | NSW adoption of credible assurance regarding Government NRM performance |
| Mature | Standardised performance reporting meeting needs of many audiences | Generalised adoption of credible NRM assurance |

[1] Developed from NRC conversations and concepts in *Performance Review of Internal Audit Capacity in the NSW Public Sector*, NSW DPC 2008

PROJECT CHARTER

## Risks

| Key Risk | Proposed actions | Responsibility |
|---|---|---|
| Project fails because of lack of resources (other calls on time) and capacity | • Regular monitoring of progress<br>• Active support from Executive Director, Mentors and Program Manager | Program Manager/Executive Director /Mentors |
| Project misses timing for key influence points | • Regular monitoring of progress<br>• Forward planning for key influence points and key conferences | Program Manager/External Researcher |
| Project misses big picture by focussing on detail or short-term interests | • Regular monitoring of progress<br>• Active support from Executive Director, Mentors and Program Manager | Program Manager/External Researcher |
| Academic detachment (to avoid conflict of interest) reduces value to NRC and NRM stakeholders | • Regular monitoring of progress<br>• Maintain a clear segregation of project from the other NRC work, both internally and in external communications | Program Manager |
| Academic publishing constraints limit value of reporting to NRC and NRM stakeholders | • Forward planning for key influence points and key conferences<br>• Establish mix of academic and practitioner presentations to share research | Program Manager |
| Credibility of research questioned by lack of NRM knowledge | • Regular monitoring of progress<br>• Active support from Executive Director, Mentors and Program Manager<br>• Consider use of peer-reviewers | Program Manager/Mentor/External Researcher |

PROJECT CHARTER

## Project team and development opportunities

| Project role | Name | Development opportunities |
|---|---|---|
| Sponsor | Commissioner | - |
| Reviewer(s) | Alex McMillan | - |
| Academic Supervisors | Prof. J Guthrie<br>Dr. N Martinov-Bennie | - |
| Line Manager – Project Manager | Tim Kirby | ▪ Leading strategic direction in NRM performance reporting and audit<br>▪ Building body of knowledge in NRC and NRM more broadly<br>▪ Presenting to high-value audiences |
| External Researcher | Angela Hecimovic | ▪ PhD Candidate/Observer |

# Appendix C

*Participant Information*

The University of Sydney
Faculty of Economics and Business

NSW 2006 AUSTRALIA

**Dr Nonna Martinov-Bennie**
*Discipline of Accounting*

**Discipline of Accounting**
Economics and Business Building H69
cnr Rose & Codrington Streets
telephone + 61 2 9306 6593
facsimile + 61 2 9351 6638
email n.martinovbennie@econ.usyd.edu.au

## PARTICIPANT INFORMATION STATEMENT

**Research Project Title:** The Evolution of Assurance Framework and Methodology within the Natural Resources Commission (NRC) milieu.

### (1) What is the study about?

The study aims to gain insights into the evolution of the NRC Assurance Framework and Methodology of the "Catchment Action Plans" (CAPS). This work is exploratory in nature and our objective is to add to the much needed understanding and limited research in the emerging area of assurance provision of sustainable reporting in Australia. In particular we are interested in what motivates these developments, how organisations such as the NRC develop their assurance framework, perform audits, communicate their outcomes and how the audits assist with improving the CAP's performance as well as stakeholder, public confidence in their management of NSW's natural resources.

### (2) Who is carrying out the study?

The study is being conducted by Angela Hecimovic (Associate Lecturer, Discipline of Accounting, University of Sydney) and will form the basis for the Doctorate of Philosophy degree at The University of Sydney under the supervision of Dr Nonna Martinov-Bennie (Senior Lecturer, Discipline of Accounting, University of Sydney).

### (3) What does the study involve?

This is approximately a 2 to 3 year longitudinal study documenting various aspects of the development and implementation of audit and assurance processes and practices at the NRC. The data will be collected by observation and/or review of documentation including minutes of critical meetings, management letters, audit interviews, audit reports and a number of CAP audits. The data collection will also involve interviewing various NRC staff and other key stakeholders such as the CMA auditees. Any issues to be raised at interviews would be initially discussed with the NRC for validity and appropriateness.

### (4) How much time will the study take?

2 to 3 year longitudinal study. However as most of the data collection involves observation of meetings/audits and review of documentation, the only time commitment for a small number of selected individual participants will involve one or two short interviews of approximately 30-50 minutes duration.

### (5) Can I withdraw from the study?

Participation in this study is entirely voluntary: you are not obliged to participate. If you consent to participate you can withdraw at any time without prejudice and without affecting your relationship with the researchers and the University of Sydney.

**(6) Will anyone else know the results?**

Various aspects of the study will be presented at practitioner and academic conferences and will be submitted for publication. Confidentiality will be strictly maintained in relation to conference and publications by concealing the name of CAPs and individuals participating in this research which is standard practice in academic research of this nature.

**(7) Will the study benefit me?**

NRC has invested significant time and effort into its Audit Framework and is now embarking into the individual CAP audits. We expect to provide the NRC with an objective record of the initial development of its assurance framework and audit methodology, as well as modifications after the first year experiences and stakeholder feedback. This valuable data can also be utilised for peer review(s) by independent third parties and dissemination of lessons learned to other organisations embarking on similar assurance processes

**(8) Can I tell other people about the study?**

Yes, although no confidential data should be discussed.

**(9) What if I require further information?**

When you have read this information, Dr Nonna Martinov-Bennie or Angela Hecimovic will discuss it with you further and answer any questions you may have. If you would like to know more at any stage, please feel free to contact either Nonna or Angela:

Dr Nonna Martinov-Bennie P:(02) 9036 6593 E: n.martinovbennie@econ.usyd.edu.au
Angela Hecimovic P:(02) 9351 8614 E: a.hecimovic@econ.usyd.edu.au

**(10) What if I have a complaint or concerns?**

**Any person with concerns or complaints about the conduct of a research study can contact the Senior Ethics Officer, Ethics Administration, University of Sydney on (02) 9351 4811 (Telephone); (02) 9351 6706 (Facsimile) or gbriody@usyd.edu.au (Email).**

Regards

Dr Nonna Martinov-Bennie

# Appendix D

*Consent Form*

The University of Sydney
Faculty of Economics and Business

NSW 2006 AUSTRALIA

**Dr Nonna Martinov-Bennie**
*Discipline of Accounting*

**Discipline of Accounting**
Economics and Business Building H69
cnr Rose & Codrington Streets
telephone + 61 2 9306 6593
facsimile + 61 2 9351 6638
email n.martinovbennie@econ.usyd.edu.au

## PARTICIPANT CONSENT FORM

**Research Project Title:** The Evolution of Assurance Framework and Methodology within the Natural Resources Commission (NRC) milieu.

I, ..... , give consent to my participation in the above named research project.

Name (please print)

In giving my consent I acknowledge that:

1. The procedures required for the project and the time involved have been explained to me, and any questions I have about the project have been answered to my satisfaction.
2. I have read the Participant Information Statement and have been given the opportunity to discuss the information and my involvement in the project with the researcher/s.
3. I understand that I can withdraw from the study at any time, without affecting my relationship with the researcher(s) now or in the future.
4. I understand that my involvement is strictly confidential and no information about me will be used in any way that reveals my identity.

**Signed:** .....

**Name:** .....

**Date**: .....

# Appendix E

*Transfer of PhD to Macquarie University Approval*

## Angela Hecimovic

**From:** Nonna Martinov-Bennie [nonna.martinov-bennie@mq.edu.au]
**Sent:** Saturday, 14 January 2017 8:17 PM
**To:** Angela Hecimovic
**Subject:** Fw: External Approval Noted- Bennie (5201100574)

**Importance:** High

--
**Professor Nonna Martinov-Bennie**
**Convener, International Governance and Performance (IGAP) Research Network**
Member of Australian Auditing and Assurance Standards Board
Faculty of Business and Economics | Level 3, E4A Building, Eastern Road

Macquarie University, NSW 2109, Australia

**T:** +61 2 9850 1926 | **M:** + 61 0413 065 679

**E:** nonna.martinov-bennie@mq.edu.au
IGAP blog: www.igapresearchcentre.com

---

**From:** Ethics Secretariat
**Sent:** Tuesday, 19 July 2011 10:45 AM
**To:** Nonna Martinov-Bennie
**Cc:** Mrs Angela Dijana Hecimovic
**Subject:** External Approval Noted- Bennie (5201100574)

Dear Prof Martinov-Bennie

Re: "An investigation of auditing and assurance sustainability reporting and practices within a case study context: The evolution of assurance framework and methodology within the natural resources"

The above application was considered by the Executive of the Human Research Ethics Committee. In accordance with section 5.5 of the National Statement on Ethical Conduct in Human Research (2007) the Executive noted the final approval from the University of Sydney and your right to proceed under their authority. Please be advised Macquarie University HREC is happy to take over from the University of Sydney and be the primary Committee responsible for your project. Your first progress report due for this project is due on 19 July 2012. Please refer to the below mentioned website address to find progress report:

http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/forms

Please do not hesitate to contact the Ethics Secretariat if you have any questions or concerns.

Please retain a copy of this email as this is your official notification of external approval being noted.

Yours sincerely
Dr Karolyn White
Director of Research Ethics
Chair, Human Research Ethics Committee

# Appendix F

*Final Ethics Report Macquarie University Approval*

**APPROVED**
*By Ethics Secretariat at 1:55 pm, Jul 14, 2016*

MACQUARIE University

**Human Research Ethics Committee**

**FINAL REPORT FORM**
**FOR TEACHING OR RESEARCH INVOLVING HUMAN PARTICIPANTS**

***** Submission Instructions ******

- If you are a student, this form must be either signed or submitted via email by your supervisor
- If your application was reviewed by a Human Ethics Faculty Sub-Committee or you have received an email reminder from a faculty sub-committee, then you can submit your completed final report form to the relevant faculty sub-Committee.
- For all other Final Reports please submit your completed form to ethics.secretariat@mq.edu.au or to the Ethics Secretariat, Research Office, Level 3, Research HUB, Building C5C.

**Handwritten forms will not be accepted.**

---

*Once your report has been submitted it will be noted by the Committee.* ***Please note that you will NOT receive any correspondence from the HREC regarding your report.*** *However, the HREC may undertake an audit at any time without notification.*

Please answer all questions. Please do not delete questions or any part of a question.
Use lay terms wherever possible.

1. **TITLE of research project or unit code and name:**

| |
|---|
| An investigation of auditing and assurance sustainability reporting and practices within a case study context: The evolution of assurance framework and methodology within the natural resources |

2. **REFERENCE NO.:** **5201100574**

3. **CHIEF INVESTIGATOR:**
(If you are submitting a Final Report for an ethics application submitted after 1 January 2010 then the CI must be a staff member/supervisor)

| | |
|---|---|
| Name: | **Nonna Martinov-Bennie** |
| Title: | **Professor and Director, International Governance and Performance (IGAP) Research Centre** |

| | |
|---|---|
| Staff No.: | **MQ20101904** |
| Student No.: | |
| Position held: | **Professor** |
| Department & Faculty | **Department of Accounting and Corporate Governance** |
| Tel. No.: (work) | **+61 2 9850 1926** |
| Email address: | **nonna.martinov-bennie@mq.edu.au** |

4. **SUPERVISOR: (For Honours, Post-Graduate and HDR Students:** If you are submitting a Final Report for an application submitted **prior to 2010** please complete supervisor's details)

** FOR APPLICATIONS SUBMITTED PRIOR TO 2010 where Student is CI **

| | |
|---|---|
| Name: | |
| Title: | |
| Staff No.: | |
| Department & Faculty | |
| Tel. No.: (work) | |
| Email address: | |

5. Please indicate the current status of the project:

(a) *Completed on* **[ ]** (dd/mm/yyyy)

(b) *Not completed but the project has run for 5 years from the original approval therefore this is a Final Report for the current ethical approval.*

*I will be submitting a new application for approval to enable the project to continue.* ☐ Yes ☒ No

(c) *Not commenced or discontinued on* **[ ]** (dd/mm/yyyy)

Give a brief report below explaining why the project was not commenced or was discontinued:

| |
|---|
| |

6. During the course of the project, have you complied with the conditions of approval (i.e. any conditions imposed by the Committee and the standard conditions of approval outlined on your letter of final approval)?

☒ Yes ☐ No

If you have answered NO, explain what conditions have not been met and why:

7. Have any ethical concerns or difficulties arisen during the course of the project? ☐ Yes ☒ No

If you answered **YES**, describe the ethical concerns or difficulties and any adverse effects on participants, and steps taken to deal with these:

8. The following questions relate to the current and future storage arrangements of the research data and the maintenance of its confidentiality and security:

(a) Will the data be securely stored as listed in the initial Application (Item 6.9)? ☒ Yes ☐ No

If NO, please provide details.

(b) Will anyone else have access to the data besides those listed in the application (Item 6.10) or in any approved amendments? ☐ Yes ☒ No

If YES, please provide details

(c) Will you be keeping the data for the minimum 5 year period from the date the research was completed or 5 years from the date of the last publication? ☒ Yes ☐ No

If NO, please provide details.

(c) Are there plans to destroy the data which were not mentioned in the initial application? ☐ Yes ☒ No

If YES, please provide details,

9. **CERTIFICATION:**

**NB. If you are Honours, Postgraduate or HDR student and you submitted an ethics application prior to 2010, then your report needs to be signed by yourself and your supervisor**. (Submission by your supervisor's email will be accepted in lieu of a signature).

I confirm that this project has been conducted in a manner that conforms in all respects with the *National Statement on Ethical Conduct in Human Research* (2007), all other relevant pieces of legislation, codes and guidelines and the procedures set out in the original protocol.

**(Guidelines and National Statement available via http://www.research.mq.edu.au/for/researchers/how_to_obtain_ethics_approval/human_research_ethics/policy)**

| ***Supervisor:*** | | ***Student Investigator (If applicable):*** |
|---|---|---|
| ***Signed*:** | | ***Signed:*** |
| ***Name:*** | Professor Nonna Martinov-Benni | ***Name:*** |
| ***Date:*** | | ***Date:*** |

***Please note that you will NOT receive any correspondence from the HREC regarding your report.***

**NB. Students: Form must be signed by your supervisor (or submitted via email from your supervisor)**

The ethical aspects of this study have been approved by the Macquarie University Human Research Ethics Committee. If you have any complaints or reservations about any ethical aspect of your participation in this research, you may contact the Committee through the Director, Research Ethics (telephone (02) 9850 7854; email ethics@mq.edu.au). Any complaint you make will be treated in confidence and investigated, and you will be informed of the outcome.