

Factors influencing public sector decisions and the achievement of sustainable development in the State of Victoria, Australia

by

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Statement of originality

This is to certify that the content of this thesis is my own work. This thesis has not been submitted for any other academic degree. I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

A handwritten signature in cursive script, appearing to read 'Mitzi B', with a horizontal line underneath.

Mitzi Stephe-Lee Jessica Bolton

For my grandfather, who taught me to fight for my principles.

For the public servants who never give up.

And for Martin, who emboldens my courage to do both.

Acknowledgments

Sometimes those of us working in the public sector can feel stuck. That even though we are trying with all our might to find a solution, the public issue we are trying to help progress will not budge. It is easy to feel discouraged at that point, and I have seen people far more capable than I leave the public sector or quieten down in their attempts to find solutions to public problems as a consequence.

Like them, I too encountered a public issue, where I tried and tried but was unable to find a solution. Like them, I thought about accepting that *“this is how it is in the bureaucracy”*, about leaving a role that I loved and worked so hard for, or leaving the public sector entirely - after all, if I joined to help improve public outcomes and I was not achieving that, why stick around?

But there is always another way, and I am grateful to those who encouraged and supported me to look for it, who saw that I was searching for a solution I could not see where I was and giving me the confidence to go find it. Special thanks, especially, to Cheryl Batagol for suggesting I *“think about a PhD”*, and to Anne Northway for having my back and pushing me over the line whenever I hesitated.

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To Mum and Dad, thank you for encouraging me to always ask why.

As a distance-based student of the ANU, much of this research has been pondered, backgrounded, referenced, analysed and written from my home in Melbourne's southeast. This has meant my family have worn the brunt of the peaks and troughs along the way. Thank you for your patience with me.

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Abstract

Public decisions impact each of our lives, now and into the future. We entrust them to politicians and civil servants, expecting our elected and paid representatives to act in the public interest and to deliver on the promises they make to us. This thesis explores what has led to the arguably limited achievement of sustainable development by public decision-makers, despite three decades of increasing international, national, and subnational commitments to it.

Thirty-five interviews and a survey (n=98) of current or former Victorian Public Sector employees provide insights into public decision-making. Inductive thematic and statistical analyses across case studies and cohorts, network mapping, and systems thinking are applied to draw and validate conclusions stemming from those insights.

Forty influences, ranging from the personal characteristics of individual decision-makers to the definition, availability and use of evidence, are found to have the potential to both help and hinder the achievement of desired public outcomes. Regression and distributional analyses show that the importance of these influences varies, depending on context and perspective. For example: participants whose work focused on achieving sustainable development have quite different influence importance hierarchies compared to their more general decision-making focused peers; and, participants with a more 'upbeat' approach focus more on influences individuals can impact than their less 'upbeat' colleagues. Network mapping of the linkages between influences illustrates the importance of interconnected approaches to their management, and a theory on the level of control individuals can exert upon each is proposed.

Additionally, considerations of sustainable development are found to be influenced by: the presence of reinforcing feedback loops within the decision-making system; apparently limited awareness of the ability to change or evolve the system; inconsistent goal definition (interviewees provide seven definitions of sustainable development); and heuristics (a third of participants are unaware of the

Sustainable Development Goals, and of those indicating awareness a number demonstrate poorer understanding than they self-assess).

Seventy-eight percent of participants indicate people have more influence upon public outcomes than formal frameworks, suggesting the latter are of limited value. Other solutions discussed include: tweaking existing processes to encourage thinking and awareness of sustainable development; highlighting individual's agency; applying the understandings of system leverage points gained herein; and, a suite of interviewee ideas for enhancing public decision effectiveness or longevity.

This thesis concludes that public decision-makers recognise unmet public expectations and do their best to address them. But, they are often overwhelmed by the system's complexity and underestimate the impact they can reasonably have upon it, leaving many of them feeling as frustrated and powerless as the public they endeavour to serve. However, it also suggests that public decision-makers who *believe* they can personally drive change, are more likely to do so and that greater self-efficacy within the public sector will lead to a lessening of the gap between public aspirations and delivered public outcomes. The identified influences and solutions, presented amidst a previously unavailable and rich set of insights and other factors identified in the literature, provide a basis on which to enhance these practices. Further, it is suggested that these conclusions and the influences identified apply not only to sustainable development in Victoria but to many other public decision-making issues and geographic scales, broadening the potential application of the findings.

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Abbreviations

LPs - Leverage points

PD - Public decision

PDMer - Public decision-maker

PDMing - Public decision-making

SD - Sustainable development

SDGs - Sustainable Development Goals, also 'the Goals'.

UN - United Nations

VPS - Victorian Public Sector

Chapter 1. Introduction

On March 25 2019, passengers boarded a flight from London to Dusseldorf, Germany. A seemingly unremarkable and incident-free journey ensued except that, due to an incorrect flight plan being submitted, the plane landed in Edinburgh, Scotland. From all accounts, the crew performed well, nobody was hurt, and all aboard achieved at least one of their goals that day in leaving London. Yet, people were not exactly thrilled with the outcome, and British Airways found themselves in the headlines for all the wrong reasons (Bolton, 2015; Hope, 2019).

Public decision-making - defined here as the act of making *any* decision on behalf of the public - is not altogether dissimilar from chartering a commercial plane: a decision to move away from a current position is made, the community are invited to get on board, an authority responsible for safely executing community sentiment gives the decision go-ahead, and those employed to implement the will of the people do so. These steps incorporate a wide gamut of decisions through policy development, engagement, legislative or senior official approval, and implementation, regulation and review.

Moreover, countless such public decisions demonstrate that clear systems and procedures exist to ensure complex processes become routine - easily and safely administered without cause to consider the inner machinations. For anyone with a passing interest in best-practice public decision-making, numerous textbooks and guides exist describing the key steps (Althaus, Bridgman, & Davis, 2013; ANAO, 2001; OCBR, 2016). However, those working in the public sector advise that while such frameworks are a useful guide, idea initiation, development, and implementation processes are inherently messy (Howlett, McConnell, & Perl, 2017; Lindblom, 1959; Marston, Stark, Matthews, & Baker, 2018). Just as British Airways are not the first to land at the wrong destination (National Transportation Safety Board, 2017), it is not uncommon for well-intentioned, well-executed, public decisions that have largely followed due process to miss the mark.

Take, for example, sustainable development ('SD'): Over 30 years' since the publication of *Our Common Future*, it has become a familiar concept, recognised as a tool for ensuring current and future societal progress (World Commission on Environment and Development, 1987). An integrated approach to public decision-making, sustainable development incorporates policy dimensions - social, economic and environmental - to deliver intergenerational equity.

The international community recently reaffirmed its commitment to this concept via the Sustainable Development Goals ('SDGs') (United Nations General Assembly, 2015b). In between, the Rio Declaration on Environment and Development 1992, Rio+20, and the 2015 Paris Agreement have confirmed support for sustainable development and its decision-making principles. Additionally, national and subnational governments across the world have domestically reaffirmed their commitment to sustainable development as an important concept that ought to underpin *all* public decision-making, not just environmental matters. In Australia, a federated nation with public decision-making responsibilities spread across federal, subnational and municipal governments, this has occurred via the 1992 National Strategy for Ecologically Sustainable Development, 1992 Intergovernmental Agreement on the Environment, and ongoing incorporation in subnational primary and subordinate legislation.

Given the numerous commitments and time elapsed since the release of *Our Common Future*, there should be a significant body of evidence to demonstrate how public decision-makers have incorporated sustainable development in their decisions. If governments were committed to achieving it, and unencumbered in doing so, one would expect evidence of its integration in the outcomes arising from those decisions. This is not apparent. For example:

- A combination of improperly managed but foreseeable factors means nine out of ten people living in cities now breathe polluted air, with significant health impacts (Mayer, 2016; United Nations Department of Economic and Social Affairs, 2018). Such foreseeable factors include climate change, inequality-induced migration from regional to urban areas, and resource substitutability and technological innovations not progressing swiftly enough to counter the

- negative impacts of human progress (Guttikunda, Lodoysamba, Bulgansaikhan, & Dashdondog, 2013; Jaffe, Newell, & Stavins, 2005; Solow, 1978);
- Total wealth is increasing. However, growing inequalities within nations are causing diminished social cohesion, quality of life, and general wellbeing (R. Wilkinson & Pickett, 2009). Similarly, the prevalence of communicable diseases is falling, while that of non-communicable or 'lifestyle' diseases is growing (GBD 2013 DALYs and HALE Collaborators, 2015);
 - Legislation designed to increase consideration of sustainable development has not comprehensively resulted in greater integration of it or its principles in public decisions, or greater understanding of environmental condition (Commissioner for Environmental Sustainability, 2013); and,
 - A new geological age, the Anthropocene, has begun as a result of decisions failing to adequately recognise the physical limits of the planet (Crutzen, 2002; Steffen *et al.*, 2015). The consequences of pushing or exceeding these limits have been well documented, for example, climate change, biodiversity loss, and water stress (Commissioner for Environmental Sustainability, 2019; FAO, 2019; IPCC, 2018; Mesfin & Arjen, 2016).

As these examples illustrate, sustainable development is a multifaceted concept and its application and implementation can be regarded as areas of complex public decision-making. Typified by the presence of many competing factors, complex public decisions present genuine dilemmas for decision-makers. Often changes that benefit one area create issues in others; a scenario described as pulling at the ends of knots by Sparrow (2000).

Achievement of sustainable development and the SDGs relies on their recognition and implementation by subnational governments (state, territory, provincial). Where subnational governments are self-governing the impetus to champion and implement SD and the SDGs may be presumed to be diminished as competing interests, understandings of what has been internationally

agreed and other factors exacerbate the distance between international agreements and local application. However, detailed knowledge of what those interests and factors are appears lacking, at least in the subnational State of Victoria, Australia.

This thesis explores and adds to the sustainability and public policy literature by identifying factors that may be contributing to the complexity of public decisions within Victoria, and mechanisms to make them more manageable. It also takes up the provocation of Fischer and Riechers (2019) to apply systems thinking to sustainability-focused conceptual, qualitative empirical and quantitative empirical work. In doing so, it helps explain why this gap between the commitment to and delivery of sustainable development exists, and what can be done to address it. To aid readability, the main text has been kept relatively short with a large amount of material dedicated to appendices.

Chapter 2 presents a literature review establishing that the numerous public outcomes indicating that sustainable development is not being achieved are likely the consequence of many factors impacting upon public decision-makers, and that rarely are these factors considered from a holistic perspective. A schema from Covey (2004) is adopted to illustrate that some of these factors may be able to be addressed but are otherwise likely outside of the control of most public decision-makers

Chapter 3 provides an overview of the approach taken to this research. It details how the interviews and survey were conducted, the demographics of participants, and provides an overview of the analysis undertaken. Where an analytical method is only relevant to one chapter, it is described more fully within that chapter. This chapter also acknowledges where compromises were accepted within the course of the research and where hindsight reveals an altered approach may have been preferable.

Chapter 4 confirms the understanding and awareness of sustainable development within the Victorian Public Sector ('VPS'). It first discusses the concept of SD, including consensus around its definition and views on how well it is applied. Discussion of the Sustainable Development Goals follows, showing that understandings of this framework are more varied and likely acting to limit its success.

Chapter 5 provides a rigorous analysis of the insights of the interviewees, in particular, to validate, dispel, and expand upon the factors identified within Chapter 2 as potential barriers and enablers. A revised set of influences on public decision-makers is identified. Further analyses are applied to: identify commonly important factors across multiple contexts; illustrate the role of all factors in maintaining a complex operating environment; and, consider the value of systems thinking as a tool to manage these factors for improved public outcomes.

Chapter 6 discusses the perceived value and application of frameworks within the VPS. It highlights that frameworks are not routinely or uniformly followed and that tools to assist public decision-makers to better manage the influences acting upon them, will need to reflect the people-centric nature of the public sector. It also commences a shift in focus to solutions, and the use of minor alteration of existing framework tools is discussed.

Chapter 7 continues the shift to solutions, making a case for PDMer agency and presenting a discursive compendium of solutions to increase the effectiveness and longevity of public decisions. It is supported by Appendix H, which discusses these solutions against a backdrop of participant insights and application of the newly identified influences and system leverage points.

Future Research ideas are presented in Chapter 9, preceding the conclusion of the thesis. The numerous ideas outline areas for expansion of the current research, novel ideas, and opportunities for researchers or public decision-makers alike to enhance public sector and community awareness and application of sustainable development and the Sustainable Development Goals.

Before delving into the above chapters, it is worth noting that it became abundantly clear soon after commencing this research that much the same influences impact public decisions irrespective of whether those decisions relate directly to sustainable development. For this reason, conclusions drawn throughout interchangeably relate to decisions directly and indirectly considering sustainable development.

It similarly became evident that all public decisions are ostensibly ones of sustainable development. It stands to reason that this reality is the underlying cause of the aforementioned universal application of the identified influences: If sustainable development is about making wise decisions for now and the future, then every decision made about the path a society takes is inherently one made under the auspices of sustainable development. So, while the intent of this research is to enhance public sector driven achievement of sustainable development, it is manifestly also about improving public decision-making irrespective of the subject matter area.

Chapter 2. Factors Influencing Complex Public Decision-Making and the Achievement of Sustainable Development

- A Literature Review

Key points

- Many potential influences are discussed in individual literatures or evident in local practices - but holistic analyses are rare.
- A novel framework adaptation illustrates how public decision-makers' level of control upon these influences expands and contracts in differing contexts.
- Three categories of solutions to enable decision-makers to address the influences identified in the literature are presented.
- Findings here provide a foundation for a better understanding of how the influences on public decision-makers may inhibit the achievement of sustainable development and other complex public decision-making areas, which is tested and built upon in subsequent chapters.

Introduction

Governments and bureaucrats are elected and paid to achieve the will of the people. Yet, public decision-making outcomes - such as the incomplete realisation of sustainable development - demonstrate that this will is not always achieved. This chapter explores the literature to understand what constraints public decision-makers face, why, and how well discussion of these reflects the lived experience of practitioners - such as siloed versus holistic considerations. For example, there exists environmental-policy literature, social-policy literature, economic-policy literature, public-management literature, and discussions amongst but not between academics (e.g. in [The Conversation](#)) and policymakers (e.g. in [The Mandarin](#)) (Capano, 2009). Less often are there conversations bridging the differing schools of thought and practice (Gibbons *et al.*, 2008; Lalor & Hickey, 2013). In addition to these structural issues, personal characteristics, such as self-awareness

and the ability to identify challenging behaviours and underlying patterns are recognised as key influences in '*successful change implementation*' (Higgs & Rowland, 2010).

Further, of the myriad factors influencing public decision-makers, some have greater impact than others, and the level of influence is considered to expand and contract pending the specifics of a decision and those involved with it. In acknowledgment of this concertinaing of influences, a conceptual framework is presented (Figure 1), providing a static view of influences based on their predominant state as described in the literature. This framework acts as a map for the chapter, highlighting the influences discussed throughout, as a schema to enable readers to quickly appraise and address factors which may be affecting them and their work, and as a foundation for the exploration of influences identified by research participants in Chapter 5.

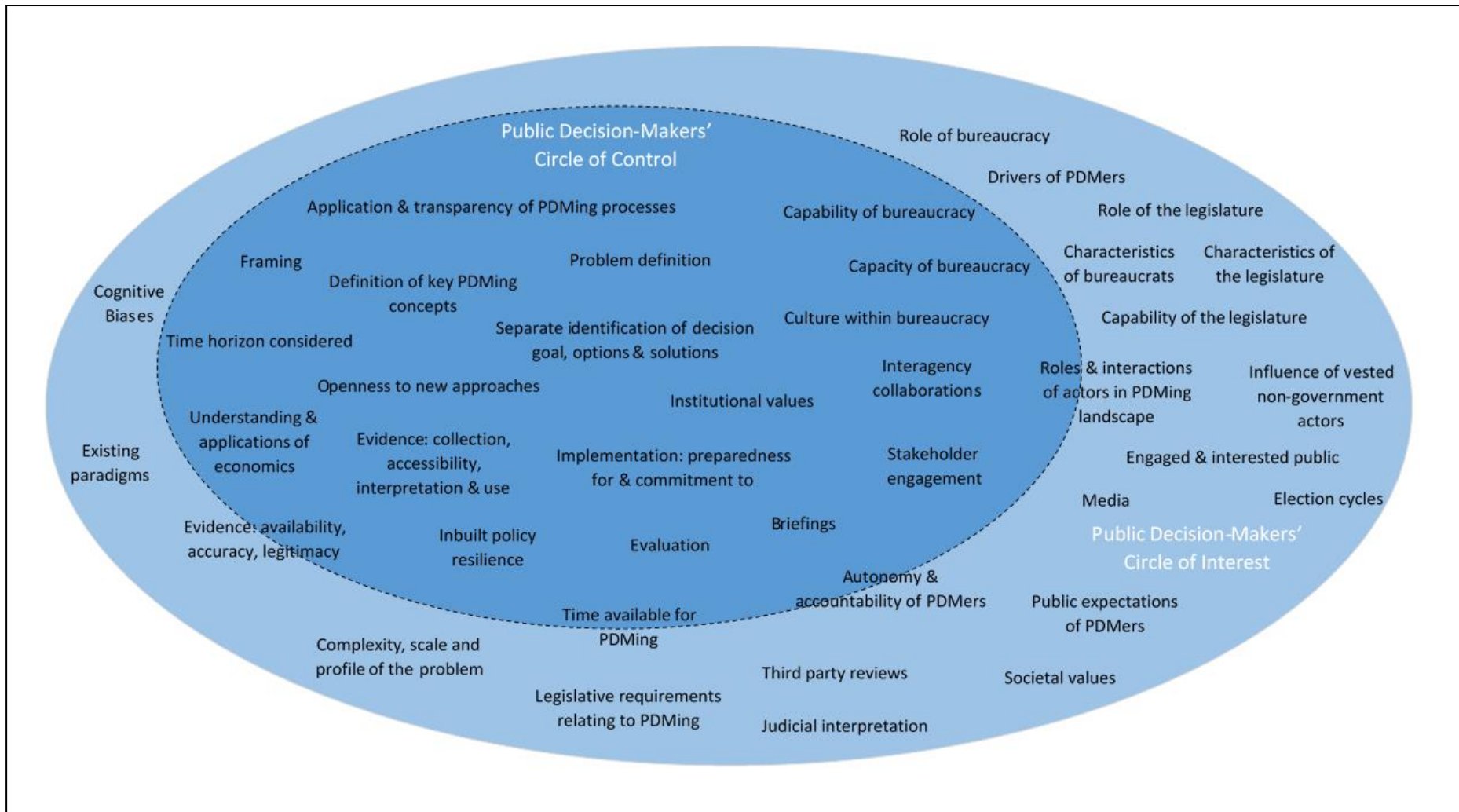


Figure 1. Recognised influences on Public Decision-Makers by circles of control and interest.

Public decision-makers' level of control can expand or contract depending on the individual issue and people involved. To illustrate, some influences are illustrated as spanning both circles. PDMers = public decision-makers; PDMing = public decision-making.

Influences on Public Decision-Making

The major influences identified within the literature and presented in Figure 1 fall into two categories which are discussed in detail below: the *operating environment*, and *processes* of public decision-making.

The Operating Environment of Public Decision-Making

Role and characteristics of the bureaucracy

Though largely removed from electioneering, bureaucracy is paid for and in service to the public and its role and value is regularly questioned (Eccles, 2016a). The job security and function of public servants ebbs and flows with electoral cycles as different parties and ideologies come and go (Dunckley, 2013; Fair Work Ombudsman, 2015, p. 12; Grant-Smith & Colley, 2018). Similarly, the mandate for action and even framing of problems within that action frequently alter. Consider, for example, shifting positions on climate change and energy policy (Crabb, 2018; Rich, 2018; Talberg, Hui, & Loynes, 2015).

Moreover, while public-sector heads may themselves be clear on the role of the bureaucracy, whether the motives of other bureaucrats align with this is less transparent (Eccles, 2015a, 2015b, 2015c, 2016a, 2016b; Egeberg & Stigen, 2018). A possible hangover from the Thatcher-era derived New Public Management, it is common for staff to be recruited for one position and subsequently used to fill another as changes in priority and circumstance require, irrespective of the relevance of their expertise or interest. Such practices can lead to difficulty in maintaining the motivated and capable public-sector workforce required to build and implement complex public decisions, with potentially disastrous effects (Edwards, 2009; Hanger, 2014; Johnston, 2008; Likens, 2010; Pielke Jr., 2007; Tiernan, 2011). At the same time, the quick-fire shifting of priorities and resources burdens decision-making practice and inhibits institutional cultures that encourage frank and fearless questioning and championing of complex ideas (R. Carey, Caraher, Lawrence, & Friel, 2016). This combination of role uncertainty and ever-changing environments, coupled with individual's intrinsic values heavily

influence decision-making practice, leading to the question: Are the right people, in the right jobs, with the right incentives (Menzel, 2013; Tingle, 2015)?

Capacity

In many jurisdictions, budgeting occurs once a year with half-yearly adjustments to accommodate newly identified problems and priorities (Schick, 2013, pp. 34-35, 51; State of Victoria, 2017). Such reviews see funds shift between and within agencies but rarely 'new money'. To ensure the necessary resources are obtained in a timely manner and retained throughout the life of a decision, a project must be: flagged in annual budgets; achievable and deliverable in the short-term (so as not to have to bid for funds over multiple years); and, remain high-profile throughout its life (typically at the hand of external stakeholders) (C. Scott & Baehler, 2010:238). If it is not, it will be reliant on passionate public decision-makers finding creative ways to address data or resource needs, campaigning to find savings elsewhere, and keeping it in the mix when the call for projects to mop-up unspent annual budgets comes each financial year (Graycar, 2007; *pers. comms.* former VPS agency Chief Financial Officer, 2014). In this sense, the length of budget cycles and funding arrangements can act to limit the resolution of complex public decisions - it can be difficult to develop and maintain budgets for lengthier programs such as the 15-year horizon of the UN Sustainable Development Goals (Schick, 2013:47-48).

Similarly, it can take months to mobilise staff into roles. Existing staff often need to finalise old projects while commencing new ones, and new positions involve necessarily rigorous yet time-consuming recruitment processes (VPSC, 2015a). These factors can incentivise outsourcing and the use of contractors and lead to a "*discourse of declining policy capacity*" (Dickinson & Sullivan, 2014; Edwards, 2009). Obtaining support and staff requires briefing, and public decision-makers increasingly find their time occupied with substantiating, drafting, reviewing and approving briefs not only on policy and public outcomes but also staffing issues (Graycar & Mccann, 2012). Kahneman (2003); (2011) has shown holistic and deliberative consideration of issues to be difficult when operating in a time-poor state. Thus, while process integrity must not be abandoned, it must be acknowledged that the

consequential time and resourcing imposts constrain public decision-makers who seek to develop and implement complex public decisions.

Capability

Development of public documents and decisions is typically undertaken by policy writers with the targeted input of subject matter experts as required (consider the extensive list of acknowledgments in the reports of Armytage *et al.* (2016) and Commissioner for Environmental Sustainability (2019)). A policy writer's skill is in understanding government direction, processes, points of influence and engagement, and policy writing itself, not necessarily detailed knowledge of the subject area (C. Scott & Baehler, 2010:241-243). Where internal expertise does exist, the constant evolution of knowledge, technologies, and community sentiment, coupled with professional development primarily being 'on the job', limits opportunities for these skills to evolve and remain current (Armytage *et al.*, 2016:47; Fukuyama, 2015; VPSC, 2015b).

To overcome this, and the delays involved in traditional recruitment, experts are brought in for short periods to manage particular projects or elements of them. Once complete, knowledge of the project and what is required to implement it typically leaves with the expert. Consequently, well-developed policies fall over or fail to realise their potential: Key elements of government strategy remaining '99% complete' for years are not unheard of (*pers. comms.* Victorian Public Sector (VPS) agency Manager, 2015).

The opposite also occurs. Where those who design or approve the policy do not have a strong grasp of likely implementation practices, a great sounding policy can stumble (Hanger, 2014). Australia's Foreign Affairs Defence and Trade Committee report (Foreign Affairs Defence and Trade Senate Committee, 2019) shows this to be a concern with regard to the domestic implementation of the Sustainable Development Goals.

Culture

Perhaps in response to the risks raised by capability and capacity needs, or complex public decisions increasingly having cross-departmental implications, interdepartmental or centralised approaches to

problems appear on the rise (Australian Family Relationships Clearinghouse, 2011; VMIA, 2016). The benefits of cross-agency collaboration are clear: the capacity and diversity afforded by such approaches lead to less myopic outcomes (Reischl, 2012; Sunstein, 2017). They can, however, also be more challenging to achieve.

While public bodies are united in their collective purpose of delivering public benefit, they also have separate and complex cultures, goals, and perspectives that may well be oppositional (Fifield & Blake, 2011; Freiberg, 2010). With the benefit of varying insights comes differences in problem-solving approaches and distinct working paradigms, which can create irreconcilable tensions (Brown, Deletic, & Wong, 2015; Plant, Boydell, Prior, Chong, & Lederwasch, 2017). Where explicit and implicit values of individual institutions affect collaborative abilities, it can become difficult for public decision-makers to hold meaningful conversations about strategic and long-term policy needs and to obtain the necessary mandate and resources to act (Marsh, 2001). Such scenarios hinder the achievement of integrated decision-making, a core sustainable development principle.

Engagement

Public decisions are not made in a vacuum: In almost any area, decisions affecting the public are increasingly shaped by the indirect input of many (ANAO, 2001; Sunstein, 2017). The scale of people, systems, and policy complexities involved means genuine influences on public decision-making now extend beyond the legislature, bureaucracy, and longstanding conventions (Head, 2013). Where government may once have been perceived as the body holding complex public knowledge, everyday technologies now facilitate ever-increasing awareness and transfer of information. Consequently, issue visibility increases and, though resources may not, the people come to expect more from their public representatives (Skoric, Zhu, Goh, & Pang, 2016).

This visibility has led to greater use and uptake of less traditional engagement approaches in recent times, such as citizen's juries, citizen science, data sharing, and an increased focus on public decision-making co-design, to both applause and criticism (City of Melbourne, 2015; DTF, 2016; EPA Victoria, 2019b; Kosmala, Wiggins, Swanson, & Simmons, 2016; Reed, 2019; Russell, 2016; Sandman, 1993). It

remains to be seen how such tools may compound or alleviate the issue of public decisions largely being those raised or framed by smaller pockets of society (MacDermott, 2008). It is easy for public decision-makers to legitimately consider the perspectives of vested interests to be valid if those are the only stakeholders engaging with government: Decisions may be balanced based on the opinions heard, and still out of step with the expectations of broader society (Alberichi, 2014). Thus, the relationships and dynamics between non-government actors and public decision-makers, along with varied understandings of issues and public decision-making processes, all affect decision outcomes (Clark, Mazur, Cork, Dovers, & Harding, 2000).

In more straightforward decisions, these dynamics may be easily visible, but in more complex ones it can lead public decision-makers to state that *“if nobody’s happy, it must be the right decision”* (pers. comms. Former Public Sector Agency CEO, 2009-2014). While this catchcry can appear glib, and an expression of the ‘middle ground’ fallacy, it acknowledges the difficulty of making complex public decisions which reflect the evidence and views presented by diverse stakeholders.

Stakeholder engagement is not helped by the archaic systems used both to draw information *in* and communicate it *out*. A simple illustration of this is the Victorian requirement that the reason and impacts for proposed regulations be published in the Government Gazette and *‘a daily newspaper circulating throughout Victoria’* (s12 Subordinate Legislation Act 1994 (Vic)). The number of people who read a print newspaper daily, and would be likely to see such an advertisement, is widely observed to be steadily declining (Roy Morgan Research, 2018). Even so, this would still be far more than those who are aware of the Victorian Government Gazette. Moreover, primary legislation and non-statutory decisions are not required to undergo any consultation, relying on citizens approaching parliamentarians directly.

It is the role of public decision-makers to enhance societal understanding of issues and ensure the approaches taken meet the needs of all stakeholders as far as possible (Michael, 1993; Sparrow, 2000). Failing to do so means failing to build the trust required to try new approaches, particularly methods

with uncertain or time-delayed consequences, as may be required to achieved sustainable development (Jaffe *et al.*, 2005; Malekpour, Brown, & de Haan, 2017). Well-intentioned but arguably outdated practices such as s12 (above) can lead to a scenario where laws exist which the community would not accept if they were aware of them (Johnston, 2008). Attempts are underway to address this in places (see www.EngageVic.gov.au), yet these too require the proactivity of citizens looking *in* to engage rather than public decision-makers reaching *out*. For complex public decisions to reflect the values of broader society, people need to be actively engaged and informed on how to have their say, and their resulting inputs need to be given fair consideration not dismissed as uninformed, irrelevant, or overzealous (Malekpour *et al.*, 2017; Sandman, 1993; Schneider & Ingram, 1993).

The media

Historically the media has had a role as an objective clearinghouse of government messages and host of public debate. It broadens the government's audience and overcomes jargon to ensure messages are delivered and received largely as intended (M. T. Boykoff & Goodman, 2015). Some argue this role is no longer being exercised: The desire for content to be 'just in', headline-worthy, and 'balanced' limits the discussions that are held, and rarely reflect the complexity of real-world concepts and problems (Cook *et al.*, 2013; Likens, 2010; Tanner, 2011).

The changing influence of the media may also impact the time-horizon considered in public decisions. Increased scrutiny on elected public decision-makers heightens their focus on short-term outcomes and 'politics not policy', this focus is transmitted to the bureaucracy creating a reinforcing social trap that undermines behaviours and processes designed for long-term benefit (Platt, 1973; Rickards, Wiseman, & Kashima, 2014). Complex problems are papered over in the time available rather than properly addressed. Blake *et al.* (2013) argue public decision-makers need to actively maintain relationships with the media so that during a crisis the focus is on using the incident to shine a light on where improvements need to be made, rather than finding someone to blame. If this approach were applied more widely, it may encourage greater dialogue on complex issues and acceptance of the timeframes, processes, and resources needed to progress solutions properly.

Election cycles

Whether delivery of the decision and associated actions can occur before voters are next in front of a ballot box is another key influencing factor in public decision-making (Buti & Noord, 2003; Sunstein, 2017). Its effect is quite evident in the US Presidential system, where second-term Presidents - who are unable to be re-elected - have been found to place greater focus on bigger issues and ideas (Gaddis, 2005).

More generally, once the legislature has a mandate to act it has a very short time to deliver. For example, in the State of Victoria, electoral terms are legislatively set at four years (s63(7) *Electoral Act 2002 (Vic)*). After time is allocated to understanding the inherited state of affairs across government and within portfolios, public breaks during which best-practice consultation cannot occur, parliamentary sitting times, and direct campaigning for the next election, there are essentially two years in which to deliver public decisions (see Figure 2). Such timeframes impact public decision-makers' abilities to draft and deliver statutory policies, and limit opportunities to innovate or engage with the community on higher-level direction setting (Althaus *et al.*, 2013, p. 221; Howlett, 2014).

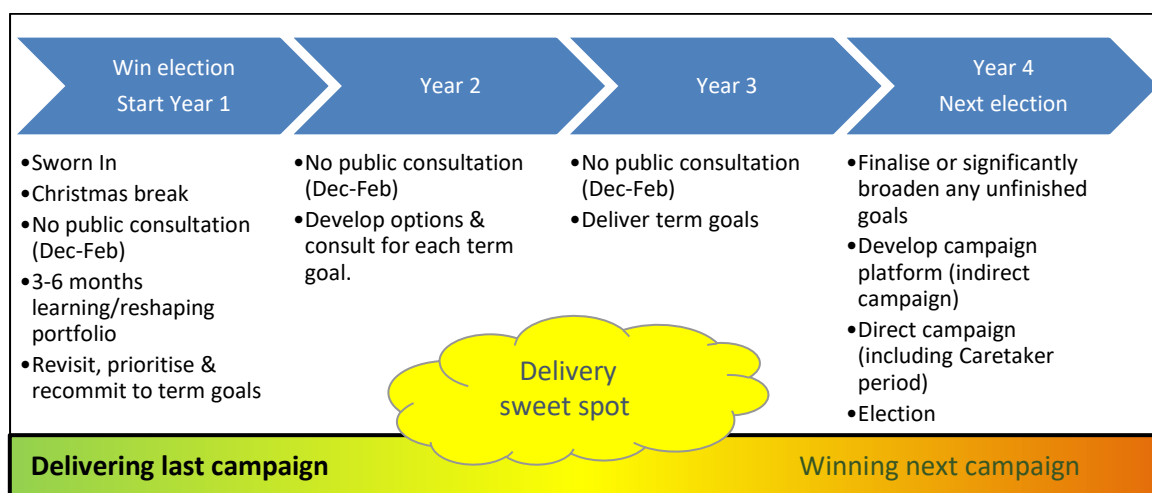


Figure 2. Time constraints in the Victorian election cycle.

These timing constraints make it difficult to develop or implement public decisions requiring more than a term to deliver, leading to a politicisation of fundamental societal needs (Jennings, 2015). For example, typically seeking to meet the needs of current and future generations (and, thus, considered opportunities to implement sustainable development), major infrastructure projects often cannot be

achieved in a single or even back-to-back terms of government (Martyn, 2011, Table 1). They require years and sometimes decades of planning to address financial, technical, and social risks (Linking Melbourne Authority, 2009). To address the political risk of such projects being incomplete at the ballot box some governments have taken to campaigning on infrastructure which *can* be delivered within shorter timeframes, such as road-rail grade separations (VAGO, 2017).

This approach appears to have worked for the 2014 Victorian State Labor government which was re-elected with a comfortable margin (Alcorn, 2018) and strong performance in seats affected by the policy (compare, for example, 2014/18 Sandbelt electoral margins www.vec.vic.gov.au). However, in isolation, it runs the risks of failing to address longer-term sustainability needs. Larger scale improvements to public and freight haulage rail networks, for example, may have led to greater longevity of the road network and decreases in transport-related greenhouse gas emissions (Commissioner for Environmental Sustainability, 2013; Infrastructure Australia, 2018).

Given these constraints, an engaged and active public questioning the rationale of decisions and debating their *shared* future - rather than individual gains -, is crucial throughout the public decision-making process, not just on election day (Bolton, 2015; MacDermott, 2008).

Engagement tools used in the United Kingdom offer a different approach. For example, they routinely broadcast Question Time during prime-time television and require parliamentary debate on issues raised in petitions signed by 100,000 citizens (UK Government and Parliament, n.d.). O'Neill and Watts (2015) argue that adopting such approaches may make parliamentarians more accountable to their constituents, and constituents more aware of what is being decided on. The United Nations used widely available and freely accessible methods to engage 'global citizens' in determining their desired future. This process facilitated broad stakeholder engagement on the Sustainable Development Goals, resulting in genuine changes to the final 2030 Agenda. Further, the same mechanism continues to maintain stakeholder interest now that implementation has commenced (Foreign Affairs Defence and Trade Senate Committee, 2019, p. 3; United Nations, 2012). While improving transparency and

opportunities for participation does increase public decision-makers' workloads, it also enables and encourages citizens to debate what matters. This debate broadens awareness of the spectrum of public values and policy options, and has been shown to increase acceptance of solutions which are appropriate to the scale and complexity of the problem being addressed (Dernbach & Cheever, 2015; Plant *et al.*, 2017).

Cognitive bias

A great deal has been written on individuals' actual behaviour in comparison to how conventional economic theory and, by extension, conventional policy anticipates (Jolls, Sunstein, & Thaler, 1998). For instance, that people do not always act in line with their values or best interests, demonstrating bounded rationality and will-power, is well recognised (Chilton, Crompton, Kasser, Maio, & Nolan, 2012; Lindblom, 1959; Thaler & Benartzi, 2004). Moreover, Tversky and Kahneman (1981, 1986) demonstrated that the language, or 'framing', of an option determines its likelihood of being selected. Consequently, not acknowledging framing and other cognitive biases or trying to correct them leads to poorer public decision-making outcomes. Unacknowledged biases can shape the conclusions drawn, the negotiations that occur, and the decisions that are ultimately made (Kahneman, 2011; Lakoff, 2010, 2014; Thaler, Sunstein, & Balz, 2013). For example, the World Bank (1992, p. 15) demonstrated confirmation bias in discounting the findings of the *Limits to Growth* report (Meadows, Meadows, Randers, & Behrens III, 1972), stating, '*it is hard to believe that a pollution crisis can sneak up on humanity so insidiously as the model implies*'. Nevertheless, in comparing actual outcomes against the models of Meadows *et al.*, Turner (2008) found that is largely what happened.

Application of economics

Another significant influence is the understanding and application of economics. While often used to discuss monetary policy, economics is not solely about monetisation. Not unlike sustainable development, economics is about the efficient management of resources and understanding how human behaviours influence this (Gans, King, Stonecash, & Mankiw, 2009).

The arena in which such management decisions are made and behaviours observed is regularly described as ‘the market’. Often little can be done by public decision-makers in the short-medium term to address unforeseen consequences of public decisions. The market, however, is much more responsive. It will react to current rules and find creative ways to address or avoid poorly constructed or implemented decisions to its advantage, with perhaps less than desirable societal, economic and environmental outcomes. Thus, in market economies, anticipating likely market responses is critical to minimising unexpected public decision-making outcomes.

For example, the legal requirements and associated guidance for the management of contaminated soil under the *Environment Protection (Industrial Waste Resource) Regulations 2009* (Vic) unsuccessfully anticipated market behaviour. This led to the misuse and dumping of soils, judicial action, regulatory and guidance amendments, and general uncertainty for the contaminated sites, waste management, and development industries (e.g. *Maddingley Brown Coal Pty Ltd v Environment Protection Authority [2013] VSC 582* (EPA Victoria, 2016, 2018)).

Scenarios such as this underscore Costanza *et al.*'s (2015, pp. 14-16) argument that where PDs are based on economic models and theories, those models need to be regularly monitored to ensure inbuilt assumptions marry with the implementation reality. This call is no different from that for monitoring and evaluation to be a non-negotiable component within the implementation of all public decisions. To enable this, public decision-makers must be supported and expected to collect data and build and review the models needed to test assumptions, acknowledge externalities, and generally develop well-considered public decisions (VAGO, 2017).

Public Decision-Making Processes

Public decision development

In most jurisdictions, guidelines for policy and public decision-making are readily available. For example, *The Australian Policy Handbook* is easily obtainable, as is the free *Victorian Guide to Regulation* (Althaus *et al.*, 2013; OCBR, 2016). Both provide detailed information on the necessary steps to develop public policy or regulation, yet, neither is used consistently by public decision-makers

(*pers. comms.* VPS Senior Official). Freiberg (2010, p. 259) notes many reasons why this may be, such as it often being, *'true that 'evidence' is not the only factor that determines policy'*. His arguments support the central tenet of this chapter that, the numerous influences on public decision-making make it messy.

Public decision-makers are rarely prompted to consider if they are asking the right questions, and can skip over clearly defining the problem or ultimate policy objectives (the 'why'), in favour of focusing on 'how' they will address it or 'what' has already been announced (Freiberg, 2010:278-83; Mossberger & Wolman, 2003; Parliament of Australia, n.d.; Sparrow, 2000:192). Too often problem framing, goal setting, options identification, and solution design are conflated as one thing to consider and carry pre-existing value judgements. This aggregation and lack of deference to best practice PDMing processes mitigates understanding of the influences on, necessity of, and complexity within each stage (Bacci, 2009). This is problematic on many levels and can undermine PDMers efforts to faithfully realise community aspirations, as:

- efforts are wasted on addressing the wrong problem;
- building consensus on policy needs and options, and altering existing paradigms can become more difficult (Michael, 1993; NDP Steering Committee and Secretariat, 2013);
- there is a greater danger of borrowing 'wheels' from other jurisdictions without sufficient consideration of contextual differences, increasing the risk of expenditure and resources for little tangible improvement in public outcomes (Mossberger & Wolman, 2003; Sandel, 2012, pp. 52-23); and,
- opportunities are provided to vested interests to steer or reframe the public decision-making process away from best-practice approaches and holistic thinking (R. Carey *et al.*, 2016; Mathews, 1997).

Evidence can act as an antidote to these concerns. New data can shine a light on where PDs are not on track or have failed to meet expectations. This information can then prompt enhanced governance

and adherence to the policy process. However, its availability, legitimacy, and interpretation introduce additional parameters that can further limit public decision-making effectiveness (Cairney, 2016): Information asymmetries, insufficient time to collect or cleanse data to demonstrate a problem or consensus on possible solutions, conflicting views on what counts as ‘evidence’, and how different inputs are weighted (e.g. representing opinion as a counterargument to peer-reviewed data) can all significantly hinder the impact of evidence (M. Boykoff, 2016; Nilsson & Persson, 2012, p. 67; Oreskes, 2004). These factors, combined with cognitive biases, lead to policy debates and decisions based on imperfect knowledge (Etzioni, 2010). Thus, consistency in definitions and considerations of evidence, and sufficient time to consider it are all key factors underpinning its effectiveness.

Public decision implementation and evaluation

Once a public decision is made there remain two critical, and frequently underdeveloped, steps: implementation, and evaluation.

Sparrow (2000, pp. 3-4) notes that the ‘style and nature’ of implementation can ‘make or break’ public decisions. Nevertheless, as mentioned the reward for public decision-makers is typically front-ended in the delivery of a decision, not its implementation or eventual review (MacDermott, 2008). While checks and balances may be in place to ensure proposed policies can be delivered as intended, unforeseen factors do arise and proactive attempts to build-in policy resilience to these factors are often missing or insufficient (Schick, 2013).

The flow-on effect of poorly implemented policy change is that those outside the public decision-making circle are unaware of it and fail to administer or act in accordance with their legal responsibilities. For example, within 45 hours of the introduction of the *Heavy Vehicle National Law 2014*, there was a need to revert to the previous approach, as the regulator responsible for implementing this new law was not sufficiently prepared (Queensland Audit Office, 2016). Similarly, while much of the data needed to report on Australia’s progress on the Sustainable Development Goals is collected and held by subnational jurisdictions, to date state and territory involvement in the

country's response has been limited (Foreign Affairs Defence and Trade Senate Committee, 2019, p. 73).

Theoretically, evaluation should mark the start and end of the public decision-making process. And, some decisions are regularly reviewed, such as sunseting legislation (e.g. s5 *Subordinate Legislation Act 1994* (Vic); s48F *Legislation Act 2003* (Cth)) or highly political issues (consider, again, climate change policy). However, for many public decisions no such review mechanism or attention exists, and they operate or sit unimplemented *ad infinitum*. For example, the Australian Government's (1992) National Strategy on Ecologically Sustainable Development is still represented as the nation's sustainable development strategy. However, given various machinery of governments changes, there have been no public reviews of this strategy since 1995, and it has become somewhat forgotten by many who ought to be involved in its implementation (see Burnett, 2018, pp. 198-234 for a detailed historical summary). Some contemporary Australian environmental public decision-makers note 'ESD' is no longer recognised as an acronym for Ecologically Sustainable Development (*pers. comms.* VPS Environment Department Officer, 2019).

Absent or poorly executed reviews make it difficult to determine if representations of problems and solutions are accurate and to distinguish the effects of past decisions, due to deprioritisation of data collection and diminished feedback loops (C. Weiss, 1999). This makes it difficult for policymakers to objectively state what has and has not been achieved, whether desired outcomes are met, and to determine what ought to be retained or revisited in future policies (Commissioner for Environmental Sustainability, 2013, 2018; Tversky & Kahneman, 1986).

While Kysar (2011) argues that timebound review mechanisms also have limitations, in the absence of such drivers, laws and guidance remain unchanged, inadequately reflecting advances in knowledge and societal aspirations. Setting review timelines and indicators is thus important in driving the evaluation of the contemporary value of ageing decisions, ensuring implementation, and recognising

and addressing any unexpected consequences before perverse outcomes are realised (Hezri & Dovers, 2009; Sanderson, 2002).

Solutions

The literature confirms public decision-making is messy and that its practice rarely conforms to textbook frameworks. The many factors constraining public decision-makers apply to most if not all public issues to varying degrees. The achievement of sustainable development, for example, seems no more or less impacted than other policy goals. For this reason, when trying to make conceptual sense of constraints, Covey's (2004) notion of the things one can and cannot control can be useful: For each issue that comes across a PDMer's desk, the amount of control they can exert and on what fronts varies.

Figure 1 applies this to the factors identified here, enabling public decision-makers to become more aware of what may be influencing their decisions, assess how much personal control they have over those factors, and respond accordingly. Where public decision-makers have some control, they can then consider solutions presented in the literature or other jurisdictions. Factor identification also helps researchers to understand bureaucratic behaviour and add new public decision-making tools and insights to the solutions literature (Egeberg & Stigen, 2018). At present, this literature can be described in three categories:

- i. Solutions that exist and are already being used by some public decision-makers.
- ii. Solutions requiring further research or minor normative change.
- iii. Solutions requiring significant further research, normative or institutional change.

The first of these groupings includes ideas which, while of greater impact if taken up more broadly, can be adopted in isolation to demonstrable effect. For example, providing a more specific definition or emphasis on principles such as integrated decision-making may help increase recognition and application of sustainable development as a concept that seeks to improve outcomes across all policy domains (Dernbach & Cheever, 2015; Ross, 2010). The benefits of doing this is seen in programs such

as Victoria's former Environment and Resource Efficiency Plans which - by combining both economic and environmental considerations - saw businesses significantly reduce costs and water and energy usage (Armytage et al., 2016, p. 167).

Similarly, scenario planning, changing the production, accessibility, and use of information, and encouraging and rewarding businesses that embody public decision-making goals, are all examples of scalable solutions that can be used to engage broader citizen participation and understanding of the decisions being made (City of Melbourne, 2015; Costanza et al., 2017; Elkington, 1999; Korslund, 2016; Kubiszewski, Farley, & Costanza, 2010; Lakoff, 2014; Lalor & Hickey, 2013).

Ideas in the second grouping can be contentious - often views and opinions on them have cycled within the literature without ever reaching consensus, or have failed to garner sufficient public support to be adopted. Consequently, further tweaking or discussion of solutions in this category is required to observe substantive benefits. Nonetheless, they may be useful where adapted to local needs. For example, within a single jurisdiction it might be possible to: alter the roles and interactions of actors within the decision-making landscape (Stone, 2004); apply differing discount rates to different forms of capital (Almansa & Martínez-Paz, 2011; Kula & Evans, 2011); better recognise the interconnectedness of policy domains and embeddedness of the economy and society within nature (Costanza et al., 2012; Max-Neef, 2014); or, increase accountability by requiring audited evidence of program implementation and review (Schick, 2013, p. 54).

Looking at problems through the prism of opportunity gives rise to the third category. While some see these as insurmountable issues, others recognise their potential to deliver significant change if focused on differently. For example: If part of the issue is short-termism, why not apply mechanisms to foster consideration of longer-time horizons (Thaler & Benartzi, 2004)?; If public decision-makers instinctively fall back on the hammers in their toolkit, why not actively encourage consideration of other tools (Finighan, 2015; Gunningham, 2009; Hoppe, 2017)?; If public decision-makers regularly lag community aspirations, opinion, and use of technologies, such as how and when information is

accessed, why not consciously evolve governance systems and tools in line with societal advances (O'Neill & Watts, 2015)? And, if existing paradigms prevent the achievement of societal goals, why not review those paradigms and confirm they are still appropriate (Raworth, 2017; Trebeck & Williams, 2019)?

While some of these solutions and questions may come across as lacking an appreciation of the complexity involved, there is genuine work being done to develop and address them. From even this superficial view, it is clear there are many ways to deliver on complex societal objectives and aspirations, such as sustainable development and the Sustainable Development Goals.

Conclusion

No matter how altruistic those who occupy positions within public institutions may be, gaps between what public decision-makers aim to achieve and what is actually delivered are routinely evident in social, economic and environmental outcomes. The literature considered here presents a vast array of factors that hinder public decision-makers and increase the likelihood of these gaps, particularly for complex public decisions. The volume of influences identified is great and likely overwhelming for any one person to consider and address - a finding that begins to answer the questions of why decision-makers may fail to deliver public goals, and why the achievement of sustainable development remains elusive after 30 years. The solutions flagged highlight the need for greater collaboration between stakeholders, public decision-makers and researchers, and interdisciplinarity of thought and sectors.

Figure 1 illustrates the identified influences and enables public decision-makers to more actively identify and overcome factors that may hinder the delivery of desired public outcomes. It demonstrates that public decision-makers can control some elements, but are merely spectators to others. Importantly, the degree to which they are controller or spectator alters depending on the issue, their awareness of the influencing factors, and willingness or ability to consider alternative approaches.

Subsequent chapters, particularly Chapter 5, present the insights of Victorian public decision-makers to recalibrate this schema, and add to the solutions documented here, flagging a way forward for those public decision-makers determined to resolve complex public issues, such as the incomplete achievement of sustainable development, to do so.

Chapter 3. Methods and Limitations

Methods

A literature review was undertaken to assess the state of knowledge regarding barriers and enablers impacting upon public decision-makers and acting to deter consistent achievement of sustainable development through current public decisions. Building on and addressing gaps within this baseline, the experiences of public decision-makers were then gathered via semantic, mixed-methods analysis involving semi-structured interviews and an online survey of current and former VPS bureaucrats. This involved indirectly and directly questioning both PDMers' general decision-making and their awareness and experience of sustainable development and the Sustainable Development Goals within public decisions.

Interviews

The interviews involved 35 participants across three cohorts, selected to enable comparisons in PDMing under different conditions: 21 PDMers were canvassed on their general decision-making; eight based on their experience with the Victorian Channel Deepening Project ('CDP'); and five on their experiences with the Victorian Environment Protection Authority's ('EPA') Environment & Resource Efficiency Plans ('EREP'). Additionally, a former EPA Chair and CEO was well-placed to discuss both case studies. Given the nature of semi-structured interviews, CDP and EREP interviewees invariably also talked to their general experience.

The specific case studies were selected to contrast PDMing approaches and tools used under differing considerations of SD:

- EREP was selected based on its stated goal, '*to promote increased environmental resource use efficiency*' (Parliament of Victoria, 2006a, p. 1). The 2008-2014 program, required businesses using more than 120TJ of energy or 120ML of water to self-assess and develop a plan '*detailing savings opportunities for energy, water and waste with a payback period of 3 years or less* (Ibid.).

- Conversely, CDP was selected on the basis of lingering community sentiment, particularly views that the project had been driven by financial and political interests with scant regard for environmental impacts (Blue Wedges, 2019; Cameron Houston, 2016). The project itself involved dredging of Melbourne's Port Phillip Bay to increase minimum vessel draughts from 11.6 to 14m and upgrade associated landside infrastructure to ensure the ongoing viability of the Port of Melbourne, as was allowed for under s44 of the *Port Management Act 1995* (Vic) (and, prior to renaming in 2010, the *Port Services Act 1995* (Vic), see s22) (VAGO, 2012, section 1.2).

Potential interviewees were identified based on role, portfolio and organisation, or as a result of snowballing, and sent formal invitations. Participants chose the time and location of their interviews, typically offices but also cafés and by phone. Written preferences for the use of identifiers within the research (e.g. name, role, organisation, etcetera) were recorded and respected. All 2017-18 Victorian Public Sector (VPS) departments were represented and participants ranged in seniority from Mid-Level Officials (VPS5) to Departmental Secretary (see Table 1).

A plethora of diverse views on transcription approaches exists (for example, Bird, 2005; Du Bois, Schuetze-Coburn, Cumming, & Paolino, 1993; Halcomb & Davidson, 2006; McLellan, MacQueen, & Neidig, 2003; Psathas & Anderson, 1990). In light of these views, and the intended nature of the interviews as open, free-flowing, conversations, the following transcription approaches were taken:

- Each interview was recorded simultaneously on two separate devices.
- Notes on the key insights, tone and general impression provided by the interviewee were made immediately after each interview.
- As soon as possible, interviews were uploaded to *Go-Transcript*, an online human-generated transcription service, for verbatim transcription (i.e. marginal words and pauses, etcetera were included in the transcripts).

- Once transcripts were received, the researcher listened back to the audio and checked every element of the written form for accuracy. Where the audio and transcript did not match, a revised transcript was sought or the transcript manually amended.
- Once satisfied that the transcript accurately documented the interview, transcripts were emailed back to interviewees for review, noting that if no correspondence was received within a month, the transcript would be deemed accurate. To aid interviewees and ensure that nothing sensitive was inadvertently placed on the record, sections of text that appeared to the researcher to be more sensitive were explicitly highlighted. All requested corrections and redactions were adopted.

Thematic analysis

Once this quality assurance and familiarisation with the transcripts had been undertaken, transcripts were uploaded to *NVivo* for inductive thematic analysis (Braun & Clarke, 2006; Frith & Gleeson, 2004). Initial themes were identified based on several readings of the interviews (as described above) and the results of a subsequent online survey (as described below). As coding progressed themes were added, removed, split and compressed to better reflect what participants had said. Where such changes occurred, all of the transcripts were reviewed again and recoded where necessary to ensure as far as possible that all were coded in the same way. Throughout, notes on possible conclusions, categories of possible importance, and possible future research were also made.

Braun and Clarke (2006) and Psathas and Anderson (1990) note that as objective as one might try to be, the interpretation of interview content is intrinsically linked to the unconscious biases, values and knowledge base of the researcher. That is, it is entirely possible that the researcher may see something that the interviewee did not intend or miss something that they did. This bias cannot be easily removed, especially in autonomous qualitative research that has involved semi-structured interviews. However, the alternative is not to seek to understand the views of people and, critically for this research, it is people who make public decisions. To reduce this bias as far as possible, coding of transcripts occurred chronologically by interview date forward and were reviewed chronologically

backwards. Additionally, a week after coding and checking had concluded, every transcript was reviewed again to ensure that the same things had been identified and coded to in the same way across all interviews, and that hand-written annotations made on the original transcripts had been captured.

Upon finalisation of the coding of transcripts, two matrices were extracted from *NVivo* to *Microsoft Excel*: One showing both how many times themes were coded to overall and how many of those times they were also co-coded with other themes in the same passage of text (see Appendix A, Table A1); and, another showing which themes were coded to which person (see Appendix A, Table A2). The latter allowed for comparisons across individuals and cohorts, the former allowed identification and quantification of the relationships between themes.

As 142 themes were identified through the inductive thematic analysis, aggregation was undertaken to reduce these to a more manageable number of influences (see Appendix B). While it is appealing to gravitate toward a shorter list of influences, limiting them to a number smaller than the complexity presented by the research participants was considered to be a false reflection of the richness of the insights provided. And, further, to be unhelpful in explaining *why* there is difficulty in addressing complex areas of PDMing like SD. All other analyses building on the thematic analysis conducted in *NVivo* also use these 40 influences rather than the 142 themes. Tables A1 and A2 (Appendix A) also reflect these aggregated values. Aggregation could have taken place within *NVivo*, however, in order to maintain the integrity of that dataset and transparency of the process used, aggregation was undertaken in *Excel*, such that the accuracy of the aggregation process could be easily verified.

Following identification of the influences, and quantification of the relationships between them, the thematic analysis data were also considered from a network mapping and systems analysis perspective. More detailed methodological descriptions on these approaches are presented in Chapter 5.

Statistical analysis - Preparing the data

Statistical analysis of both the total coding matrix (Appendix A, Table A1) and, separately, the participant coding matrix (Appendix A, Table A2) was undertaken manually and using the software programs *Microsoft Excel* and *JMP*. A presumption was made that more important influences would be mentioned, and thus coded to more often.

Data within Table A2 was manipulated further to enable comparisons between individuals and cohorts. For each interviewee, the number of times their transcript was coded to each influence, was divided by the total number of coded passages within their transcript overall. This action resulted in a clear value indicating what percentage of coded passages from each participant's transcript were about which influence, i.e. where individuals had focused their discussions.

For example, interviewees 14c and 17b each spoke to *Complexity* seven times, however, the transcript of 14c contains 101 codes, while that of 17b contains 190. Dividing 7 by 101, and separately by 190, shows that 6.93% of the coded passages within 14c's transcript were about *Complexity*, while just 3.68% of 17b's were. Consequently, it can be argued that *Complexity* was focused on more heavily by 14c and is, therefore, arguably of more importance to them, than it is 17b. These percentages are referred to as 'proportional coding' throughout this thesis and were used for the cohort analysis.

This approach was adopted to remove or at least reduce the bias of some participants having longer interviews (Range: 45 minutes to 2 hours 18 minutes), and some participants speaking more succinctly and purposely about a topic compared to others who jumped back and forth between themes throughout their interview. To clarify, this is not a measure of how much time (in terms of minutes and seconds) an individual spent talking to an influence but a measure of how much of what was coded within their transcript was about a particular theme, i.e. where the focus of their coded themes lay. Nonetheless, as inductive thematic analysis was undertaken, almost everything an individual said about public decision-making or sustainable development was coded, so there is likely a high correlation between the proportion of coded sections for a particular influence and the literal amount of time spent discussing that influence during an interview.

For each influence, the 35 individual proportional codes calculated were summed to provide a 'base average', which was then used as a comparison point during subsequent cohort analyses. The cohort analyses considered differences in interview type, seniority, and interview outlook, and are discussed in more detail in Chapter 5.

Survey

Based on interviewee responses, an online survey was created and conducted using *Qualtrics*. Questions were adapted from those put to interviewees to allow for closed responses but were otherwise identical. Where multiple choice or Likert scale responses were requested, the options presented were typically summaries of responses from the interviewees. In this way, survey participants acted to validate or otherwise add understanding to the insights provided by interviewees.

Repeated advertisement over six weeks, via social media platforms (Twitter, LinkedIn, Facebook) and direct emails to interviewees and contacts within the VPS, yielded 97 complete responses from 174 starts. While there is representation across all 2017-18 VPS departments, the number of survey respondents overall limits the statistical power of the data and the ability to perform statistical demographic analysis. Additional methodological detail concerning the use of survey data is provided in Chapters 4 and 6.

Representation

Participants are referenced throughout the paper with codes indicating their role: 'a' for Senior Officials, 'b' for Higher-Level Officials, and 'c' for Mid-Level Officials, e.g. "1a", is interviewee number one, a Senior Official. Where participants did not wish to disclose their position, it is withheld e.g. "21-". Case studies participants are denoted by the symbols 'ϣ' or 'ϵ' for CDP and EREP respectively, e.g. "22aϣ" is a Senior Official interviewed about CDP. Survey participants are referenced with an 'S' followed by their level of seniority and department, e.g. "Sa-DELWP" is a Senior Official from DELWP participating in the survey. More detailed demographic information on interviewees is provided in Appendix C. Broadly, participants:

- Represent all 2017-18 VPS departments - the majority from the Department of Environment Land Water and Planning or its portfolio agencies (DELWP);
- Cover the spectrum of bandings within the VPS - the majority of interviewees being senior- or high-level officials, and survey participants' being predominantly mid-level officials;
- Have worked within the public sector (Victorian or otherwise) for 16.9 years on average (interviewees: 21 years, survey participants: 12.7 years);
- Represent a wide array of PDMing areas (i.e. despite large representation from DELWP, participant experiences cover the spectrum of the public sector).
- Predominantly have experience in bureaucratic settings but also legislative settings and the private sector. One interviewee had a judicial background, no other direct experience within the judiciary was recorded.

Table 1. Organisations and Roles represented by interview and survey participants.

Organisation (2017-18 names)	Interview (n=35)		Survey (n=97)
	General	Case study*	
<i>Department of Economic Development, Jobs, Transport and Resources, or Portfolio agencies (DEDJTR)</i>	2	1	4
<i>Department of Environment, Land, Water and Planning, or Portfolio agencies (DELWP)</i>	8	3	66
<i>Department of Education and Training (DET)</i>	1	-	1
<i>Department of Health and Human Services, or Portfolio agencies (DHHS)</i>	2	-	1
<i>Department of Justice and Regulation, or Portfolio agencies (DJR)</i>	1	-	2
<i>Department of Premier and Cabinet, or Portfolio agencies (DPC)</i>	2	-	4
<i>Department of Treasury and Finance, or Portfolio agencies (DTF)</i>	2	-	3
<i>Review agency (Office of the Commissioner for Better Regulation, Victorian Auditor-General's Office, or similar)</i>	1	-	1
<i>Outside of the VPS - Public Sector role</i>	1	5	4
<i>Outside of the VPS - Private Sector role</i>	-	5	7
<i>Prefer not to say</i>	1	-	4
Role*			
<i>Senior Official (SO) (Secretary, Deputy Secretary, Chair, CEO, etc.)</i>	10	1	7
<i>Higher-level Official (HO) (Executive Director, Director, etc.)</i>	6	1	7
<i>Mid-level Official (MO) (Manager, Team Leader, Senior Officer, etc.)</i>	4	2	67
<i>Junior Official (Project Officer, etc.)</i>	-	-	13
<i>Outside of the VPS (Alternative public sector, retired, contractor)</i>	-	9 (6*SO, 1*HO, 2*MO)	-
<i>Prefer not to say</i>	1	1	3

*Details at the time of the interview, as opposed to the time of the case study, indicated for case study interviewees.

Limitations

As with any piece of work, this research was limited both by foreseen and unforeseen factors. The mitigations, responses, and acceptances of each follows below.

- Within the literature review (Chapter 1) several compromises were accepted:
 - Drawing together different disciplines and sectors to understand constraints and further the practice of public decision-making in a way that is accessible for multiple audiences, necessitates covering and framing ideas in a manner that at times may seem out of place, obvious or even naïve to different people reading the same passage. Similarly, to undertake semantic review of multiple literatures requires omitting some sources. However, the aim was to survey sufficient literature to capture the main issues identified within diverse work areas and it is considered that the totality of the approach and findings delivers a more comprehensive view than previously presented.
 - Examples from Australian and its subnational State of Victoria are used to illustrate the transferability and relevance of general concepts and issues. This approach was adopted to provide a case study to ground the arguments made and unite the differing disciplines, and also because the empirical research of this thesis is focused on the State of Victoria. While the experience of one jurisdiction may not transfer to others, the presence of the influences across diverse literatures suggests most identified constraints on public decision-making will have broader applicability, particularly in similar political systems.
 - Theoretically only elected representatives are public decision-makers. The tasks of the public or civil service can be boiled down to administrative functions -implementing the will of the legislature-, and those of the judiciary as feedback loops which confirm the legislature's decisions are having the desired impact and are being correctly implemented. In practice, however, the bureaucracy provides significant support and advice to the elected government. It can, therefore, be argued bureaucratic contributions directly and heavily influence elected

government decisions, and the resulting outcomes experienced by the community (Althaus *et al.*, 2013, pp. 13-14, 24; Hinchy, 2008, pp. 57, 265). Noting this, this paper considers anyone employed to make decisions that establish, implement or enforce the rules of a society to be a public decision-maker.

- Despite pre-testing with public-sector peers and a computer estimated duration of 20 minutes, the survey was ultimately judged too long for just under half of those who started it. There would likely have been some non-completion regardless of its length, through curious individuals opening it to see what it was about and taking it no further (n=46, or 26% of survey starters). In any event, the survey was lengthy and future efforts could be more economical in the number and detail of questions asked. Narrowing the survey focus may also assist.
- The reduced participation rate in the survey resulted in reduced statistical power in the results. While there is representation across all 2017-18 VPS departments and a range of levels, the number of participants makes meaningful statistical demographic analysis difficult to perform. For example, the impression left by interviewees was that those in more senior roles, though not necessarily with greater length of service, felt they had a more rounded understanding of sustainable development and were well placed to implement it, however, there were insufficient participants overall to draw statistical conclusions on this.
- Case study conclusions are limited in their power by the number of EREP participants: EREP staff have moved on and were surprisingly difficult to reach and engage. To address this snowballing was used where possible - all participants were asked to suggest others who might be able to provide insights-, and the window in which interviews were undertaken extended to allow for maximum participation.
- Another possible limitation is that, while Secretaries of each department were approached to participate and suggest others within their departments to participate and snowballing was used with those I did interview, I may have missed key people with deep knowledge of sustainable development and the Sustainable Development Goals within the VPS. If this has occurred it is on

the one hand lamentable. However, the reason this approach was taken is that it is, on the other hand, more representative of knowledge and experience within the VPS.

- The potential impact of a difference in personality and outlook was not realised until the interview process was well underway and it was no longer possible to change the study design. Consequently, the creation of cohorts for the more or less overtly upbeat comparison was necessarily subjective - based on manual separation of individuals. As noted in Chapters 5 and 8, if repeating any aspect of this research it would be beneficial to commence the data collection interaction with participants with a personality or values test to provide a more objective method of segregation for cohort analysis.
- Given the subjectivity of coding practice and application of Meadows' Leverage Points, objective verification of the coding and application of the LPs would ideally be undertaken to ensure consistency and the rationality of conclusions drawn. As this was a solo piece of research, this was not possible. In the absence of an objective peer, each phase of the work was checked multiple times over an extended period (i.e. left while focusing on something else for at least a week and then revisited) to ensure consistency and rationality of conclusions occurred.
- The public sector is not static, and the things that people told me and believe to be true when I interviewed or surveyed them may no longer be so. Such is the compromise of all research: we can only know what we have measured, and that can never be what is happening at this very moment. In some ways the understanding and experience of the public service will have progressed from when these measurements were taken; for example, anecdotally DELWP aligned their existing work program with the Sustainable Development Goals in 2019. Regardless, this work provides a baseline of sentiment and experience.

Notwithstanding the above, this research presents a previously unavailable, sufficient and rich set of insights through the combination of interviews and survey.

Chapter 4. Awareness and Understanding of Sustainable Development and the SDGs in the Victorian Public Sector

Key points

- The public decision-making considerations, approaches and experiences, along with their understandings and applications of SD and the SDGs of public decision-makers within the State of Victoria, Australia, are examined.
- Sustainable Development is found to be more widely understood than the SDGs, although understandings of both are variable and participants indicate neither are being widely or consistently implemented.
- Definitions of SD are inconsistent within the VPS, and it appears some decision-makers are missing a holistic understanding of the concept within their intuitive thinking, but there is potential to bring about consensus.
- The polluter pays and precautionary principles are applied and interpreted differently across the VPS.
- Legislative and institutional structures are likely contributing to misperceptions about the concept and Goals.
- Heuristics and framing are identified as major factors in the application of SD and the SDGs. For the latter in particular, implementation is impacted by cognitive biases concerning alignment, complexity, perceived value and responsibility for the Goals.
- Leadership (personal, political, organisational or central agency) is recognised as a necessary catalyst for the achievement of the SDGs within Victoria.
- Victorian public decision-makers possess many ideas for enhancing intergenerational equity and a list of tools to improve the effectiveness or longevity of public decisions is provided.

Introduction

While some may argue that sustainable development ('SD') is embedded or 'aligned' within public decisions, what causes it to be directly considered in public decision-making ('PDMing') and how often is unclear. Since 2015, international efforts to achieve SD have been embodied within the United Nation's Sustainable Development Goals ('SDGs' or 'the Goals') (United Nations General Assembly, 2015b). Adopted by all 193 UN member states, the 17 Goals contain specific and general targets allowing their progress to be monitored.

Recent reports, both government initiated and independent, indicate that on the basis of those targets and levels of awareness within the country, Australian governments have been comparatively slow to identify and implement mechanisms to achieve the SDGs: Australia ranks 38th globally and 32nd amongst OECD nations on measures of progress toward achievement of the Goals (Allen, Reid, Thwaites, Glover, & Kestin, 2019; Foreign Affairs Defence and Trade Senate Committee, 2019; National Sustainable Development Council, 2018; Sachs, 2019). In particular, the inquiry report of the Department of Foreign Affairs and Trade Senate Committee, a body comprised of Australian government parliamentarians, made 18 recommendations, including creation of both federal and subnational implementation plans, Australian government integration of the Goals into '*all internal and external websites, strategies and policies*', and improved public awareness of the Goals). The report also noted that the inquiry is '*the first time the parliament has engaged with the SDGs in a comprehensive manner*' (Foreign Affairs Defence and Trade Senate Committee, 2019, p. 143).

As a federation, the Commonwealth of Australia's Constitution assigns some specific decision-making powers to the federal government. Those not listed fall to the country's states and territories. Thus, the practices of subnational governments are pivotal to Australia making good on many of its international commitments, including the achievement of sustainable development and the SDGs. A situation shared with many other federal systems.

Located in the southeast of the continent, Victoria is Australia's second-most-populous state. Given the similarity of governance styles and parliamentary structures, the Victorian experience is likely to be transferable to other subnational jurisdictions within Australia, and internationally. This chapter explores considerations of SD and the SDGs in PDMing through the experiences of public decision-makers ('PDMers') within or with ties to the Victorian Public Service ('VPS') - the core civil service of Victoria. Semi-structured interviews and an online survey were used to gather PDMers' insights. Semantic thematic analysis of the qualitative responses was then compared with quantitative data to validate conclusions. The results provide an improved understanding of PDMing practice in the achievement of sustainable development and the Sustainable Development Goals within Victoria.

Methods

As per Chapter 3, 174 participants were recruited to undertake the survey component of the research, which yielded 97 complete surveys. Of these completed surveys, all participants indicated an awareness of Sustainable Development and were asked subsequent questions about it, however, only 69 indicated an awareness of the SDGs and 28 participants were therefore not asked further questions concerning their knowledge and application of them. Survey responses were graphed for further analysis using *Microsoft Excel* and were contrasted with interviewee insights (which were also cleansed and thematically analysed as per Chapters 2 and 5).

The legal definition of sustainable development in Victoria's primary legislation was sought by searching for the term 'sustainable' in current Acts in the 'Victorian Law Today Library' at <http://www.legislation.vic.gov.au> on May 1, 2016. Each Act identified was reviewed and assigned to one of five categories: Reference is to other Acts with 'sustainable' in their name; term is not used in a sustainable development context; term appears to be used in a SD context but no definition or principles are provided; principles provided; or, definition provided.

Results and Discussion

Understanding and Applications of Sustainable Development

Awareness of Sustainable Development

“I get quite sad about the fact that we're still arguing about climate change. And that's just a symbol, we're still arguing about the impacts that we're currently having... so, whether it's plastic in the oceans or whatever it is. And so, until we join up our thinking, and until we think about the joined-up consequences of what we're doing and then start planning for something different, then we're in trouble”.

- Cheryl Batagol, Chairman EPA Victoria

All participants are aware of SD but, their familiarity with it varies significantly (Figure 3). The ‘BBQ conversation’ was used as a yardstick, as many public servants are provided with ‘key messages’ around their organisation’s priorities and responses to issues throughout the year so that they can confidently and accurately talk to their work at informal gatherings such as family BBQs. The fact that 85% of survey participants indicated that they could host at least this level of conversation on sustainable development suggests they are confident in their knowledge and awareness of the concept and its application.

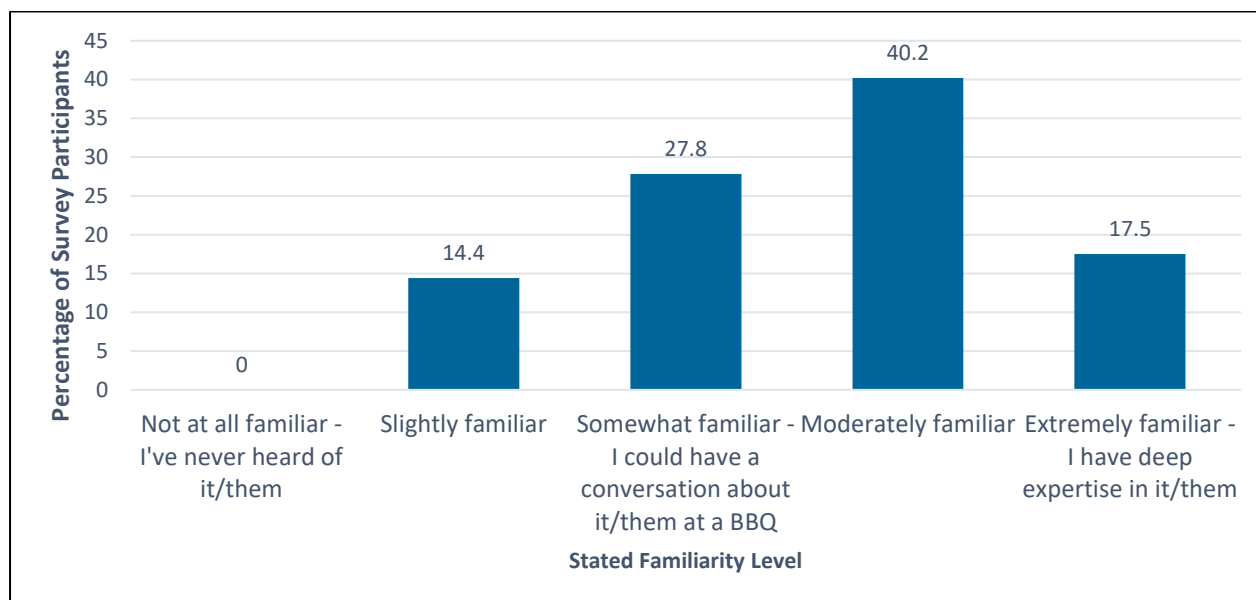


Figure 3. Self-reported familiarity with Sustainable Development among survey participants. (n=97).

Definition

One of the first issues to tackle when considering applications of sustainable development is how people conceptualise it. When prompted for their definitions, interviewees advised that SD is about:

resilience,^(27a⚡) and this generation “*not stealing from the next*”,^(8a, 3a) not having an impact,^(20a, 28a⚡, 29a⚡) and using resources wisely,^(14c, 35cĚ) maintaining and improving things),^(11b, 13b, 16b, 24a⚡, 33cĚ) continuing to do things *ad infinitum*;^(2a, 6b, 21-, 25b⚡, 27a⚡) societal development;^(9c, 12b, 17b) incorporating externalities,^(22a⚡) and the triple bottom line;^(10a, 19a, 26-⚡) and, integrated decision-making more broadly.^(3a, 22a⚡, 23-⚡)

All participants were aware of sustainable development as a concept, yet, rarely talked to a single idea of what it meant. Some reasoned their way through the words to arrive at their given definition, then provided different responses when prompted to discuss SD in the context of their work.^(18a, 20a) This may indicate that though they are capable of discerning SD when applying deliberative (or System 2) thinking, as a holistic concept it is absent from some participants’ intuitive (or System 1) thinking (Kahneman, 2003). Several participants described SD as ‘woolly’ and ‘amorphous’, and in need of ‘*measurable elements*’ and greater definition to be applied.^(5c, 7c, 8a) Indeed, the DEDJTR Secretary replied, “*This is like, ‘What’s your definition of God?’ really*”.^(3a) Others, including those with extensive environmental policy experience, commented that SD is an unachievable utopia: “*It’s not a real concept, it’s just a nice to pretend we can achieve, but I actually don’t think we can*”.^(34cĚ)

Another very senior bureaucrat acknowledged much of the above, as well as other views reflecting dominant societal paradigms (e.g. trickle-down economics, consumption) before concluding that, while economic models and cognitive abilities to value the future are not necessarily aligned with SD, intellectually you have to go with the *Limits to Growth* (Meadows *et al.*, 1972) model:

“Because ultimately-- In 1972, there’s this great photo from a spacecraft... the blue marble photo... for the very first time, we could see that in fact the Earth is a very frail thing. And that the atmosphere is only 15 kilometres thick. And that we actually-- Everything that goes on in it is stuck in there and so we’d better do it properly”.^{4a}

These variations and difficulty in honing-in on a single definition are not altogether surprising when the Victorian legislation is looked to for definitional guidance. At the time of the interviews there were 69 live Acts with the word ‘sustainable’ (Figure 4) but, just one that defined it - the *Commissioner for Environmental Sustainability Act 2003* (Vic). The latter is not referred to by any other Acts, and is essentially a document with the legislative function of setting out the duties of the Commissioner.

Therefore, there is little reason for public decision-makers or others unaffiliated with the Commissioner to refer to her Act and have their definition of sustainable development guided by it. Further, while the Act has a similar definition to that provided within *Our Common Future*, it is arguably somewhat more ecologically focused: “*Ecologically sustainable development is development that improves the total quality of life, both now and in the future, in a way that maintains the ecological processes on which life depends*” (S(4(1) Commissioner for Environmental Sustainability Act 2003 (Vic)). This nuance may encourage a perception among those who do refer to the Commissioner’s Act that SD is only about the environment.

Eight other Acts provide definition of some of the principles of SD, in some cases appearing to define the concept but not including this within their definition sections. These Acts are in some ways helpful in providing more detail, but in other ways add to the inconsistency of how sustainable development is defined within the State of Victoria. As of July 2019 (after the research fieldwork was complete), a second Act defining sustainable development had been added to the Victorian law books (*Marine and Coastal Act 2018* (Vic)). However, while this serves to reduce definitional ambiguity within its specific context, the lack of a standard definition across Victoria’s legislation arguably persists, remaining a barrier to consistent understanding and therefore the application of SD in public decisions.

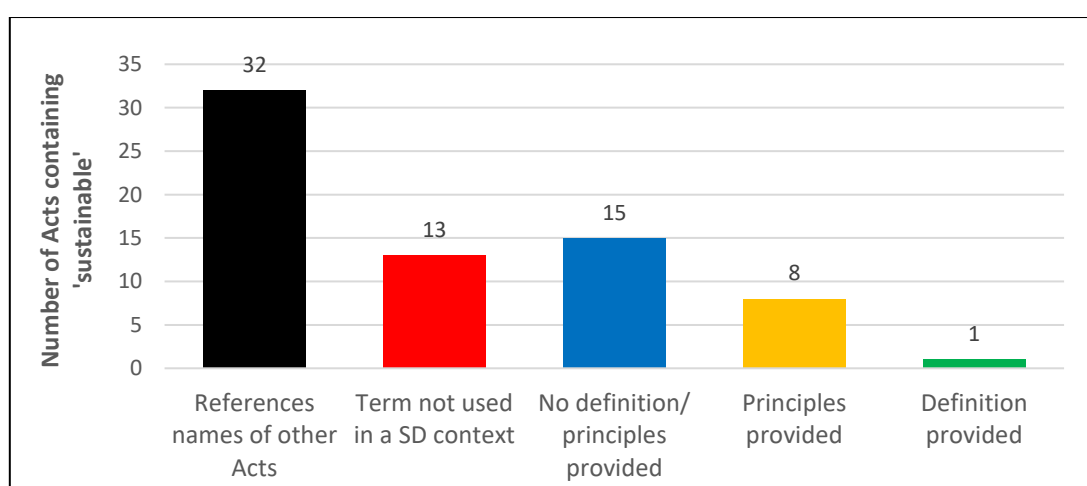


Figure 4. Breakdown of Victorian Acts containing the word ‘sustainable’ at 1 May, 2016.

The main definitions raised by interviewees were summarised and put to survey participants, who were asked how much they agreed with the different ideas. Table 2 shows that as familiarity increases

so too does the inclination to see SD as about integration of all that matters to society. Despite this, many respondents indicated that sustainable development is about the triple bottom line and giving greater weight to the environment in PDMing. These perceptions may be a consequence of prior efforts to embed sustainable development, such as Elkington (1999), or a consequence of sustainable development structurally being the responsibility of environmental agencies. Consider, for example, the location and role of the Victorian Commissioner for Sustainability and the Environment within DELWP, and responsibility for the National Strategy on Ecologically Sustainable Development within the Commonwealth Environment Department.

The *Our Common Future* World Commission on Environment and Development (1987) definition remains valid for many people: 98.4% survey participants agreed with it as a definition of SD, and many interviewees spoke to it directly or elements thereof: *“I still feel old school in that sense of using the Brundtland definition, that's still the purest form of the definition, I think”*.^(32bë) This finding suggests common ground on which to raise and discuss understandings and applications of SD.

In sum, there are several characterisations of SD relied upon, with at least two implementation-impacting tension points within those definitions:

- **Intellectual vs practical:** Interviewees were deeply reflective and could rationalise what a more holistic definition and application of SD would mean, however, their formal and on the job training reinforced misconceptions of SD, leading them away from those broader definitions and applications in practice.
- **Limits to Growth vs economic rationalist:** Earth's finite carrying capacity is not a prominent feature of dominant economic paradigms. So, what achievement of SD might mean in terms of affluence, living standards, equity, and so forth can jar with reinforced measures of progress and appear at odds with what society is willing to accept.

These tensions are apparent both when comparing cohort-wide definitions and when comparing individuals' prompted (System 2) responses with unprompted or practice descriptive (System 1)

responses. This highlights a need for greater deliberative discussion of SD, as reflected by 31a in asking, "How do we as a society work out what prosperity means within what one planet can support?".

Principles

There are many internationally recognised and debated principles of SD. The Council of Australian Governments' (1992, s3.5) *Intergovernmental Agreement on the Environment* agreed on four that should inform PDMing:

- i. improved valuation, pricing and incentive mechanisms - such as the polluter pays principle and including environmental factors in cost-benefit analyses;
- ii. the precautionary principle - not allowing a lack of scientific certainty to postpone decisions preventing irreversible environmental degradation;
- iii. intergenerational equity - ensuring that future generations have at least the same environmental and resource opportunities as today's do; and,
- iv. conservation of biological diversity and ecological integrity.

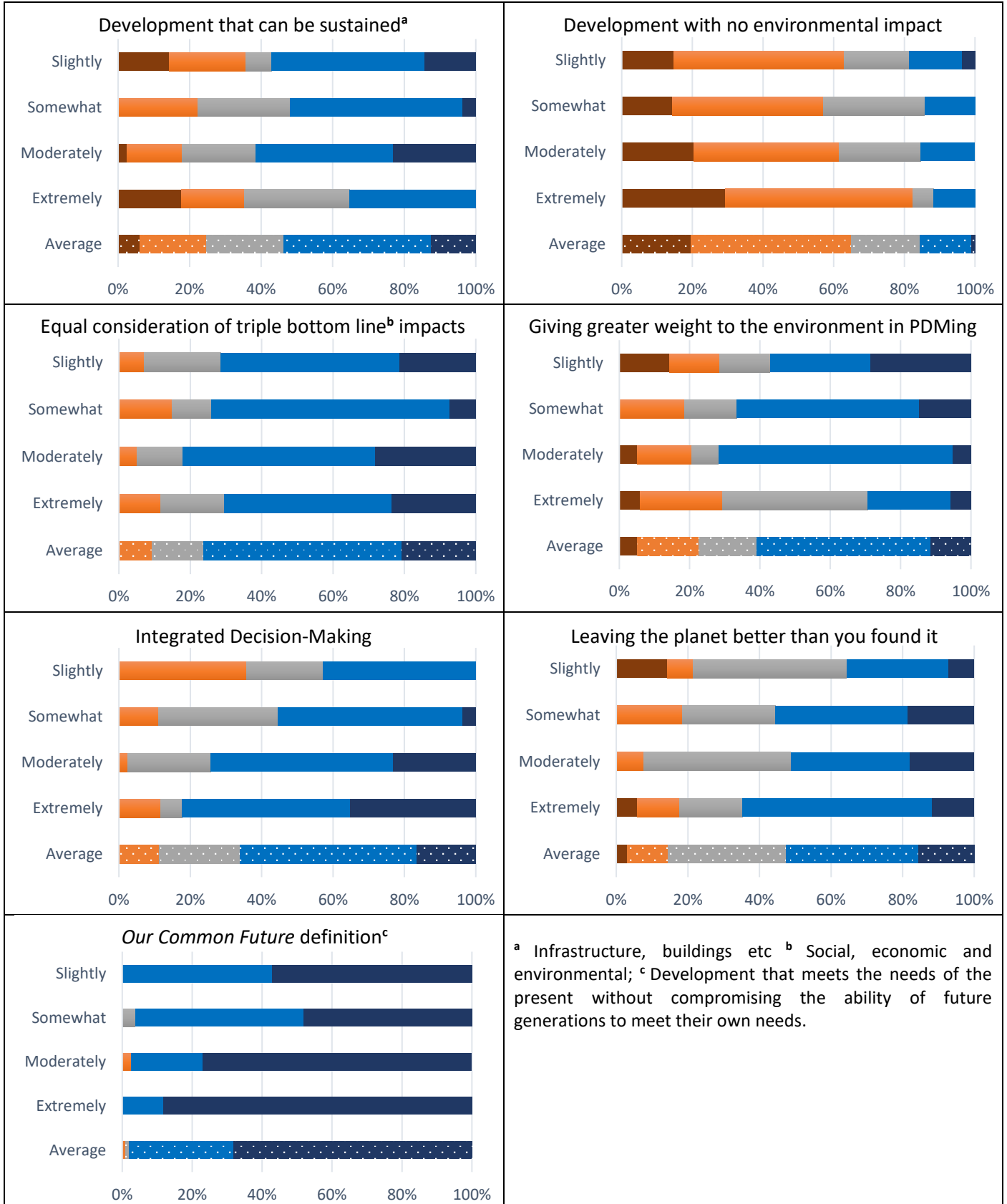
Understandings and applications of the first three of these principles were confirmed with participants. The fourth principle was considered too environmentally focused to enable participation of a broader cohort of PDMers.

When asked who typically bears the costs of PDs, the response was largely, 'the taxpayer', either directly or indirectly through the transfer of business costs.^(5c) Aside from situations where the beneficiary was considered to be society at large, i.e. the taxpayer was the utilitarian beneficiary.^{(4a,}

^{14c)} Rarely was the beneficiary or polluter considered to pay. Where examples were given of a beneficiary paying, participants noted there was often an inbuilt lag between the initial implementation of decisions and payment requirements being introduced. This lag, or application of time-limited subsidies, is considered helpful in making payments more politically palatable, as beneficiaries have an opportunity to realise the benefits they obtain before incurring the associated costs.^(11b, 18a) Survey responses on cost attribution supported these views.

Table 2. Agreement with definitions of sustainable development, by self-reported familiarity with the concept

Each box represents a different tested definition of sustainable development, see individual figure titles. Horizontal axes indicate increasing agreement with the suggested definition, left-right: Strongly disagree (brown), Disagree (orange), Neither agree nor disagree (grey), Agree (blue), Strongly agree (navy). Vertical axes represent self-reported familiarity with sustainable development (Slightly aware, Somewhat aware, Moderately aware, Extremely aware) and corresponding bars represent the variation of opinions within those cohorts. Averages represent the variation across all participants.



To assess the application of the precautionary principle interviewees were asked to identify tools or frameworks they use when required to make a decision with either an incomplete evidence base or uncertainty about the likely outcomes or impacts. Here there was a clear disparity of views. Some argue if there is *any* doubt when making PDs one should hold off until certainty has been restored, perhaps through reviewing or collecting additional data.^(2a) Others consider that the most important thing to do amidst uncertainty and a difficult decision is to make a call, regardless of what it is, to enable the issue to progress in a timely manner:^(4a, 16b, 18a)

“So where I've seen things go wrong is where it's a really hard decision, so the decision-makers defer the decision and ask for more information. And you go through this intractable loop of, 'We need more information. We'll go and to do an analysis of this. We'll do an assessment of that. We'll do another economic cost-benefit on that.' The fact of it being that you're never going to remove the fact that this is a difficult decision. So there's this deferral mentality. It's like, 'Well, we cannot make this decision because we don't think we got enough information. So, we'll go and do more work.' Months go by, come back, you've actually ended up with the same decision. You just got a whole lot more information, you haven't made the decision any easier”.^{4a}

A similar split occurred among survey participants, though their responses may show that context is important. For example, when considering general approaches to PDMing, 38% of respondents often 'just do something', a further 38% rarely approach PDs in that way, while the remainder does it 'about half the time'. However, when asked explicitly about decisions with incomplete evidence or uncertainty, there was a greater propensity to review the evidence (84% often do this) or gather more information (63% often gather additional qualitative evidence).

Interviewees were also asked to identify one change they felt would increase the effectiveness or longevity of public decisions, or one change to improve those outcomes in the context of their case study. This question acted as a proxy for how to overcome short-termism and increase intergenerational considerations. Responses were collated and presented in the survey; Figure 5 shows the level of broader support for these ideas, which are explored in more detail in Chapter 7 and Appendix H. Additional and supporting thoughts raised by survey participants in free-text responses include calls to: increase transparency of decisions; engage with *all* stakeholders; ensure sufficient time (not always more) to make decisions; increase reliance on and deference to evidence, data, and

expertise; increase testing, monitoring and evaluation; create or maintain independent bodies to remove partisan interference; improve bipartisanship; and, require longer-term planning and vision setting, accompanied by implementation, for example, a Senior Official at DELWP wrote in a free-text survey response:

“I would have 20-30 year plans across each Department with its portfolio agencies with review at 10 year and then detailed planning at 5 years, feeding into the electoral cycle with red/blue book processes. We have 4 year fixed terms in Victoria so 16, 8 and 4 year reviews and refinements to the strategy should occur with the 4 year plans being put into business plans”.

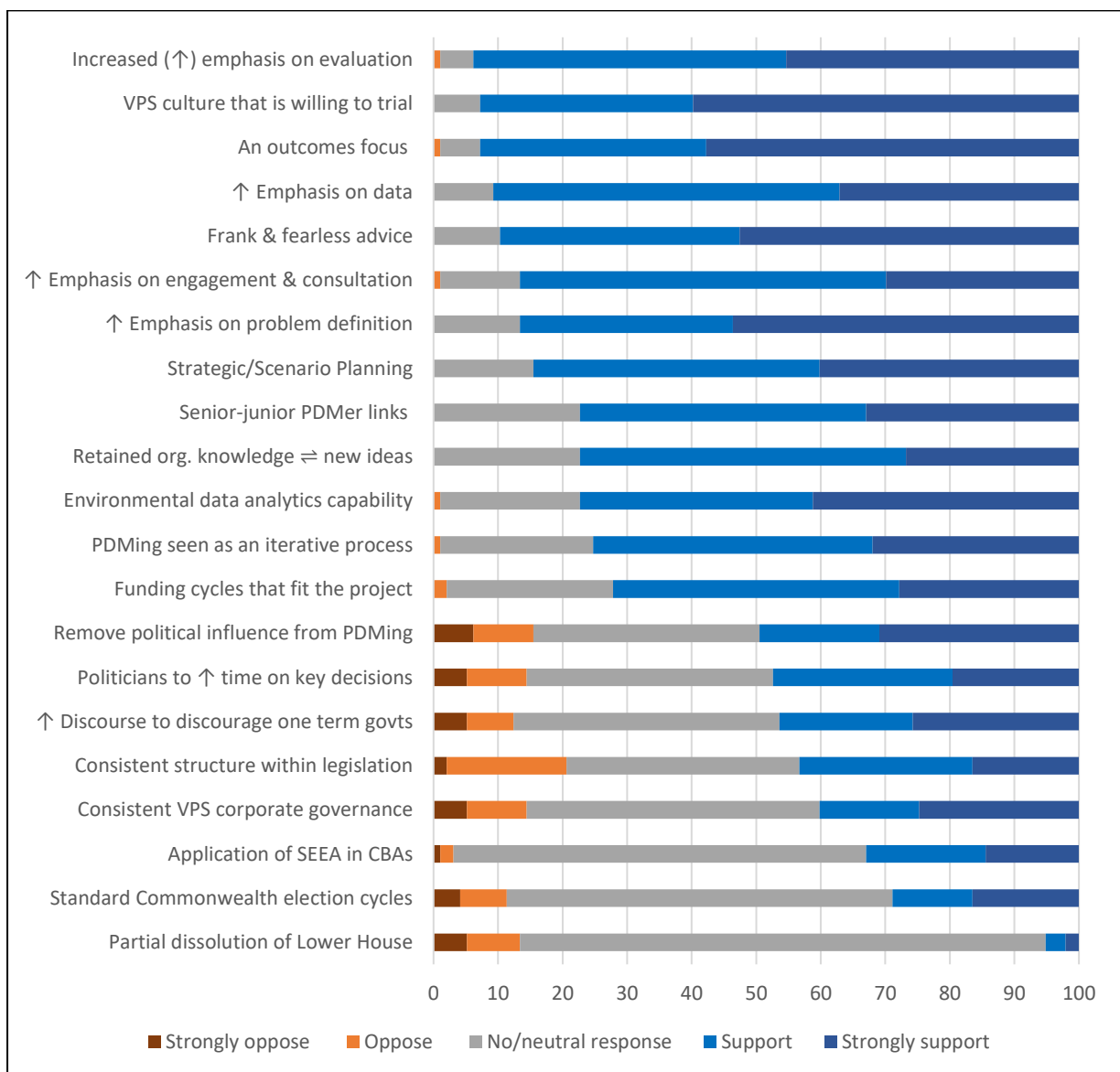


Figure 5. Survey participant support of interviewee suggestions for improving the effectiveness or longevity of public decisions. (n=97).

Embedding Sustainable Development

While participants are aware of sustainable development and have a personal definition of it, most survey participants do not consider SD to be ‘very well’ embedded in public decisions in the VPS, and on average consider it to be applied less than 50% of the time (Figure 6). Inconsistent definitions of SD and the level of individual responsibility taken for applying SD in PDs are contributors to this response variability. The responses of participants to the assertion that they, or people in roles like theirs, are the reason why SD is not integrated into more PDs support this argument (Figure 7).

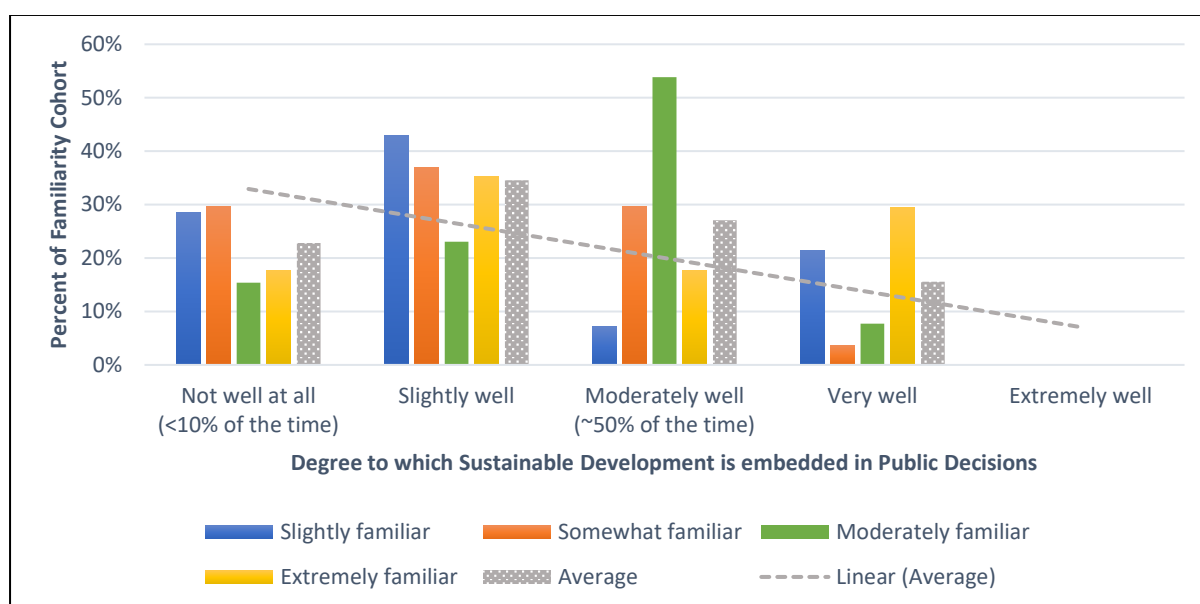


Figure 6. Survey participant views on how well sustainable development is embedded in public decisions, by self-assessed familiarity with the concept.

Familiarity cohorts run L-R: Blue - Slightly; Orange - Somewhat ('could have a BBQ conversation about it'); Green - Moderately; Yellow - Extremely; Grey - Average response. An average line of best fit is shown (n=97).

Personal responsibility was greater amongst interviewees; however, this may be an artefact of the interview method enabling or requiring them to talk through their perspectives. For instance, the percentage of unclear views was substantially smaller for interviewees, with whom clarification could take place. Importantly, the number of people who indicated that they are not to blame because they or others *are* implementing SD is small. This finding supports the data presented in Figure 6 showing that most participants agree that SD is not regularly embedded in Victorian PDs.

In discussing reasons why sustainable development is not achieved participants commented that: the achievement of SD has got to be politically driven and is not in the hands of bureaucrats; (6b, 7c, 8a, 21-,

Sc-DET, Sa-DELWP) it is not their agency's role;^(20a, Sc-DPC, Sc-DELWP) the scale and structure of the VPS inhibits integrated decision-making,^(7c, 21-, 25b θ , Sc-DELWP) lasting impact is constrained by the complexity of decision-making;^(9c, 11b) speaking up too much could be career-limiting;⁽²¹⁻⁾ the influence of any one person is limited;^(6b) external understandings of how government actually works are poor;^(20a) there is limited time to debate and address multiple competing priorities;^(6b, 13b, Sc-DELWP) more could be achieved from outside the VPS,^(21-, 25b θ) particularly as the public service is driven by the societal views reflected into it;^(3a, 5c, 24a θ , Sc-DELWP) and, that the current dominant paradigm of economic growth conflicts with SD.^(5c, 10a, 24a θ)

There were also a handful of people who agreed with 7c that, *"the public service is very left-wing. They care a lot about the environment and they don't sacrifice the environment at the table of the Gods of economic growth"*.^(18a, 19a) Those who acknowledged that they did play a role tended to indicate that *everyone* does,^(3a, 16b) that people's actions impact outcomes,^(2a) that the characteristics and values required to be hired into particular positions are not necessarily the same ones required to fight for SD,^(1a, 4a, 17b) or simply that, yes, with greater seniority comes responsibility to act regardless of the above factors and constraints.^(12b, 15a, 17b)

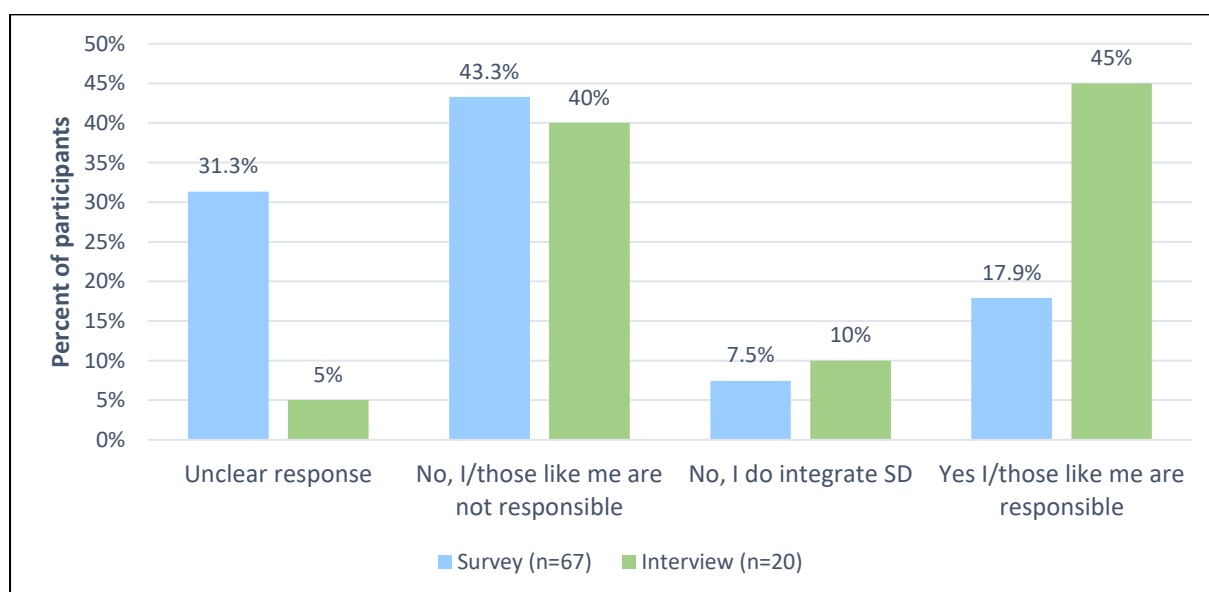


Figure 7. Apparent agreement with the suggestion that the participant or people in roles like theirs are the reason why more PDs integrating sustainable development are not made.

Case Study Comparisons

On face value, EREP illustrates the application of sustainable development in public decision-making. However, while the underlying goal may have been ecologically sustainable development, the Bill, Hansard, and Regulatory Impact Statement, show the primary selling point was the economic benefit it would bring to business: It was argued that EREP's mandatory requirements would encourage businesses to overcome market failures by driving investment in the expertise and information required to identify resource efficiency gains (State of Victoria, 2007). As time and staff moved on, and the low hanging fruit of implementation was picked, the primary objective of the program became more visible and EREP an easy casualty of a change in government.^{33cē} Thus, while framing can help get policies embedding SD across the line, additional factors are required to imbue longevity.

Notwithstanding clear evidence of inter-organisational brinkmanship and the absolute necessity of robust governance structures, on account of almost everyone interviewed about it, CDP is an example of a government project where all the players worked together.^{24a⊕, 25b⊕, 29a⊕, 22a⊕} Adequate internal capabilities, knowledge, time, respect, governance, communication (internally and externally), and clarity of role meant people knew what needed to be achieved and by when.^{23-⊕} Environmental monitoring of the project wrapped-up early because fears were unrealised and, according to the former Port CEO, the works positioned the State to sell a 50-year lease of the Port at a premium.^{28a⊕} Yet, as earlier referenced (Chapter 3, p.28), CDP is still considered in a poor light by many Melbournians, and poor outcomes around the Bay are still attributed to it. In light of the three independent reports favourably reviewing the project, the awards it won, and that it was completed ahead of time and well under budget, this enduring public distrust for the project is curious (Korbee, Mol, & Van Tatenhove, 2014; VAGO, 2012). Perhaps greater transparency around the business case, and equally intense media attention and stakeholder engagement on the post-project reviews as there was attention to pre- and during-project concerns, would have helped alter Victorian's perceptions.

Examining third-party reviews and interviewee accounts, showed that both case studies applied SD, but were framed differently: EREP was primarily a program in aid of sustainable development sold as a win for business; CDP was primarily argued as critical to the State’s economy but, had to demonstrate its social and environmental virtues to gain formal and community approval to proceed. These may seem like semantics, but the data clearly suggests that the way these case studies were presented to business and the community had a substantial impact on enduring perceptions of them.

Understanding and Application of the Sustainable Development Goals

“I was in Paris and we're talking about the Sustainable Development Goals and people are going, ‘Yes. It's, you know, it's all a happening thing’. You come back and you can't hear anybody even minutely concerned about it”.

- Kate Auty, Former Victorian Commissioner for Sustainability and the Environment

Awareness of the SDGs is low for those in or with ties to the VPS. Survey participants were far more likely to be able to have a conversation about SD than the Goals (Figure 8). One-third of interviewees were wholly unaware of the SDGs. Others said they were aware but spoke to SD more generally or a belief that the Goals will *align* with existing work, rather than reflecting on individual SDGs and targets or even indicating such detail exists.

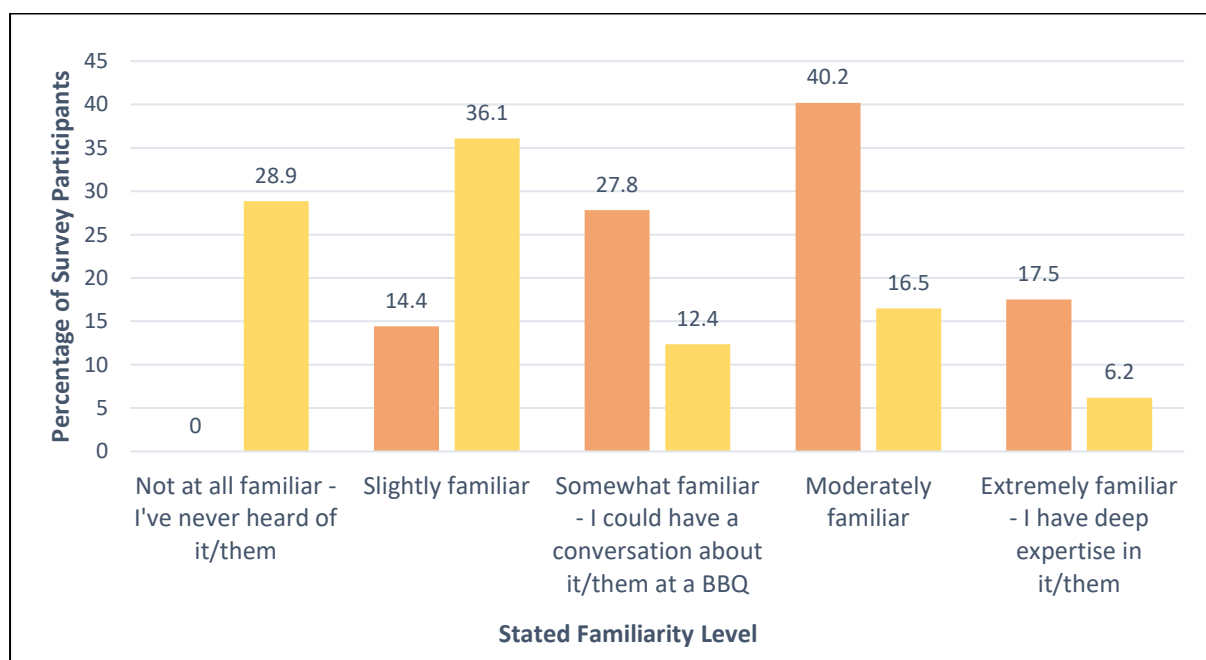


Figure 8. Self-reported familiarity with Sustainable Development and the Sustainable Development Goals among survey participants.

Notes: Sustainable Development = orange bars, Sustainable Development Goals = yellow bars; n=97.

The latter findings are validated by views expressed on the likely implications of the SDGs on PDMing within survey participants’ organisations (Figure 9). This question was only asked of those who indicated an awareness of the SDGs yet, on average, 35.8% of respondents answered ‘neither agree nor disagree’ to each suggested implication. This reveals either that one in three survey respondents are unfamiliar with PDMing approaches in the VPS (unlikely given their aforementioned average of 12.7 years of service), or, limited understanding of the Goals prevents those respondents from commenting on how they will impact public decision-making.

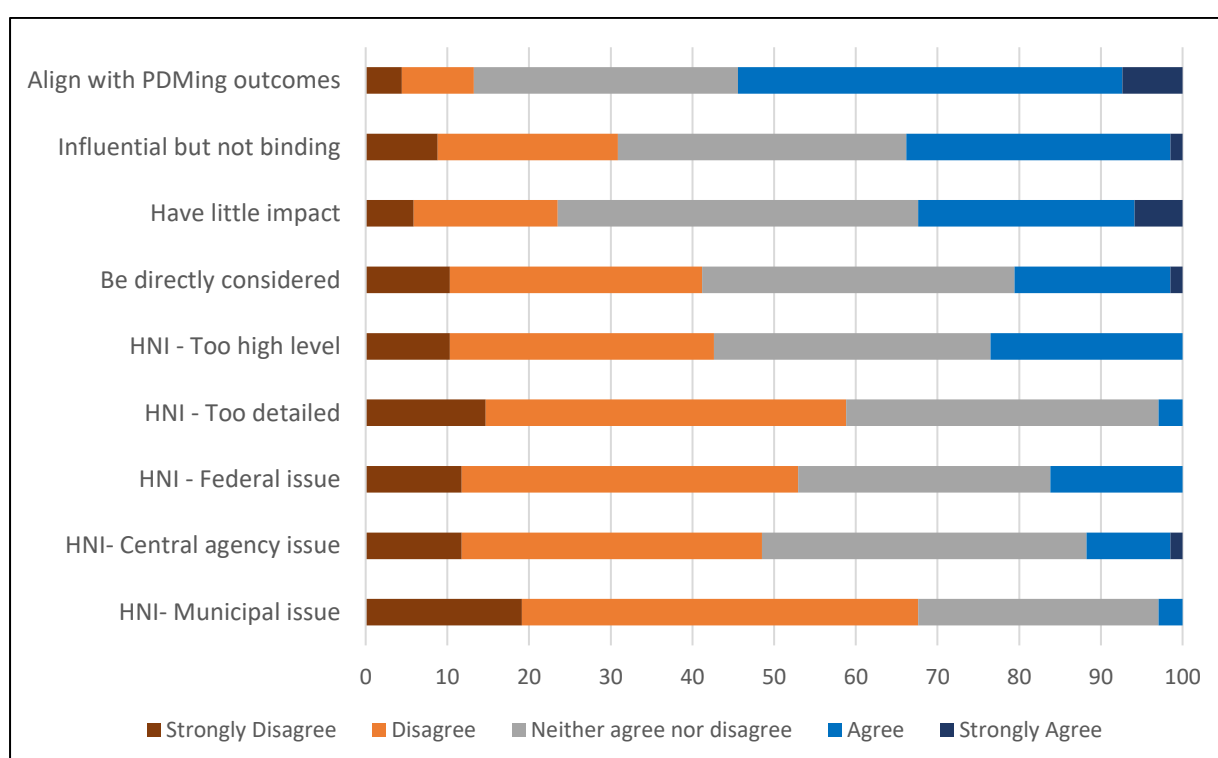


Figure 9. Survey participant views on the likely impact of the Sustainable Development Goals on organisational decision-making.

Notes: HNI=Have no impact; n=68.

Unsurprisingly, the Victorian and Australian Capital Territory Sustainability Commissioners and the representative from Sustainability Victoria ably drew these connections between Goals and public decision-making processes, pointing to activities such as State of the Environment reporting or intentions to build the SDGs into business and reporting plans.^(1a, 2a, 19a) Others in roles some might expect to be engaged with the Goals noted that, despite their personal awareness, the research interview itself was highlighting gaps in departmental dialogues: “What this discussion's leading me

to, is a realisation that we, as an agency, as a department, we haven't really been fair dinkum and looked at those Goals directly. We haven't looked at them in any structured way".^(4a) The EPA Chair commented: "...it's interesting, why am I aware of them? I'm aware of them because I sit on the Monash Sustainable Development Institute's Board. If I wasn't sitting there, I wouldn't even know about them. I would not even have any idea".^(15a)

All interviewees indicated that the Goals' visibility and application across government were to date limited: "...they're just not part of the decision-making matrix... I can't in three years ever remember anyone talking about or citing one of those Goals..."^(10a) And it was clear that the SDGs were not being routinely embedded or applied in Victorian PDMing practice and were unlikely to be anytime soon: "We are, sadly, if you go back 30 years, I believe we are nowhere near as prepared in, in a political frame, in a policy frame to embrace this, I don't think we're anywhere near it".^(4a)

Based on interviewee and survey free text responses, uptake of the SDGs is likely to be driven by four factors: alignment, complexity, perceived value and commitment, and responsibility.

i. Assumed alignment

Perhaps because their position in government inherently involves regular cross-portfolio decision-making, representatives from central agencies questioned the need to deliberately link current PDMing practice and priorities to the Goals:

"I think that the considerations that underpin the development of the SDGs are considerations that underpin development of public policy. And I don't think that that public policy is, -if it's trying to get to the same intent or outcome-, is deficient because it hasn't considered being one of the 17 Goals that governments have signed up to".^{12b}

"I think you can put a label on it which is sustainable goals... [but], You're making the same decisions... I can't imagine that people in the past made decisions that they didn't think were sustainable, that wasn't for the best outcomes of future generations and things like that".^{11b}

"...in terms of the sort of the daily work that you do, probably don't resonate that much with a lot of people, unless they work in a particular policy area... so in a daily sense, I'm not sure that those things will resonate in terms of the transactional advice that people are providing".^{13b}

Interviewees in other parts of government agreed that there is alignment but could also see the value in considering the Goals more formally: *“I think so much of what [current organisation] does, is quite aligned to them anyway.... But that said, I think you can always get new insight out of going through a formal process of alignment”*.⁽²¹⁻⁾

Assumptions about alignment may also exist because of the availability heuristic commonly resulting in the SDGs being seen as an extension of SD^(27a⊕, 35cē) *“I’d say that the Brundtland Commission... and everything I’ve been dealing with ever since has made me intrinsically think globally as part of my consideration of what to do here.... I reckon they’re the same principles. It’s just that, I don’t actually literally link back to the Goals”*.^(3a)

The presence of this heuristic is particularly concerning given that the SDGs address criticisms about sustainable development’s lack of definitional and measurement clarity by providing a metric-rich ‘plan of action’ (United Nations General Assembly, 2015b). The nature of the SDGs is such that, if PDMers understood those metrics relevant to their work, alignments would be self-evident. There would be no need for assumptions. SD and the SDGs are *not* the same: SD is a conceptualisation of where humanity wants to go and why, the SDGs are an embodiment of what needs to be done to get there. Linking the Goals to public practice is critical to their delivery, a lack of awareness and consideration of the targets and indicators within the roadmap will severely inhibit achievement of the SDGs’ objectives.

The issue of alignment, or belief that PDMers are implicitly considering the SDGs because of their familiarity with SD also indicates that people are less familiar with the Goals than implied. Shifting from the latter assumptions to using the Goals to find gaps in practice will help:

“I’m hopeful for, within three years, we’ll [be] flipping it on its head.... So you’re shifting it from a reporting framework, ‘This is what we’re doing, aren’t we brilliant’, to ‘Oooh, we’ve got real gaps in say, 13.10.4. What’s government or private sector going to do to address those so we actually do meet the targets?’ ...instead of a PR exercise and another overload of reporting, in a few more years you should actually get to use it as a common language across government”.^{19a}

In the meantime, a more deliberate, if subterranean, alignment may help obtain some traction and encourage greater open-mindedness to the Goals. For example, while 31a's organisation publicly supports the Goals, he deliberately talks in concepts more traditionally accepted by business and central agencies:

"When you say 'sustainable', you marginalise your arguments. You need to marginalise old style thinking. So, if someone's proposing coal, I would say, that they've got an appalling understanding of how to build a successful economy. That they're economically illiterate. I wouldn't say they're environmentally illiterate... I don't talk about environmental sustainability, I just talk about being successful".

ii. Complexity and understanding

Complexity was raised as an inhibitor to increased public and PDMer comprehension of the Goals: ^{(5c,}

25b⁺, 34c^ē)

"...if there's 179 targets or whatever, I just look at that and go, 'God, how am I gonna... I'm not gonna measure myself against each of those. I've got all these other corporate kind of targets I have to deliver on. I've got existing government policies I need to deliver on. How do I kind of bring all these 179 targets to kind of bear on my work?' ... I kind of wouldn't know where to begin". ^{6b}

When asked why they believed *Take2*, Victoria's climate change targeting initiative, is regularly linked back to the 2015 *Paris Agreement* but not the SDGs (DELWP, 2016), official's responses further illustrated how complexity and understanding might negatively manifest themselves:

"My only thought and, literally it's thinking out loudly, is that it's to do with the prominence in the public mind. I think if you ask the same question that you asked about do you know what Sustainable Development Goals are? Do you know what Paris Agreement is? You'd get a much higher success rate. Everyone knows about [the] Paris Agreement. It's in the news all the time, so it's got a public profile. So if I'm trying to roll out a program and I want people to buy-in. I go with a thing that's sexy and well known". ^{6b}

In the absence of that attention, visibility and knowledge the situation has arisen where, *"probably as a country, Australia doesn't really think the Sustainable Development Goals are as important as they ought to be for us. They're regarded as pitched to an international aid environment and to that extent, they're not necessarily relevant to us"*. ^(1a) That is, cognitive bias concerning the social and economic relevance of the Goals to Australia compared to countries where Maslow's hierarchy is less well met,

has led some to see the SDGs as an extension of the Millennium Development Goals ('MDGs') and only important locally from an environmental perspective.^(1a, 4a, 20a)

Such perceptions add weight to the earlier argument that, due to a lack of communication on what the SDGs *are*, prior knowledge of SD and the MDGs inhibits action toward achieving them. Combined with the earlier discussed variation in definitions of SD, these fallacies are likely to challenge understandings of what the Goals represent considerably. Using 'the Global Goals' as a preferred nomenclature may be a starting point to reframe them and encourage deeper consideration.

iii. Perceived value and strength of commitment

Perspectives on the utility of the Goals traverse the practice and political spectrums. People were upbeat when discussing the Goals' potential, particularly as a tool to quantify how to remain within planetary boundaries at a country level and subsequently apportion personal, business and government-level targets. Just as 19a noted that the narrative can be reframed to show the benefit of the SDGs as a gap-analysis tool and improve PDMing outcomes, 32bë reflected that the SDGs can be used to improve future EREP-like programs. By providing, "*a science-based or a global referencing in design*", the SDGs provide an ability to say, "*This is what the planet actually needs you to do, [rather than] ...just keep consuming, regardless of what the planetary boundary is. But sort of be more efficient at it. Knock off 5% or 10% or something like that*".^(32bë) Several sustainability-focused leaders talked to how this understanding is being reflected in the primary functions, reporting processes, public documents, and broader operations of their organisations.^(1a, 2a, 19a, 31aë) For example, after having found that when she talked "*to people about the practical application, they have trouble working that [how to apply the SDGs] out*", the Victorian Commission for Sustainability and the Environment decided to, "*develop a methodology to apply the SDGs to State of the Environment reporting*", so as to provide, "*a prototype that will become a methodology for jurisdictions to pick up and apply SDGs at a state or national level*".⁽¹⁰²⁰⁾

Notwithstanding the policy value of the SDGs and efforts to increase their ease of application, however, there was a common thread around commitment to the Goals by politicians and senior leaders being a determinant of success. While the presence of international agreements was seen as a constructive antidote to competing local interests, some signalled that signing up to the agreements is easy and should not necessarily be taken as a meaningful commitment to them:

“...If you’ve signed up to sort of a treaty or a convention or whatever, internationally, that I think is very good, and it’s very comforting, for politicians, in a way, ‘Oh it’s not me, it’s these international- they’ve sort of mandated it’, ‘The UN has said...’. They can be invoked in a circumstance where, you know, there’s a lot of other pressure to do otherwise”.^{27a^u}

“The frameworks, by nature, like UNGC, tend to be front end, and commitment based and it’s easy to say, ‘Yes’.... It’s much harder to put your hand up and say, ‘Well, I’m accountable, I’m responsible... And here’s what I’m going to do’”.^{32b^ě}

“And so, the thing I’m challenging is, just because we’ve signed a piece of paper and made some public statements ... why does that actually represent the fact that that is true and correct? Like, that is not an accepted goal. That is just a point in time. People doing what they think they have to do... There is never actually an accepted position because it’s always evolving, day in day out things change and politicians hate to be locked into anything”.^{26^u}

iv. Clarity of responsibility for implementation

A lack of clear local responsibility for the Goals was raised as a concern and potential stumbling block to their achievement.^(5c, 6b, 15a) 5c noted that, where subnational jurisdictions are required to implement international agreements, standard practice is to, “...look to the Commonwealth first, and the Commonwealth will then tend to work with jurisdictions to determine what their roles will be”. Interviewees also made the point that, in the absence of Commonwealth action, states can choose to take the lead but had not yet done so on the SDGs and were unlikely to:^(5c, 6b, 33c^ě, 34c^ě)

“If the Victorian government said, ‘We wanna make it a priority to- Victoria’s a kind of national leader in delivering on the UN Sustainable Development Goals’, then that could have an impact. But I’m not sure if the government’s made any statements with regards to that”.^{6b}

Public sector priorities mirrored this view: even when Department Secretaries became aware of them, agencies were unlikely to actively facilitate the Goals: “Will we do anything with it? Maybe, maybe

not. Like in all honesty. Because, yes we should, but there's no driver. There's no system, there's no reason... It'd have to be leadership telling us that it's important".^(12b)

Whether the advice that the Goals are subnationally important is missing due to a lack of awareness, value-judgement, or the perception that the Commonwealth is actively leading and thus deterring states from action, is unclear. In relation to the latter point, the findings of and muted official response to the APH report (Foreign Affairs Defence and Trade Senate Committee, 2019; *pers. comms.* Senator Claire Moore), suggests it may be some time before comprehensive Commonwealth direction on the Goals occurs. This presents an opportunity for states who are aware of and see the value in the SDGs to take a more active leadership role in their achievement.

To this end, the role of organisational and central agency leadership was raised numerous times, particularly against the backdrop of other state government priorities. Several non-central agency senior officials flagged the significance that a direction from the centre would have. Central agency action regarding the Human Rights Charter leading to VPS-wide practice improvements to educate staff and better embodiment of it within public documents was raised as a comparable example of what can be achieved.^(8a, 15a) Without Commonwealth or Victorian central agencies acting as catalysts, there was genuine concern that, *"we've signed onto another external UN treaty, and it hasn't flowed through"*.^(15a)

Conclusion

While all of those interviewed and surveyed are aware of sustainable development, its consideration within Victorian PDMing is inconsistent. Similarly, while there is consensus on the validity of the *Our Common Future* definition, ambiguity around what the concept means, variable reference to its principles, decision-makers not seeing their responsibility in its delivery, and misbeliefs that SD is predominantly an environmental issue have constrained the concept's application.

The state of knowledge regarding the Sustainable Development Goals is worse. The SDGs are poorly understood - even by those who indicate an awareness of them. There is confusion about what they are, their tangible benefits are largely unacknowledged, and a widely evident misperception that alignment rather than direct consideration will suffice in achieving them persists. These findings are consistent with submissions to and findings of the Senate Committee Inquiry (Foreign Affairs Defence and Trade Senate Committee, 2019).

Despite the inconsistent application and awareness of SD and the SDGs, PDMers proposed and supported a large number of tools to support more effective and enduring public decisions, such as increased emphasis on evaluation, data, outcomes, and a willingness to trial, as well as greater frank and fearlessness, engagement, problem definition, and strategic/scenario planning. These ideas and support for them illustrate an enthusiasm and determination that the public sector can improve its efforts. As illustrated by the false confidence in the ability of the SDGs to align with existing policy goals, however, heuristics and framing will play a pivotal role in the implementation success of such tools.

Chapter 5. What Influences Public Decision-Makers in Making (or not) Public Decisions that Embed Sustainable Development

Key Points

- There are 40 common influences on Victorian public decision-makers that impact upon the achievement of SD. These factors are neither solely barriers nor enablers but inherently possess the ability to be both.
- This volume of factors and duality of states presents a considerable degree of cognitive complexity for those trying to work with them, and is itself a reason for public outcomes failing to meet public aspirations. Further aggregation of these is cautioned against as it would reflect an oversimplification of the operating environment and limit efforts to identify effective solutions.
- Which influences are most important depends on context, who is asked and how the data is analysed. When averaging rankings across all of the methods applied, the five most important factors are *Personal characteristics of PDMers*, *PDMing considerations*, *Appetite for Change*, *Evidence*, and *PDMing processes*. The *Personal characteristics of PDMers* is found to impact the functioning and conceptualisation of many other influences.
- The hierarchy of influences is noticeably different amongst the interviewees associated with the EREP case study - a public decision considered to be a reflection of sustainable development being embedded in public decisions - for whom *Commitment to concepts*, *Engagement*, and *Implementation* ranked more highly.
- Channel Deepening and EREP interviewees see the world most differently, and the more or less overtly upbeat most similarly, although significant differences exist in this latter cohort with regard to the frequency with which they mention *Leadership*, *Personal characteristics of PDMers*, *Appetite for Change*, *Institutions*, and *PDMing considerations*.
- Network mapping is a useful exercise for understanding the relationship between influences and highlighting less commonly raised but underpinning factors. It also indicates that many

important influences are on the periphery of the predominant state of PDMers' circle of control.

- Donella Meadows' leverage points ('LPs') framework is useful in demonstrating where and why PDMers get stuck and where and how to most effectively drive enhanced action toward the achievement of SD within the VPS. Positive feedback loops and the potential to evolve the system appear to be the LPs with the greatest capacity to drive or stymie change within the Victorian PDMing system.

Introduction

Practitioner experiences of public decision-making ('PDMing') and influences upon them in this process were not highly evident in the literature. This was the case both for general public decisions and those relating to sustainable development or the Sustainable Development Goals ('SDGs') specifically. Rickards *et al.* (2014) provide a notable exception to this. Given these findings, the main focus of this research became centred on seeking to understand, document and draw on the insights of those with considerable PDMing experience in the Victorian Public Sector ('VPS'). The purpose being to ground explanations of why public decision-makers ('PDMers') may struggle to achieve sustainable development ('SD') within their lived experiences, and similarly to draw upon ideas for how to overcome such barriers. This chapter discusses the common themes stemming from interviews of 35 practitioners, the analytical methods used to make sense of those themes, and begins to explore what changes are needed to enhance public decision-making within the State of Victoria.

It finds 40 influences that commonly impact upon decision-makers and the decision-making process. The ranking of importance for these varies pending the method of analysis and whether those asked have worked directly on projects seeking to embed sustainable development in public decisions.

As this is such a comprehensive chapter, with multiple complex analytical streams applied. The methods and results are co-located for each analysis subsection. That is rather than one standalone methods section and one standalone results section, the two are discussed together for each of the

following analyses: Thematic; Statistical and cohort; Networking mapping; and systems thinking. These analyses build on the approaches described in Chapter 3, and follow the flow chart shown in Figure 10.

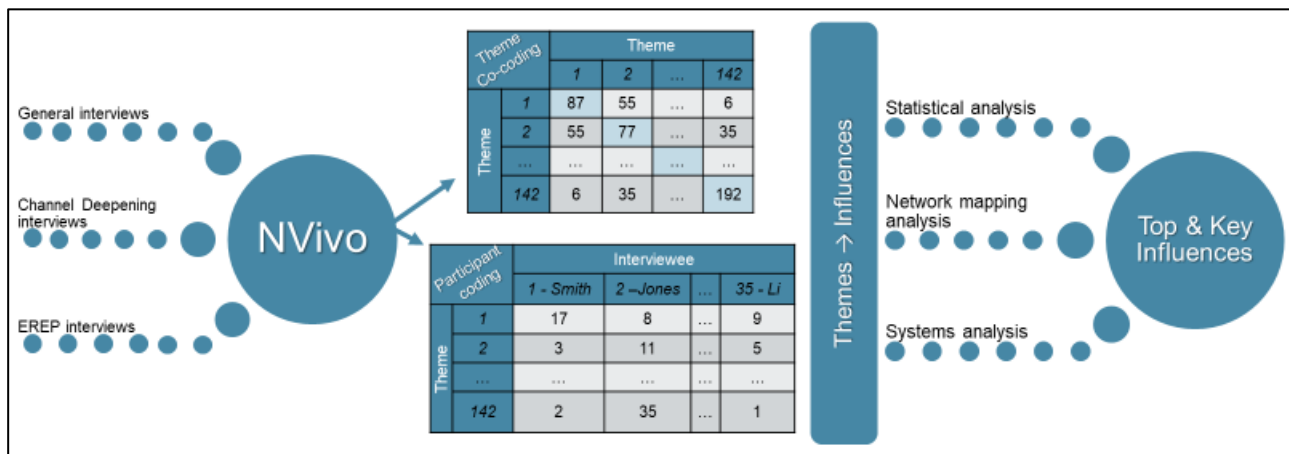


Figure 10. Methods used to identify and triangulate the influences acting upon public decision-makers seeking to embed sustainable development in public decisions.

As per Chapter 3, Interview transcripts were uploaded to NVivo for thematic inductive analysis; Matrices were extracted showing the coding values per themes and/or individuals; Themes were aggregated to influences; Influences and their corresponding coding data were analysed using statistics, network mapping and systems thinking, before being compared to enable conclusions regarding top and key influences.

Analytical Methods and Results

Thematic Analysis - What Influences People

Method

As per Chapter 3, 35 participants were recruited to participate in the interview component of the research. All interviews were recorded, verbatim transcribed, checked, and sent for interviewee review, before being uploaded to NVivo for inductive thematic analysis (Braun & Clarke, 2006; Bryman, 2016). Given the subjectivity of coding practice, verification of coding consistency was undertaken multiple times over an extended period.

Once coding of transcripts was complete, two matrices were exported for statistical, network mapping and systems analysis: One presenting frequency thematic coding and co-coding between themes (see Appendix A, Table A1), and another showing how frequently individuals spoke to each theme (see Appendix A, Table A2).

Aggregation of the 142 themes identified through thematic analysis resulted in the identification of 40 influences with which public decision-makers contend when making public decisions, especially those public decisions concerning sustainable development (see Table 3 and Appendix D). These influences are considered to be the smallest possible units to which the issues raised by public decision-makers can be grouped without reducing the value of the insights shared.

Results - Thematic analysis

The volume of influences identified supports the hypothesis that many factors are impacting upon public decision-makers. At the same time, the detail provided by participants dispels the idea suggested by the original hypothesis that such factors are either barriers or enablers, but instead shows they are more typically both (see Appendix E). This finding is important as it suggests both that the influences are more complex than thought, and that there is the potential to influence the dominant phenotype on display.

Table 3. The 40 influences identified from the research interviews

Influence			
Alignment of SD & PDs	Election cycles	Leadership	Politics
Appetite for change	Engagement	Legislation	Public awareness
Businesses/non-govt. actors	Evaluation	Mandate	Relationship between bureaucracy & ministers
Central & review agencies	Evidence	Media	Relationship between PDMers & community
Cognitive biases	Framing	Ministers	Resources - capability/capacity
Collaboration	Funding	Paradigms	Risk
Commitment to concepts	Governance	PDMers' understanding	Role of PDMers/Govt.
Complexity	Implementation	PDMing considerations	Scale
Culture	Institutions	PDMing processes	Strategic planning
Economics	Jurisdiction	Personal characteristics of PDMers	Time

(SD=Sustainable Development, PDs = Public decisions, PDMers= Public decision-makers, PDMing= Public decision-making, Govt.= government).

The perspectives collected from interviewees and survey participants enabled further calibration of the initial Covey schema (Figure 1) to result in Figure 11. Their experiences indicate several influences ought to be collapsed (e.g. capability and capacity of bureaucracy), some expanded (e.g. complexity, scale, and profile), and others added (e.g. central agencies, and risk) but, much of the model remains

the same. Suggesting there is reasonable consistency between the literature and the Victorian public decision-making experience regarding the type of influences and individual's control over them.

Statistical Analysis

Total Coding Analysis

Method

Data within Table A1 (Appendix A) allowed comparisons between influences, leading to a ranking of most and least mentioned themes overall, and identification of outliers through distributional analysis. These values are referred to as ‘total coding’ throughout this thesis and are the basis for the network mapping analysis (page 83, below). Influences were sorted based on their frequency of coding overall (i.e. across all interviews) (Figure 12), and distributional analysis was conducted to identify outliers within these counts (Figure 13).

Results - Total Coding Analysis

Total-coding analyses showed the median total passages coded was 180.5 and that *Personal characteristics of PDMers* was most coded to (838 passages), ergo most important, and also a statistically significant outlier, exceeding the 97.5% confidence interval.

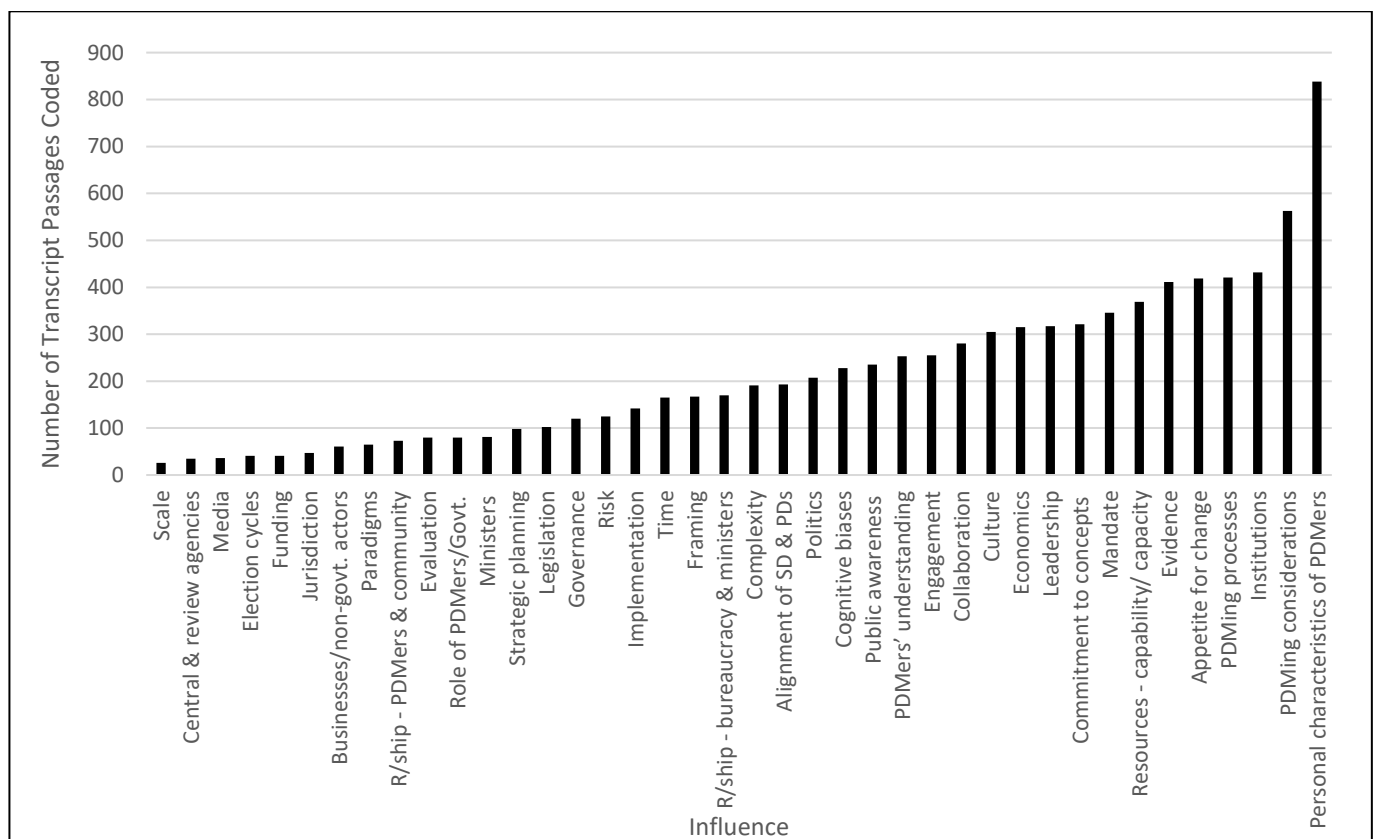


Figure 12. Number of passages coded within NVivo across all interview transcripts, for each influence.

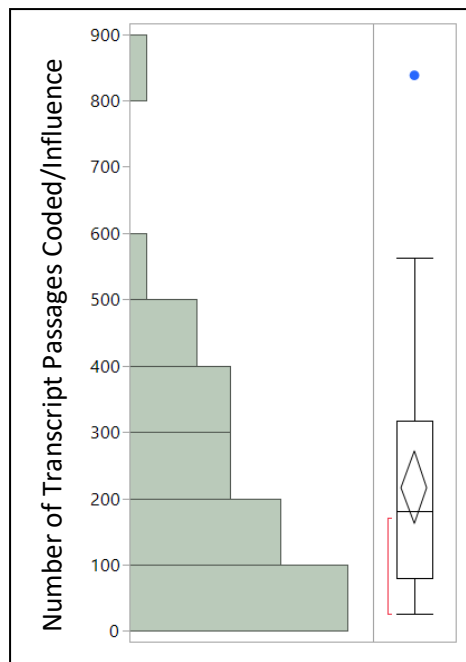


Figure 13. Distributional analysis of the total number of passages coded within NVivo per influence overall.

The box and whisker plot indicates the 95% confidence intervals of the number of times an influence was mentioned. The deep blue coloured dot indicates *Personal characteristics of PDMers* to be an outlier.

Counts of how many interview transcripts had at least one passage mentioning each influence were also reviewed (Figure 14).

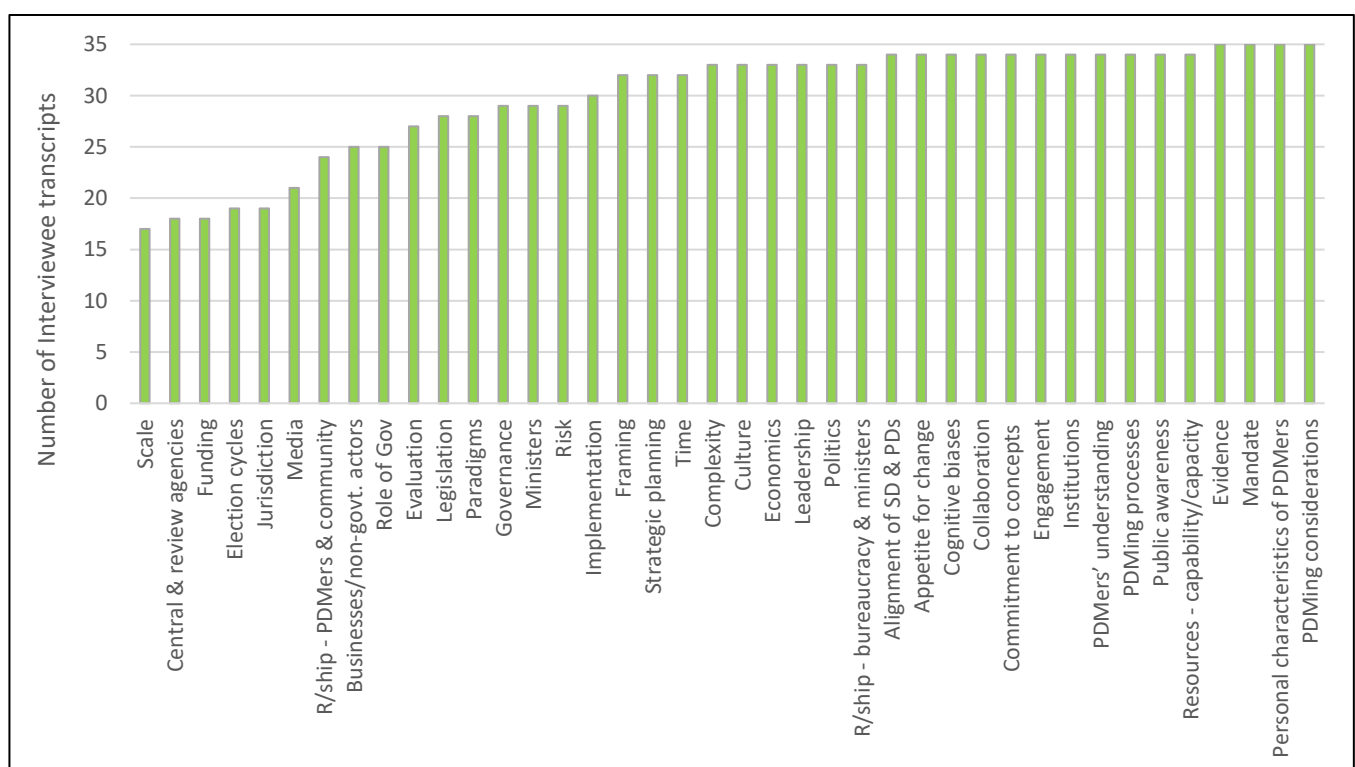


Figure 14. Number of interviewees who mentioned each influence.

While only four influences were mentioned by all participants (*Evidence, Mandate, Personal characteristics of PDMers and PDMing considerations*), on average participants each spoke to 34

(range 26-38) of the 40 influences, and three-quarters of influences were mentioned by at least 80% of participants. *Scale* was the only influence mentioned by fewer than half of all participants.

Appendix E shows that there is variability in the consideration of the influences: Some participants spoke to them only as a barrier, others only as an enabler, others still as both barrier and enabler. This kind of thinking was also reflected in the survey responses to possible barriers and enablers to the integration of sustainable development in public decisions, while a number of people recognised they had witnessed influences as both (Figure 15). Note, however, that as the survey was conducted prior to the thematic analysis being conducted, the 40 influences discussed throughout this thesis were not directly tested with survey participants.

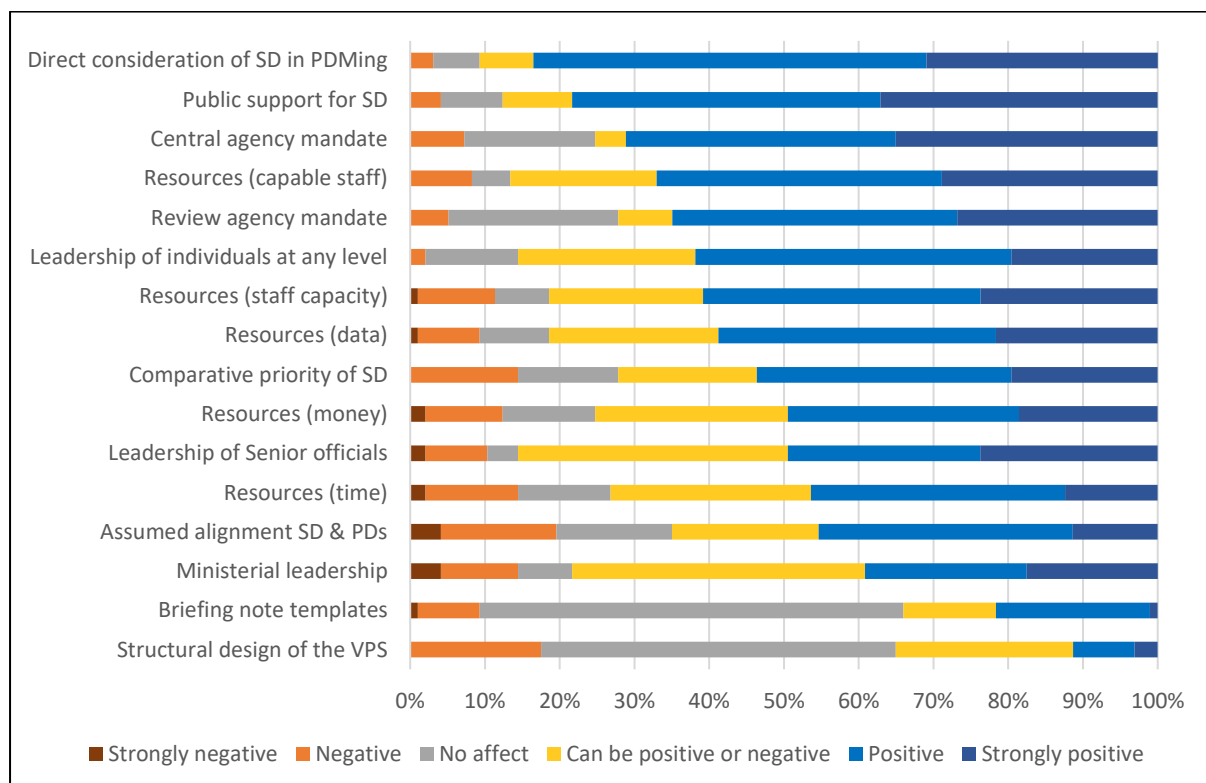


Figure 15. Survey participant responses to interviewee identified factors impacting the embedding of sustainable development in public decisions.

Note: While similar, the options presented to survey participants differ from the identified 40 influences, as the survey was conducted prior to thematic analysis of interview transcripts being completed.

Co-Coding Analysis

Method

Table A1 (Appendix A) highlights which influences were most frequently mentioned in conjunction with other influences ('co-coding'), indicating where relationships *between* themes might also be

important. Co-coding is used here as an indication of the strength of a relationship between influences. It is outside the scope of this research to categorically identify how such relationships may manifest, i.e. further research would be required to meet the approach of Kim (2013, p. 1). Nonetheless, collation of this data allowed such relationships to be identified and analysed (see Network Mapping, below) and creates opportunities for further exploration of antagonistic or synergistic relationships between influences in future.

Results - Co-Coding Analysis

When considering relationships *within* the coding set of a single influence (i.e. reading down columns in Table A1) to understand how individual influences were proportionally conceptualised by interviewees in relation to other influences:

- The most frequently co-coded influence (i.e. overlapping) within other influences' coding sets is *Personal characteristics of PDMers*. It is the highest-ranking co-coded influence within the coding sets of 13 other influences: *Cognitive biases, Collaboration, Culture, Governance, Institutions, Leadership, Ministers, Paradigms, Relationship between bureaucracy & ministers, Resources, Risks, Role of Govt. and Strategic planning*). 70.59% of passages coded to *Relationship between bureaucracy & ministers* were also coded to *Personal characteristics*. However, within the coding set of *Personal characteristics* itself, only *Leadership* is regularly co-coded with it (22.32% of *Personal characteristic* coded passages also feature coding to *Leadership*).

These results suggest the *Personal characteristics of PDMers* are important in the functioning and conceptualisation of many other influences, but other influences are not necessarily important to it.

- *PDMers' understanding* (defined here as "*Understandings (including definitions) and awareness of SD and the SDGs, including confusion with one another and the MDGs*") is discussed in isolation most often (69.7% of the time). It has no overlap with 17 of the 39 other influences, and where it is co-coded the highest overlap is with *Commitment to concepts*

which 16.21% of the former's passages are also coded to. These findings imply sustainable development is neither thought about in conjunction with many other influences nor discussed at length when it is mentioned with others.

- The three influences, *Governance*, *Ministers*, and *Politics*, were discussed in conjunction with other influences most often: each recording a self-coding percentage of between 19.26% and 19.68%, i.e. less than 1 in 5 passages of text coded to each of these influences were coded to them alone, demonstrating that these influences are often thought about with others.
 - In the case of *Governance*, its highest co-coded influences were *Personal characteristics* (45% of *Governance* passages overlap with this) and *PDMing Processes* (36.7% overlap). It is interesting that *Personal characteristics* were raised within *Governance* ever so slightly higher than *PDMing process*, as while *Governance* mechanisms are meant to help standardise processes they are often argued to be driven by people (see Chapter 6).
 - The highest co-coded influence for *Ministers* was also *Personal characteristics* (48.2% of *Ministers* passages overlap with it) followed by *Relationship between bureaucracy & ministers* (37% overlap). This is understandable, although due to the nature of their role one might expect *Politics* to also feature more prominently in conversations about ministerial characteristics and incentives.
 - *PDMing considerations* (37.2% of passages coded to *Politics* overlap) followed by *Mandate* (28.5% overlap) were the highest co-coded influences within *Politics'* itself.
- *Evidence* is also interesting to consider from a co-coding perspective. It was most likely to be discussed by itself (33.1% of its coded passages) or in conjunction with *PDMing processes* (21.41% of its coded passages). However, like *Personal characteristics of PDMers*, it featured highly in the coding sets of other influences: 38.22% of discussions about *Complexity*, 27.5% of discussions about *Evaluation*, and 24.39% of discussions about *Funding* also touched on *Evidence*.

- The coding set of *Business/non-govt. actors* also stands out given the high proportion of its coded passages that overlap with *Appetite for change* (65.57%). This suggests the role of non-government actors in often seen by public decision-makers as building an appetite for change.

Regression analysis between influences (i.e. comparing how often each influence was coded to other influences) found the greatest similarity between:

- *Leadership and Personal characteristics of PDMers* ($R^2=0.41$)
- *Relationship between bureaucracy & ministers and Personal characteristics of PDMers* ($R^2=0.398$)
- *Appetite for change and Businesses/non-govt. actors* ($R^2=0.326$)
- *Ministers and Relationship between bureaucracy & ministers* ($R^2=0.31$)
- *Cognitive biases and Personal characteristics of PDMers* ($R^2=0.30$).

While relatively weak, the presence of these relationships at all is noteworthy given the overwhelming weighting that including self-self relationships in a regression creates. The lowest regression value is for *Paradigms v Framing* ($R^2=2.7e-7$).

When considering the binary presence or absence of relationships, eight influences were found to be coded in conjunction with *all* other influences to some degree (*Influence* - total coding rank): *Appetite for change* - 5; *Complexity* - 17; *Economics* - 15; *Institutions* - 4; *Leadership* - 8; *Mandate* - 6; *PDMing considerations* - 2; *Risk* - 25. Of these, those which rank more highly may thus be considered more dominant influences given their apparent value both in the number of mentions and presence within the discussion of other influences. While those that are less highly-ranking based on the total number of mentions but which feature highly in co-coding may be hidden or supporting influences, perhaps less well recognised but still ever-present.

Cohort Analysis

Method

As per Chapter 3 (pages 30-31), once proportional coding had been established for every individual interviewee, two further steps were undertaken:

- i. proportional coding across all individuals was summed for each influence to provide a 'base average' focus across all 35 interviewees. Averages were then ordered to indicate which influences were most commonly coded to. Applying the earlier mentioned presumption, that the more something was talked to the more important it was considered to be by the interviews (page 30, Chapter 3), provided an indicative hierarchy of most to least important influences across all participants (see column 'All (Av)', Table Appendix F).
- ii. Cohort analysis was undertaken to compare hierarchies within three distinct groups.

Three sets of cohort analysis were compared to this base average:

- *Interview type*: The 'average cohort focus' values (calculated by averaging the proportional coding of all interviewees within a cohort) for general interviewees (n=21) were compared with those of Channel Deepening Project (n=9) and EREP interviewees (n=6) respectively, and against the CDP-EREP combined average values (n=14). Recall, as per Chapter 3, page 27, one interviewee was a representative for both case studies.
- *Seniority of role of the interviewee*: Participants were sorted and compared based on their position within the Victorian Public Sector or equivalent position if now working outside of the VPS, as was the situation for some case study participants. The three cohorts encompassed Mid-Level Officials (n=8; Senior Policy Officers, Team Leaders, Managers), Higher-Level Officials (n=10; Directors and Executive Directors), and Senior Officials (n=17; Secretaries, Deputy Secretaries, Commissioners, CEOs, etc.).

- *More or less overtly upbeat interviewees*: Sentiment analysis was manually conducted to assign participants to one of these two cohorts based on their demeanour and comments within the interview.

While such categorisation is a subjective undertaking, there was nonetheless an over-riding impression that those who were more overtly enthusiastic (n=23) had a different take on what and how influences impact public decision-making and the application of sustainable development. This difference in perspective also appeared to extend to their self-perceived capability to effect change in public decision-making. That is not to say that those less overtly upbeat (n=12) were pessimistic rather than they did not present the energy or optimism that was apparent for some other interviewees. Apparent outlooks may well be a temporary state brought on by the interview setting, a bad day, or indeed being asked to reflect on past PDMing experiences. People are not upbeat all the time, and this points to a limitation in the sentiment analysis and highlights the value of including a personality test or similar in future incarnations of this research.

Comparison between cohorts within each coding set and against the all-participant base average illuminated key differences between groups when presented in *Microsoft Excel* numerical data tables and graphs (Figures 18, 20, 22). These comparisons were also made within *JMP*: distributional analyses identified statistically significant outliers in the amount of focus individual cohorts placed on particular influences; and, regression analyses compared similarity in the overall focus between different cohorts.

Results - Cohort Analysis

Figure 16 illustrates that when considering how often influences are discussed, on average across all interviewees *Personal Characteristics* is an outlier taking up an average of 8.15% of coded conversational focus in each interview. Figure 17 shows this was followed by *PDMing considerations* (5.91%), *PDMing processes* (4.94%), *Institutions* (4.47%), and *Evidence* (4.43%). The least discussed

influences across all interviewees were, on average, *Funding* (0.61%), *Election cycles* (0.56%), *Media* (0.53%), *Central & review agencies* (0.46%), and *Scale* (0.41%).

The most like-individuals in terms of their conversation focus (based on individual's proportional coding of influences) were both Senior Officials from DELWP or its portfolio agencies ($R^2=0.73 - 4a:15a$). More than thirteen per cent of each of their coded transcripts was devoted to *Personal characteristics* and up to 9.69% to *Leadership*, although 4a spent an equal amount of time focused on *Economics* (7.17%) and understandings of it. However, this was the only strong linear relationship between interviewees, all other relationships had R^2 values below 0.70 and of the possible 1190 comparisons, only nine relationships with R^2 greater than 0.60 were present. This illustrates great variability among individuals when discussing their PDMing approaches and may indicate that they have similarities in defined areas of thinking about PDMing only.

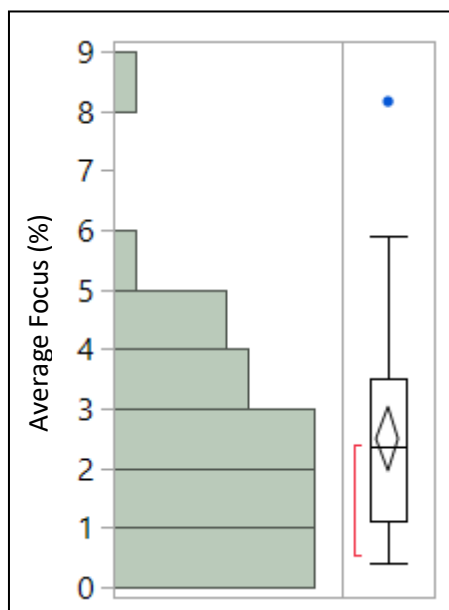


Figure 16. Distributional analysis of the average focus per influence across all interview transcripts.

The box and whisker plots indicate the range of influences for which the average focus is within 95% confidence intervals. The deep blue coloured dot indicates that *Personal characteristics of PDMers* is an outlier.

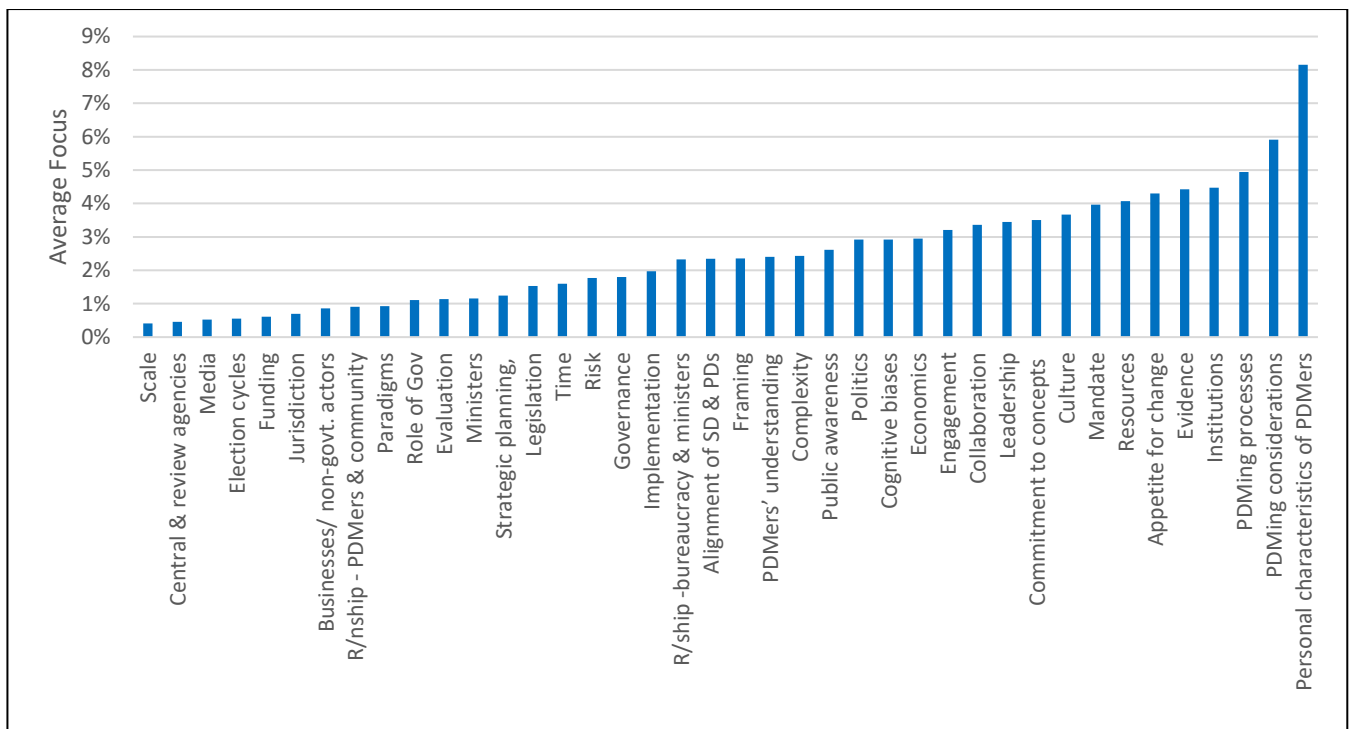


Figure 17. Base average focus per influence across all interviews.

Interview type cohort analysis

Figure 18 highlights the variation in focus across all interview types (general, CDP and EREP). In particular: *Implementation*, *Engagement*, *Commitment to concepts*, and *Appetite for change* were focused on more strongly by EREP participants than not; *Complexity*, *Collaboration*, and *PDMing processes* were focused on more strongly by CDP participants than not; and, *Economics* and *Leadership* were focused on less so by CDP participants than EREP or general interviewees.

It does not appear that the smaller number of participants in the EREP cohort is the cause of the difference, as variation amongst participants was greatest for the general-interviewee cohort (the average standard deviation between general-interviewee responses is 1.59%, *c.f.* 1.39% for EREP and 1.29% for CDP). Further, even after removing the values of the individual who spoke to *Implementation* most and recalculating the average focus, *Implementation* would only fall one place in EREP rankings. Thus, a genuine difference in experience and outlook across different case studies is considered more likely.

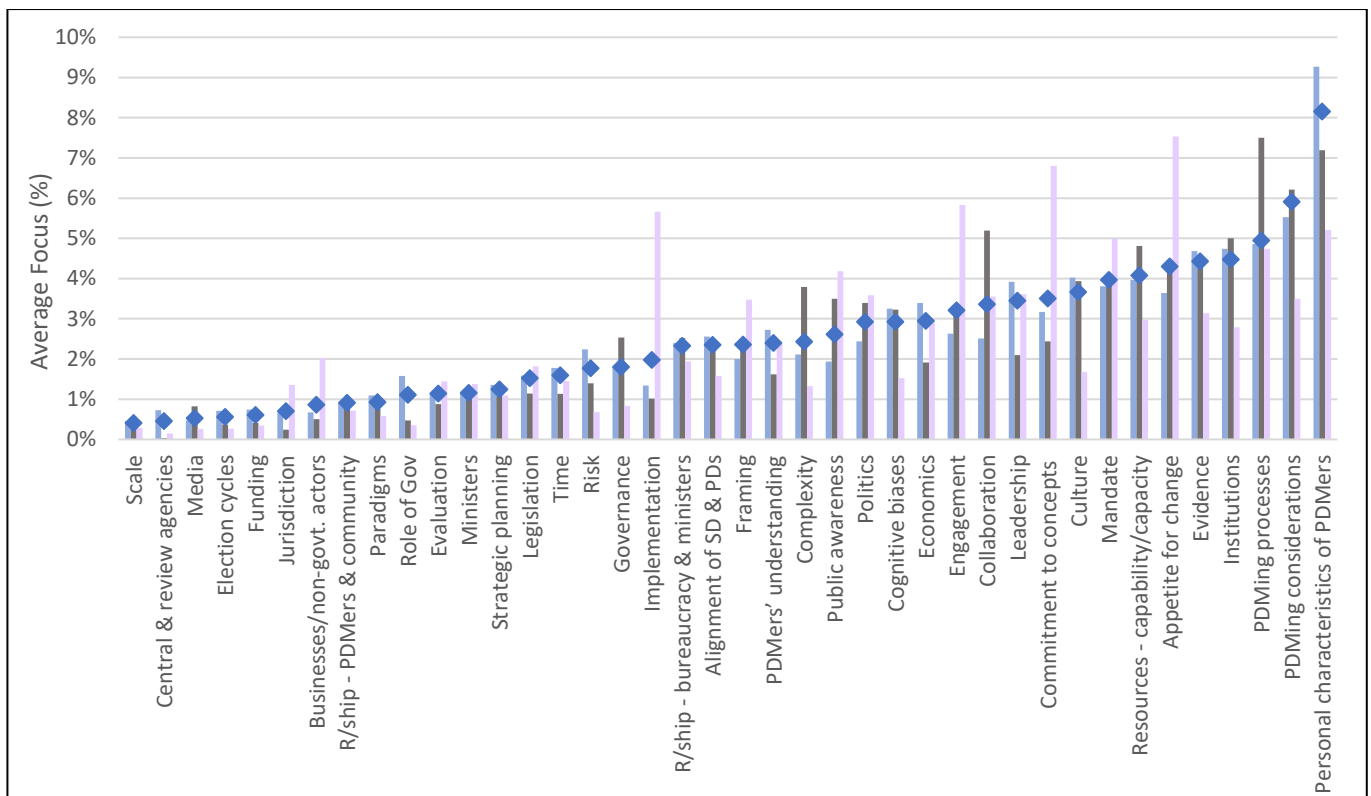


Figure 18. Average focus of General, Channel Deepening and EREP interviewees on identified influences.

Blue diamonds represent the base average for all participants (i.e. the bars in Figure 17), blue bars represent the general interviewees' (n=21), grey bars represent CDP interviewees' (n=9) and lilac bars represent EREP interviewees' (n=6) proportional averages.

Nonetheless, variation was so great across all interview-type cohorts that the only influences found to be statistically significant under distributional analysis of their proportional coding (Figure 19) were: *Collaboration* (a significant difference was recorded between general and CDP interviewees) and, when comparing general and EREP interviewees, *Personal characteristics of PDMers*, *Appetite for change* and *Implementation*. No outliers were recorded when comparing the average focus between CDP and EREP interviewees. Regression analysis was conducted comparing the average cohort focus for each interview type and showed EREP participants to be least like other interviewees ($R^2=0.32$ with general interviewees and 0.35 with CDP interviewees) (Figure 24 a-d, page 99-100).

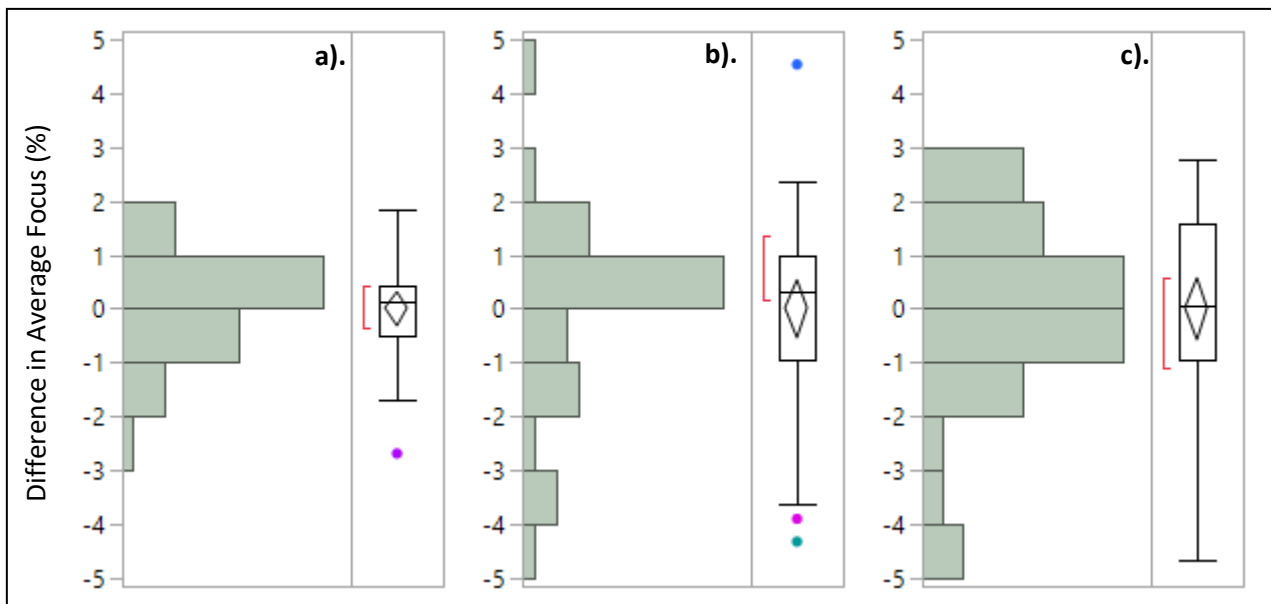


Figure 19. Distributional analysis highlighting differences in cohort average focus over different interview types.

a). General and Channel Deepening (CDP) interviewees, **b).** General and EREP interviewees, **c).** CDP and EREP interviewees. (General n=21, CDP n=9, EREP=6).

Box and whisker plots indicate the range of influences for which the average focus of each cohort is within 95% confidence intervals of the other cohort. Coloured dots indicate influences that are outside those 95% confidence intervals: Outliers: Purple - *Collaboration*, Deep Blue - *Personal characteristics*, Deep Pink - *Appetite for change*; Teal - *Implementation*.

Seniority of role cohort analysis

Variation is less marked when comparing responses across the cohorts formed based on the seniority of interviewees' role (Figures 20, 24 e-g). However, this means that where differences occur they are more significant, as illustrated by the increased number of outliers under comparative distributional analysis (Figure 21). Mid-Level Officials are the most visually and statistically different, focusing significantly more on *Implementation* and *Appetite for change* and significantly less on *Cognitive biases* than Senior Officials. Mid-level officials also focussed significantly less on *Personal characteristics of PDMers* than both Senior and Higher-Level Officials did. *Resources* is significantly less focused on by Higher-Level Officials than it was by Senior Officials. Higher-Level Officials also place visually but not statistically greater emphasis on *Governance* and *Framing*, and less on *Public awareness*. Senior Officials placed greater emphasis on the *Relationship between bureaucracy and Ministers*, and *Leadership*, though not significantly so.

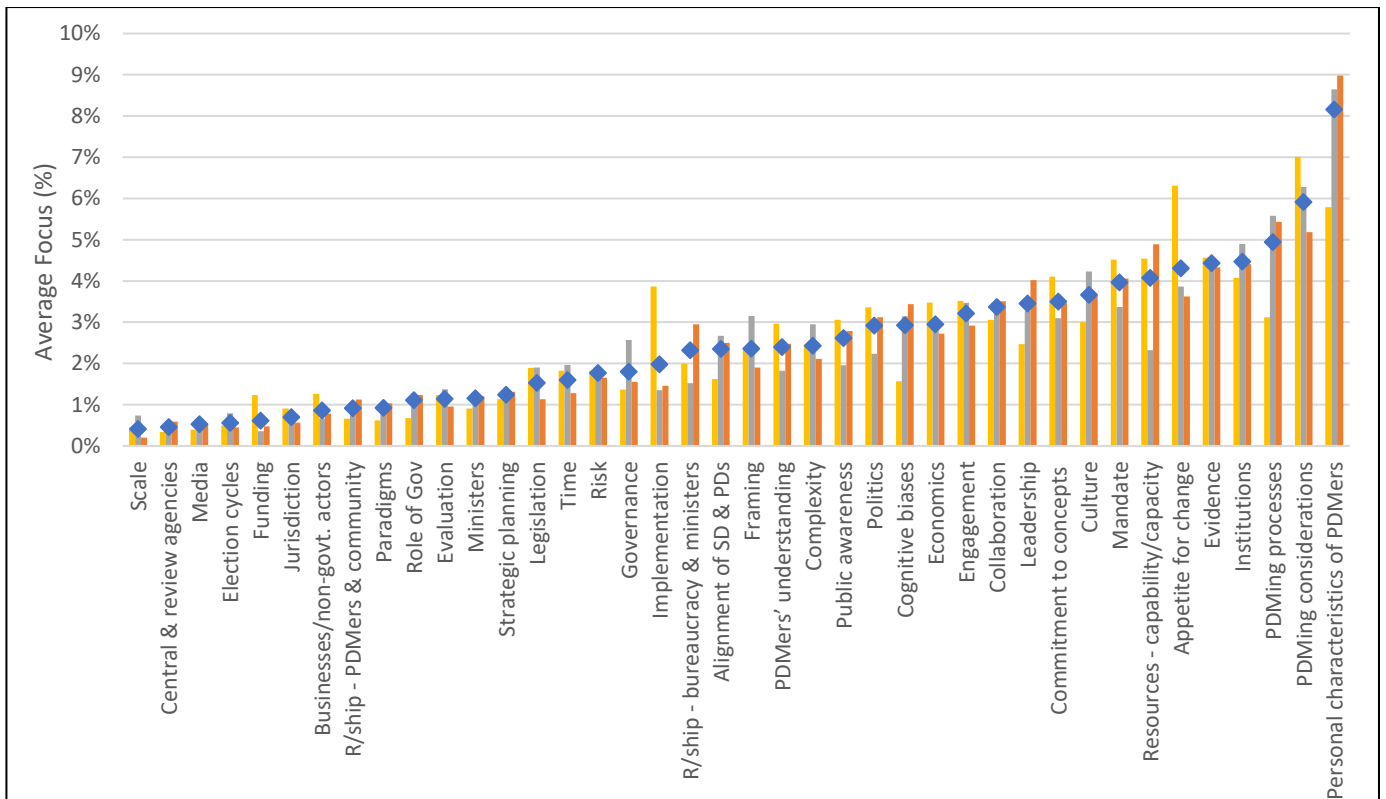


Figure 20. Average focus of Mid-Level, Higher-Level, and Senior Official interviewees on identified influences.

Blue diamonds represent the base average for all participants, yellow bars for the cohort average focus of Mid-Level Officials (n=8), khaki bars for Higher-Level Officials (n=10), and orange bars for Senior Officials (n=17).

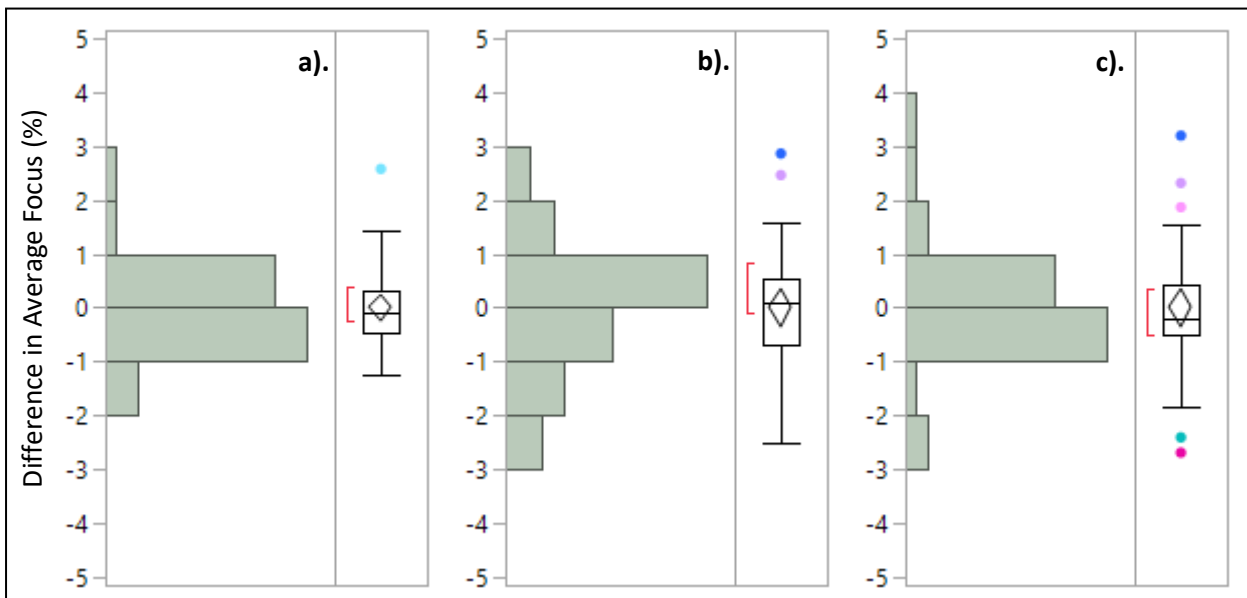


Figure 21. Distributional analysis highlighting differences in cohort average focus between differing levels of role seniority.

a). Senior v Higher-Level Officials, b). Higher-Level v. Mid-Level Officials, c). Senior v. Mid-Level Officials. (Senior n=17, Higher-Level n=10, Mid-Level n=8).

Box and whisker plots indicate the range of influences for which the average focus of each cohort is within 95% confidence intervals of the other cohort. Coloured dots indicate influences that are outside those 95% confidence intervals: Outliers: Light Blue - Resources, Deep Blue - Personal characteristics, Lilac - PDMing processes, Light Pink - Cognitive Biases, Teal - Implementation, Deep Pink - Appetite for change.

Outlook cohort analysis

There are fewer large and obvious differences in the cohort average focus provided by more or less upbeat interviewees (Figure 22), a finding substantiated by an R-squared value of 0.87, the largest recorded (Figure 24).

Five significant differences do exist, however: *Leadership* and *Personal characteristics of PDMers* stand out for the more upbeat; and, *Appetite for change*, *Institutions*, and *PDMing considerations* stand out for the less upbeat (Figure 23). Exploring this further, it is also noteworthy that *Leadership* (defined in this thesis as ‘the concept of leadership as well as the need or demonstration of leadership by individuals’, i.e. as having an intrinsic focus) ranks sixth for the more upbeat but eighteenth for the less upbeat. *Appetite for change*, *Institutions* and *PDMing considerations* are all defined with greater reference to the expectations or limitations set by others (i.e. as having a more extrinsic focus) and rank (more overt: less overt) 7:4, 8:3, and 3:5, respectively.

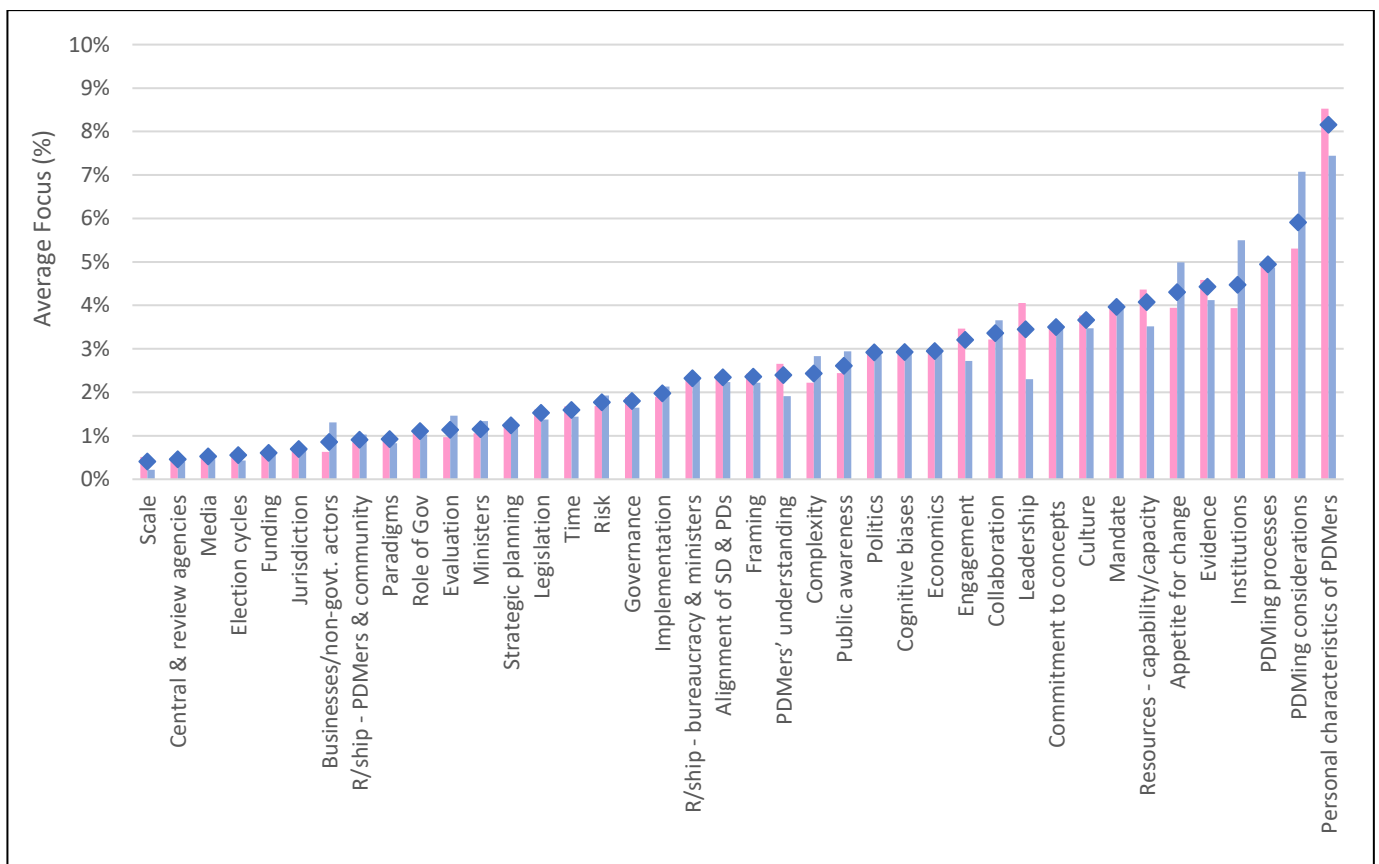


Figure 22. Cohort average focus of more and less overtly upbeat interviewees on identified influences.

Blue diamonds represent the average for all participants, pink bars the more overtly upbeat interviewees (n=23) and blue bars the less overtly upbeat interviewees (n=12).

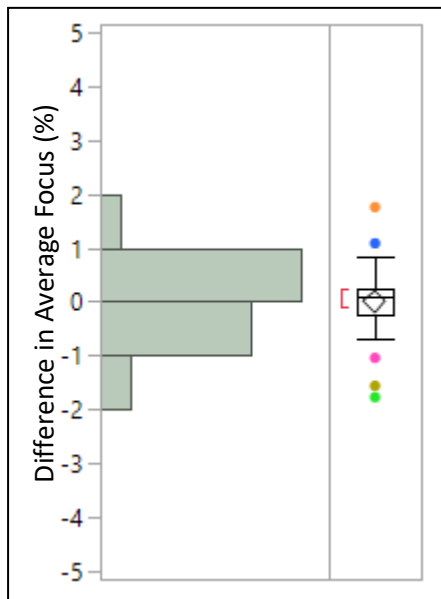
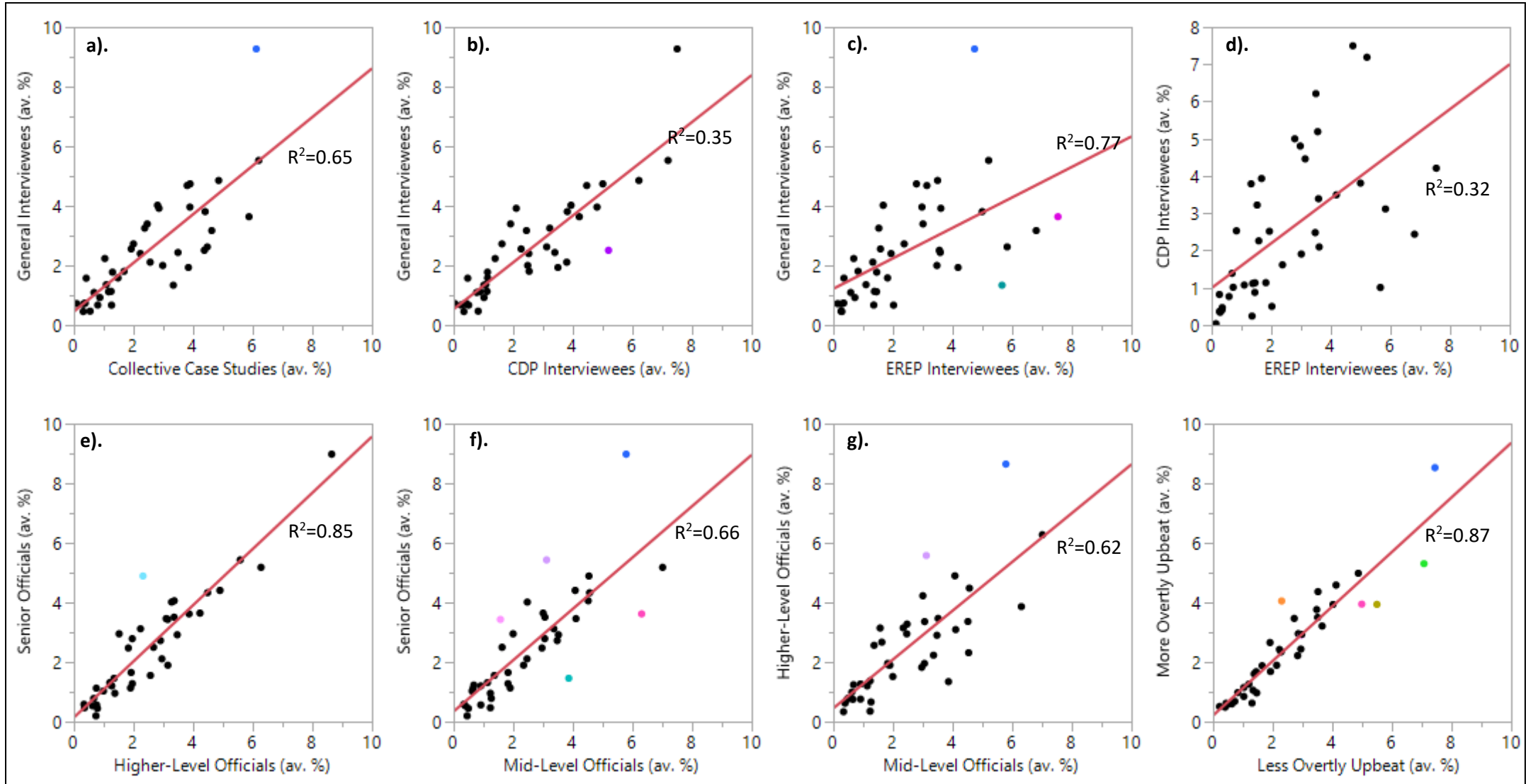


Figure 23. Distribution analysis highlighting average focus across More and Less Overtly Upbeat participants.

Differences in average focus between apparently more (n=23) and less (n=12) overtly upbeat participants. Box and whisker plots indicate the range of influences for which the average focus of each cohort is within 95% confidence intervals of the other cohort/influence average focuses. Coloured dots indicate influences that are outside those 95% confidence intervals: Outliers: Orange - *Leadership*, Deep Blue - *Personal characteristics*, Pink - *Appetite for change*, Mustard - *Institutions*, Green - *Policy debates and proposals*.

Figure 24. Regression analyses comparing all tested cohorts.

a). General v. Collective (average) case studies; **b).** General v. Channel Deepening interviewees; **c).** General v. EREP interviewees; **d).** Channel Deepening v EREP Interviewees; **e).** Senior v. Higher-Level Officials; **f).** Senior v. Mid-Level Officials; **g).** Higher-Level v. Mid-Level Officials; **h).** More v Less overtly upbeat Interviewees. Each regression compares the average focus on each influence across two cohorts. A linear regression line is indicated in red, with its value noted alongside. Dots represent each influence. Coloured dots represent outliers identified under distributional analysis, as follows: Dark blue - *Personal characteristics*; Purple - *Cognitive biases*; Pink - *Appetite for change*; Teal - *Implementation*; Light blue - *Resources*; Lilac - *PDMing processes*; Green - *PDMing considerations*; Orange - *Leadership*; Mustard - *Institutions*.



Network Mapping Analysis

Method

Network theory was applied to the data to better understand the relationships between influences (Borgatti & Halgin, 2011). Again, this drew on the presumption that the frequency of overlapping coding (or, 'co-coding') between influences was proportional to the strength of their relationship between them. If this is true, solutions or tools adopted to get the most from one influence will also need to be suitable for those other influences it is commonly considered in conjunction with. For example, solutions aimed at optimising the *Relationship between bureaucrats and Ministers* may also need to be strong in enhancing the *Personal characteristics of PDMers*.

Network mapping was, however, also viewed as a useful tool to highlight which less conspicuous influences are essential from a broader perspective, such as playing a connecting or 'bridging' role. Considering Granovetter's (1973) Strength of Weak Ties theory in this setting was thus deemed to be appropriate to validate and draw further insights regarding the operation of the system.

Gephi, a network mapping program, was selected to undertake this work as it is a free, menu-driven, program with ample training tutorials online that correspond to published texts. For example, network theory texts by Golbeck (2013, 2015) are accompanied by social media videos also by Golbeck (2016) explaining how to apply various aspects of *Gephi*. This allows the user both to read and witness how to use the program in quick succession and aids ease and timeliness of upskilling.

Data within Table A1 (Appendix A) was reformatted to meet *Gephi's* input needs, with influences uploaded as nodes, and the relationships between influences uploaded as undirected edges. The Fructerman Reingold layout (settings: Area-10000, Gravity-10, Speed, 1) was adopted due to its recognition as the best layout algorithm for smaller datasets (Jacomy, Venturini, Heymann, & Bastian, 2014). Statistical tests and formatting under the 'Appearance' tab were then applied to enable calculation and emphasis of betweenness centrality, graph density, and relationships between influences (Figure 25).

Once these mathematical and formatting activities had been undertaken and results noted, the physical layout of the network map was manually altered to reflect the positioning of the influences within the Covey schema described in Chapter 4, therein providing an updated schema (Figure 26). The revised schema allows for further reflection upon critical relationships and influence placement.

Results - Network Mapping Analysis

Analysis within *Gephi* found the network to have a density of 0.971, indicating that 91.7% of possible relationships between influences were established (Golbeck, 2013). Figure 25 illustrates those relationships, highlighting stronger relationships with thicker, lighter, coloured lines and weaker ones with thinner, darker, lines.

Figure 25 also illustrates which influences were found to have a higher betweenness centrality ('BC'), assigning larger node points (circles) to them. Betweenness centrality is a measure of the shortest paths travelled between nodes (Golbeck, 2013), and can be thought of as a measure of the degrees of separation between nodes. An influence with a greater betweenness centrality indicated can thus be considered as being well-connected to other influences or, as the nodes/influences here do not have agency, as more likely to be mentioned (and by implication operate) in conjunction with other nodes/influences. Based on this measure, the top ten most important influences are (BC, 2.55): *Appetite for change*, *Complexity*, *Economics*, *Institutions*, *Leadership*, *Mandate*, *PDMing considerations*; (BC, 2.49) *Implementation*; and, (BC 2.37) *Time*.

Manually manipulating the positions of nodes within the Fructerman Rheingold layout, i.e. moving influences from the algorithmic layout, enabled a reapplication of the earlier mentioned Covey schema. Applying the same positioning as was applied in Figures 1 and 11, this illustrated that some of the key influences identified within the statistical analysis, such as *Personal Characteristics of PDMers* and *PDMing Considerations* are at or close to the centre of the Circle control, while several other fundamental influences - such as those with greater betweenness centrality - are found to sit on or very close to the periphery of the circle of control (Figure 26).

This finding could be a circular artefact reflecting that those interviewed might be more likely to discuss things within their control. However, conversations did not solely focus on things within one’s control. As the sections above highlight, participants tended to reflect on those influences of most importance and visibility to them in their day-day work, irrespective of an individual’s perceived control over such influences. Thus, an alternative finding is that several influences deemed to be dominant in the expression of others are likely to be within the control of some PDMers but not others, pending the limits of an individual’s actual or perceived control.

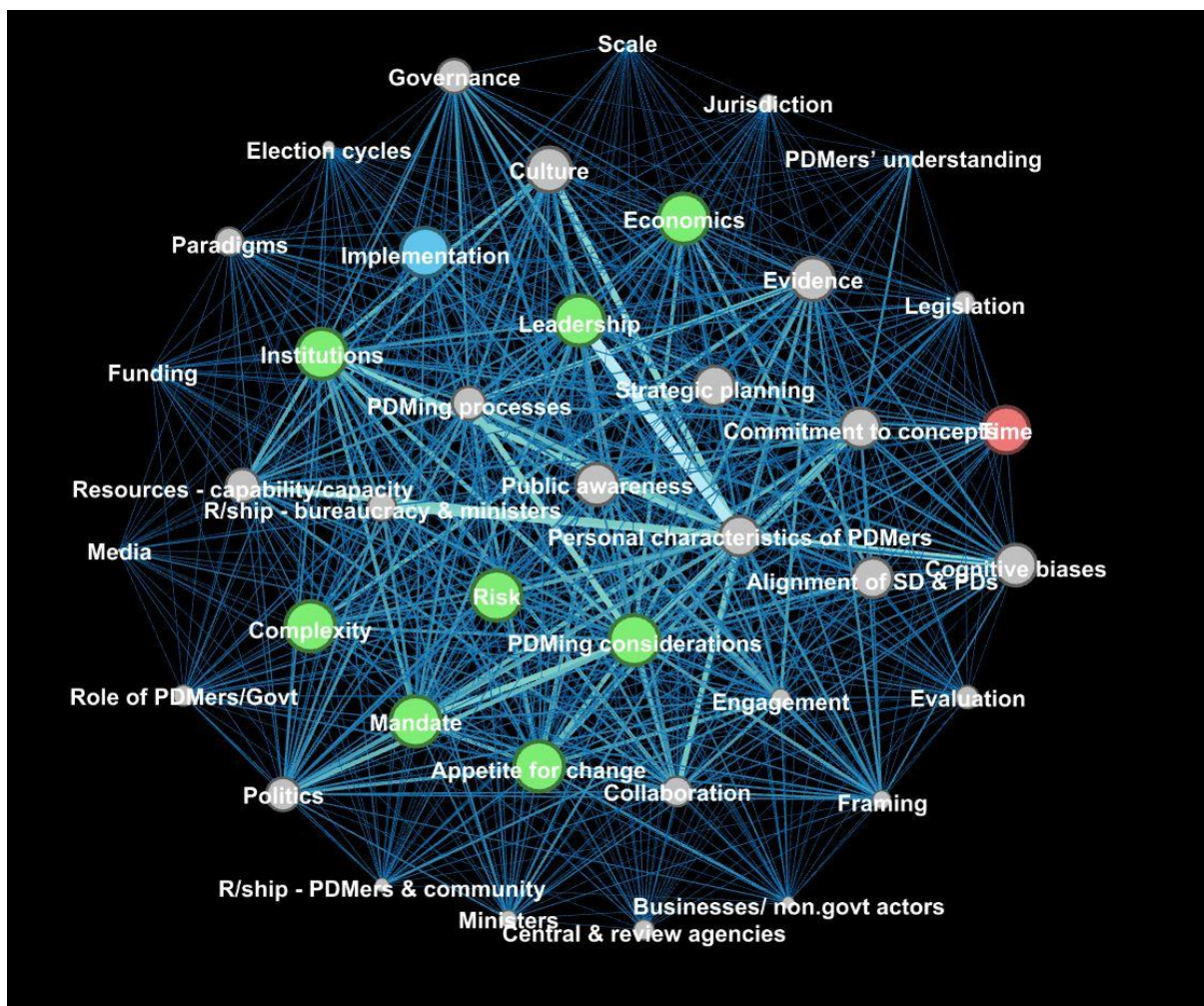


Figure 25. A network map of influences public decision-makers must contend with.

Showing: increased strength of relationships between influences with corresponding thicker and lighter coloured lines; and, increased betweenness centrality with increased size node size. Coloured nodes reflect the ten influences with the greatest betweenness centrality, those in green are equal first, blue second and red third.

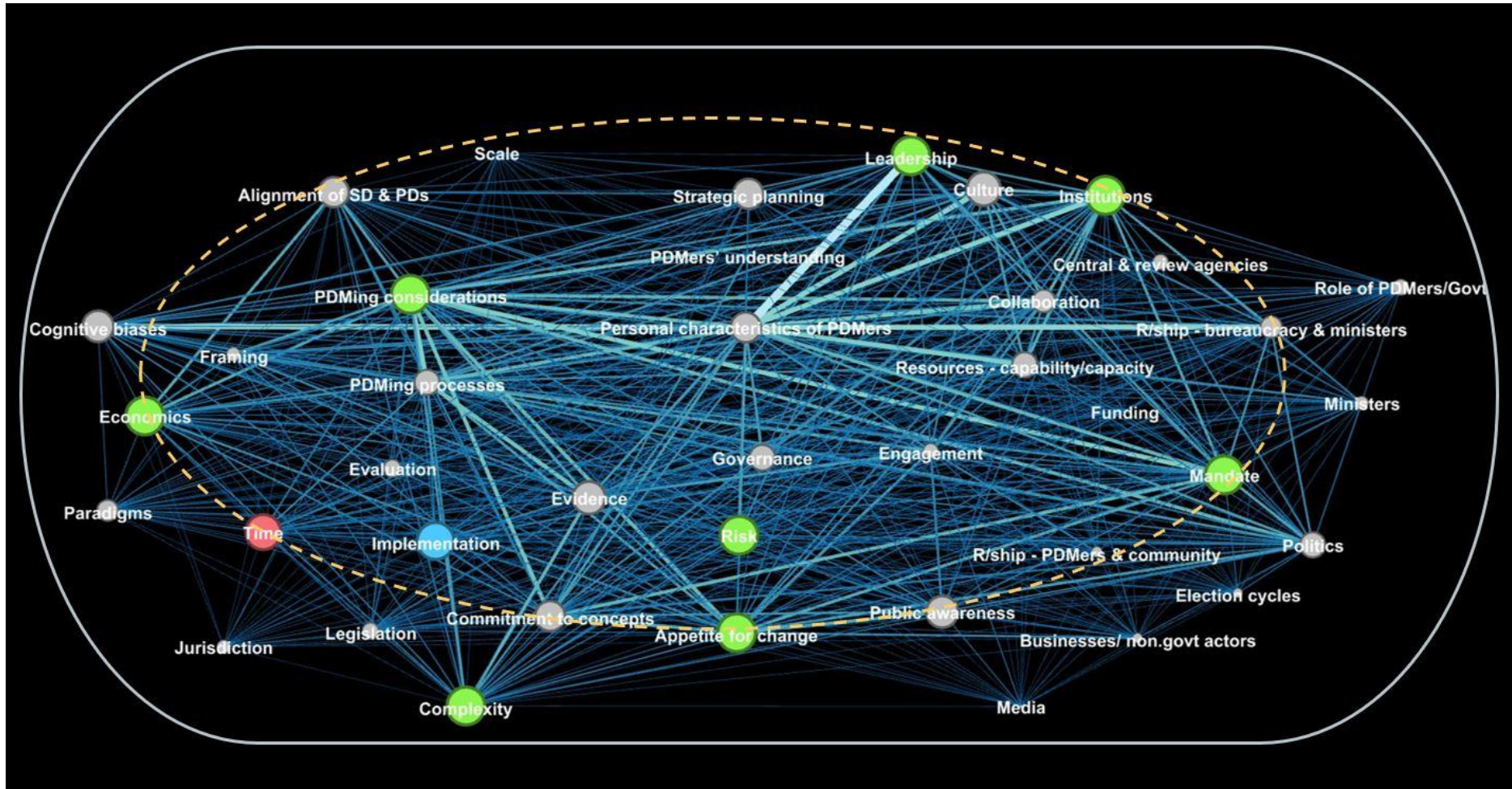


Figure 26. Overlay of the outputs of the Network Mapping analysis on the Covey schema.

Illustrating that a number of influences with strong relationships and /or deemed important due to their betweenness centrality are positioned on the periphery of the public decision-makers circle of control (indicated by the dashed yellow line). Public decision-makers circle of interest is indicated by the thick grey line.

Applying Systems Thinking

Public decision-makers and the decision-making literature often talk to complexity and wicked problems as factors which prevent objectives from being reached (Cairney, 2012; Head, 2008, 2019; Pressman & Wildavsky, 1984; Rittel & Webber, 1973). Systems thinking is a tool that can be used to help explain such complexity (Cairney, 2012). Through the application of logic in documenting and understanding process flows, systems thinking illustrates how elements within a network interact. Donella Meadows, a well-regarded thinker in this field, argued that systems are everywhere, not just in the natural world, and her work on leverage points (LPs) includes discussion of political and government systems (Meadows, 1999, 2008).

The multi-layered, multi-actor, examples discussed by research participants, illustrate public decision-making within the Victorian Public Sector to be an example of a complex system. Thus, the 12 leverage points and associated arguments concerning their increasing impact, as identified by Meadows, are a useful framework to apply in understanding where and why PDMers get 'stuck'. Mapping which influences can operate as which leverage points helps to identify influences that might be more or less powerful in their effects on the rest of the system.

Coincidentally, Fischer and Riechers (2019) appear to have been considering the value of Meadows' leverage points as a tool to enhance the achievement of sustainability at a similar point in time to the conduct of this research. They argue that Meadows' framework is an 'under-recognised' tool in the field of sustainability, and propose that 'conceptual, qualitative empirical or quantitative empirical work' drawing on the strengths of the framework may, 'yield both practical and theoretical advances'. The following subsections go a considerable way to addressing these provocations within the context of Victorian Public Sector decision-making.

Assigning Influences to Leverage Points

Method

Meadows' (1999, 2008) complete description of the leverage points was read multiple times before the isolated text on each leverage point was read in conjunction with the interviewee reflection and

definitions of each influence. Where an influence was considered to have the potential to act as a leverage point it was highlighted with a cross in Table 4, and a more detailed annotation on the rationale for this recorded in Table G1 (Appendix G). This approach ensured that each leverage point was considered against all influences at the same time, enhancing consistency in the interpretation of the function and application of each leverage point.

The leverage point-influence links identified were validated via a review process. This involved revisiting Table G1 4-7 days after an entry was recorded, and reviewing the text again for each leverage point to confirm a sound understanding of its application and that the influences assigned to it were appropriate. This verification process was repeated until no further changes were recorded - which occurred during the fifth review.

Here, the earlier aggregation of themes to influences (page 22) is less useful as it creates the situation whereby, pending context, an influence may operate at multiple leverage points. Nonetheless, this aggregation has been retained to aid comparison with the other perspectives taken in this chapter. Should certain influences be considered especially important or of interest in future, it may be worth exploring the alignment of leverage points and subthemes comprised by that influence further.

Results - Assigning Influences to LPs

Reviewing each influence in light of the leverage points described by Meadows and the context and insights provided by interviewees resulted in the creation of Table 4 (based on Table G1).

Table 4. Influences ordered by highest order leverage points they interact with.

Influences intersecting with a leverage point are indicated by a cross (x). Leverage points are indicated in row 2 by the number assigned by Meadows (1999): **12**. Constants, parameters, numbers (such as subsidies, taxes, standards); **11**. The sizes of buffers and other stabilizing stocks, relative to their flows; **10**. The structure of material stocks and flows (such as transport networks, population, age structures); **9**. The lengths of delays, relative to the rate of system change; **8**. The strength of negative feedback loops, relative to the impacts they are trying to correct against; **7**. The gain around driving positive feedback loops; **6**. The structure of information flows (who does and does not have access to what kinds of information); **5**. The rules of the system (such as incentives, punishments, constraints); **4**. The power to add, change, evolve, or self-organize system structure; **3**. The goals of the system; **2**. The mindset or paradigm out of which the system—its goals, structure, rules, delays, parameters—arises; **1**. The power to transcend paradigms.

		Leverage Points											
		12	11	10	9	8	7	6	5	4	3	2	1
Influence	Alignment of SD & PDs		x				x			x		x	
	Appetite for change		x		x	x	x			x			x
	Businesses/non-govt. actors					x	x	x	x	x			
	Central & review agencies		x			x	x		x	x		x	
	Cognitive biases		x		x		x	x		x		x	x
	Collaboration				x	x	x	x		x			
	Commitment to concepts						x		x	x	x	x	
	Complexity	x			x		x			x			
	Culture		x		x	x	x			x		x	x
	Economics	x	x			x	x	x	x	x	x	x	
	Election cycles	x		x		x	x	x	x	x		x	
	Engagement				x	x	x	x		x			
	Evaluation		x		x	x	x	x		x			
	Evidence	x					x	x	x	x		x	
	Framing						x	x		x		x	x
	Funding	x	x		x		x			x			
	Governance		x	x		x	x	x	x	x		x	
	Implementation				x		x	x		x			
	Institutions		x	x			x		x	x		x	
	Jurisdiction		x	x			x		x	x			
	Leadership						x		x	x		x	x
	Legislation	x	x	x	x		x	x	x	x			
	Mandate				x		x		x	x			
	Media				x	x	x	x		x		x	
	Ministers			x			x		x	x			
	Paradigms	x	x				x		x			x	
	PDMers' understanding	x	x				x			x			
	PDMing considerations						x		x	x			
	PDMing processes	x	x	x	x		x	x	x	x			
	Personal characteristics of PDMers						x			x			x
	Politics				x	x	x		x	x			
	Public awareness				x	x	x			x			
R/ship - bureaucracy & ministers		x		x	x	x			x				
R/ship - PDMers & community		x		x	x	x			x				
Resources - capability/capacity	x	x		x		x			x				
Risk		x				x	x	x	x			x	
Role of Gov	x	x	x			x		x	x	x	x		
Scale	x					x			x				
Strategic planning		x		x		x	x		x				
Time	x	x				x	x	x	x				

Analysing Influences as Leverage Points

Methods

Because all influences were found to have the potential to operate as multiple leverage points, further distinction between influences is required to delineate most from least important. A review of the literature found no pre-existing methods to rank between factors that interact with multiple leverage points. So, once confident in the allocation of influences to leverage points, five separate approaches were undertaken to provide a defensible ranking of the influences within the leverage points framework:

- i. Influences were arranged by '*highest-order leverage point*' intersected with. This provided an indication of which influences had the opportunity to operate as the most transformational leverage points.

Where multiple influences intersected the same leverage point, those influences were sorted based on the next highest-order leverage point intersected, and so on.

- ii. A '*reverse linear score*' was calculated for each influence by ascribing values in reverse order to the leverage points. That is, LP1, *Transcendence of Paradigms*, having the most power to alter a system was given 12 points, and LP12, *Constants, Parameters, Numbers*, having the least power was given 1 point. Each influence that interacted with LP1 was thus given 12 points and if it also interacted with LP12 given an additional 1 point to give it a total score of 13 points, and so on, across all influences and leverage points.

A reverse linear score rank was then calculated by ordering influences by their score such that the influence with the highest value was ranked 1st and that with the lowest score ranked 40th.

Where multiple influences had the same score standard competition ranking was applied (i.e. the equal influences were given the same rank, while the ranking of subsequent influences remained unimpacted).

This approach (score and rank) gives an indication of which influences might have the highest potential for impact overall based on the value of the leverage points they intersect. However,

higher scores can be formed from both an influence interacting with many lower-order leverage points *or* a handful of higher-order ones, and this approach does not discriminate between those methods.

- iii. The '*number of leverage points*' each influence was considered to have the potential to act upon (i.e. how many crosses there were per row in Table 4) was calculated. The resulting scores were then sorted as per the ranking approach taken in method ii (more intersections yielded a higher rank; equal values yielded the same rank).

This approach gave an indication of the number of opportunities an influence has to effect change on the system. This is a potentially useful insight as it could be argued that an increased number of opportunities to intervene makes an influence more likely to be used and therefore more imperative from a practicability standpoint (though this is not an argument made by Meadows in *Leverage Points* (1999)). However, in this instance, it is not that meaningful as a standalone measure due to the limited variation between influences. This method also suffers from a lack of discrimination between higher and lower-order leverage points intersected.

- iv. The reverse linear score (ii.) was divided by the number of LPs intersected (iii.) to create an '*average score*'. As per methods ii and iii above, the scores were ordered from highest to lowest, and standard competition ranking applied to result in an '*average score rank*'.

This approach indicated whether the leverage points interacted with are of higher or lower order value. Such that those ranking as more important are more likely to correspond with higher-order LPs. However, it does not take into consideration the practicability of applying higher-order leverage points by public decision-makers. Again, while Meadows did not raise this issue, the difficulty of applying novel or non-standard approaches within public decisions was raised as a concern by many interviewees.

- v. In light of the pros and cons of each of the above approaches, a '*smoothed average rank*' was calculated by summing the reverse linear score (ii.) and average score ranks (iv.) calculated for

each influence, ordering from smallest (most important) to largest (least important), and applying standard competition ranking.

Results - Analysing Influences as Leverage Points

Further analysis of Table 4 lead to Table 5, which highlights the ‘most important’ influences based on the highest-order leverage points intersected alone (method i). The top seven, all of which are considered to have the potential to act as or impact upon the expression of the power to transcend paradigms are *Leadership, Cognitive biases, Framing, Culture, Risk, Appetite for change* and *Personal characteristics of PDMers*.

At the lower end of the table are things which intersect with the positive feedback (LP7) and ability to evolve the system (LP4) leverage points (both of which interact with almost all influences) or lower. These are *Relationship between bureaucracy & ministers, Relationship between PDMers & community, Public awareness, Resources - capability/capacity, Funding, Complexity, PDMers’ understanding, and Scale*. In particular, the latter two present foremost as buffers or constants (LP11 and 12). Typically one does not focus on those things that come last, however, Meadows argues these are likely to be things that are widely discussed and focussed on when trying to drive change, so it is useful to be aware of them and ready to point out their limited effect as leverage points.

When the reverse linear score (method ii) is applied to indicate which influences might have the highest potential to affect leverage points overall, the overall range is 16 (*Scale*) to 59 (*Economics*) out of a maximum possible score of 78. The top five influences are, *Economics (59/78), Governance* and *Cognitive biases (51/78)*, and *Election cycles* and *Role of Gov (50/78)*. The

When ranking by the number of possible leverage points (method iii) and thus opportunities to impact upon the system the range is more condensed (range 3-9, average 5.45), limiting the ability to separate influences. The top six are separated by 1 point (number of LPs): *Economics (9), Governance, Election cycles, Role of Gov, Legislation, and PDMing processes (8)*.

The top five Influences for interacting with higher-order leverage points based on the average score (method ii/method iii = method iv) are (method iv score in brackets) are *Leadership* (9.2), *Framing* (9), *Personal characteristics of PDMers* (9), *Commitment to concepts* (8.8), and *PDMing considerations* (7.67). Under a smoothed average ranking the top five were: *Leadership*, *Cognitive biases*, *Framing*, *Commitment to concepts*, and *Culture*.

The full list of rankings across all analytical approaches applied with leverage points in mind is presented in Table G2 (Appendix G).

Table 5. Reordered influences ordered by highest order leverage points interacted with, reverse linear score weighting and number of leverage points per influence.

Influences intersecting with a leverage point are indicated by a cross (x). Leverage Points are indicated by the number assigned by Meadows (1999), as at Table 4. The weighting given to each leverage point is noted in the bottom-most row and the number of leverage points intersected by each influence is noted in the far-right column.

		Leverage Points (LPs)											# of LPs	
		12	11	10	9	8	7	6	5	4	3	2		1
Influence	Leadership						X		X	X		X	X	5
	Cognitive biases		X		X		X	X		X		X	X	7
	Framing						X	X		X		X	X	5
	Culture		X		X	X	X			X		X	X	7
	Risk		X				X	X	X	X			X	6
	Appetite for change		X		X	X	X			X			X	6
	Personal characteristics of PDMers						X			X			X	3
	Economics	X	X			X	X	X	X	X	X	X		9
	Role of Gov	X	X	X			X		X	X	X	X		8
	Commitment to concepts						X		X	X	X	X		5
	Governance		X	X		X	X	X	X	X		X		8
	Election cycles	X		X		X	X	X	X	X		X		8
	Evidence	X					X	X	X	X		X		6
	Central & review agencies		X			X	X		X	X		X		6
	Institutions		X	X			X		X	X		X		6
	Media				X	X	X	X		X		X		6
	Alignment of SD & PDs		X				X			X		X		3
	Paradigms	X	X				X		X			X		5
	Businesses/non-govt. actors					X	X	X	X	X				5
	Legislation	X	X	X	X		X	X	X	X				8
	PDMing processes	X	X	X	X		X	X	X	X				8
	Time	X	X				X	X	X	X				6
	Politics				X	X	X		X	X				5
	Mandate				X		X		X	X				4
	Jurisdiction		X	X			X		X	X				5
	Ministers			X			X		X	X				4
	PDMing considerations						X		X	X				3
	Evaluation		X		X	X	X	X		X				6
	Engagement				X	X	X	X		X				5
	Collaboration				X	X	X	X		X				5
	Strategic planning		X		X		X	X		X				5
	Implementation				X		X	X		X				4
	R/ship - Bureaucracy & ministers		X		X	X	X			X				5
	R/ship - PDMers & community		X		X	X	X			X				5
	Public awareness				X	X	X			X				4
	Resources - capability/capacity	X	X		X		X			X				5
	Funding	X	X		X		X			X				5
	Complexity	X			X		X			X				4
	PDMers' understanding	X	X				X			X				4
	Scale	X					X			X				3
Reverse Linear Scale		1	2	3	4	5	6	7	8	9	10	11	12	

Analysing Leverage Points for Potential to Influence

Method

While not helpful in understanding which influences are most important, considering which leverage points have or may have the most potential to be activated within the Victorian PDMing system is also valuable. To do this, the number of intersecting influences per leverage point was calculated to identify which LPs are already most present across *this* system. That is, rather than considering leverage points only from an individual influence perspective, it is also useful to consider which LPs already predominate based on their representation within the 40 influences. It is conceivable that with this knowledge an exercise could be undertaken specifically looking to drive system change across all influences by focussing on one or two particular leverage points that are most present within the system of concern.

Selection of the appropriate leverage points can also be informed by providing each leverage point with a reverse linear score (i.e. assigning a magnitude of 12 to LP1, a magnitude of 11 to LP2, etcetera) and multiplying it by the number of intersecting influences for that leverage point, to create a weighted hierarchy of which leverage points are most important to PDMing in the VPS (see Table 6).

Results - Analysing Leverage Points for Potential to Influence

Ordering the leverage points by the number of intersecting influences demonstrates that *Positive feedback loops* (LP7) and the *Ability to evolve or change the system* (LP4), and are the most common leverage points within the Victorian public decision-making system, followed by the *Size of buffers* (LP9) (see Table 6, 'most prominent').

When the reverse linear score is applied to provide a potentially more sophisticated understanding of opportunities to influence the system, LP4 and LP7 remain the most important leverage points, followed by the *Origins of paradigms* (LP3) (see Table 6, 'weighted prominence').

Table 6. Prominence of Leverage Points intersecting with Influences, and where to focus attention.

Values are conditionally formatted (coloured) to aid visual review of importance, blue are most important, white of middling importance and red of least importance. More vibrant colours indicate scale extremities.

Leverage Point	Most Prominent [^]	Influences Intersected (#)	Weighted* Prominence
1. Ability to Transcend paradigms	11	7	6
2. Origins of paradigms	6	15	3
3. System goals	12	3	10
4. Ability to evolve or change the system	2	39	1
5. Rules of the system	4	20	4
6. Information flows	6	17	5
7. Positive feedback loops	1	40	2
8. Negative feedback loops	6	15	8
9. Length of delays, relative to system change	5	19	7
10. Structure	10	8	11
11. Size of buffers	3	22	9
12. Constants, Parameters, numbers	9	13	12

[^]Based on the total number of influences intersected; *Weighting provided by reverse linear scaling described on page 90.

Comparing Different Approach Outcomes

Method

The top ten influences identified from each of the methods discussed in this chapter (total coding, proportional average across all interviewees, proportional average for each cohort, top ten influences by betweenness centrality, highest-order leverage points, average rank of leverage points) were compared to identify influences commonly arising as most important (see Table 7).

Average influence rank across all methods was also determined by summing the rank values calculated under each of the methods (except betweenness centrality due to the sizeable number of values that ranked equal first), ordering from smallest to largest, and applying standard competition ranking.

Results

Table 7 presents the top 10 influences for each analytical method applied and cohort tested. Under statistical analyses *Personal characteristics of PDMers* is regularly identified as the most important influence, *PDMing considerations* and *PDMing processes* also regularly rank highly. However, the experiences of Mid-Level officials and EREP interviewees are quite different, instead focusing more on

influences such as *Appetite for change*, *Engagement* and *Implementation*. Network mapping also shows *Appetite for change*, *PDMing considerations* and *Implementation* as important. Applying systems thinking suggests *Leadership*, *Cognitive biases* and *Framing* are most important.

The averaged rank across all methods identified the top five influences overall as *Personal characteristics of PDMers*, *PDMing considerations*, *Appetite for change*, *Evidence*, and *PDMing processes*. Appendix F lists the full 40 influences, as ranked by statistical and systems analyses.

Table 7. Variation in the top 10 influences identified by the methods applied.

Differences in colour highlight similarities and variation in top ten influences across methods only and have no numerical or statistical value.

		Statistical Analysis										Network Mapping	Leverage Points			
		Total Codes/ Influence	All interviews (Av)	General participants	CDP participants	EREP participants	Mid-level official participants	Higher-level official participants	Senior official participants	More overtly upbeat participants	Less overtly upbeat participants		Average ranking across all cohorts	Highest Leverage Point	Scaled Rank	
Rank	1	Personal characteristics	Personal characteristics	Personal characteristics	Personal characteristics	Appetite for change	PDMing considerations	Personal characteristics	Personal characteristics	Personal characteristics	Personal characteristics	Personal characteristics	Appetite for change Complexity Economics Institutions Leadership Mandate PDMing considerations Risk (Equal 1 st)	Leadership	Leadership	
	2	PDMing considerations	PDMing considerations	PDMing considerations	PDMing considerations	Commitment to concepts	Appetite for change	PDMing considerations	PDMing processes	PDMing considerations	PDMing considerations	PDMing considerations		Cognitive biases	Cognitive biases	
	3	Institutions	PDMing processes	PDMing processes	PDMing processes	Engagement	Personal characteristics	PDMing processes	PDMing considerations	PDMing processes	Institutions	PDMing processes		Framing	Framing	
	4	PDMing processes	Institutions	Institutions	Collaboration	Implementation	Evidence	Institutions	Resources	Evidence	Appetite for change	Appetite for change		Culture	Commitment to concepts	
	5	Appetite for change	Evidence	Evidence	Institutions	PDMing considerations	Resources	Evidence	Institutions	Resources	PDMing processes	Institutions		Risk	Culture	
	6	Evidence	Appetite for change	Culture	Resources - capability/capacity	Mandate	Mandate	Culture	Evidence	Leadership	Evidence	Evidence		Appetite for change	Risk	
	7	Resources	Resources	Resources	Evidence	Personal characteristics	Commitment to concepts	Appetite for change	Mandate	Appetite for change	Mandate	Mandate		Personal characteristics	Economics	
	8	Mandate	Mandate	Leadership	Appetite for change	Public awareness	Institutions	Engagement	Leadership	Institutions	Collaboration	Resources		Economics	Evidence	
	9	Commitment to concepts	Culture	Mandate	Culture	Leadership	Implementation	Mandate	Culture	Mandate	Resources	Commitment to concepts		Implementation (2 nd)	Role of Gov	Media
	10	Leadership	Commitment to concepts	Appetite for change	Mandate	Politics	Engagement	Collaboration	Appetite for change	Culture	Commitment to concepts	Collaboration		Time (3 rd)	Commitment to concepts	Governance

Discussion

Complexity

That 35 interviews with current or former VPS public decision-makers resulted in the identification of 40 influences illustrates why public decision-making outcomes can so often fail to meet expectations: The sheer volume of factors presented as things to contend with easily overcomes what even the smartest humans and supercomputers can cognitively compute (Bossaerts, Yadav, & Murawski, 2019; Murawski & Bossaerts, 2016).

It follows that, in an ideal theoretical world, these 40 influences would be collapsed further such that a memorable handful of items could be referred to, or some neat alliteration could put in place around which action could be proposed. Indeed, the 40 influences could be thought of as being about people, processes, pressures, and paradigms. However, as is attributed to Einstein, "*everything should be made as simple as possible, but not simpler*", and oversimplifying complex problems may be part of the reason why they remain unresolved. The insights presented here make it clear that public decision-makers do not operate in a world where factors impinging on their work can be ascribed neatly to pithy subgroups. Thus, the 40 influences were concluded upon as the level at which subthemes could be drawn together without losing the substance of each influence or the ability to genuinely consider its depth and operation as both an enabler and barrier (Appendix E).

One obvious solution to mastering this complexity while retaining the richness of PDMer insights is to identify which of the forty influences are most important. For example, a hierarchy of sorts would enable PDMers to focus their efforts on those influences shown to have the most impact on their decisions. However, as the above results show, which influence is most important depends heavily on the experience of those asked and the analysis method chosen. Though it is clear that the *personal characteristics of PDMers* play a prominent role.

Reflections on Differences Between Cohorts

Linear regression highlights - Experience

From a linear regression perspective, key differences are most significant between those involved in the EREP case study and not (see Figure 24 b, d). This is important. The focus of those involved in this case study, selected because it *did* reflect sustainable development being embedded in public decisions, was different to that of all other participants.

Where *Personal characteristics of PDMers* ranked foremost for almost all other cohorts (third for Mid-level officials), the top-ranking influences for EREP interviewees were *Appetite for change* (defined as 'expectations, willingness or calls for change, i.e. alignment with social values, how compatible SD is with other values'), and *Commitment to concepts* (defined as 'Acceptance and application of SD or the SDGs, reflections on the application and impact of these concepts/tools on PDMing'). These influences averaged fourth and ninth placings across other cohorts. Similarly, *Engagement* and *Implementation* which failed to rank in the average top 10 of other cohorts, ranked third and fourth for EREP participants. *Implementation* is a particular stand-out as it ranked 29th and 30th among general and CDP interview cohorts, respectively. These variations in ranking and average focus continue throughout all 40 influences and suggest that EREP participants really do have a different perspective on the world, or at least did when asked to consider their decision-making and applications of sustainable development in light of that program.

While only one case study, the variation presented by the EREP interviewees suggests that different influences may need to be focused on to encourage integration of sustainable development in public decisions. It would be worthwhile repeating elements of this research with other cohorts of public decision-makers who have worked on projects similarly considered to have embedded SD to see whether the influences they focus on are likewise different to those whose work is less directly focussed on embedding SD. Perhaps if the focus of other PDMers were to shift to mirror the influence hierarchy of EREP interviewees more public decisions embedding sustainable development would

occur. That is, to build on Teisman and Klijn (2008), mimicking the attributes present in some public decision-making contexts may drive desired outcomes in others.

Distributional analysis highlights - Seniority and Personality

From a distributional analysis perspective, the most significant differences among cohorts are between Mid-Level and Higher or Senior-Level Officials (Figure 21), and between more and less overtly upbeat participants (Figure 23).

Significantly more emphasis on *Implementation* and *Appetite for change* by Mid-Level Officials than by Senior Officials may reflect limited interaction between more senior PDMers and those impacted by public decisions. This would suggest that the differences in focus expressed over differing levels of seniority are likely attributable to differences in workday focus over the different tiers than ideology. Therefore, variations in worldview and focus between levels of seniority are interesting but, given such rationales, also unlikely to be the dominant factor behind PDMers not achieving what they set out to.

Conversely, differences between the more and less overtly upbeat may hold critical insights. Some interviewees presented as more able to contend with the complexity of the operating environment, more able to see the forest for the trees, and to know when and how to act to drive the change they joined the public sector to make. While this research did not assess the intelligence of participants, it did not appear that intellect was necessarily responsible for interviewees presenting in this way. Certainly, many apparently very intelligent interviewees presented as less overtly upbeat and more scathing of how the public sector operates. Instead, what did seem to matter were individual's personalities. This is evident in *Personal characteristics of PDMers* rating highly in the number of coded passages overall and across many cohorts, and also in those same characteristics (value, motivations, self-belief, frank and fearlessness) coming through more clearly in the interviews with more overtly upbeat people.

The latter people spoke to *Personal characteristics* and *Leadership* (managerial and individual) significantly more than their less overtly upbeat colleagues, despite their collective focus on other influences being pretty similar (Figure 24, h). As noted in the Results above, the only other significant differences were the greater focus by the less overtly upbeat on *Appetite for change*, *Institutions*, and *PDMing considerations*. Arguably, those influences focused on more heavily by the more overtly upbeat can be seen as being about what individuals can do to leave their mark on the world, for example:

“Under the last government, I had a diverging view from [other government agency] and, in fact, our own policy people here about the issue of tyres, waste tyres. ...And so, I ended up having to pick a moment. And the moment was having an argument with [CEO other government agency] in front of the previous Minister. ‘Cause I was getting nowhere here. And so I've got the Minister on my side who agreed it was a problem. So that was really naughty but I just- I just had to- I had to move on it because there's a problem, and we weren't actually seeing the problem in a way that we could fix it. Now, I know EPA can't fix everything, we try. But I knew we could do something about stockpiles.

So, I don't always, you know, shoot somebody down-- And in front of everyone but well, you know, if I have to, I will”.^{15a}

“I mean this would be kind of galling for some people to sort of realise but even in somewhere like DPC, when you're writing advice on a Cabinet submission, often whatever your opinion is and how you write the brief will form the substantial basis of the advice of the Premier. And unless you're really off the mark, your managers are probably going to shape it around the edges or put an additional condition on it. But they're not gonna substantially say, "Wrong decision buddy, go back to square one". And so, however the person on the ground level thinks about the issue, is likely to shape the ultimate decision. So, junior people have power”.^{7c}

Whereas those influences focused on significantly more by the less overtly upbeat can be seen as about how the wider world might constrain the individual, for example, one CDP participant reflected:

“But as soon as you take our Chair and appoint it as the independent monitor, as soon as he's now funded by the Port. Not, sorry, not by the Port but essentially government. We have no ability to countermand our own Chair in another role. So, anything that they say now represents us. Everything we did had to feed into this. And that this was no longer us. This was a government, independent government again. So, it totally cut the knees off us. It totally weakened our position, and it shut us completely out. We were just a service to the arm. All we did was gather data throw it out into this pile. They made then the political overlays and-- You know, they did a good job in terms of what they promoted, what they pushed out and how they framed it, but it was, it was controlled. It was, you know, greenwash. It was sold as a government controlled message. It was no longer EPA telling its side as an independent voice for the community and an

independent assessor of the environment. By taking our Head and putting it up there, we had nothing. Absolutely no play in the public. And that's the only lever that EPA has, is how we leverage the community views, and the powers that be knew that, and they positioned it so that it would shut us up".^{26-u}

This experience and view was tested with other participants involved in the Channel Deepening Project, illustrating variation in the perspectives on what individuals could achieve:

Interviewer: *I interviewed someone at EPA... And they sort of indicated that, well it didn't really matter what results came out of the monitoring because it was going to go ahead, it had already been decided.*

29au: *"No, it did, it did matter".*

"You had to believe it could be done because believing it couldn't be was very difficult"
^{28au}

In making these comparisons, it is not being argued that public decision-makers should be encouraged to foster a disregard or disrespect for the Executive. Participants presented no such view. If anything, the need for public decision-makers to gain a better understanding of the operation and drivers of parliament was raised:

"I think where I've seen really effective public servants, and successful ones, if you define success as being going up to the top of the tree. A lot of them have had some experience working in a Minister's office or world. Because you do get the role, the relative roles that you play and you do understand that.

...I do find a lot of public servants have a big disconnect between themselves and parliament and ministers, you know. It's almost like the ministers are an impediment, whoever it is. It doesn't matter what side of politics they are, ministers sort of get in the way: "Oh God, do I have to deal with the Min?"^{18a}

What was presented by more upbeat participants was a self-belief that irrespective of the situation they can and will put their best foot forward and give it a go. They are determined to have an impact within the constraints of their roles and do not let setbacks stop them from trying. In short, they demonstrate what Angela Duckworth (2016) calls 'Grit':

"We all face limits - not just in talent but in opportunity. But more often than we think, our limits are self-imposed. We try, fail, and conclude we've bumped our heads against the ceiling of possibility. Or maybe after taking just a few steps we change direction. In either case, we never venture as far as we might have. To be gritty is to keep putting one foot in front of the other. To be gritty is to hold fast to an interesting and purposeful

goal. To be gritty is to invest, day after week after year, in challenging practice. To be gritty is to fall down seven times, and rise eight". (p. 275)

Public decision-makers interviewed here also illustrate and can learn from Bandura's Theory of Self-Efficacy (Bandura, 1994): "*Beliefs in personal efficacy affect life choices, level of motivation, quality of functioning, resilience to adversity and vulnerability to stress and depression*". Or, more simply, "*..people have a hand in shaping events and the course their lives take*" (Bandura, 2012). Similarly, other research has positively linked self-belief and achievement: Meta-analyses found self-belief has a 'small but noteworthy' positive impact on academic achievement (Valentine, DuBois, & Cooper, 2004), and a 'significant correlation' between self-efficacy and workplace performance (Stajkovic & Luthans, 1998).

If conducting extensions of this research or future surveys with the public sector it may be valuable to have participants undertake Duckworth *et al.*'s Grit test to see if the more overly upbeat are indeed more gritty (Duckworth, 2019; Duckworth, Peterson, Matthews, & Kelly, 2007), or other tests canvassing personality traits (e.g. Gosling, Rentfrow, & Swann, 2003; Morony, Kleitman, Lee, & Stankov, 2013; Sherer *et al.*, 1982). Assuming they are, the question then becomes how can PDMers be encouraged to present as more upbeat? What can they, their managers, public sector commissions, and others do to support them to recognise their agency in public decision-making? How can public decision-makers become respectfully gritty? Duckworth and her colleagues have ideas on this too, such as engaging in and rewarding 'deliberate practice' (121, 135) and encouraging a growth mindset (192) to improve grittiness, and going as far as to argue that grittier people are more life satisfied (270) (Duckworth, 2016). Cuddy (2016) too argues that encouraging people to feel they have a sense of personal power improves their cognitive functioning. Suggesting that encouraging PDMers to exercise agency and develop self-efficacy will improve their outputs.

Back to Covey

Coupling practitioner identified influences (Table 3) and insights with the network mapping (Figure 26) highlighted that *who* or *what* the controlling actor/s within VPS public decision-making are, and their awareness of their role, is not consistently understood. This was particularly evident in the

variety of opinions on the role and reach of bureaucrats,^(18a, 26-Ϸ) and may help to explain why the influences that *are* considered to be within PDMers' circles of control are not being widely harnessed for beneficial means: If nobody takes custodianship of the circle of control it will shrink and the things that are thought to be within it are instead more likely to fall outside of it, and be controlled by outside actors or serendipity.

Uncertainty over who is exercising control may also explain why those who believe they can drive change do so, even if objectively their abilities to drive change are no greater than their less optimistic peers. If possessing greater awareness of the influences on PDMing and being willing to respectfully test one's personal agency in relation to those influences can result in one having a more significant impact, it is foreseeable that self-aware and driven PDMers will fill the custodial role that has been left wholly or partially vacant within the schema. Thus, the statistical and network mapping both act to underscore the importance of personal characteristics. This too is supported by Duckworth (2016, p178): "*When you keep searching for ways to change your situation for the better, you stand a chance of finding them. When you stop searching, assuming they can't be found, you guarantee they won't.*"

Reflections Arising from Different Methods

The pool of influences vying for the title of most important was narrowed using. This showed that, notwithstanding the above differences across cohorts, *Personal characteristics of PDMers* and *PDMing considerations* are widely and frequently discussed in the context of public decision-making and sustainable development, as are *PDMing processes*. In particular, the prevalence of coding for, co-coding with, and frequently elevated ranking of *Personal characteristics of PDMers* indicate it to be a good candidate for most important influence.

Under a network mapping context, however, the most important influences in terms of operation of the system are not always the most obvious, *Leadership and PDMing considerations* are among the eight most important influences from a network mapping perspective, but so too are *Complexity* and *Risk* which rank relatively lowly in the cohort analysis. *Implementation*, the factor raised comparatively

out of the blue by EREP participants, ranks as second most important under network mapping analysis. Thus, this analysis supports the argument that while those influences ranking more highly within the cohort analyses may be more dominant or overt, other less visible influences may be operating in a more subterranean way (i.e. without PDMers realising). Counterintuitively, it may be these which are most important because, without recognition and conscious management of them, they can act upon PDMing systems and by implication public outcomes.

To try to identify the most important influences from a systems perspective, Meadows' (1999) Leverage Points were considered in detail. Here too multiple methods were applied to identify which influences might be most important: The three highest-order influences were identified as *Leadership*, *Cognitive biases* and *Framing*. An average ranking based on multiple sub-methods of analysis found the same, although the variation within those sub-methods was much more considerable.

One of the most striking things about plotting the identified influences against the leverage points is the common to all leverage point of positive feedbacks (LP7), and the almost common to all leverage point of self-organisation or system evolution (LP4). These commonalities prompt consideration not only of which influences are best placed to stimulate system change at the most transformational levels, but also which leverage points have the power to alter the functioning of the most influences within *this* system. For example, if a concerted effort were made to identify, confirm, and where necessary alter the positive feedback loops within the VPS system of public decision-making, the behaviour and outcomes of the system would be wildly different.

The other conclusion made possible by the visibility of the reinforcing feedback loops in this system is that well-meaning, self-efficacious public decision-makers may hit up against these loops and reason that there is nothing more they can do. This may explain why some deeply knowledgeable and experienced PDMers appeared less overtly upbeat in the interviews. However, presenting the influences against the leverage points as per Table 4 or Table 5 shows that additional, more impactful, though arguably harder to achieve LPs are available to such practitioners. Given that changing the

expression of the leverage points or employing higher-order ones is no easy task, this also highlights the importance of organisational leaders in supporting staff to bring their most efficacious self to the workplace. Absent this formal leadership, like-minded individuals can still exercise their personal power to form advocacy coalitions to collectively enact change, if over a longer time period (Sabatier, 1987)

Meadows (1999) notes the need for caution in making system changes as they often act as proverbial butterfly wings causing unanticipated domino effects elsewhere. Nonetheless, changes may be necessary if the system is not working as desired - which, as earlier chapters show, is arguably the case in relation to the achievement of sustainable development (see Chapter 1). This leverage points perspective illustrates that rather than changing all elements within the operation of an influence, the positive feedback loops reinforced by one, some, or all of the influences, could be focused on instead and perhaps more easily or resoundingly altered.

Emergent Links Between Influences

One striking relationship between influences irrespective of the cohort or method of analysis applied is that of *Personal characteristics of PDMers* and *Leadership*. Table 7 shows both of the latter to rank highly across methods and cohorts, a strong relationship is shown in the network mapping, both were significantly more focused on by the more overtly upbeat, and text analysis of the passages coded to each of these influences identifies similar topics as being relevant to both (Box 1).

While similar, a difference between the two may have been inadvertently highlighted in the words of Kate Auty, the Former Victorian Commissioner for Sustainability: "... coming back from WA to Victoria, everybody's talking leadership and I'm going, "Oh, for heaven's sake! You know, just get on with it".^(1a) This comment belies a frustration that talk of leadership delays its expression in tangible action. Or, put another way, Auty's comments suggest that personal characteristics are more innate - things that can be amplified but not learnt, and are skills or attributes to look for when recruiting or to cultivate

within existing teams. Whereas, leadership appears to be something that the public sector considers can be taught or enforced through Key Performance Indicators and governance.

Topics raised on <i>Personal Characteristics</i>	Topics raised on <i>Leadership</i>
– Expertise/Knowhow/Self-belief	– Expertise/Experience (in same role)
– Willing to support and show others what to do, not throw them under the bus	– Demonstrate support of others
– Surround yourself with equally committed people	– Provide opportunity for everyone to build & demonstrate leadership
– Emotional intelligence	– Build layers of governance & support for your cause, network.
– Understand others' ways of thinking and talk to them in their language	– Start with a discussion, listen and gently educate.
– Recognise where values are part of the decision base	– Art of persuasion/Storytelling
– Build self-awareness to strategically influence outcomes	– Pework, strategic planning and a willingness to negotiate
– Willing to build the environment needed for a decision to succeed	– Unafraid to push boundaries
– Just doing it, because it's necessary	– Be the circuit breaker
	– Pick your moment

Box 1. Topics raised in relation to *Personal Characteristics* and *Leadership* have considerable overlap.

Conclusion

These findings confirm the hypothesis that PDMers who do not achieve stated public objectives are not necessarily attempting to pervert decisions relating to public goods and outcomes. A more likely rationale is that they themselves are blown off course by the 40 factors found to be influencing their working environment. How individuals respond to and prioritise these influences is important. Yet consideration and focus on these also appears lacking.

The results also raise new ideas about desirable personal characteristics and experiences within the public sector:

- That perhaps the grittier one is, the more control they exercise within the context of Covey and, thus, gritty public servants exercise greater mastery over the influences acting upon them. If this is true, hiring managers need to be on the lookout for gritty PDMers.
- That those who do or have previously embedded sustainable development in public decisions focus their thinking on different influences to other PDMers. If this is true, striving to replicate

their focus hierarchies more broadly may increase the achievement of sustainable development within public decisions. Moreover, managers wanting to embed sustainable development may benefit not only from seeking out those with experience of having done so but, also, look for on-the-job opportunities to increase the exposure of their teams to it, so as to increase internal capabilities.

In addition to the mindset and capabilities of individuals, taking a systems approach and, in particular, exploring opportunities to alter the behaviour of currently dominant leverage points within the VPS public decision-making system would be a potentially transformational activity. Though one which would require careful planning and orchestration from a team with oversight for the whole system to attempt to anticipate and mitigate unforeseen and undesired outcomes.

Chapter 6. Solutions - The Value of Frameworks in Navigating Influences and Guiding Public Decision-Making

Key Points

- Public decision-makers do not consistently rely on existing frameworks or show appetite for adopting novel ones.
- Decisions are seen to be more heavily influenced by people, and the most important influences identified in this research are predominantly about people.
- Solutions and tools attempting to provide rigour will likely benefit from being packaged to appeal to the people-centric nature of the VPS public decision-making system, rather than the creation of new frameworks.
- Building questions into or tweaking existing templates may help.

Introduction

A common strategy within academic and the public sector when seeking to alter practice and establish novel ways of thinking is to develop a framework which practitioners can then apply. Rather than assuming an additional framework is necessary and would be welcomed by practitioners, the value of frameworks was tested first: Interviewees and survey participants indicated approaches and tools they rely on within their PDMing, and subsequently nominated either people or frameworks as more heavily impacting upon PDMing outcomes.

The Oxford Dictionary (2019) defines framework as, *“an essential or underlying structure; a provisional design, an outline; a conceptual scheme or system”*. This sentiment was applied to analytical methods here, with some additional considerations provided (see method, below), to facilitate the distinguishing of the practitioner-identified tools as framework- or people-centric. Doing so also enabled conclusions to be drawn about the perception and use of frameworks within public decision-making, and requirements for the successful application of framework-centric solutions.

Method

Interviewees were asked to reflect on the PDMing tools and approaches they rely on to guide their work. Responses were firstly thematically analysed in *NVivo* as described in Chapter 3. Survey participants then indicated how frequently they relied on each of those tools, using a Likert scale (Never, Rarely, About half the time, Often, Always), and their responses were analysed using *Microsoft Excel*.

Post data collection, each tool or approach was considered in light of whether it provided uniformity, consistency, replicability, and predictability to public decisions. And, further, whether it was largely objective to individuals' views. Where they did, influences were categorised as being framework-centric. Where they did not, they were categorised as being people-centric. A more complex mechanism of defining framework-centric could have been devised, drawing on Giddens (1984) for example. However, the considerations noted above were deemed sufficient for enabling conclusions to be drawn about the frequency of use of people- or framework-centric approaches.

This mechanism for defining tools as framework-centric or not was also applied to each of the 40 influences identified through the analyses in Chapter 5 (see Appendix D). A categorisation of neither framework or people-centric ('n') was added at this point. This category applies to influences where the framework descriptors are not an appropriate fit but, neither is the influence considered to be regularly swayed by individuals, e.g. complexity of public decisions is not uniform, consistent, replicable or predictable but nor is it predominantly the manifestation of any one individual's interpretation or beliefs.

A second, more direct, question was put to participants toward the end of the interviews and surveys: people were asked, "*Do you believe Public decision-making outcomes are influenced more by people or frameworks?*". The qualitative responses received by interviewees were again thematically analysed in *NVivo*, giving insights into how frameworks are used and considered within the VPS (n=24).

The binary responses (people/frameworks) given by the survey participants (n=97) were analysed in *Microsoft Excel*.

Results

Interviewees identified the approaches and tools listed below as mechanisms that aid their decision-making. Whether these are considered people- or framework-centric in light of the above rules of uniformity, consistency, replicability, and predictability is indicated in parenthesis by a 'p' or 'f':

- Attempt to be fair & balanced (p)
- Legislative requirements (f)
- Organisational strategy (f)
- Internal standard operating procedures (f)
- Published government policy (i.e. manifesto, election commitment, etc.) (f)
- External political considerations (e.g. community needs/ demands) (p)
- Legal/ Accounting/ Industry standards (f)
- VPS political considerations (e.g. other agency needs/ demands) (p)
- Intuition (p)
- Do something to keep it moving (p)
- Formal central agency guidance, such as the Victorian Guide to Better Regulation (f)
- Follow my boss' lead (p)
- Textbook Policy Cycle (e.g. Althaus *et al.* 2013) (f)

Figure 27 presents survey responses to these mechanisms. The most frequently used approach, 'Attempt to be fair & balanced', is considered to be a people centric-approach while the second, 'Legislative requirements', is framework based. Concerningly perhaps, use of intuition as an approach is a 50:50 proposition and existing frameworks, such as central agency guidance or textbooks, are rarely relied upon.

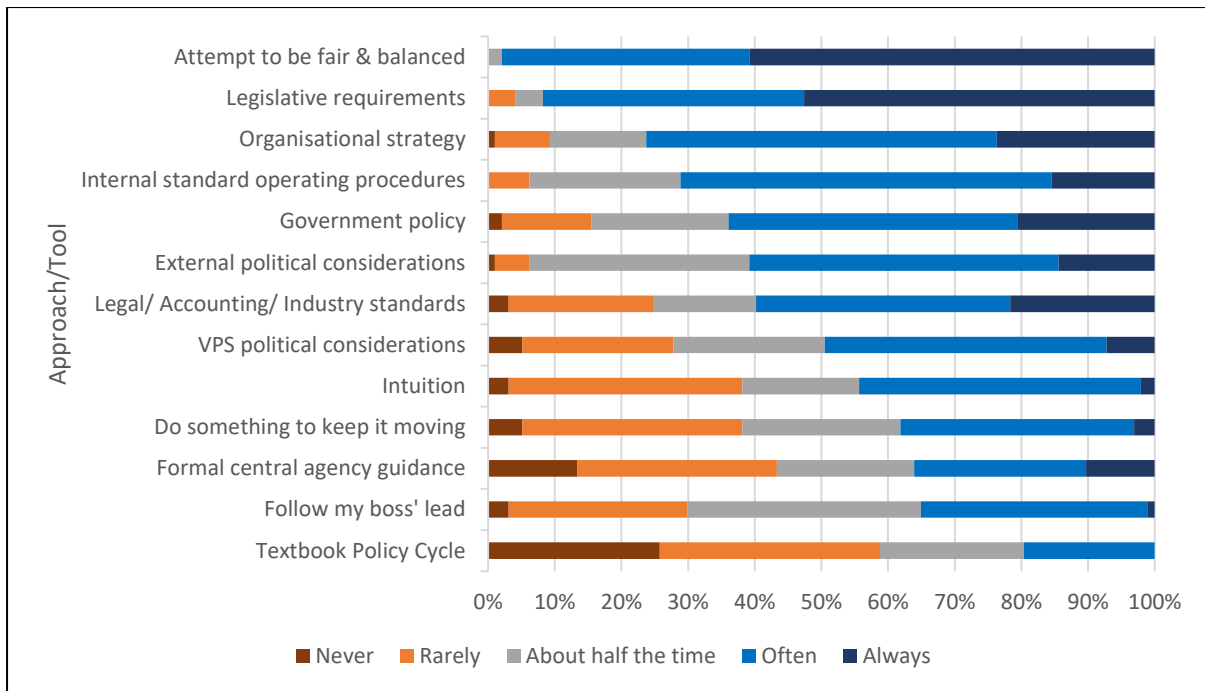


Figure 27. Survey participant use of the public decision-making approaches identified by Interviewees.

Table 8. Variation in top 10 influences identified by the methods applied, highlighting framework-centric influences

Differences in colour highlight similarities and variation in top ten influences across methods only and have no numerical or statistical value. Influences in darkened boxes with white text are considered to be framework-centric.

		Statistical Analysis										Network Mapping	Leverage Points		
		Total Codes/ Influence	All interviews (Av)	General participants	CDP participants	EREP participants	Mid-level official participants	Higher-level official participants	Senior official participants	More overtly upbeat participants	Less overtly upbeat participants		Average ranking across all cohorts	Highest Leverage Point	Scaled Rank
Rank	1	Personal characteristics	Personal characteristics	Personal characteristics	Personal characteristics	Appetite for change	PDMing considerations	Personal characteristics	Personal characteristics	Personal characteristics	Personal characteristics	Personal characteristics	Appetite for change Complexity Economics Institutions Leadership Mandate PDMing considerations Risk (Equal 1 st) Implementation (2 nd) Time (3 rd)	Leadership	Leadership
	2	PDMing considerations	PDMing considerations	PDMing considerations	PDMing considerations	Commitment to concepts	Appetite for change	PDMing considerations	PDMing processes	PDMing considerations	PDMing considerations	PDMing considerations		Cognitive biases	Cognitive biases
	3	Institutions	PDMing processes	PDMing processes	PDMing processes	Engagement	Personal characteristics	PDMing processes	PDMing considerations	PDMing processes	Institutions	PDMing processes		Framing	Framing
	4	PDMing processes	Institutions	Institutions	Collaboration	Implementation	Evidence	Institutions	Resources	Evidence	Appetite for change	Appetite for change		Culture	Commitment to concepts
	5	Appetite for change	Evidence	Evidence	Institutions	PDMing considerations	Resources	Evidence	Institutions	Resources	PDMing processes	Institutions		Risk	Culture
	6	Evidence	Appetite for change	Culture	Resources	Mandate	Mandate	Culture	Evidence	Leadership	Evidence	Evidence		Appetite for change	Risk
	7	Resources	Resources	Resources	Evidence	Personal characteristics	Commitment to concepts	Appetite for change	Mandate	Appetite for change	Mandate	Mandate		Personal characteristics	Economics
	8	Mandate	Mandate	Leadership	Appetite for change	Public awareness	Institutions	Engagement	Leadership	Institutions	Collaboration	Resources		Economics	Evidence
	9	Commitment to concepts	Culture	Mandate	Culture	Leadership	Implementation	Mandate	Culture	Mandate	Resources	Commitment to concepts		Role of Gov	Media
	10	Leadership	Commitment to concepts	Appetite for change	Mandate	Politics	Engagement	Collaboration	Appetite for change	Culture	Commitment to concepts	Collaboration		Commitment to concepts	Governance

Applying the categorisation of 'p', 'f', or 'n' to the ranking results discussed in Chapter 5 (Table 8, above) shows just five top influences meet the framework-centric criteria. Supporting the assertion that the system of public decision-making within the VPS is highly people-centric and resistant to the imposition or uptake of novel frameworks.

A follow-up question asking, *"Do you believe Public decision-making outcomes are influenced more by people or frameworks?"*, supports the latter findings. This question found that both interviewee and survey participants were more inclined to consider people rather than frameworks to have more considerable influence on public outcomes, with similar response rates (Figure 28).

Some interviewees were emphatic that people had greater influence, while others weighed up the impact of both before settling on a response. The following interviewee quotations provide additional insight into why people are considered to have more influence on public decision-making outcomes.

"I think the best decisions are influenced by people. I think the worst decisions are driven by frameworks. As I said to you before, decision trees and all those sorts of things, safe thinking-- I've just observed this recently through the legislative reform stuff. The safe thinking, the stuff that kind of fits within the box and everything else, gives you pretty much the same outcome as last time because it was all done within the same bloody framework, and so, you know, if you want same and safe, yeah go with frameworks. If you want good, then be prepared to do it differently".

- Chris, Higher-Level Official, DELWP^{17b}

"You can have whatever framework you want, the people in Treasury who opposed EREPs would have found a way of opposing it..."

- Terry, Former EREP participant, now Non-VPS Senior-Level Official^{31aë}

"I think they're more influenced by people. Because you can have frameworks and people can see them as optional. And then if you don't have the governance, then they don't get caught out if it's optional and they don't adhere to it. So it comes to the people I think.

It's both obviously but I would say it's more influenced by people".

- Mid-Level official, DHHS^{9c}

"[Chuckles] So the framework helped guide the decision making. People and everybody influenced the framework".

- Jeff, Senior-Official, Victorian Ports Corporation^{29aü}

"I work so much on frameworks and I like to think that they are actually, that- they are of value, I think. And, I think, in the main, they can influence outcomes, really, quite strongly. But unless the framework is backed up by a level of accountability, by good governance, by things, like, you know, third party assurance. ...then the outcome would be influenced just by people and personalities and power dynamics, as it was then".

- Robyn, Former EREP participant, now Non-VPS Higher-Level Official equivalent^{32bë}

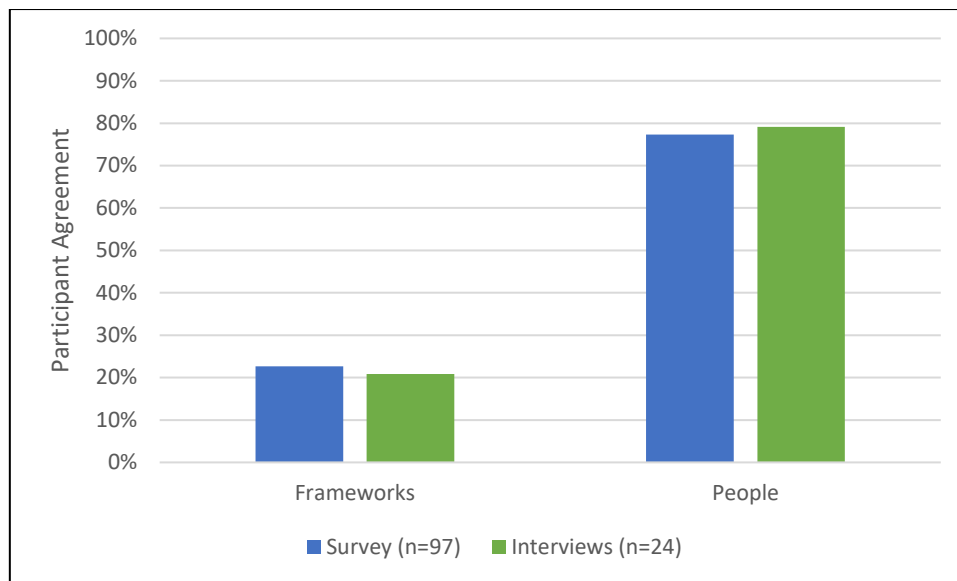


Figure 28. Survey and Interviewee responses on whether public decision-making outcomes are more heavily influenced by frameworks or people.

Due to time constraints in their interviews, nine people were not directly asked the question. Also, two interviewees would not be drawn to commit to either people or interviews.

Discussion

After reviewing the tools identified by public decision-makers and the frequency with which they use them, and after analysing the forty influences raised through semi-structured interviews, it is clear participants typically viewed decisions as more heavily influenced by people. While some frameworks are well embedded, others are not. Moreover, the prevalence of personal characteristics, political considerations and intuition support the explicitly stated view of 77-79% survey and interview participants that people more heavily influence outcomes.

Recall also the discussion in Chapter 4 concerning the apparent cognitive dissonance experienced by some interviewees who could give a Brundtland-esque definition when they stopped to think about sustainable development wholeheartedly, but reverted to talking about the environment and perceived the concept as not directly relevant to their work when asked follow-up questions about how the concept is embedded in their day-day activities.^(18a, 20a) Similarly, recall the finding that many people appear to be relying on the availability heuristic in order to make sense of the SDGs (also Chapter 4).

It appears that some frameworks, such as legislative requirements and institutions, are perceived as harder to avoid while others, such as formal agency guidance, are seen as something that can be helpful but also circumvented if desired. That is, there are a small number of formal frameworks that are seen as non-negotiable but the human element more consistently influences public practice, even when applying framework-centric approaches.

One might ask, why does it matter that public servants do not have a single definition of sustainable development, or know-how broadly it applies, or whether public decision-making outcomes reflect balancing or integrating considerations? An answer lies in the increasing complexity of public policy problems, which are requiring greater collaboration across portfolios and departments, purportedly within ever-diminishing timeframes (Daviter, 2017; Shergold, 2015; Thodey *et al.*, 2019). The difficulty of effectively managing these constraints to address public concerns presents fertile ground for implementing sustainable development and the SDGs, both of which recognised and attempt to address the interconnected nature of public decision-making. However, the fact that many public servants do not fully realise the scope of SD or the SDGs, know how to apply them, or feel they have the mandate to approach their work with a frame of mind shaped by either the concept or Goals, represents a significant missed opportunity (Chapter 4).

Given that prompting people to take a moment to reflect resulted in answers more aligned with the intent of sustainable development, but also that when asked about decision-making frameworks people indicated a propensity to shy away from them, tools that similarly drive prompting in the workplace but which are already part of the vernacular and practice may help to give sustainable development broader public decision-making salience application. Minor amendments to two existing, well-subscribed, processes (the PESTLE framework and standard briefing templates) could be readily adopted today in support of this.

A PESTLE Approach to Sustainable Development

“The common theme throughout this strategy for sustainable development is the need to integrate economic and ecological considerations in decision-making. They are, after all, integrated in the workings of the real world”.

- ‘Our Common Future’, (WCED, 1987, p., xi)







The PESTLE analysis framework invites consideration of Political, Economic, Social, Technical, Legal, and Environmental concerns (Cadle, Paul, & Turner, 2014, pp., 3-6). In business parlance a PESTLE analysis is applied to external factors and opportunities only, however, in public sector use the distinction between internal and external concerns is less pronounced. Given the earlier mentioned definitional and intuitive misinterpretations that sustainable development disproportionately represents environmental matters, one could be forgiven for thinking it is covered by the second ‘E’ of the acronym. Yet, an initial PESTLE analysis of the SDGs illustrates the applicability of sustainable development across the framework is far broader.

Table 9 shows that the SDGs traverse *all* elements of public decision-making, not just environmental ones. A fact recognised by the Commonwealth government in assigning not only the environment department but departments and agencies of all ilks to oversee the delivery of individual goals (Foreign Affairs Defence and Trade Senate Committee, 2019, p. 39). This breadth makes sense given the Goals represent areas identified by the international community as warranting targeted focus and monitoring to the year 2030, as part of a concerted effort to improve global wellbeing and prevent exceedance of planetary boundaries.

Table 9. Mapping the Sustainable Development Goals (SDGs) to the PESTLE framework.

This activity demonstrates the breadth of sustainable development considerations. A view that is supported by the variety of Australian Commonwealth agencies identified as leading (**bolded**) or supporting the implementation of the SDGs (Foreign Affairs Defence and Trade Senate Committee, 2019, p. 39).


SDG	P	E	S	T	L	E	Lead and supporting Commonwealth Departments at March 2018
	X	X	X				Social Services ; PM&C; ABS; Home Affairs (EMA)
		X	X	X		X	Agriculture and Water Resources ; Health
	X	X	X	X			Health
	X	X	X	X		X	Education and Training
	X	X	X			X	PM&C ; DSS
		X	X	X		X	Agriculture and Water Resources ; Environment and Energy
	X	X	X	X	X	X	Environment and Energy ; Industry, Innovation and Science
	X	X	X	X	X		Treasury ; Jobs and Small Business; ABS
	X	X	X	X		X	Infrastructure, Regional Development and Cities ; Industry, Innovation and Science; Communications and the Arts
	X	X	X			X	Treasury ; Social Services; Home Affairs
	X	X	X	X	X	X	Infrastructure, Regional Development and Cities ; Communications and the Arts; Home Affairs (EMA)

SDG	P	E	S	T	L	E	Lead and supporting Commonwealth Departments at March 2018
	X	X	X	X	X	X	Environment and Energy ; Agriculture and Water Resources; Finance
	X	X	X	X	X	X	Environment and Energy ; Home Affairs (EMA)
	X	X	X	X	X	X	Environment and Energy ; Agriculture and Water Resources; Home Affairs (Maritime Border Command); Infrastructure Regional Development and Cities (Australian Maritime Safety Authority)
	X	X	X	X	X	X	Environment and Energy ; Agriculture and Water Resources
	X				X		AGD ; Defence
	X	X	X	X	X	X	DFAT ; Treasury; ABS

Over time variation of PESTLE have emerged, such as STEMPLE to incorporate Military considerations, or shortening to PEST to omit legal and environmental considerations (e.g. Burrows & Gnad, 2018; Jonathan Law, 2016). Updating templates (for example, Table 10) may enhance awareness and implementation of the SDGs and concept more broadly by signalling that SD and the SDGs apply across all government considerations and support creation of the authorising environment to consider them more frequently. For example, where public decision-makers are encouraged to use a sustainable PESTLE template to undertake problem definition, solution identification, risk analysis, or briefings, two educational outcomes make occur: osmotic learning - whereby people become aware of the 17 Goals through repeated exposure to them; and, active learning - where, through direct consideration decision-makers more deeply explore the targets and indicators of the SDGs as potential sources of data and metrics for their own projects.

Table 10. A Sustainable PESTLE analysis template.

A template encouraging greater awareness of the Sustainable Development Goals and breadth of sustainable development considerations.

	Relevant SDGs 	Project considerations (Risks, Opportunities, Assumptions, Applicability of relevant SDGs)
P	1, 3-17	
E	1-15, 17	
S	1-15, 17	
T	2-4, 6-9, 11-15, 17	
L	5, 7-8, 10-17	
E	2, 3, 6-7, 9, 11-15, 17	

Amending Standard Template Questions

Inserting questions that invite consideration of sustainable development and associated frameworks into existing decision-making templates and processes may help drive more structured thinking within public decisions. The following could be adopted as standard questions within briefings, budget bids, regulatory impact statements, and the like to encourage integrated decision-making across timescales and portfolios:

1. *How does the preferred option benefit other portfolios?*

Prompted consideration of other portfolios and sectors may encourage decision-makers to consider public outcomes from Covey's balcony as well as the forest in which they operate (Covey, 2004). This practice could be extended to require a statement from other portfolios that the identified benefit is real (A'Hearn, 2010). Such a statement would require PDMers to talk with and understand the priorities and concerns of others, providing opportunities for new information loops and encouraging more holistic thinking.

2. *What will be the value of this decision in 5-10 years?*

Encouraging thought and cost-benefit analysis beyond electoral terms, responses to this question could talk to economic benefits, but also social, environmental, and technological improvements.

3. *How does this decision reflect community aspirations and needs?*

Requiring reflection on stakeholder views could drive increased engagement and accountability to the very people many interviewees noted PDMers are ultimately in service to.

4. *How will this facilitate, complement or improve organisational or government processes and priorities?*

A prompt to ensure PDMers' role in supporting the government of the day is remembered, and the solutions or policy proposals they put forth reflect that.

5. *What influences are driving selection of the preferred option? Should they be?*

Prompts encouraging acknowledgement of the factors impacting on the decision will assist PDMers in recognising, limiting and harnessing their effects.

6. *How does this decision address the problem? What other options are there?*

A prompt to confirm a solution has been found to the problem, rather than a problem being found for a preconceived solution.

For some PDMers, such questions may simply codify existing considerations. For others, suggestions of exercising influence and proposing new ideas to the Executive may jar with conceptions the role of the public sector in administering the decisions of the government of the day. However, as many senior officials - including those who had previously worked within Ministerial offices - noted, the Executive is benefitted by a public sector that thinks holistically and raises ideas, concerns, and novel solutions. Thus, codifying minor adjustments within existing PDMing processes may be a way to subtly but transparently encourage bureaucracy-wide integrated decision-making, improved public outcomes and opportunities to achieve SD.

Conclusion

Frameworks are espoused as best-practice solutions, driving consistency of outcome and effort. As such, one might expect heavy utilisation of them within the complex institution that is the public sector. However, findings here show public decision-makers themselves believe people and people-

centric tools to be more influential in shaping public outcomes. Thus, when trying to increase the application of sustainable development within public decisions, or enhance efforts to achieve the Sustainable Development Goals, devising an additional framework is unlikely to yield the desired effects.

Instead, other consistency-inducing and awareness-raising mechanisms must be built into already well-subscribed approaches. For example, adding a small number of additional standard questions to briefing templates or by illustrating the potential consistency with and value add of novel frameworks to existing tools. Such changes would have more impact if mandated from the centre of the VPS or the top of an organisation but can also be effective if applied from the bottom-up.

Chapter 7. Solutions - Accepting Agency, and Achieving More Enduring Public Decisions

Key points

- All public decision-makers, irrespective of seniority have the opportunity to influence public outcomes.
- When people choose to use that agency they are operating in a way that is more consistent with the concept of frank and fearless bureaucracy, and are supporting the realisation of a more effective public decision-making process therein helping to drive societal progress.
- Public decision-makers have a great many ideas on changes that could be adopted to increase the effectiveness or longevity of public decisions. These are discussed and presented in light of public decision-maker experiences and insights in Appendix H, alongside some contextual literature to provide readers with a starting point, should they wish to explore applying the ideas raised.

Introduction

While this research has identified an overwhelming number of influences that can prevent the achievement of public objectives, tools to tame and address them do exist. The courage to seek out and act on these solutions appears to be the magic ingredient held by some but not all. This chapter explores the relationships between actors within the Victorian public decision-making system, illustrating the agency that individuals have to encourage considerations of sustainable development and its principles within public decisions.

Having established this individual agency, thoughts then turn to how best to cultivate and apply it, and interviewee-raised solutions aimed at increasing the effectiveness or longevity of public decisions are explored. In doing so, it simultaneously canvasses ideas to enhance integrated decision-making and intergenerational considerations within public decisions. Solutions are presented as discrete

packages, and readers are encouraged to jump to those ideas which most strongly appeal to their needs.

Key Roles in the Victorian Public Decision-Making System

As Chapter 4 discusses, participants were explicitly asked if they are responsible for the limited achievement of sustainable development. Fewer than 10% of participants indicated that they do integrate sustainable development in their decision-making and that they, therefore, consider their decision-making practices sufficient in relation to SD. While more than 40% indicated that they or people in roles similar to theirs are not responsible for the lack of integration of sustainable development within the public decisions that they are involved in.

In some ways, it is easy to offer such binary responses. To say I am perfect or not to blame, that the fault lies with others. It is harder to admit one's frailties and missed opportunities. Nevertheless, 45% of interviewees and 17.9% of survey participants indicated that they *are* responsible, and also that there is more to do and a need for enhancements to public decision-making practice. Ideas presented by this group tended to include making the most of the influence conferred by one's positioning within the hierarchy, but also that achievement of sustainable development is everyone's responsibility. Figure 29 seeks to illustrate this.

In doing so, it further highlights the value of considering solutions and limitations in light of system leverage points ('LP') (Meadows, 1999): The achievement of sustainable development (a goal of the system, LP3) is helped and hindered by the overall discourse within society (a predominant source of actors' beliefs, LP2). This discourse surrounds, directly interacts with, and bleeds into decisions made within society - both public and private. The interactions between public and private societal actors then operate as positive and negative feedback loops (LPs 7 and 8), and at times as pathways of new information (LP6). These feedback loops and information impact both what is collectively considered acceptable within the system (the agreed settings of parameters within it, LP 12) and also ongoing evolution of the social narrative, i.e. maintenance or challenge to the accepted rules (LP5), operation

(LP4) and ultimate goals of society (LP3). The speed at which the loops can operate - impacted by the buffering effect of competing or collaborating actors and discourse (LP11) and the inbuilt delay of election cycles (LP9) -, determine the overall rate of change within the system.

Explicitly within the public decision-making realm, this research identifies many pathways between and within the hierarchy of bureaucrats and Ministers that provide opportunities to exercise frank and fearlessness and correspondingly the use of LPs 6 and 8. These interactions between decision-makers and external actors can be further complicated or enhanced by competition or collaboration across ministerial portfolios. The mapping of these pathways in Figure 29 illustrates that, while different actors do have differing levels of accountability and influence, to a degree everyone is in a system-impacting position and can feed into the achievement of sustainable development.

For example, there is a clear one-directional mandate-provision pathway, ultimately coming from the voting public. No actor receiving a mandate can directly impact what that mandate contains but, they can seek to influence the information and feedback received by the mandate-providers directly. That is, politicians engage the public to receive an electoral mandate, Secretaries engage ministers to receive policy mandates, non-senior public decision-makers engage senior officials to receive programmatic content mandates. These mandates do not defy the laws of physics; they are responses to information and other actors in the system. So, while all public decisions are made within the context of the social discourse and approval pathways, this does not mean that public decision-makers must slavishly react to the inertia or shocks within that discourse. They can influence it. The approval and information pathways within the system structure provide decision-makers with a formal ability, some might even say responsibility, to inform public and private understandings of issues and therein the broader discourse within which all actors operate.

This research is not advocating public decision-makers embark on revolution but an active practice of maintaining and utilising an awareness of information relevant to their roles, and sharing that with others where appropriate. Such that the advice they provide, the decisions they make, and the

proposals they seek approval on are the best they can be. One interviewee, for example, found it surprising that so few public decision-makers seem to take an interest in the goings-on of parliament. Far from advocating anarchic uprising or political gameplay, she simply encourages her staff to listen to or read back parliamentary discussions and debates on their work areas, in order to better understand the 'nuance'.^(18a) This practice does not appear to be widespread.

Chapter 6 illustrates that the significant impact of people on public decision-making outcomes is already recognised within the public sector. Yet, while some recognised that this was less than ideal, few were religiously relying on frameworks or other tools to address it, appearing to accept the influence of people as part of public decision-making practice instead. Given this acceptance of this interference, it makes sense to better understand and act with awareness of it.

Recognising one's position within the relational context of the public decision-making system may also aid those less confident or comfortable about using the leverage points available to them, to realise the circular nature of the system and their influencing power in it upon public outcomes. Put more simply, while senior official and ministers 'hold the pen', and citizens hold the votes, everyone can have influence if they choose to use it. Moreover, influence need not be a dirty word. As was discussed in Chapter 5, those who do use it are more likely to drive the change needed to close the gap between public aspirations and the public decision-making reality.

This gap is arguably a cause of current public disaffection with governments and bureaucracy, and similarly dissatisfaction and frustration among public sector employees. Thus, respectful influencing to provide new information and feedback should be seen as a positive and necessary element of the public decision-maker skill set, and actively encouraged. Adopting ideas described within the next section may be a way to catalyse such agency.

Ideas for Improving the Effectiveness or Longevity of Public Decisions

One of the rationales for this research was the need to hear directly from public decision-makers about their experiences and perspectives. Earlier chapters discuss the synthesised view of their insights to address the research hypotheses posed. For example, Chapter 4 Figure 5 presented collective survey responses to ideas for improving the effectiveness or longevity of public decisions. Here, the longer form perspective is provided in aid of addressing the identified literature gap of public decision-maker voice.

Exploring responses to the question, *“If you could make one change to improve the effectiveness, or longevity, of public decisions you’re involved with, what would it be?”*, Appendix H provides a compendium of insights on the following possible solutions:

- Increased emphasis on evaluation
- VPS culture that is willing to trial
- An outcomes focus
- Increased emphasis on data
- Frank & fearless advice
- Increased emphasis on engagement & consultation
- Increased emphasis on problem definition
- Strategic/Scenario planning
- Senior-junior PDMer links
- Balance between retained org. knowledge and new ideas
- Environmental data analytics capability
- PDMing seen as an iterative process
- Funding cycles that fit the project
- Remove political influence from PDMing
- Politicians to increase time on key decisions
- Increased discourse to discourage one term govts
- Consistent structure within legislation
- Consistent VPS corporate governance
- Application of SEEA in CBAs
- Standard Commonwealth election cycles
- Partial dissolution of Lower House

Each section presents a single idea so that solution-seekers can jump to those ideas which appeal most strongly to them, rather than necessarily reading things in succession. Ideas are presented in declining order of the overall survey participant support for them. In identifying those proposals with greatest appeal, readers may also find it useful to consider Table 11. This table indicates which solutions are hypothesised to have an impact on which of the 40 identified influences, based on participant insights. As most ideas are supported by their own literatures, i.e. there are schools of thought spanning many decades devoted to many of them, it is not possible to cover the breadth or depth of peer-reviewed

literature on each. A literature review on each solution is not, however, the intention of this section either. Rather, the purpose of these vignettes is to showcase public decision-maker ideas within the context of more detailed public sector examples and perspectives, supported by a selection of references, so that if someone wants to further explore an idea for practical use within their work, they will have a place to start.

Interviewees and survey participants were asked many overlapping questions and gave many insightful answers, and one might be curious as to why this particular question has received attention.

The answer is twofold:

- i. As was previously discussed (Chapter 3, this line of questioning was used as a proxy indicator of thinking around intergenerational or integrated decision-making. In this way, insights aligning with the principles of sustainable development were gleaned without priming participants or causing them to constrict their thinking to a potentially narrow preconception of the concept. That is, responses to this question are less constrained in identifying ways to address the intergenerational equity and integrated decision-making principles of sustainable development than otherwise might be.

The validity of including non-priming questions became apparent after the formal introduction of sustainable development to the research conversation. For some participants, the act of explicitly drawing SD into the discussion appeared to narrow the insights and examples drawn upon significantly. This was the case even where they had demonstrated in questions such as this that they did have a wealth of experience and knowledge relevant to the application of sustainable development principles, i.e. it was evident that some participants had relevant insights of which they were unaware.

- ii. This question was one of the most enthusiastically responded to: Interview participants would light upon being asked, before taking an audible moment or two to think before responding thoughtfully; and survey participants - who were given a free-text opportunity to provide their

own solutions before voting on those of interviewees - gave quite detailed explanations and rationales for their thoughts.

Both sets of participants left the impression that public decision-makers have a great many ideas of how to improve public outcomes if one simply asks them. This impression is validated by the experience of an Executive Director at the Department of Premier and Cabinet who was surprised but encouraged by the number of health department employees engaging in a policy pitch process concerning economic productivity across the State.^(12b)

In sum, Appendix H illustrates that many tools exist. Some of these are existing concepts in the public process that are poorly or inconsistently implemented, such as evaluation, data collection and stakeholder engagement. Others are more radical or less widely understood, such as reducing political interference in public decision-making or increasing application of the System of Environmental Economic Accounting. All are worthy of consideration and further debate.

Table 11. Overlap between Solutions and Influences.

Hypothesised overlap between interviewee ideas for enhancing public decision-making effectiveness and/or longevity, and the 40 public decision-making influences identified through thematic analysis.

		Interviewee Identified Solutions [^]																				
		Evaluation	Trial culture	Outcomes focus	Data Emphasis	Frank/fearlessness	Engagement	Problem definition	Planning	Hierarchy linkages	Retained/new ideas	Data analytics	Iterative PDMing	Funding cycles	Political influence	Time for decisions	Political longevity	Structure of legis. ⁿ	Corp. governance	SEEA in CBAs	Cth election cycles	Parliament
Influences [^]	Alignment SD & PDs			X					X							X			X			
	Appetite for change	X	X	X		X		X		X	X	X		X		X			X			
	Bus/Non-govt. actors		X	X		X									X							
	Central agencies	X		X										X							X	
	Cognitive biases						X		X	X	X					X		X			X	
	Collaboration				X		X		X													
	Commitment to concepts			X		X	X	X	X		X		X	X	X	X	X				X	
	Complexity	X	X	X	X		X					X			X	X				X	X	
	Culture		X	X		X			X	X		X								X		
	Economics			X										X		X				X		X
	Election cycles																X				X	
	Engagement		X	X		X						X	X									
	Evaluation	X		X	X	X	X					X	X		X							
	Evidence	X		X	X		X					X								X		
	Framing			X		X										X	X			X		
	Funding	X		X										X		X			X	X		
	Governance			X		X	X		X					X				X	X			
	Implementation			X									X	X	X	X	X					
	Institutions			X		X			X	X				X	X			X	X	X		
	Jurisdiction			X																	X	
	Leadership			X		X		X	X						X							
	Legislation			X									X			X		X			X	
	Mandate	X	X			X		X				X	X		X		X			X	X	
	Media			X											X							
	Ministers												X		X	X	X					X
	Paradigms			X											X					X		
	PDMers' understanding								X	X												
	PDMing considerations	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X	X	X
	PDMing processes	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X		X		
	Personal characteristics				X			X	X	X												
	Politics			X										X	X		X					X
	Public awareness			X		X						X	X		X		X					
	R/ship - PDMers/Min			X		X	X	X				X	X	X	X	X	X			X		X
	R/ship - PDMers/comm.		X	X		X	X					X	X							X		
	Resources			X		X			X	X				X		X			X			
	Risk		X	X		X	X		X				X									
	Role of PDMers/Govt.												X		X							
	Scale			X								X	X		X							
	Strategic planning			X		X	X	X				X	X	X	X	X	X				X	
	Time			X				X						X	X	X			X		X	X

[^]Solution and Influence titles have been truncated for ease of readability, but correspond to the full-length titles listed elsewhere.

Conclusion

That public decision-making outcomes are missing the mark when it comes to the achievement of sustainable development is widely recognised (see Chapter 1). Based on this, one might dismiss the concept as unsuited to the realm of public decisions. However, the continued recognition of SD and its component principles in local, national and international fora - including widespread global citizen engagement - indicate that there is still perceived and real value in the concept. What is needed are tools and insights to reinvigorate public sector activity toward it.

This chapter has illustrated that while some people have sufficient self-efficacy to identify and drive solutions themselves, others need an explicit authorising environment to do so. Figure 29 suggest that such an environment already exists within Victoria's democratic institutions. While direct mandates from senior leaders and central departments would go a long way in encouraging bureaucrats to actively embed the principles pronounced within their overarching legislation in their day-day work, as has been the case with mandating consideration of Human Rights, such tools are not the only pathway available.

Public decision-makers are already able to create and support decisions that better reflect the aspirations of society. Some will need assistance to accept this truth and alter their behaviours to reflect it without feeling that they are overstepping unwritten lines. Others will need help to see how they can manage another 'thing' amongst their pre-existing priorities when current workloads already leave some feeling overwhelmed. Chapter 6 illustrated that minor changes to existing templates are a straightforward way to achieve this.

This chapter went a step further in discussing many other ideas in the context of creating more enduring or effective decisions. The latter highlight the multitude of existing or within reach solutions. Decision-makers need only take up the challenge to explore and utilise them or advocate for their broader uptake across the VPS. Advocacy can come in many forms; the simplest is displaying the effectiveness of what one is advocating for; it need not be political.

Chapter 8. Future Research Ideas

Further research possibilities raised by this work are numerous and include alterations or extensions to the present study design, novel research ideas, and activities researchers or public decision-makers could undertake to boost understanding, awareness, and application of sustainable development and the SDGs. A brief synopsis of each follows below.

Alterations/Extensions of the Current Study Design

Public Decision-Makers

- i. Run similar interviews and surveys with a **brief personality or values test** to explore:
 - If particular personal frames and worldviews lead to different attitudes on public decision-making or sustainable development.
 - Which personal characteristics and leadership styles are most effective in embedding sustainable development.

The cohort analysis presented in Chapter 5 indicates that there are some significant variations in the way public decision-making is approached, and perceived in relation to some influences. Gathering additional demographic data would allow for further analyses between individuals, and more to be learnt about how to respond to these differences to encourage the application of sustainable development. It may be that those with particular values or personality types or traits are more inclined to express conscious agency in the achievement of sustainable development.

- ii. Explore (via literature review or fieldwork) **whether people can adopt desirable personal characteristics**, i.e. can one learn to adopt the characteristics linked to the expression of sustainable development?

This idea goes to the point of whether the right people with the right incentives are in the right roles to deliver achievement of the community aspiration of sustainable development.

Influences

- i. Expand the interview component of this research to **include additional case studies that reflect integration of sustainable development** in the public decision-making process.

As Chapter 5 shows, the EREP participants placed markedly different proportional coding on the 40 influences to that expressed by other cohorts. Exploring the focus in other similarly strong examples would enable testing of the hypothesis that, those who embed sustainable development in public decisions focus their attention on different influence to those who do not.

- ii. Test the hypothesised overlap between interviewee ideas for enhancing the effectiveness or longevity of public decisions and the 40 influences identified. That is, **validate the hypotheses links presented in Table 11**, Chapter 7. This would aid confidence that applying the ideas proposed would impact upon the influences suggested, thereby assisting in tool selection.
- iii. Further examine the available **literature on each of the 40 influences identified** to provide summaries of what is known and considered best practice in managing them. This will aid the identification and attainment of their optimal expression for achieving sustainable development through public decision-making.
- iv. Explore and test key **relationships between individual influences** in greater detail. For example, research that determines the direction of relationships between influences, i.e. adding direction to the linkages illustrated in Figure 25, Chapter 5, would allow for further elaboration of how the influences identified here interact and shape one another.

While the present research indicates it is highly likely that the relationship between influences is bimodal, there is also a high likelihood that one direction is likely to be stronger than the other, e.g. does a mandate enable stakeholder engagement or does stakeholder engagement

lead to a mandate? Enhancing this understanding would improve insights into the system mechanics at play.

- v. Undertake historical analysis to determine if any of the **influences** identified here have featured **in election campaign** or party policy platforms and, if so, how often those campaigns were successful.

Winning party policy platforms are not only an indication of what matters to broader society but also the basis for the work PDMers are tasked with implementing. Thus, such research could uncover topics and issues which more feature commonly within winning and losing election campaigns as an indicator of what the public values about the public service and public decision-making. Additional barriers to addressing some of the influences acting upon the operating environment of public decision-makers may also be uncovered in this way. Alternatively, the absence of direct positions on the influences identified suggests a lack of mandate to formally address them, limiting the availability of resources to address issues that may be hindering efficient and effective PDMing and the achievement of sustainable development. For example, when asked about what is used as evidence, 7c replied:

“Well, data ideally. But, realistically often we just don’t have good data. ‘Cause government never invests in IT. And they don’t invest in data ‘cause you don’t get elected by investing in data. So, we generally have crap data”.

- vi. Seek to identify or test **population-level knowledge** to ascertain if the conclusions drawn in Chapter 4 concerning the awareness and acceptance of sustainable development and the SDGs, can be scaled to the population level.

For example, Bain *et al.* (2019) have undertaken some preliminary population investigation, canvassing 175 Australians to understand how they conceptualise sustainable development and where trade-offs and tensions are perceived to be. Arguably population sampling such as this could be extended to a larger cohort base covering multiple subnational jurisdictions within Australia.

Leverage points

- i. Identify and test the merit of **alternative positive feedback loops** with a view to replacing those currently inhibiting optimal expression of the influences identified.

As discussed in Chapter 5, the system is held in place by the many reinforcing loops within it, changing even one of these would have an impact on overall functioning. However, how substantial, long-lasting and beneficial that impact would be is unclear. Also unclear is how many feedback loops would require alteration for the system to deliver achievement of sustainable development in line with stated community aspirations.

Testing of the alternatives could involve system modelling or additional fieldwork in public decision-making settings to validate how tangible and practicable such alternatives might be.

Novel Research Ideas Arising From this Research

Public Decision-Makers

- i. Noting the widely acknowledged increase in the size and influence of ministerial staffers in recent times (Ng, 2017; Thodey *et al.*, 2019; Tiernan, 2007, pp. 135-137), as well as the perceived lack of interest in parliamentary activities (e.g. Chapter 5, page 103), test mechanisms to both reduce politicisation and enhance PDMing understanding of political offices. For example, trialling the reintroduction of the permanent presence of public servants on staff or provision of secondment opportunities such that public decision-makers have the opportunity to **work as public servants and advisers within Ministerial offices**. Such opportunities previously existed and informed the experience of several interviewees, who were able to see *“a bit more of the special sauce being made”*. (3a, 12b, 3a, 22a+, 30a+)

Given such potential for creating new system loops arising from changed operating environments, research aiming to understand how such an approach might enhance the skills and knowledge of public decision-makers by providing additional perspective on the experience, needs, and role of those they serve within the Executive, would be invaluable.

Moreover, a trial could review whether arrangements such as this might improve the longevity of robustly made policy decisions through the enhanced opportunity for strategic thinking informed by both elected and institutional government. Similarly, such a trial could measure whether such an arrangement would help to build trust between the Executive and the public sector to address perceptions that, “...they [parliamentarians] don't really trust the bureaucracy. They think we're kind of a bunch of latte sipping lefties that will try and undermine their agenda at every step of the journey”.^(7c)

- ii. Understanding and testing the **value of 'Pi people'** to integrated decision-making.

There is an array of literature on professional skill profiles (e.g. Barile, Saviano, & Simone, 2015; Demirkan & Spohrer, 2015). One that has been the focus of recent discussion in public sector circles is the value of Pi-shaped people (*pers. comms.* staff in Victorian and Australian Public Sectors, 2018-9). Reflecting the Greek letter, π , the idea is that such people have a depth of technical skills in a couple of areas *and* breadth of management and interpersonal skills so as to be able to act as boundary spanners to multiple areas of expertise (Macaulay, Moxham, Jones, & Miles, 2010).

A testable hypothesis could be that the presence of such Pi-people in public decision-making settings leads to more holistic public outcomes.

Public Organisations

- i. Seek to confirm and understand what drives cultures that encourage and reward new employees but not longer-serving ones to **question organisational practices and positions**.

As discussed in Chapter 7 and Appendix H, the values placed on retained institutional knowledge and new ideas vary. Sometimes new staff are lauded as having fresh eyes or ideas, or forgiven for asking questions that may seem stupid or at odds with organisational positions, e.g. “I could benefit because I was an outsider and I was new, so I could ask some dumb questions”.^(18a) This invites resentment from longer-serving staff who feel their ideas are not

valued, encourages staff turnover through recognition-seeking, and discourages deliberate practice in a field or role (an activity considered to encourage grit, see Chapter 5). These phenomena likely also reinforce institutional culture and appetite for change, thereby further embedding existing non-sustainable development public decision-making practices.

It is unclear from this research whether (dis)engagement in questioning organisation practices and positions is driven by individuals (e.g. not speaking up for fear of losing face, or indeed speaking up because of an absence of insider frames). Or, if it is organisationally driven (e.g. pigeon-holing longer-term staff and their knowledge to certain roles, while seeing new people as fonts of exotic knowledge or someone to be somewhat accommodating to temporarily). Understanding why this occurs and seeking to address it, for example, through acceptance and encouragement of respectful questioning by all public decision-makers, may help to overcome sustainable development preventing practice issues.

- ii. Assess whether any particular portfolios or types of PDMing are more likely to apply sustainable development or the SDGs than others. Where they do, seek to understand why, and look for ways to **adopt those practices in other areas**. For example, decision-makers may be able to learn from the delivery of infrastructure projects in which 26-⁴ argues the triple bottom line is a standard, if secondary, consideration:

“So, those things are pretty standard in a policy landscape. Particularly for transport. You're always thinking along the society impacts, and cultural impacts, environmental impacts. Like it's just, it's just what you do. Generally, as secondary considerations, but you do consider them”. ²⁶⁻⁴

- iii. Seek to understand whether **unrelated negative perceptions** of agencies who are associated with sustainable development or the SDGs are **having a damaging impact** on the concept and framework by association. That is, test whether there is a correlation between opinions on agencies who administer or advertise sustainable development, and the level of support for the concept and Goals?

For example, as discussed in Chapter 4, many people intuitively perceive sustainable development as primarily an environmental consideration, so it stands to reason that people associate it with environmentally-focused organisations. Similarly, as illustrated by the commentary from interviewees (see, for example, pages 53-54, Chapter 4), it is typically environmentally-focused organisations who are promoting the concept and the SDGs. Where such organisations are seen as “*the blocker’ to getting the job done*” elsewhere,^(26-ψ) then, through a form of anchoring and negativity bias, it may be that SD is similarly perceived in an unfavourable light.

Public Decision-Making

- i. 4a commented that without a crisis, it can be hard to get the resources and commitment required for enduring change:

“There has to be a point of general agreement within politics, and within the community for that matter, that there’s something that matters regardless of which part of the political spectrum you’re on. ...it’s said, you don’t want to waste a crisis because you actually end up getting the level of attention politically, -and if it can be garnered in a bi-partisan fashion that’s even better-, you end up with a mandate and the resources that mean it is an enduring change”. ^{4a}

Seeking to understand **how to achieve action on SD and the SDGs without an acute crisis occurring** could thus be valuable. As the crises brought about by inaction on sustainable development are only just beginning to be seen and will take decades to be fully realised, mechanisms to drive near-universally accepted outcomes and commitment without the societal pain of a crisis first are clearly desirable, if in some ways a policy-making nirvana.

- ii. Explore what is known about when **the ‘right’ point in time to make a decision** is. As was discussed in Chapter 4 (page 45), there is some contention about when and what basis a decision can be made. Analysis of historical decisions on how the precautionary principle, and the responsibility of and expectation upon public decision-makers to get decisions ‘right’ in a timely and cost-effective manner, can best be balanced to identify mechanisms that give license to act in the face of uncertainty would thus be useful. For example, the operational

period of the EREP regulations was initially set at seven years rather than the standard ten, in balancing recognition of uncertainty around a national carbon price with a desire to increase efficiencies sooner rather than later. ^(32bě, 33cě)

Inevitably a future crisis or review will find that too little emphasis was placed on either time or evidence in a particular decision and drive the decision-making pendulum in the opposite direction. Nonetheless, understanding what has been historically acceptable rather than responding to anecdotes and assumptions would provide decision-makers with more explicit bounds on the suitable balance between timeliness and certainty, and the range in which the pendulum can be pushed will shorten.

Such clarity would mean that decision-makers can spend less attention on debating or justifying the timeliness:certainty ratio present within a decision and more on the decision-making process itself. That is evidence around what has been successful and is considered acceptable would act to reduce “*a whole lot of fear and uncertainty and doubt*” ^(4a) around making difficult decisions, and enable that energy to be channelled into best practice PDMing processes.

- iii. Explore whether increased outsourcing of public sector functions or responsibilities decreases internal **risk appetite** or vice versa. As one would expect from a heterogeneous population, this research encountered variable risk appetites. However, it was raised that the private sector is at times drawn upon for advice when it need not be. For example:

“We did appoint a lawyer. I’m not sure that they were adequately experienced in the area because I felt at that time that I was almost providing most of the legal advice on it -the liability advice. But I still think we had a level of robustness behind the advice once it was put on an external letterhead as well to say that, alright, we’ve got something that we can sit on here and rely upon”. ^{14c}

The impact of outsourcing public decisions on institutional knowledge has been documented (e.g. Bess, 2012; Hess & Adams, 2002; Tingle, 2015). However, the role that this has on the expression of risk appetite does not appear to have been. Risk appetites affect people’s

willingness to try different or innovative approaches, such as application of the ideas raised in Chapter 7 or the SDGs, and so understanding whether any common public sector practices are shaping these appetites would be valuable.

Activities Researchers or Public Decision-Makers Could Undertake to Increase Awareness and Action on Sustainable Development or the SDGs.

- i. Conduct a process to support Victorian society (government, community, business) to collectively determine what it considers to be the **attributes of the 'good life' and how it wishes to achieve that life** within the limitations of what our local, national and global physical environments allow, i.e. conduct an envisioning process such as the community scenario planning described by Costanza *et al.* (2017) and the Australian Academy of Science (2015).

While sustainable development has been subscribed to by the State for 30 years (e.g. *Mineral Resources (Sustainable Development) Act 1990* (Vic)), the evidence presented in Chapter 4 suggests that awareness and acceptance within the community is not perceived to have been maintained, and this discourages public decision-makers from making decisions which do embed sustainable development, for example:

"I think we are reflecting society's requirements. I see some people in the community saying you need to develop sustainably or words to that effect. But, if you break that down further and say what are we actually going to do, you end up not with sustainable development. I don't think people particularly want it, because it would probably mean their quality of life would suffer or at least not advance. So, I think that the government and the public sector is reflecting the views of the majority of Victorians".^{5c}

Thus, a renewal of the commitment and awareness would encourage public decision-makers to more actively embed sustainable development, its principles and the SDGs in their decisions. Of course, the community could also argue that they are not interested in sustainable development and come up with another future vision that they prefer, however, research by Chambers *et al.* (2019) suggests this is unlikely.

- ii. Develop **an online course for public decision-makers** which reflects their daily experiences and operating environments explaining sustainable development, the SDGs, mechanisms that support their implementation, how PDMers can get involved and why they apply to PDs in Victoria and Australia, so as to address the concerns raised in Chapter 4 regarding PDMers awareness and understanding.

In the context of public decision-makers being sent to training courses with little follow-up and therefore muted adoption of the content, interviewees were asked what they think impacts the acceptance of new or innovative public decision-making processes. Responses included culture, the quality of the training, the assistance the training provides in doing day-day tasks, demonstration of value from a return on investment perspective, its value in broadening thinking, and also the accessibility of the training.^(4a, 5c, 6b, 9c, 11b, 12b, 14c, 16b, 18a, 19a) One way to address this is to produce freely available courses that can be undertaken within an office setting. Such accessibility would allow decision-makers to upskill in the time available to them, and to undertake training in teams. For example, at the Victorian EPA staff within the Policy and Regulation Unit established a group that met weekly to undertake Massive Open Online Courses (MOOCs) covering professional development areas that the group had identified as desirable.

As the significance of advice from senior leaders and the Executive signalling that the training is important and valuable was also raised,^(4a, 9c, 10a, 11b, 21-) any such training course would also benefit from the accompanying support of respected leaders, spokespeople and agencies. For example, in regard to the Human Rights Declaration:

*“So [the] Andrews government has come in and it's really important to them. And so what they've done, I think is added it as a question onto the People Matters Survey. And so, as a result of that, for example, because we want to improve our culture and People Matters Survey results, we've gone and created an e-learning module for the organisation that we've made mandatory. Now, you wouldn't do that, unless there were those system and structures of the Andrews government saying it's important”.*²¹⁻

Thus, while online courses generally covering sustainable development and the SDGs have already been developed and rolled out (e.g. the [SDG Academy](#) provides links to multiple courses), more targeted programs reflecting the PDMer's operating environment and using local case studies appear to be absent and will likely be more effective in gaining participants within the VPS and them subsequently applying what they have learnt

Chapter 9. Conclusion

I started this research pointing to less tangible examples of sustainable development not being achieved, to literature modelling possible futures. Five and a half years later, as unprecedented bushfires and storms last the country, I end it with the consequences screaming from the national broadcaster, newspaper headlines, social media and in my own lungs. I wanted to write that we are waking up. That decision-making for sustainable development has shifted and become the norm. But, while there are certainly growing pockets of people who realise the importance of integrated decision-making and value of sustainable development and the SDGs, we are not there yet.

This research provides a baseline for explaining why. It has established that:

- A demonstrable gap between the idea and reality of what public decision-makers set out to achieve, including in the achievement of sustainable development, is well recognised in the literature (Chapter 1). Conceptually there are many possible reasons for this, some of which are more likely to be within the control of decision-makers and others which are not but, most of which are discussed in isolated schools of thought and often not specific to the experience of public decision-makers (Chapter 2).
- Application of sustainable development and the Sustainable Development Goals (SDGs) in the Victorian Public Sector is poor. Chapter 4 discusses the findings to this end, including identification of the rationale for these poor uptake and implementation rates including inconsistencies in definition and awareness, which inhibit consistent goal definition and support perverse cognitive biases to persist.
- Thematic analysis finds there are 40 influences on public decision-makers in Victoria, making for a complex operating environment (Chapter 5, Appendices A, B, D). Qualitative insights illustrate that how people perceive and use these influences determines their expression as barrier or enabler, with all influences having the potential to help and hinder public decision-making that is consistent with stated societal aspirations (Appendix E). Also variable is the

hierarchy of importance of these influences. As established in Chapter 5 and supported by Appendices F and G, this hierarchy fluctuates pending the analysis method used and the perspective taken. For example, *Personal characteristics of PDMers* and *Leadership* often rank highly, however, quite different rankings are evident among those who worked directly on a project considered to reflect SD in PDMing.

- Public decision-makers use decision-making frameworks inconsistently (Chapter 6, Results). This is problematic in its own right but also suggests that framework-centric solutions for optimising the expression of the 40 influences will do best if they can be surreptitiously embedded in current practice rather than being championed as entirely new or onerous additional steps. Such solutions exist (see Chapter 6, Discussion).
- Consideration of the system leverage points that each of the 40 influences has the potential to operate as, *and* of the prevalence of particular leverage points across the whole system represents a new way of looking at the barriers and enablers of public decision-making and of encouraging the achievement of sustainable development (Chapter 5; Appendices F and G). Both perspectives represent opportunities for transformational system change and, within a subnational context, go a considerable way to addressing the provocations of Fischer and Riechers (2019), which appear to have been progressed at the same time as this research.
- There is opportunity to express individual responsibility and agency relating to the achievement of sustainable development inherent within VPS PDMing systems (Chapter 7, Figure 29). Individual public decision-makers must realise this and choose to exercise it to narrow the gap between public ideas and reality. When they do, mindfully raising their ideas in language and contexts others can understand will go a long way to ensuring their success. For example, framing sustainable development and the SDGs as being environmentally driven narrows people's considerations of them, inhibiting whole of public sector action toward them.

- Public decision-makers have many sound ideas on how to improve public decision-making outcomes, most of which are well-supported by their peers and have a considerable literature backing their virtues behind them (Chapter 4, Figure 5; Chapter 7; Appendix H). This support coupled with the literature and data on the success of the suggestions raised illustrate that there is fertile ground to adopt some or all of these ideas. Perhaps more importantly, however, this aspect of the research also illustrates that public decision-makers are deeply reflective, aware of the constraints in their operating environment and active in looking for solutions. An authorising environment in which to explore or trial these solutions appears to be absent or at least perceived to be.

The research outcomes also continue to support the assertion that sustainable development encompasses all public decisions. Thus, the above findings also apply to public decision-making more broadly: Just as all public decisions can be viewed through an economics lens, to too can a sustainable development one be applied.

In acknowledging the 40 influences and exploring people's experience of them, a theory emerged from this work that, irrespective of the circumstances the people who believe they can make a difference do. One only need peruse the local library self-help section to see that there is already plenty of material on this, and it will come as no surprise to management and coaching gurus but, in the context of the public sector, it feels somewhat of a revelation. Comparing the findings of this research with Hood's weakness of organisational types, it is evident that the public sector at times exhibits hierarchist and fatalist biases (Hood, 2000, Table 2.2). This is not to argue that public decision-makers should become more individualist, cooperation is a central requirement of organisations working toward the public good. Rather, that by thinking ahead and respectfully challenging others where appropriate, instead of allowing ourselves to be passive contributors, public decision-makers can drive more change in public outcomes than perhaps they realise. This theory also sits nicely against the work of McConnell and 't Hart (2019) on typologies of PDMer inaction. Particularly in regard to reluctant

and inadvertent inaction, where PDMers may feel they have no power or are wholly unaware of the power that they do have. Hence, all those public servants who said they were not responsible for SD not being achieved are in some regard right, it is not the role of any one individual public decision-maker to drive whole of government action on an issue, but at the same time, they are very wrong as they have considerably more potential to influence public outcomes than perhaps they realise.

Presented with the same opportunities, public decision-makers who believe they can be the change they want to see will go further and be more effective in their efforts to do so. In an environment of competing priorities, KPIs, ever-changing hierarchies and mandates, reinforcing feedback loops, and where the role of the public sector as more than implementer of government policy is regularly questioned, summoning and holding onto that belief is clearly difficult. Faced with this, many good public decision-makers give up on delivering what they joined the public sector to do. The great ones do not.

Great public decision-makers recognise their ability to influence, however small, at every stage. That regardless of whether society is moving forward incrementally or with sharp jumps, every public decision impacts the path society collectively takes. The findings here support this and add weight to the theory that, if each step in the public decision-making process - from the way people are greeted at the front desk and the material that is available to them in the foyer, through to the make-up of the re-election platform the Premier stands on - was taken with the knowledge that it genuinely matters, public decision-makers' collective understanding of issues and circle of control would increase - bringing about improved outcome delivery.

This research shows that how we think about what we do, and the level of self-belief we hold, has a hand in determining what we achieve. If we want to see greater achievement of sustainable development through public decisions, then we must continue to believe in the value and impact of the public sector and our roles within it. We must not take rebuttal of one idea as a cue to stop putting up well-crafted options to address well-articulated public problems but, instead, focus on the times

that our suggestions *do* get taken up. And, we must act with courage - though we may well be fearful - and use it to improve the quality of public sector outcomes. Because giving up or leaving it to others has not worked. If we want to change the world, our even our small part in it, we must believe in that change and embody it ourselves in the decisions we make today.

'All' public decision-makers wanting to achieve this need do is, recognise their role, its constraints and opportunities, identify matching solutions, and have the courage to voice their ideas. This research has increased awareness of the constraints and opportunities and identified some matching solutions to help make this a more manageable task. However, while leaders can shape organisational cultures to cultivate it, ultimately, courage is something only individual decision-makers can unearth. Promisingly, the ability to do this is firmly entrenched in the centre of each individual's circle of control: The achievement of sustainable development is in a great many ways within our own hands.

Appendices

Appendix A - *NVivo* Outputs

Table A1. Total *NVivo* coding outputs, by influence

Table A2. Total *NVivo* coding outputs, by influence, per interviewee

Table A1. Total NVivo coding outputs, by influence (aggregated)

Vertical and horizontal titles are the same and reflect the 40 influences identified; Blue squares represent the total number of coded passages across all transcripts for a single influence, i.e. *Alignment of SD & PDs* is coded to 193 times across all transcripts, *Appetite for change* is coded to 419 times across all transcripts, etc.; White and grey squares (zero coding), indicate the number of times the same passage of text was coded to both of two different vertical and horizontal influences, i.e. *Appetite for Change* and *Alignment of SD & PDs* overlap in their coding of twenty-one passages of text, while *Businesses/non-govt. actors* and *Alignment of SD & PDs* only overlap once, and no interview passages were concurrently coded to both *Businesses/non-govt. actors* and *Central & review agencies*.

Influence	Influence Coding Set																																							
	Alignment	Appetite	Businesses	Central &	Cognitive	Collaboration	Commitment	Complexity	Culture	Economic	Election cycles	Engagement	Evaluation	Evidence	Framing	Funding	Governance	Implementation	Institutions	Jurisdiction	Leadership	Legislation	Mandate	Media	Ministers	Paradigms	PDMers' understanding	PDMing considerations	PDMing processes	Personal characteristics of PDMers	Politics	Public awareness	Relationship between bureaucracy & ministers	Relationship between PDMers & community	Resources - capability/ capacity	Risk	Role of PDMers/Govt.	Scale	Strategic planning	Time
Alignment of SD & PDs	193	21	1	1	14	20	40	27	9	64	1	3	7	21	17	3	5	3	32	2	12	6	26	0	2	9	5	60	30	22	13	8	7	1	8	8	10	3	14	6
Appetite for change	21	419	40	2	24	41	66	27	26	45	9	63	8	38	28	4	15	29	37	7	23	11	65	7	16	6	4	80	58	42	56	69	20	24	9	8	18	2	12	9
Businesses/non-govt. actors	1	40	61	0	4	15	7	3	0	5	2	18	2	3	4	0	0	6	3	2	5	2	8	1	3	0	0	7	5	9	14	22	3	2	3	1	2	0	3	2
Central & review agencies	1	2	0	35	1	7	6	1	6	8	1	1	2	3	4	1	4	1	16	1	7	3	11	0	2	0	1	7	5	10	1	1	2	0	4	2	0	0	4	1
Cognitive biases	14	24	4	1	228	19	30	26	28	15	3	15	1	34	25	0	5	0	20	1	34	4	14	2	19	12	5	27	32	126	12	15	15	4	21	15	5	4	6	8
Collaboration	20	41	15	7	19	280	23	21	56	15	0	51	7	34	35	5	30	9	68	10	40	3	35	3	11	3	0	73	45	91	22	12	26	10	46	8	5	2	8	12
Commitment to concepts	40	66	7	6	30	23	321	18	13	35	5	20	4	19	28	4	9	12	39	9	44	11	75	0	11	8	41	88	23	56	28	48	17	5	15	5	8	2	11	9
Complexity	27	27	3	1	26	21	18	191	16	26	3	21	7	73	20	7	24	4	17	1	14	7	16	1	5	3	2	51	44	45	21	12	10	5	18	28	1	3	7	17
Culture	9	26	0	6	28	56	13	16	305	12	4	37	9	21	22	2	37	8	71	3	59	8	33	3	12	4	1	42	48	114	21	5	25	9	56	20	7	3	13	13
Economics	64	45	5	8	15	15	35	26	12	315	2	11	4	24	32	8	4	11	22	4	12	10	24	2	3	12	6	64	42	31	28	10	10	5	14	5	17	3	14	4
Election cycles	1	9	2	1	3	0	5	3	4	2	41	4	1	3	1	0	0	3	3	0	3	2	17	1	7	7	0	6	7	13	16	4	9	1	2	1	2	0	5	12
Engagement	3	63	18	1	15	51	20	21	37	11	4	255	5	55	25	2	21	36	32	0	30	10	28	17	1	4	0	31	64	45	30	47	7	37	29	15	9	0	8	14
Evaluation	7	8	2	2	1	7	4	7	9	4	1	5	80	22	3	2	7	16	13	1	7	4	2	0	1	2	0	18	17	7	4	3	0	2	14	5	2	1	10	4
Evidence	21	38	3	3	34	34	19	73	21	24	3	55	22	411	41	10	17	9	20	0	13	5	12	2	7	3	2	59	88	53	18	21	10	6	24	16	4	6	16	17
Framing	17	28	4	4	25	35	28	20	22	32	1	25	3	41	167	1	9	4	11	0	22	8	24	0	10	4	0	57	36	40	21	13	11	2	18	3	4	1	6	3
Funding	3	4	0	1	0	5	4	7	2	8	0	2	2	10	1	41	4	9	8	0	1	3	4	0	0	2	0	9	5	3	4	0	2	0	9	4	4	0	3	5
Governance	5	15	0	4	5	30	9	24	37	4	0	21	7	17	9	4	120	14	37	0	26	8	14	2	1	1	1	26	44	54	12	6	9	5	18	16	2	4	3	9
Implementation	3	29	6	1	0	9	12	4	8	11	3	36	16	9	4	9	14	142	19	2	10	7	28	1	6	1	2	17	29	25	14	11	2	3	37	5	2	2	6	9
Institutions	32	37	3	16	20	68	39	17	71	22	3	32	13	20	11	8	37	19	432	10	45	24	61	1	14	13	2	75	43	112	33	22	54	15	66	24	17	6	19	24
Jurisdiction	2	7	2	1	1	10	9	1	3	4	0	0	1	0	0	0	0	2	10	47	5	4	10	0	0	0	1	13	2	1	10	2	3	2	3	2	1	1	2	2
Leadership	12	23	5	7	34	40	44	14	59	12	3	30	7	13	22	1	26	10	45	5	317	7	51	3	16	6	3	40	30	187	19	7	37	2	32	34	7	2	15	10
Legislation	6	11	2	3	4	3	11	7	8	10	2	10	4	5	8	3	8	7	24	4	7	102	20	0	2	2	0	18	16	20	17	3	10	5	8	6	0	1	4	7
Mandate	26	65	8	11	14	35	75	16	33	24	17	28	2	12	24	4	14	28	61	10	51	20	346	2	24	10	3	102	44	76	59	28	46	7	18	11	15	3	16	10
Media	0	7	1	0	2	3	0	1	3	2	1	17	0	2	0	0	2	1	1	0	3	0	2	36	3	4	0	5	2	0	5	16	1	3	2	6	2	0	0	1
Ministers	2	16	3	2	19	11	11	5	12	3	7	1	1	7	10	0	1	6	14	0	16	2	24	3	81	4	0	24	17	39	22	1	30	0	2	6	2	1	2	10
Paradigms	9	6	0	0	12	3	8	3	4	12	7	4	2	3	4	2	1	1	13	0	6	2	10	4	4	65	5	17	3	18	14	5	7	3	5	4	5	0	14	16
PDMers' understanding	5	4	0	1	5	0	41	2	1	6	0	0	0	2	0	0	1	2	2	1	3	0	3	0	0	5	253	11	0	5	0	7	0	0	0	1	0	0	1	1
PDMing considerations	60	80	7	7	27	73	88	51	42	64	6	31	18	59	57	9	26	17	75	13	40	18	102	5	24	17	11	563	104	82	77	33	41	3	30	27	13	5	18	32
PDMing processes	30	58	5	5	32	45	23	44	48	42	7	64	17	88	36	5	44	29	43	2	30	16	44	2	17	3	0	104	421	78	49	23	26	11	42	18	10	7	12	36
Personal characteristics of PDMers	22	42	9	10	126	91	56	45	114	31	13	45	7	53	40	3	54	25	112	1	187	20	76	0	39	18	5	82	78	838	53	21	120	10	99	66	20	4	29	21
Politics	13	56	14	1	12	22	28	21	21	28	16	30	4	18	21	4	12	14	33	10	19	17	59	5	22	14	0	77	49	53	207	29	41	7	11	24	10	3	12	15
Public awareness	8	69	22	1	15	12	48	12	5	10	4	47	3	21	13	0	6	11	22	2	7	3	28	16	1	5	7	33	23	21	29	235	4	16	5	6	16	1	6	6
Relationship between bureaucracy & ministers	7	20	3	2	15	26	17	10	25	10	9	7	0	10	11	2	9	2	54	3	37	10	46	1	30	7	0	41	26	120	41	4	170	0	12	13	10	1	9	8
Relationship between PDMers & community	1	24	2	0	4	10	5	5	9	5	1	37	2	6	2	0	5	3	15	2	2	5	7	3	0	3	0	3	11	10	7	16	0	73	5	3	11	0	4	2
Resources - capability/ capacity	8	9	3	4	21	46	15	18	56	14	2	29	14	24	18	9	18	37	66	3	32	8	18	2	2	5	0	30	42	99	11	5	12	5	369	16	8	3	14	27
Risk	8	8	1	2	15	8	5	28	20	5	1	15	5	16	3	4	16	5	24	2	34	6	11	6	6	4	1	27	18	66	24	6	13	3	16	125	2	1	4	5
Role of PDMers/Govt.	10	18	2	0	5	5	8	1	7	17	2	9	2	4	4	4	2	2	17	1	7	0	15	2	2	5	0													

Table A2. Total NVivo coding outputs, by influence, per interviewee (aggregated)

Vertical titles are the 40 identified influences; Horizontal titles reflect the interviewees (corresponding details for each interviewee identifier are provided in Appendix C). White squares indicate the number of coded passages of each individual coded to a particular influence. Where squares are grey, an individual did not have any coded passages relating to that influence. The bottom row provides the total number of coded passages per individual.

	Interviewee																																			
	1a	2a	3a	4a	5c	6b	7c	8a	9c	10a	11b	12b	13b	14c	15a	16b	17b	18a	19a	20a	21-	22ac	23bc	24ace	25bc	26-c	27ac	28ac	29ac	30ac	31ae	32be	33ce	34ce	35ce	
Alignment of SD & PDs	2	3	7	11	8	3	2	8	6	2	6	4	8	3	7	1	2	4	10	4	5	1	4	4	9	3	4	5	5	3	11	7	0	2	1	
Appetite for change	9	5	4	8	20	14	7	12	2	4	16	6	5	4	3	0	8	6	7	5	6	7	10	26	5	10	4	7	8	6	17	6	17	11	18	
Businesses/non-govt. actors	1	0	1	0	1	1	1	3	0	5	2	2	0	0	1	0	1	0	2	5	1	0	1	2	2	0	1	2	1	0	5	2	4	1	9	
Central & review agencies	1	0	0	2	2	4	1	2	1	2	0	0	1	1	3	0	1	4	5	1	1	0	0	1	0	0	0	0	0	0	2	0	0	0	0	
Cognitive biases	13	7	11	2	4	5	8	6	8	8	4	2	8	1	3	4	11	6	4	4	10	5	11	12	2	2	5	9	4	10	7	3	1	2	0	
Collaboration	4	2	5	4	5	5	4	3	11	3	6	3	5	2	5	3	6	8	9	9	4	4	13	9	8	14	15	15	12	3	23	10	7	0	5	
Commitment to concepts	15	7	5	8	7	12	3	5	11	4	8	5	7	2	5	1	1	3	15	6	5	2	4	20	4	5	5	0	6	2	31	13	10	15	7	
Complexity	1	1	2	4	4	6	4	8	5	0	5	1	9	7	3	3	7	1	3	5	3	8	9	4	8	8	6	10	9	5	5	4	1	0	4	
Culture	15	4	4	9	5	5	14	2	16	6	5	5	15	4	6	10	8	9	14	6	3	14	8	5	7	7	7	9	9	4	12	8	0	0	2	
Economics	1	0	5	17	12	9	6	12	9	5	6	9	12	4	9	1	6	8	2	5	4	4	7	10	1	2	0	7	5	3	11	1	5	7	6	
Election cycles	2	0	0	2	1	0	7	2	0	0	2	0	2	0	2	1	0	3	2	1	4	0	1	1	3	0	0	1	0	0	3	1	0	0	0	
Engagement	21	3	7	1	10	8	1	4	5	1	2	7	6	1	3	1	11	8	6	2	5	3	14	17	2	2	0	12	15	1	15	12	6	15	10	
Evaluation	1	1	1	0	3	4	1	0	5	3	3	3	7	0	2	0	0	8	3	1	3	1	4	1	0	0	1	3	2	4	1	4	7	0	3	
Evidence	7	13	11	4	13	9	7	7	15	3	12	5	13	7	8	5	8	18	7	4	8	9	12	7	3	11	10	5	16	8	6	11	2	7	6	
Framing	3	0	8	5	0	3	2	2	5	0	6	10	7	1	2	2	8	1	4	2	9	3	2	8	6	7	2	3	9	5	20	3	10	6	3	
Funding	2	0	0	2	4	0	2	0	3	3	2	0	0	3	1	0	2	0	2	1	3	2	0	0	0	2	0	2	2	0	0	0	0	0	0	3
Governance	3	4	1	3	3	0	3	0	9	0	1	0	4	2	3	10	6	4	6	1	5	6	9	8	5	3	2	5	8	2	0	2	1	0	1	
Implementation	4	4	0	2	3	3	0	1	7	3	1	3	5	1	3	1	1	4	3	2	4	3	2	6	0	0	0	4	1	4	12	6	10	16	15	
Institutions	11	4	8	9	9	10	14	12	15	4	11	3	15	5	11	7	5	4	12	19	9	7	12	14	9	17	5	8	5	13	16	10	1	4	0	
Jurisdiction	1	0	2	0	2	3	1	0	0	5	5	1	1	0	1	0	0	2	3	1	0	3	0	0	1	0	0	0	0	1	4	5	5	0	0	
Leadership	17	5	4	17	0	0	3	2	16	7	2	11	2	1	22	7	9	3	13	12	11	3	2	6	2	2	2	8	8	6	20	9	11	5	1	
Legislation	8	0	3	2	2	8	0	2	1	0	1	1	1	4	6	9	3	2	0	6	0	3	3	3	0	7	0	1	2	3	3	5	6	3	2	
Mandate	10	2	1	16	15	15	7	6	1	4	9	3	4	5	12	3	4	8	14	15	10	7	4	16	6	9	4	7	10	8	21	5	12	8	7	
Media	1	1	0	0	1	1	1	2	0	1	3	1	1	1	0	0	2	1	1	0	0	1	5	1	0	0	2	6	1	0	0	0	0	2	0	
Ministers	1	0	2	3	2	1	3	1	0	8	4	5	1	0	1	0	2	5	1	1	4	3	0	5	2	5	3	1	0	1	8	4	1	1	2	
Paradigms	3	1	4	3	0	1	4	4	2	4	1	3	3	0	2	1	2	0	2	0	3	2	2	3	1	2	2	0	1	1	3	1	0	2	0	
PDMers' understanding	6	5	10	7	7	4	3	4	5	3	7	3	3	6	5	2	5	8	5	7	2	5	4	6	2	3	3	3	5	0	5	2	4	8	4	
PDMing considerations	13	4	5	9	28	10	10	19	20	7	23	9	19	4	5	4	6	12	13	7	8	11	14	15	16	27	13	12	10	9	29	8	10	8	6	
PDMing processes	5	7	8	9	16	11	6	11	10	8	11	12	14	2	9	4	13	23	7	8	5	23	15	17	5	16	7	9	16	9	22	16	1	2	0	
Personal characteristics of PDMers	45	15	12	31	7	14	15	4	34	12	19	17	5	5	31	15	13	19	13	29	31	17	17	15	11	14	15	13	19	13	27	11	8	6	4	
Politics	12	0	4	11	5	5	11	6	0	11	7	1	3	1	2	1	5	6	7	3	3	12	7	3	3	11	6	6	8	5	12	9	8	7	6	
Public awareness	4	5	3	5	8	9	2	6	3	1	5	1	3	2	4	0	1	2	9	5	3	4	10	17	3	5	4	18	4	4	9	5	7	7	9	
R/ship - bureaucracy & ministers	10	2	3	9	4	3	8	5	2	4	0	3	2	2	7	1	1	8	8	16	6	4	3	10	5	7	4	3	6	4	10	3	6	0	1	
R/ship - PDMers & community	2	0	4	0	2	2	0	7	1	0	0	0	2	1	5	0	4	0	0	8	1	2	6	3	0	1	1	2	3	2	1	1	2	0	2	
Resources	11	4	0	9	7	7	14	4	13	7	5	2	5	10	14	2	4	22	14	12	1	14	9	5	3	3	13	12	13	12	11	7	5	7	4	
Risk	7	0	1	5	3	0	5	2	4	7	0	1	5	7	6	4	9	2	5	11	4	1	9	5	2	2	0	3	5	1	2	1	0	0	2	
Role of Gov	0	2	3	3	7	6	1	5	2	1	2	0	2	0	3	0	9	4	4	9	5	2	1	2	0	0	0	2	0	2	1	0	1	1	0	
Scale	0	0	1	1	1	0	3	0	0	0	2	2	1	0	0	2	2	1	0	0	1	3	0	0	1	1	0	0	1	0	0	1	0	2	0	
Strategic planning,	1	0	6	2	3	4	2	1	5	1	1	1	5	1	7	1	2	3	6	1	5	3	0	4	1	3	0	4	1	4	5	3	2	1	1	
Time	3	1	1	2	3	7	12	0	6	4	3	3	7	1	5	2	2	9	3	0	1	1	1	1	2	2	2	8	1	2	4	9	1	4	0	
Total Coded Passages	276	112	157	237	237	212	198	180	258	151	208	148	218	101	227	108	190	239	244	234	196	203	235	292	140	213	148	225	231	159	391	207	172	165	144	

Appendix B - Thematic Make-up of Influences

Table B1. Themes and Influences

Table B1. Themes and Influences.

142 themes were aggregated to 40 influences as shown.

Themes listed in NVivo	Aggregated Influence
<ul style="list-style-type: none"> - Assumed alignment w ESD - Alignment with existing work (SDGs) - Principles of ESD - Integrated Decision Making - Intergenerational Long-term considerations - Polluter Pays - Precaution Uncertainty - Applying without knowing (ESD) 	Alignment of SD & PDs
<ul style="list-style-type: none"> - Actors expectations - Appetite for change - Compatibility with other values (of ESD) - (SDGs) Not needed in our society - Societal values/Publicly driven (mandate) 	Appetite for change
<ul style="list-style-type: none"> - (ESD application) outside of gov - Non-Gov Actors Lobbying (mandate) 	Businesses/ non-govt. actors
<ul style="list-style-type: none"> - Central Agency Mandate (mandate) - Review Agency Mandate 	Central & review agencies
<ul style="list-style-type: none"> - (Cognitive) Habits - Personal Frames - Unintended consequences 	Cognitive biases
<ul style="list-style-type: none"> - Interagency collaboration & interactions - Interactions between actors 	Collaboration
<ul style="list-style-type: none"> - Acceptance of ESD - Application of ESD - Env considerations (ESD application) - Acceptance of (SDGs) - Application of (SDGs) - (ESD application) Not actually changing anything - (SDGs) Impact on PDMing - (SDGs) Unlikely to impact PDMing = missed opportunities 	Commitment to concepts
<ul style="list-style-type: none"> - Complexity of decisions - Overwhelm Too much in it (SDGs) - Uncertainty 	Complexity
<ul style="list-style-type: none"> - Culture - People or Frameworks - Frameworks - People 	Culture
<ul style="list-style-type: none"> - Economic models understanding application - Growth - Externalities Non-Financial costs considerations - Maslow's hierarchy of needs - Financial 	Economics
<ul style="list-style-type: none"> - Elections 	Election cycles
<ul style="list-style-type: none"> - Stakeholder engagement - Messaging 	Engagement
<ul style="list-style-type: none"> - Outcome/evaluation 	Evaluation

- Evidence Information - Measurable - qualitative - Data	Evidence
- Framing Debating what matters	Framing
- Funding	Funding
- Accountability, governance, KPIs	Governance
- Implementation - Stakeholder capabilities	Implementation
- Institutional characteristics - IT admin systems - Inertia context of government - Structural design of VPS - Where does consideration of decision SD sit	Institutions
- State vs. Commonwealth tiers	Jurisdiction
- Leadership - Individual - Ministerial - Organisational - Senior Officials	Leadership
- Legislative requirements, barriers - Inbuilt policy resilience	Legislation
- Mandate - Crisis & Watershed driven - External scrutiny/Third Party reviews - No or questionable mandate - Political or party mandate - Virtue of who the org is	Mandate
- Media	Media
- Ministers (position, interests, incentives capabilities)	Ministers
- Existing Paradigms - Luck Serendipity - Short-termism	Paradigms
- Confusion with ESD (SDGs) - Confusion with MDGs (SDGs) - Unaware (of SDGs) - Understanding & definition of SDGs (General comment) - Understanding, origins (definition (of ESD) - Amorphous undefined (definition of ESD) - Better Planet (definition of ESD) - Define the words (definition of ESD) - Greater weight to the env in PDMing (definition of ESD) - Integrated Decision Making def (definition of ESD) - Limits to Growth (definition of ESD) - No net impact (definition of ESD) - Our Common Future (definition of ESD) - Social Human Development (definition of ESD) - Sustained development (definition of ESD) - TBL Equal Consideration (definition of ESD)	PDMers' understanding

<ul style="list-style-type: none"> - Considerations - Success of Prior/Parallel projects - technology - Priorities - Comparative Priority of ESD - Consideration of ESD, SDGs in decisions - PDMing Goals - Other Portfolios priorities 	PDMing considerations
<ul style="list-style-type: none"> - PDMing process - Options Id/analysis - Problem Definition - Stages - Transparency (of process) - Briefing notes 	PDMing processes
<ul style="list-style-type: none"> - Skills, Attributers, Influence - Expertise/Know-how/Personal Capabilities - Frank and Fearless - Influence as a PDMer-Autonomy - Experience informing practice - i CAN impact here - I can ONLY impact here - It's Mins call - Not my role org - Values Motivations of PDMers - Making a difference 	Personal characteristics of PDMers
<ul style="list-style-type: none"> - Politics 	Politics
<ul style="list-style-type: none"> - Awareness of ESD - Public awareness (of SDGs) - Engage informed public (mandate) - Public Support for ESD (mandate) - Profile/Visibility of issue (mandate) 	Public awareness
<ul style="list-style-type: none"> - Relationship between bureaucracy and ministers 	Relationship between bureaucracy & ministers
<ul style="list-style-type: none"> - Community trust of governments - Disconnect between gov & community 	Relationship between PDMers & community
<ul style="list-style-type: none"> - Staff Capability - Consultants, Citizen scientists - Staff Capacity - Resources 	Resources - capability/ capacity
<ul style="list-style-type: none"> - Risk (Appetite) - Avoiding criticism 	Risk
<ul style="list-style-type: none"> - <i>Role of PDMers/Govt.</i> 	Role of PDMers/Govt.
<ul style="list-style-type: none"> - <i>Scale</i> 	Scale
<ul style="list-style-type: none"> - Strategic view/ Longer-term thinking - Future, Anticipation of policy need 	Strategic planning,
<ul style="list-style-type: none"> - Time capacity - Timeframes considered 	Time

Appendix C - Interviewee Participant Details

Table C1 - General interview participant details

Table C2 - Case study interview participant details

Table C1. General interview participant details.

Identifier	Role	Organisation	Years' of public sector experience
1a	Commissioner	Commissioner for Sustainability and the Environment - ACT	20+ years
2a	Commissioner	Commissioner for Environmental Sustainability - VIC	20+ years
3a	Secretary	DEDJTR	20+ years
4a	Deputy Secretary	DELWP	20+ years
5c	Senior Policy Officer	DELWP	20+ years
6b	Director	DELWP	10-19 years
7c	Manager	DET	5-9 years
8a	Deputy Secretary	DHHS	5-9 years
9c	Senior Project Officer	DHHS	10-19 years
10a	Deputy Secretary	DJR	10-19 years
11b	Executive Director	DPC	10-19 years
12b	Executive Director	DPC	10-19 years
13b	Acting Director	DTF	20+ years
14c	Manager	DTF	10-19 years
15a	Chairman	EPA	20+ years
16b	Executive Director	EPA	20+ years
17b	Executive Director	EPA	10-19 years
18a	Commissioner	Office of the Commissioner for Better Regulation	20+ years
19a	Director	SV	20+ years
20a	Chief Executive Officer	Undisclosed	20+ years
21-	Undisclosed	Undisclosed	20+ years

^Where 'undisclosed' is noted, the participant did not want those details publicly shared, though they were taken into account in cohort analyses.

Table C2. Case study interview participant details

Identifier [^]	Role in Case Study (Role now)	Organisation	Years' of public sector experience
Channel Deepening Project (CDP)			
22au	Secretary (Outside of VPS)	DELWP	20+ years
23-u	Undisclosed	DELWP	20+ years
24au	CEO/ Chair (Outside of VPS)	EPA/OEM	20+ years
25bu	Senior Manager (Outside of VPS)	EPA	10-19 years
26-u	Undisclosed	EPA	10-19 years
27au	Chair (Outside of VPS)	Independent Expert Group	Not Applicable
28au	CEO (Outside of VPS)	Port of Melbourne Corporation	5-9 years
29au	Deputy Director	Port of Melbourne Corporation	20+ years
30au	Chair (Outside of VPS)	Supplementary EES	20+ years
Environment & Resource Efficiency Plans (EREP)			
31ae	Director (Senior Official, outside of VPS)	EPA	20+ years
32be	Manager (Higher-Level Official equivalent, outside of VPS)	EPA	10-19 years
33ce	Team Leader (Outside of VPS)	EPA	10-19 years
34ce	Policy Officer (Mid-Level Official)	EPA	10-19 years
35ce	Manager (Outside of VPS)	City West Water	20+ years

[^] Where 'undisclosed' is noted, the participant did not want those details publicly shared, though they were taken into account in cohort analyses; where seniority changed since the case study occurred, the highest level of seniority experienced at the time of interview is indicated.

Appendix D - Definitions

Definitions of the 40 influences identified through inductive thematic analysis of participant interviews, are as follows (categorisation as described in Chapter 5 as framework-centric, people-centric, or neither, follows):

Alignment of SD & PDs - Reflects discussion on assumptions about alignment between SD or the SDGs and public decisions, as well as considerations and perspectives on the principles of SD (p).

Appetite for change - Talks to expectations, willingness or calls for change, i.e. alignment with social values, how compatible SD is with other values, the recognition of need for the SDGs within Australia (p).

Businesses/non-govt. actors - Applications of ESD by actors with influence outside of government, and lobbying of government by those actors (p).

Central & review agencies - The role of Central & review agencies in providing a mandate to act or consider particular things within public decision-making (f).

Cognitive biases - Heuristics, personal anecdotes and pain points that influence decisions, and their associated unintended consequences (p).

Collaboration - How actors work together, particular PDMers and parliamentarians (p).

Commitment to concepts - Acceptance and application of SD or the SDGs, reflections on the application and impact of these concepts/tools on PDMing (p).

Complexity - Within and of decisions, how this leads to increased uncertainty and PDMers feeling overwhelmed (n).

Culture - Considerations of culture, people or frameworks, and their impact on PDMing practices (p).

Economics - Understanding and application of different schools of thought, growth as a goal, externalities, monetary/financial costs, and Maslow's hierarchy of needs (f).

Election cycles - The impact of elections on decision-making and actor's behaviours (n).

Engagement - How (and if) communication with stakeholders occurs and the framing of that messaging (p).

Evaluation - Both consideration or focus on outcomes and evaluation of PDs (f).

Evidence - Consideration of evidence or information in decision-making, what 'counts' as evidence (e.g. qualitative and quantitative), and availability of data (p).

Framing - Covers framing in the sense raised by (Lakoff, 2014; Tversky & Kahneman, 1981), etc. and how it is used to present ideas more/less favourably (p).

Funding - Availability of economic resources to facilitate PDs to be made and implemented (f).

Governance - Arrangements within and across PDs to ensure their rigour, such as accountability, KPIs and transparency (f).

Implementation - Putting decisions into practice, including whether stakeholders have the capabilities necessary and expected of them to achieve the desired outcomes (p).

Institutions - Characteristics of the machinery of government, such as the VPS and departments and agencies within it as individual and combined institutions, as well as the structure of those institutions and administrative tools to support their functioning. Plus, how these impact who has authority to consider and make a PD and also government inertia (designed and unintentional) in responding to perceived needs for PDs (f).

Jurisdiction - Consideration of where the Head of Power for a decision sits across jurisdictions, as well as how that impacts willingness to act (f).

Leadership - Covers the concept of leadership as well as the need or demonstration of leadership by individuals, senior officials, ministers and/or organisations (p).

Legislation - Legal requirements acting as opportunities and barriers, such as inbuilt policy resilience (inertia) (f).

Mandate - The provision or lack of authority (e.g. crises, external scrutiny, political/party driven, expectations and responsibilities conferred on organisations) to make a decision in a particular area (p).

Media - Presence, use and impact of the media in shaping PDs (p).

Ministers - The position, interests, incentives and capabilities of Ministers (grouped, as ministers are not the primary focus of this research) (p).

Paradigms - The impact of established 'rules' within a society that govern the way it thinks and acts in determining what is possible within PDMing, including the presence of luck or serendipity, and focus on the short-term (*n.b.* growth is covered separately under economics) (f).

PDMers' understanding - Understandings (including definitions) and awareness of SD and the SDGs, including confusion with one another and the MDGs (p).

PDMing considerations - Success of prior or parallel projects, availability and reliance on technology, and government priorities (including overall PDMing goals, competing priorities across portfolios, the comparative priority of ESD and SDG impacting their status as goals within decisions). Also includes less commonly mentioned factors considered in making public decisions (p).

PDMing processes - The stages and act of making PDs, from understanding and follow through of the whole process to individual components such as problem definition, options identification and analyses, and recognition of the importance of separating stages to retain objectivity. Also includes the transparency of the process and how it is communicated within briefing notes (f).

Personal characteristics of PDMers - The skills, experience, attributes and personal capabilities of PDMers. This includes their values and motivation, willingness or perceived ability to be frank and fearless, and self-perceived ability to influence PDs. For example, dichotomies were present between those felt they could have meaningful impact, compared to those who felt their impact was tightly constrained and/or that it wasn't their role to try to influence outcomes (p).

Politics - The impact of political beliefs, gameplay, party dynamics, power struggles and allegiances (p).

Public awareness - Public understanding, awareness of and support for SD or the SDGs (p).

Relationship between bureaucracy & ministers - How PDMers and their ministers interact and view each other (p).

Relationship between PDMers & community - How PDMers and the community interact and view each other, the trust between them and the impact of this on connections between them (p).

Resources - capability/capacity - The amount of full time equivalent (FTE) staff available and the relevance of their skills and experience to the task at hand, as well as the use of consultants and citizen scientists to undertake work considered to be within the remit of PDMers. Also a general catch all for where 'resources' are mentioned outside of the context covered in other resource-relevant influences (e.g. around data, funding, time, institutions) (f).

Risk - Appetites for taking decisions outside of tried and true approaches, and behaviours driven by an avoidance of criticism (p).

Role of PDMers/Govt. - Conceptions of the purpose of PDMers and government as a whole, and the impact this has on licenses to act and individual decisions to influence (or not) particular outcomes (p).

Scale - The size of problems requiring public decisions (n).

Strategic planning - Proactively utilising processes to anticipate future policy needs and drive consideration of a more strategic than reactive view, culminating in reports that set agenda and measurable goals (f).

Time - Both as a capacity-limiting resource and as a consideration within PDs (f).

Appendix E - Influences as Both Barriers and Enablers

Table E1. Influences as barriers and enablers.

Table E1. Influences as barriers and enablers.

Note: Interviewee and survey participant references indicate discussion, not necessarily fixed perception, of an influence as a barrier or enabler.

Influence	How it can act as a Barrier	How it can act as an Enabler
Alignment of SD & PDs	Consequential inaction (4a, 13b, 34cě)	Serendipity, aligned values. Helped by active checking and more deliberate if externally hidden alignment (11b, 12b, 21-).
Appetite for change	Inertia, lack of fertile ground (8a, 11b, 19a, 33cě).	Govt., public, business on board and willing to pay (22aϕ, 24aϕ, 33cě)
Businesses/ non-govt. actors	Reject/ incapable of implementing policy (32bě, 33cě).	Support policy, capable of driving change, well-placed to benefit from changes: e.g. data shows "3/4 of Victorians would prefer to buy from a business or service provider that is positively acting on climate change" ^{19a} ; (31aě, 33cě, 34cě, 35cě)
Central and review agencies	Underestimate their role (15a, 19a).	Drive consideration of concepts, process, etcetera (5c, 8a, 15a)
Cognitive biases	Personal frames shape everything and lead to assumptions about what needs consideration (5c, 8a, 10a, 12b, 24aϕ, 27aϕ, 32bě, 34cě,).	Use to encourage buy-in e.g. highlight onboard 'celebrities' or success of prior programs (appeal to glamour, ego, legacy) (22aϕ, 24aϕ, 33cě).
Collaboration	Can drive lowest common denominator outcomes, and I shard to line up: <i>"So, how ambitious should we be? ...let's like redesign, let's like scrap the system and redraw it. In a more sensible way. Let's put all our funding together, and some of our teams could even have the same director and share funding and they could work together. And there can be all multi-disciplinary and, you know, rainbows and unicorns for mutual happiness. But like that's not really gonna happen... The timing and the alignment just wouldn't really work, right?"</i> (7c, 19a, 26-ϕ, 29aϕ)	Where supported by resources, reduces internal sniping and addresses siloes, also drives broader thinking about policy problems and solutions (7c, 8a, 9c, 19a, 20a, 23-ϕ, 25bϕ, 28aϕ 29aϕ),
Commitment to concepts	Lack of/creation of constraints: What was appealing may no longer be. (19a, 26-ϕ, 32bě)	Create mandates, supports implementation. (30aϕ, 35cě)
Complexity	Making sense of it amongst other priorities, constrained resources, and siloed structures can lead to disagreement about how to effect change, targeted <i>c.f.</i> holistic approaches, and misplaced faith in technological saviours. (2a, 5c, 6b, 9c, 10a, 13b, 17b, 24aϕ 32bě)	Embracing it helps identify novel solutions (24aϕ, 29aϕ)

Influence	How it can act as a Barrier	How it can act as an Enabler
Culture	Siloes, competition/risks to careers, fiefdoms and a view that SD has become political, deter people from speaking in favour of SD and the SDGs. Those who do note the need for a thick skin and optimism, which can come across as arrogance (1a, 3a, 4a, 9c, 13b, 21-, 23- \cup).	Drives innovation: <i>"I think generally we would have found it disappointing if we'd borrowed an idea from someone else... if it wasn't a world first idea we weren't particularly excited"</i> . ^{31aě}
Economics	Approaches taught and considered by public are too narrow (e.g. neoliberal economic/fiscal policy focus), sometimes hold false assumptions (e.g. rational actor) and can dominate PDMing. Latter issues compounded by rules around debt ratings, concerns over transition costs (7c, 8a, 10a, 11b, 32bě, 35cě).	Can be a useful hook to take SD and the SDGs into boardrooms and Cabinet, and facilitate improved public outcomes through a variety of tools (e.g. capturing externalities, balance sheets separating good/bad debts, applying appropriate discount rates, designing in market benefits) (3a, 7c, 9c, 24a \cup 31aě 33cě).
Election cycles	<i>"...it's two elections we survived. If there'd been a change of government two years after it was launched, it probably would have just been chucked out"</i> . (7c, 18a, 21-, 25b \cup).	46% of survey recipients supported improved political/public discourses to discourage single term government.
Engagement	Lack of/apprehension due to perceived easier PD passage without it and fears of potential public aggression (<i>"people are just sick of getting yelled at by angry nutbags"</i> ^{17b}), or inabilities to answer questions (<i>"[Planning] really don't want to engage with stakeholders and there is almost a fear of, "Well, there are things we can't say, so therefore, we shouldn't meet with them because there are things we can't say"</i> ^{15a} ;; (13b, 28a \cup 33cě).	Rather than being 'a stick to beat people with', increased transparency and consultation aids buy-in and options identification (in and out of govt.): <i>"...we ought to have regard to communications and ... how the public understands and engages with the decisions that we make. I think that's a legitimate public policy consideration"</i> . ^{6b} ; (1a, 3a, 13b, 24a \cup , 26- \cup -, 29a \cup , 33cě).
Evaluation	Lack of. (3a, 18a).	Enables progress measurement and reporting (1a, 2a). 94% of survey respondents agree more enduring PDs are supported by greater emphasis on evaluation.
Evidence	Making assumptions about, ignoring, or insufficient (9c, 18a, 9c, 35cě)	Useful as a shield (<i>"we said we'd do x, we have"</i> ^{23-\cup}), to correct misinformed voices, and design targets (2a, 3a, 23- \cup , 24a \cup , 27a \cup , 32bě).
Framing	Being unaware of their power to persuade or presence: <i>"we don't think about our challenges as being sustainable development"</i> ^{11a} (19a, 24a \cup); <i>"The reason why I'm quite keen for you talk to Treasury quite deeply is, they simply don't see this. They don't see-- Sustainability is not in their lexicon. Everything has to be about economics and about the systems</i>	Use to win support for PD and target different audiences, e.g. emphasise economic/social/ business benefits: <i>"So, sure we have scientific reports and there's a really strong evidence base. But we're also storytellers at heart...we've got four reporting products with the same information, told different ways to people who consume things differently"</i> . ^{2a} ;; (24a \cup , 31aě, 33cě).

Influence	How it can act as a Barrier	How it can act as an Enabler
	<i>around economics. And if you can't see clean air, you can't count it".</i> ^{15a} (31aě).	
Funding	Revoked or insufficient (5c, 9c, 20a, 35cě).	Sufficient or can be made so via cross-program synergies (4a, 14c, 15a, 21-, 35cě).
Governance	Without, less senior staff struggle to raise ideas (9c).	Delivers better outcomes, drives personal responsibility and recognises the role of the VPS in delivering for the whole State c.f. isolated interests (5c, 14c, 19a 22aϕ).
Implementation	Is inconsistent with policy design, changed priorities, or does not occur due to lack of monitoring, capability, coordination, enforcement (" <i>it was quite clear no one was really ever gonna fine anyone</i> " ^{32bě}), or consideration (" <i>...people will spend more time, on the policy than they do on implementation. Implementation is absolutely the hardest part</i> ". ^{22aϕ}); (22aϕ, 30aϕ, 32bě, 33cě, 34cě).	Facilitates change, provides basis for evaluating and refining public decisions. " <i>...in terms of implementation, I think one of the really critical things is people who are designing the intervention or the policy need to be heavily involved in the implementation. Both to help to see what works, but to refine what isn't</i> " ^{2a} ; (6b, 21-).
Institutions	Machinations of VPS do not win votes, therefore no overt driver to address systemic issues such as siloes, structures, fiefdoms, and institutional characteristics and processes that prevent optimal outcome delivery: " <i>...no one ever invests in IT: The benefits are over like 20 years, the costs are in your budget cycle where you've got lots of shit you wanna pay for, but you will get no credit for building government IT.... the benefits won't accrue to you...</i> " ^{7c} ; (15a, 21-, 22aϕ 23-ϕ, 25bϕ, 25bϕ).	" <i>We should had the ability to have common systems across government in those core things. And, it's you know, finance, HR, even the technology platform. All of that. The basic fundamentals so that at any point, in any time, a public servant can go, "Today, I'm working here. Tomorrow I'm in this new Department, turn my computer on, log in. Same everything, same desktop, same systems to get paid, same way to apply for leave, same way to book a car, same way to get approval for financial"</i> ^{20a} ; (3a).
Jurisdiction	Lack of clarity and assumptions about the roles of others creates both duplication and inaction (11b, 15a, 32bě, 34cě).	Absence of national action or political competition between levels creates mandate (34cě).
Leadership	Unrealised, unsupportive, uninterested (1a, 2a, 3a, 4a, 9c, 15a, 17b, 19a, 22aϕ, 31aě) " <i>...the barometrics within an organisation are very much set by those leading it. So, if there's no appetite for taking on board the feedback that an OCI reveals, if there's no appetite at the senior levels and at the top for that, then your culture's never gonna change</i> ". ^{4a}	Democratic, supportive, exercises influence, realised at all levels (i.e. personal and formal): " <i>I get more opportunity to make a difference than most people. At scale. You know? Everybody can make a difference but at scale, I can actually make [a] difference. That is my responsibility and it is everybody's responsibility who can do that</i> ". ^{15a} ; (1a 2a, 3a, 4a, 9c, 17b, 29aϕ, 31aě, 33cě).

Influence	How it can act as a Barrier	How it can act as an Enabler
	<i>"I don't see much talk about vision. It's just absent from the leadership here".^{9c}</i>	
Legislation	Constrains what actions can be taken through too much or too little detail, and appetite to alter (inertia) (15a, 31aě 32bě).	Sets minimum standards, processes and requirements, and helps cement PDs: <i>"...the key thing is that, you know, it's a regulated program that was absolutely key".^{33cě}</i> ; (26-ϕ, 31aě).
Mandate	Lack of, exhausted, or counter to SD objectives (4a, 5c, 6b, 7c, 16b, 21-, 23-ϕ, 33cě, 34cě).	Created by public and/or govt. agency, and seized (4a, 8a, 21-, 23-ϕ, 24aϕ, 33cě; 34cě).
Media	Poor quality journalism driving short-termism and political risk appetite; sensational stories more appealing: <i>"...unfortunately, good news like, "The Bay is Clean", is often of less interest to people than, "Oh! Major oil spill in the Bay"^{2a}</i> ; (8a, 10a, 14c, 27aϕ,)	Use to advantage: <i>"Channel Seven rang one day and said, "You wouldn't have any footage of blasting?" And we said, "Yes, we have. No one's ever asked for it. You want it?" "Yeah, can we have an exclusive--" "Well, unless someone asks for it, it's yours". And they ran that as a lead-in to a big Monday night feature, developed on the Sunday News, which was tremendous".^{28aϕ}</i> ; 31aě
Ministers	Unaligned with achieving SD and the SDG (1a, 7c, 9c, 14c, 26-ϕ, 32bě, 34cě).	Aligned with SD and the SDGs (4a, 9c, 14c, 31aě, 32bě, 34cě_.
Paradigms	Existing, dominant, or competing paradigms (e.g. neoliberal economics, virgin resource use, reacting to current voters) discourage novel thinking and intergenerational equity (3a, 8a, 10a, 13b, 15a, 17b, 19a, 20a).	Help prevent undesirable/reactive change: <i>"I also think there is an element of somewhat healthy conservatism within the public sector. The public sector, yes we should have a public sector that is innovative but the public sector shouldn't operate like it's a bunch of start-ups. Just grabbing the latest thing and running with it"^{6b}</i> ; (5c).
PDMers' understanding	Left undiscussed or unexplored, negative/limiting perceptions of SD and the SDGs (e.g. definitions), dominant paradigms, and/or the legislature prevail and influence PDs: <i>"I find it really funny that so many public servants seem to have no interest in what's going on in parliament"^{18a}</i> ; (9c, 10a, 28aϕ, 31aě, 33cě, 34cě).	Informed PDMers use savvy and nous to address biases, improve the understanding of colleagues and stakeholders and effect change (1a, 10a, 21-, 24aϕ, 33cě).
PDMing considerations	Myopic/siloed, incompatible with other priorities/values, or involve a solution finding a problem: <i>"A lot of the public services is stuck in this sort of false dichotomy: "Oh, it's either that or that!"^{17b}</i> ; (5c, 6b, 12b, 13b, 24aϕ, 30aϕ, 34cě).	Prepared to create or accept different views, use tools to think outside the box (e.g. evidence, benefit focused, reduces red-tape, easily operationalised, presents solutions not a 'grenade' (2a, 11b, 13b, 17b, 18a, 26-ϕ, 29aϕ, 33cě).
PDMing processes	Insufficient time to adhere to them, don't drive consideration of SD and the SDGs, integrated PDs (3a, 4a, 5c, 8a, 10a, 19a 25bϕ 32bě).	Drive integrated decision-making (e.g. through procurement, valuation of all decision elements, realisation that no one person makes the decision, clear

Influence	How it can act as a Barrier	How it can act as an Enabler
		problem definition, ensuring policy writers understand implementation practice, and principle-based approaches) (2a, 6b, 15a, 22a-26- b , 29a- b , 30a- b).
Personal characteristics of PDMers	Low self-belief, self-constrained influence, lack of positive reinforcement for SD and the SDGs (21-, 26- b , 34c \check{e}).	Self-belief (" <i>You had to believe it could be done because believing it couldn't be was very difficult</i> ". ^{28ab}), optimism/positive outlook, a thick skin, openmindedness, influence widely -including outside of VPS - and use opportunities to share ideas with people in leadership roles: "... <i>find unusual partners, go talk to those you wouldn't normally</i> ". ^{31a\check{e}} ; (1a, 2a, 3a, 4a, 13b, 15a, 20a, 21-)
Politics	Ideology drowning policy: "... <i>the impact that you have is very much I think influenced by the political persuasion of the day and the issues of the day</i> ". ^{4a} ; (33c \check{e} ; 35c \check{e}).	Used to create a mandate, ensure policy meets objectives, drives indirect positive outcomes (e.g. CDP drove better understanding of Port Phillip Bay) (26- b , 30a- b , 34c \check{e}).
Public awareness	Lack of in regard to SD and the SDGs and/or how govt. works and can respond: " <i>Whilst it is a goal that should be considered, SD doesn't win the minister votes or get reward from the public. SD is a concept understood at a niche level and not across the community as a whole</i> ". ^{S-Undisclosed} ; (1a, 3a, 4a, 5c, 18a, 19a, 20a, 24a- b , 34c \check{e}).	Mandate is created through improving knowledge, e.g. through reporting, engagement, linking issue to predominant paradigms (1a, 6b, 19a, 22a- b , 24a- b , 27a- b , 33c \check{e} , 35c \check{e}).
Relationship between bureaucracy & ministers	Lack of interest/trust between: " <i>the Liberals, they don't really trust the bureaucracy. They think we're kind of a bunch of latte sipping lefties that will try and undermine their agenda at every step of the-of the journey</i> " ^{7c} ; (1a, 32b \check{e}).	Integrity and respect to find and facilitate solutions: " <i>... where I've seen really effective public servants, and successful ones - if you define success as being going up to the top of the tree -, a lot of them have had some experience working in a Minister's office or world. Because you do get the role, the relative roles that you play and you do understand that</i> ". ^{18a} ; (2a, 3a, 8a, 12b, 30a- b).
Relationship between PDMers & community	PDMers fail to bring the public with them on complicated issues and ideas (8a, 9c,, 17b, 19a, 25b- b 31a \check{e} , 33c \check{e}).	Aided by transparency, proximity to public/PDMer, and attempts to understand perspectives: "... <i>if you understand someone's world, you'll understand what you're proposing and how it fits into their world. And people genuinely are hugely appreciative if you're trying to think about what you want in their world. Rather than force their world into yours</i> ". ^{31a\check{e}} ; (24a- b , 25b- b , 33c \check{e}).

Influence	How it can act as a Barrier	How it can act as an Enabler
Resources - capability/ capacity	Lack of ('doers', expertise, respect for/ trust in expertise, coherence, capacity), and over-reliance on consultancies (1a, 5c, 6b, 9c, 20a, 22a, 23-, 30a, 32b).	Get the right people in (savvy people know where to push boundaries), run processes in parallel where necessary. <i>"Lots of things in life people make complicated and they're not. Um, if you have the right people you can structure things in lots of different ways".</i> ^{31a} ; (21-, 26-, 27a, 28a; 31a, 32b, 33c).
Risk	Fear of getting it wrong inhibits frank and fearless advice, innovation and uptake of SD and the SDGs, compounded by media, politics, career concerns (14c, 20a, 21-, 27a).	Gain support by addressing (c.f. ideology): <i>"My role is never to convince you. My role is to respond... I have to give you all the information to allow you to make your own judgment, whatever your risk appetite is"</i> ²³⁻ ; (29a).
Role of Govt.	Limits, unmet expectations, understanding of role (6b, 7c, 18a, 21-, 25b, 26-, 31a).	Separates politics from policy, ability to set benchmarks, start discussion (2a, 6b, 9c).
Scale	Too large to conceptualise/address (6b, 7c, 17b).	Focus on smaller changes, such as one person at a time or things that can fly below the radar (2a, 5c, 35c).
Strategic planning	Not occurring, lack of clear scope (5c, 22a).	Focus on 'why' policy is needed, identify measurable goals, consider lifespan of the project (2a, 12b, 19a, 22a, 30a, 32b).
Time	External drivers (e.g. insufficient time to make PDs, discuss them as Cabinet, politics) favour short-term advice not long-term focus: <i>"I've seen people in roles like mine who have great power of influence. Who I think have great potential to completely bugger up long-term stuff because they have short-term, um, motivations"</i> ^{17b} ; (5c, 7c, 8a, 13b, 18a, 25b, 32b, 34c).	Adequate to develop PDs; developers consider lifespan of PD. <i>"rather than 6 projects in my unit, choose 4 and increase our ability to really smash the 4 that we do. ... if we allowed ourselves more time to dwell on problems, we might then truly solve them, especially if some of that extra time went into forming better strategic relationships with other gov and non-gov agencies (i.e., coordinating our effort better)".</i> ^{SC-DELWP} ; (18a, 22a, 23-, 32b).

Appendix F - Statistical and Systems Thinking Hierarchies of Influences

Table F1 - Ranking of all influences under Statistical and Systems Thinking methods

Table F1. Ranking of all influences under Statistical and Systems Thinking methods.

Influences were ranked 1-40 based on the values individual methods/cohorts assigned to them. Those ranked 1 are rated most important based on the corresponding method or average number of passages coded to them by a particular cohort. Values are conditionally formatted (coloured) to aid visual review of importance, blue are most important, white of middling importance and red of least importance. More vibrant colours indicate scale extremities.

	Statistical Analysis											Leverage Points		Average ranking across all methods
	Total Codes/Influence	Interview Cohort										Highest Leverage Point	Scaled Rank	
		All (Av)	General	CDP	EREP	Mid-level officials	Higher-level officials	Senior officials	More overtly upbeat	Less overtly upbeat	Average ranking across all cohorts			
Personal characteristics	1	1	1	1	7	3	1	1	2	2	1	7	15	1
PDMing considerations	2	2	2	2	5	1	2	3	3	5	2	27	19	2
Appetite for change	5	6	10	8	1	2	7	10	7	4	4	6	18	3
Evidence	6	5	5	7	14	4	5	6	4	6	5	13	8	3
PDMing processes	4	3	3	3	12	13	3	2	1	1	3	21	26	5
Institutions	3	4	4	5	17	8	4	5	8	3	6	15	16	6
Culture	12	9	6	9	22	16	6	9	10	11	11	4	5	7
Commitment to concepts	9	10	13	19	2	7	14	12	11	10	10	10	4	8
Mandate	8	8	9	10	6	6	9	7	9	7	7	24	21	8
Leadership	10	11	8	21	9	18	11	8	6	18	13	1	1	10
Resources	7	7	7	6	16	5	19	4	5	9	8	36	38	11
Collaboration	13	12	17	4	11	14	10	11	13	8	9	30	22	12
Economics	11	14	11	22	15	11	16	18	15	12	15	8	7	13
Cognitive biases	17	15	12	14	24	26	13	13	16	13	17	2	2	14
Engagement	14	13	15	15	3	10	8	16	12	17	12	29	22	15
Politics	18	16	18	13	10	12	20	14	14	15	14	23	19	16
Framing	22	20	22	18	13	20	12	22	19	21	18	3	3	17
Public awareness	16	17	23	12	8	15	22	17	18	14	16	35	33	18
Alignment of SD & PDs	19	21	16	20	23	25	17	19	20	20	22	17	16	19
Risk	25	25	20	24	33	23	23	23	25	23	25	5	6	20
Governance	26	24	24	16	31	27	18	24	24	25	24	11	10	21
Complexity	20	18	21	11	29	19	15	21	22	16	19	38	37	22
R/ship - bureaucracy & ministers	21	22	19	17	20	21	26	15	21	19	21	33	34	23
PDMers' understanding	15	19	14	23	18	17	25	20	17	24	20	39	40	24
Implementation	24	23	29	30	4	9	28	25	23	22	23	32	22	25
Time	23	26	25	26	25	24	21	27	26	27	26	22	26	26
Legislation	27	27	26	25	21	22	24	30	27	28	27	20	26	27
Role of PDMers/Govt.	30	31	27	35	35	34	30	28	29	33	31	9	11	28
Ministers	29	29	30	27	27	33	29	29	30	29	29	26	22	29
Strategic planning,	28	28	28	28	30	31	31	26	28	31	28	31	30	30
Evaluation	30	30	31	31	26	29	27	33	32	26	30	28	26	31
Businesses/ non-govt. actors	34	34	38	34	19	28	37	34	35	30	32	19	11	32
Paradigms	33	32	32	33	34	36	32	32	31	34	34	18	30	33
R/ship - PDMers & community	32	33	33	29	32	35	35	31	33	32	33	34	34	34
Election cycles	36	37	36	37	38	37	33	39	36	38	37	12	11	35
Jurisdiction	35	35	37	39	28	32	34	36	34	35	35	25	30	36
Media	38	38	39	32	39	39	38	37	38	37	38	16	8	37
Central & review agencies	39	39	35	40	40	40	40	35	40	39	40	14	11	38
Funding	36	36	34	36	36	30	39	38	37	36	36	37	38	39
Scale	40	40	40	38	37	38	36	40	39	40	39	40	36	40

Appendix G - Applications of Meadows Leverage Points

Table G1. Influences and Leverage Points

Table G2. Influence rankings based on Meadows' Leverage Points

Table G1. Influences and Leverage Points

Detailed annotations as to why influences were deemed to act or have the potential to act as leverage points.

		Leverage Point											
		12. Constants, Parameters, numbers	11. Size of buffers	10. Structure	9. Length of delays, relative to system change	8. Negative feedback loops^	7. Positive feedback loops	6. Information flows	5. Rules of the system	4. Ability to evolve or change the system	3. System goals	2. Origins of paradigms	1. Ability to Transcend paradigms
Influence	Alignment of SD & PDs		Assumptions stabilise/reinforce the status quo, but also creates inconsistencies in application of ESD/G as different assumptions persist.				Not directly considering SD in decisions perpetuates assumptions about what the SD/Gs are. Further, arriving at an accepted decision without actively looking for alignment with SD/Gs, rewards not looking for alignments and encourages future decisions to also avoid doing so.			Challenging assumptions would enable gaps to be identified, leading to sustainable change.		Culture of assumed alignment.	
	Appetite for change		Determines whether action is taken on ESD/G (parameter).		Hard to predict, crises can act to create 'jumpiness' (Meadows p9), but typically collective appetite is slow to change. Rarely is the delay length appropriate to the system.	Determines rate of response to undesirable outcomes (check).	Presents in multiple ways pending culture: fear of change, comfort with status quo, constant desire for new, relentless change seeking out utopian comfort. Once established creates cycle that persists.			Creates/prevents opportunity to change the system.			There are no limits on what can be, if it is wanted.
	Businesses/ non-govt. actors					(Where disagreeing) advise PDMers where outcomes are not what's desired; impact tends to be moderated by how confident actors are. (check).	Lobby PDMers on PDs to get desired outcomes, success encourages future lobbying of PDMers on future PDs .	Share/withhold information that informs PDs (e.g. EREP, companies didn't want to share info, but once required to realised cost savings).	(Who) - are able to influence.	Can lobby for change.			
	Central & review agencies		Act to pull agencies/depts together in the same direction (create consistency across PDMers/PDMing).			Advise PDMers if decision is missing something/if implementation is not achieving desired outcomes (check).	Belief that depts are achieving SD without confirming it means central/review agencies won't require depts. consider SD/G, so consideration will be deprioritised by depts. But as central/review agencies aren't measuring it this won't be realised until a crisis hits.		Set rules for VPS and PDMing within it (who and what).	Able to drive change in system.		Advise and reinforce how and what VPS ought to think about, how to work.	
	Cognitive biases.		Locks in thinking.		Heuristics slow and obfuscate info moving in the system.		Heuristics reinforce thinking.	Impact how information is recognised, received, and used.		Recognising them allows for evolution.		Heuristics mould new information to fit existing conceptions of the world.	Challenging these allows them to be broken.

Leverage Point												
	12. Constants, Parameters, numbers	11. Size of buffers	10. Structure	9. Length of delays, relative to system change	8. Negative feedback loops [^]	7. Positive feedback loops	6. Information flows	5. Rules of the system	4. Ability to evolve or change the system	3. System goals	2. Origins of paradigms	1. Ability to Transcend paradigms
Collaboration.				Determines rate of response.	(Where teams are oppositional) provide opportunity to learn what is/not working and desired (balance).	Where teams experience groupthink/lack of diverse views, false/limited beliefs can be reinforced.	Increase opportunities for information exchange.		Can drive innovation.			
Commitment to concepts						Greater/lack of commitment to SD drives action toward/away from SD.		Reflection on whether SD is accepted (what).	Impacts ability to challenge unaligned system goals.	Stated goal - grow within means.	Recognition of finite planet and inequalities.	
Complexity	Greater complexity = greater number of parameters to consider, and to drive/inhibit action.			Increase difficulty of predicting delays: can slow/expectedly speed up the system.		If things feel too complex to address attempts will not be made to holistically address them, this leads to reduced understanding of situations and greater belief that situations are too overwhelming to holistically address.			Provides multiple opportunities and permutations for change, determines types of evolution possible.			
Culture		Determines how PDMers respond to a change or opportunity to act; how they work together effects the flow of info and action in the system (drives behaviours, determines status quo, locks in thinking).		Impacts rate of info movements in the system.	Can act as a measure of the health of PDMing activities (check).	The more people think/ behave one way, the more others are encouraged to think/ behave that way, reinforcing that the thoughts/actions of the first group is right.			Determines ability and likelihood of changing what the rules are, "...a single culture shuts down learning. Cuts back resilience". - Meadows p 16.		Petri dish for what is accepted, determines mindsets of PDMers.	(Where openminded, actively aware of paradigms) allows for collective transcendence of paradigms.
Economics	a driving consideration of PDMing and how system operates.	How it's thought about drives action.			Market can act as a measure of PD success (check and balance).	Increased focus on growth rewards growth/drives fixation on growth at expense of other understandings of the breadth and possible applications of economics.	application of behavioural economics/ non <i>homo economicus</i> focus.	markets determine (what) happens in response to a PD; standards determine (what) discounting rates are applied when making PDs.	Consideration/ application of other schools of economic thought.	Prosperity (often defined as growth).	Success of neoliberal perspectives in the second half of the 20th century.	
Election cycles	a driving consideration of PDMing, and in State of Vic = concrete parameter.		Fixed evaluation mechanism.		Elections let PDMers know what is desired, and whether goals are perceived to have been met (check and balance).	Cycle drives thinking and public decisions to occur in time with the cycle, and reward those who offer PDs that marry with it (e.g. decisions that can be made and implemented in one cycle).	catalyst for hiding/provisioning of information.	Determine (who) has control.	Provide opportunity to recalibrate what's important.		Westminster system.	

Leverage Point												
	12. Constants, Parameters, numbers	11. Size of buffers	10. Structure	9. Length of delays, relative to system change	8. Negative feedback loops^	7. Positive feedback loops	6. Information flows	5. Rules of the system	4. Ability to evolve or change the system	3. System goals	2. Origins of paradigms	1. Ability to Transcend paradigms
Engagement				Can enhance or delay receipt of feedback or inhibit timely decisions.	Provides opportunity to learn what is/not working and desired (check).	Arriving at an accepted decision on the basis of "targeted" engagement, encourages future decisions to also rely on that "targeted" audience or a similarly small cohort.	Brings new information into system.		Provides ability to test/change the rules, can introduce new ideas.			
Evaluation		Allows for gradual change rather than shocks.		Timeliness of, determines ability to know if PD is having desired effect (i.e. system is functioning as desired).	Allows for correction of system (balance).	Limited evaluation reduces ability to recognise the benefits of evaluation, leading to less evaluation.	Drives information capture and altered behaviours.		Catalyst for change.			
Evidence	Provides information about the system (sets hard parameters).					Arriving at an accepted decision based on limited or subjective evidence, encourages future decisions to also rely on limited or subjective evidence.	Can create new loops if it is available, accessible, useable, cleansed, meaningful, complete.	Determine (what) is (e.g. natural laws).	Largest source of new information to the system, which can challenge understanding and change narrative of what's important.		What is accepted as 'true'.	
Framing						Successfully presenting arguments in a particular perspective, rewards that perspective and discourages consideration or future presentations of other perspectives.	Signalling only part of the information creates info asymmetries.		Introduces or changes narratives on what's important to, and overall functioning of the system.		Framing of evidence and narrative shapes what society holds true.	Enables the storyteller to shape the stories to be whatever they want them to be.
Funding	Determines rate at which system can operate.	Determines what can be done.		Timeless of, relative to identified need.		Limited funding reduces ability to intervene, limited demonstrable interventions leads to reduced funding.			Where available provides capacity to consider and implement change beyond the 'meat and potatoes of government'			
Governance		Determines the rate at which information is transferred, stabilises system by locking in what is acceptable.	Determines how subsystems operate.		Drives accountability.	Less transparency drives less accountability, less accountability drives less transparency.	Requirements to document approaches leads to altered behaviour.	Determines (who) is responsible for (what).	Can alter who has power (e.g. Bazelmans in CDP), and the approach taken to operate the system.		Reinforce what is accepted, determines mindsets of PDMers.	
Implementation				Timeless of, relative to identified need.		The more that is delivered that more that is expected.	Opportunity to gather and test information.		Purpose is to enact change in the system; better implemented programs evolve			
Institutions		Act to pull agencies/depts together in the same direction (create consistency across PDMers/PDMing).	Locks in thinking (like mortar holding Meadows pipes in place).			Institutional inertia drives status quo (institutions are valued so don't change them).		Determines (who) is responsible for (what).	Power to create new structures (e.g. Machinery of Government changes); or, limit change		Reinforce what is accepted, determines mindsets of PDMers.	

Leverage Point												
	12. Constants, Parameters, numbers	11. Size of buffers	10. Structure	9. Length of delays, relative to system change	8. Negative feedback loops^	7. Positive feedback loops	6. Information flows	5. Rules of the system	4. Ability to evolve or change the system	3. System goals	2. Origins of paradigms	1. Ability to Transcend paradigms
Jurisdiction		Should ensure consistency and avoid duplication.	Head of power determines if/where public decisions can proceed.			Inaction because of a belief that another jurisdiction is responsible (without reviewing/challenging the Head of Power) will leave control of the issue (perhaps falsely)with a particular jurisdiction, and inaction by other jurisdictions will continue.		Determines (who) is responsible for (what).	Where unclear/not being exercised other jurisdictions can choose to act (e.g. States creating policy in absence of national policy; Tas Dams Case).			
Leadership						Leads to greater un/certainty and reduced/increased respect for those considered to be in leadership positions, making it harder/easier for leaders to obtain the authority/respect to exercise leadership.		When exercised can set (what) the rules are (within constraints) and (who) has control/influence over them (e.g. Bazelmans - CDP).	Willingness of those in leadership positions to evolve/innovate/ challenge status quo, and to drive change.		A leader has power to transform beliefs	Has ability to lift PDMers above paradigms.
Legislation	Can act as a constant where there is legislative inertia.	Legislative inertia, regulatory timelines.	Articulates goals and sets out how to achieve them (inherent part of Westminster system).	Timeliness of legislative change to reflect needs of system.		Where tools within legislative are unused or unreviewed, there is (often) no provocation to consider if they should be used or reviewed (e.g. SD as guiding principles of Acts).	Can create information requirements e.g. EREP, CDP (EES).	Set out the shared ideas (what) of society.	Sunsetting requirements prompt consideration to evolve, and are trials that represent evolutions in thinking.			
Mandate				Timeliness of.		Mandate to act drives action which, if done well, generates additional mandates.		Restates system goals (what), but often focused on part of the system only.	Provides impetus for change where opposite to existing paradigms.			
Media				Responsiveness to report on an issue drives speed with which decisions are made, irrespective of system requirements (reinforces/creates mandates).	Reflect back views of society, shines a light where things not operating as desired.	Media interaction increases interaction and likelihood of media attention.	Role is to share info/act as clearinghouse /interpreter of info. Changing nature of media and media cycles= changed PDMer behaviour/inf ormation loops.		Highlight system weaknesses, catalyst for change.		Reinforce/question what is accepted.	
Ministers			Key PDMers, turn the system on/off, facilitate system goals.			Actions that retain or improve party standing and electoral support encourage actions to retain standing/support.		Pending seniority can set the rules (e.g. Reagan, p 17; Thwaites - EREP).	Desire for legacy can lead to system change (e.g. Joan Kirner buying up land for penguins, John Thwaites acting to reduce emissions).			

Leverage Point												
	12. Constants, Parameters, numbers	11. Size of buffers	10. Structure	9. Length of delays, relative to system change	8. Negative feedback loops^	7. Positive feedback loops	6. Information flows	5. Rules of the system	4. Ability to evolve or change the system	3. System goals	2. Origins of paradigms	1. Ability to Transcend paradigms
Paradigms	Act as constants.	Lock in thinking.				Current thinking locks society into rewarding and perpetuating those paradigms		Set the boundaries of our rules, shape them, limit us from thinking bigger/more flexibly and hold us in place (existing paradigms don't want to be changed).			What society believes to be the goals.	
PDMers' understanding	(Where fixed) determines whether action is proposed/taken.	Greater knowledge levels limits under/overreactions				Limited understanding (closed-mindedness) reinforces thinking and actions, and decreases likelihood of seeking to increase/broaden understanding.			Improved understanding/awareness of opportunities can lead to increased innovation, or recognition of need for evolution.			
PDMing considerations						Prioritising x over y, sees more emphasis on x and greater priority given to it going forward.		Determine what is most important to the government and/or society.	Provide opportunity to discuss alternate visions for our future, and change the rules; documented success elsewhere gives confidence to try change locally.			
PDMing processes	(Should) act as constants.	Ensures policy isn't jumping at shadows.	Facilitate operation of structure, and provide for feedback loops.	Timeliness of.		(Not) following process and arriving at an accepted decision, rewards (not) following process in future.	Processes drive collection/sharing/creation of info, leading to broader thinking.	Determines (who) is responsible for (what), and (what) can happen in the process of making a decision.	Options identification, evaluation drives consideration of alternate approaches.			
Personal characteristics of PDMers						Determine trajectory of PDMers outputs, outputs shape self-confidence which determines future trajectories.			Self-belief/belief in ability to effect change drives attempts to do so.			Where people realise they are not constrained by existing paradigms they can enact change.
Politics				Drives speed with which decisions are made.	Shine a light on questionable decisions of others.	Political incentives/ disincentives drives politically favourable action (which may/not align with system goals).		Can create new rules (what) e.g. Victorian budget constraints and AAA rating.	Responds to conditions as per Darwin's finches, bring on unexpected changes; arguments/debates over how the system should operate .			

Leverage Point												
	12. Constants, Parameters, numbers	11. Size of buffers	10. Structure	9. Length of delays, relative to system change	8. Negative feedback loops^	7. Positive feedback loops	6. Information flows	5. Rules of the system	4. Ability to evolve or change the system	3. System goals	2. Origins of paradigms	1. Ability to Transcend paradigms
Public awareness				Whether understanding of policy need is built in a timely manner determines whether it can be responded to in a timely manner.	Advise PDMers if decision is missing something/if implementation is not achieving desired outcomes.	Limited understanding reinforces current thinking and actions, and limited mandate for change.			Where greater may help realise possibilities/drive change.			
R/ship - bureaucracy & ministers		Quality of r/ship determines willingness to accept advice/direction of other party, and extent to which boundaries can be safely pushed.		Good relationships provide timely information/feedback to the system; poor relationships can result in accurate information being ignored or kneejerk reactions.	Mechanism to obtain negative feedback.	(Where distrustful/ unproductive) leads to increased friction, avoidance and manipulation, leading to greater distrust and less productive relationships.			Can influence to change the rules, feedbacks and structure.			
R/ship - PDMers & community		Quality of r/ship determines willingness to accept PDs, and limits over/ underreactions to community concerns.		Good relationships provide timely information/feedback to the system; poor relationships can result in lacking information or kneejerk reactions.	Mechanism to obtain negative feedback.	(Where distrustful/ disrespectful) leads to increased friction in interactions and apathy toward participation, resulting in reduced desire to interact from all parties, leading to greater disrespect/ distrust.			Can influence to change the rules, feedbacks and structure.			
Resources - capability/capacity	Determines rate at which system can operate.	Size of workforce determines capability to respond to key issues and think beyond the immediate term.		Determine speed with which decisions can be made.		Limited resourcing reduces ability to intervene, limited demonstrable interventions leads to reduced resourcing.			Where available provides capacity to consider and implement change beyond the 'meat and potatoes of government'.			
Risk		Appetite determines activity, creates consistency across decisions.				Fear of acting limits action, which further cements the status quo and fears of challenging it.	Risk concerns change how info is couched and responded to avoid unfavourable outcomes (fear drives behaviour).	Risk appetite determines (what) options/actions are taken (too risky/risk averse=loss of role, govt.).	Drives behaviours that alter the system.			Risk appetite determines willingness to push the view that paradigms are not golden rules that must be observed.
Role of Gov	Driving consideration of PDMing.	Provides consistency, purpose, direction.	Is the reason for the system, determines how it is laid out and operates.			Interpretations of role of govt. reinforce interpretations of the role of govt., govt.'s then act in accordance with those expectations, reinforcing the initial interpretations.		Creates boundaries on (what) can be done by (who).	Evolves slowly balancing need to maintain relevance with need to act as a buffer to fads.	Maintain confidence in government/ democracy.	Westminster system.	

		Leverage Point											
		12. Constants, Parameters, numbers	11. Size of buffers	10. Structure	9. Length of delays, relative to system change	8. Negative feedback loops [^]	7. Positive feedback loops	6. Information flows	5. Rules of the system	4. Ability to evolve or change the system	3. System goals	2. Origins of paradigms	1. Ability to Transcend paradigms
Scale	Greater scale = greater number of parameters to consider, and to drive/inhibit action (akin to size of Meadows' bathtub).						Things that are considered too large to address will be left unaddressed in favour of smaller scale issues, leading to development of PDMer skills and community appetite for smaller PD and continued focus on smaller scale issues (e.g. CDP - didn't initially have resources inhouse to deal with project, leading to failed EES).			Inversely proportional rate limiting factor in evolution of system.			
Strategic planning		Facilitates better operation of the system by creating opportunity to foresee issues and create multiple pathways to pivot pending circumstance, i.e. provides distance from crises.			Assists in making delays appropriate to the system, through the provision of foresight.		The more strategic planning works the more there will be a license to do it (but other influences act to limit this loop existing).	Creates opportunities for new information loops to be made through broadening of PDMer thinking/mind set.		Creates space for System 2 thinking increasing opportunities for innovation and change at a holistic level.			
Time	Limits speed at which system can operate; determines volume of opportunities to consider larger picture/alternate pathways (i.e. determinant of locked in thinking).	Impacts ability to operate in System 2 and respond thoughtfully to policy issues/complex PDs.					Making decisions within a set time period demonstrated the ability to do so such that future decisions are expected to be made in similar timeframes.	Determines ability to collect and consider information, or pre-empt how new information provisioning requirements may play out.	What time-horizon is considered.	Where available provides capacity to consider and implement change through other influences or leverage points (i.e. allows PDMer to operate in System 2)			

[^] Parenthesis indicated role as check or balance.

Table G2. Influence rankings based on Meadows' Leverage Points

Headings ii, iii, iv and v correspond to the description of methods in Chapter 5, pages 90-92. Values are conditionally formatted (coloured) to aid visual review of importance, blue are most important, white of middling importance and red of least importance. More vibrant colours indicate scale extremities.

Influence	ii. Reverse Linear Score		iii. LPs Intersected		iv. Av. Reverse Linear Score		v. Combined (A+C)
	Rank	Score	Rank	Number	Rank	Average	Rank
Culture	3	52	4	7	4	7.43	1
Economics	2	58	2	8	7	7.25	2
PDMing considerations	4	44	8	6	5	7.33	2
Risk	4	44	8	6	5	7.33	2
Election cycles	1	61	1	9	10	6.78	5
Leadership	10	39	18	5	3	7.80	6
Media	7	42	8	6	9	7.00	7
Framing	17	34	30	4	2	8.50	8
Central & review agencies	4	44	4	7	19	6.29	9
Institutions	10	39	8	6	14	6.50	10
Personal characteristics of PDMers	25	27	39	3	1	9.00	11
Cognitive biases	12	38	8	6	18	6.33	12
Commitment to concepts	23	29	30	4	7	7.25	12
Role of Gov	8	40	4	7	25	5.71	14
Politics	20	32	18	5	14	6.40	15
Businesses/non-govt. actors	25	27	30	4	11	6.75	16
Collaboration	25	27	30	4	11	6.75	16
Mandate	25	27	30	4	11	6.75	16
Paradigms	14	37	8	6	22	6.17	19
Strategic planning	15	36	8	6	23	6.00	20
Governance	16	35	8	6	24	5.83	21
Evaluation	21	31	18	5	20	6.20	22
Evidence	21	31	18	5	20	6.20	22
PDMing processes	12	38	4	7	30	5.43	24
Engagement	17	34	8	6	26	5.67	25
Legislation	8	40	2	8	35	5.00	25
Complexity	30	26	30	4	14	6.50	27
Implementation	30	26	30	4	14	6.50	27
Time	19	33	8	6	29	5.50	29
Ministers	24	28	18	5	28	5.60	30
Jurisdiction	25	27	18	5	31	5.40	31
Public awareness	30	26	18	5	32	5.20	32
R/ship - bureaucracy & ministers	30	26	18	5	32	5.20	32
R/ship - PDMers & community	30	26	18	5	32	5.20	32
Alignment of PDs & SD/Gs	40	17	39	3	26	5.67	35
Appetite for change	35	25	18	5	35	5.00	36
Scale	38	20	30	4	35	5.00	37
Funding	36	22	18	5	39	4.40	38
Resources - capability/capacity	36	22	18	5	39	4.40	38
PDMers' understanding	39	18	30	4	38	4.50	40

Appendix H - Compendium of Ideas to Improve Effectiveness or Longevity of Public Decisions

Below follows a menu of solutions as raised and supported or otherwise by the research participants. As noted in the supporting text in Chapter 7, readers are encouraged to jump to the idea/s that most spark their interest (Table H1 provides an index of the solutions in aid of this).

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As a reminder, interviewees suggested these ideas, and survey participants subsequently indicated support, opposition or neutrality toward them. Ideas receiving greater support are discussed first, and those with least support last. **Emphasis** has been added to lengthier quotes to draw the reader to the key point without losing the valuable context surrounding it.

Increased emphasis on evaluation

“In 9.5 years, I have rarely experienced my department investing in monitoring, evaluation and improvement. Project briefs are written, implemented. Rarely or never is there a close out report written either”. - Survey participant

The value of evaluation is discussed extensively within the literature, with references too numerous to cover here (e.g. Althaus *et al.*, 2013; Astbury & Leeuw, 2010; Bovens, Hart, & Kuipers, 2006; Greenstone, 2009; Mossberger & Wolman, 2003; Nagel, 2001; Pressman & Wildavsky, 1984; Sanderson, 2002; C. Weiss, 1999 Ch. 11). Evaluation is arguably at the heart of incrementalism, gradual improvements on past efforts cannot occur without confirming that solutions are being sought for the same problem and assessing the value of prior efforts (Lindblom, 1959). Evaluation is similarly critical to the feedback component of the ‘problem stream’ within Kingdon’s (1995, pp. 100-103) Multiple Streams Theory. Nonetheless, despite findings that evaluation can make *“a substantial contribution to Cabinet debate and the development of policy options”*, it is an aspect of the policymaking process which is frequently outsourced, truncated, not completed in a timely manner, or overlooked altogether (Nutt, 2002, Ch. 8; PC, 2017b, p. 204; Shergold, 2015; Thodey *et al.*, 2019, p. 220).

Cronin thus argues that evaluation needs to be applied consistently across and within government:

“I wonder whether we need to have an evaluation unit in each department that evaluates programs as the Secretary asks them to. I mean, at the moment evaluation seems to be done a lot of the time by externals. In fact, there was something in the paper today, someone’s outsourced the evaluation of a program. It was in the Herald Sun and it’s gonna cost \$325,000 to evaluate some program. God, you know, that sounds to me a little excessive. ...I think that you could do better evaluation if departments cooperated and just understood it was just part of what they do”. ^{18a}

This idea is supported by a Deputy Secretary at the Department of Justice who argued that insufficient thought is given to the consequences of decisions, and that:

“...there is way too little attention paid at the front-end to evaluation of major or even not so major decisions. Evaluation unfortunately is seen as optional in way too many cases and usually it’s at the back-end of things whereas if you wanted to do it properly you’ve got to design it right up the front” ^{10a}

A lack of focus on evaluation was also reflected in the feedback of the case study participants who noted that, evaluation was missing in places, either wholly or in part, and, in the case of EREP, that a level of unaudited trust that regulated entities were doing what was required was present:

"I wish we had taken more time to systematically and publicly document those learnings".^{23-u}

"There was that question mark of, 'Have we actually delivered these savings?'... Sometimes we rely on, 'Here's an audit', and Arup's done it or whoever. It's all schmick, 'cause, you know, they get the methodology. They know how they produce a good report. Who knows whether company X actually implemented those things".^{33cē}

The former manager of the EREP program noted that a lack of evaluation represents several missed opportunities: to ensure taxpayer dollars are well spent, to develop better-informed policies in future, and to connect to emerging national or international commitments:

"I think that would have been a really interesting phase, to see what was learned. And to sort of, you know, if you build that into that review of regulations, then I think it would have caught up to things like the planetary boundaries and science-based targets work. And [Victoria/EPA] would've been in a better position to reference the UN SDGs if that sort [of] feedback loop could have been an enabled".^{32bē}

The complexity of public problems can present as an excuse not to undertake evaluation: *"I think there is a sort of a sense in which, 'Well, because we deal with complex problems, evaluation all a bit too hard'".^{13b}* As can a popular public sector adage at the time of this research, *"not to let the perfect be the enemy of the good"*, with one interpretation being that it is better to get a policy out with no evaluation and hope someone does it later than to not get the policy out at all (*pers. comms.* multiple VPS Agency Officials). This implication that evaluation need be an either/or exercise is symptomatic of the 'black-or-white' fallacy. Not letting the perfect be the enemy of the good can, however, be used in reverse. As formal OCBR (2016) guidance on developing regulations shows and 13b argues, *"even if you can't unambiguously demonstrate direct causation from action A to outcome B, [it] doesn't necessarily mean we shouldn't try or at least try and understand better to build that knowledge-base"*.

Survey participant support:



Oppose, 1.3%; No/neutral response, 5.2%; Support, 48.5%; Strongly support, 45.4%

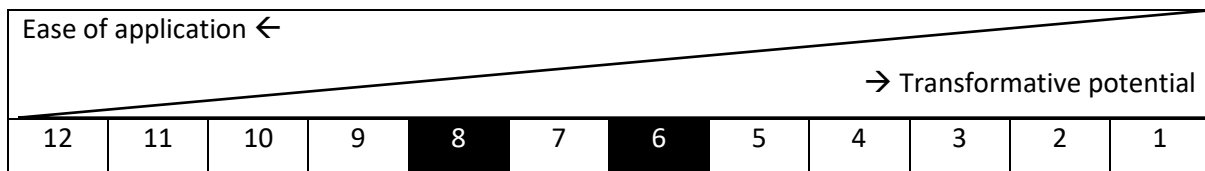
Other ideas this relates to:

- VPS culture that is willing to trial

Influences this could impact:

- Appetite for change
- Evaluation
- Mandate
- Central & review agencies
- Evidence
- PDMing considerations
- Complexity
- Funding
- PDMing processes.
- Implementation

Leverage points this could interact with:



Rationale:

8. *“The strength of negative feedback loops, relative to the impacts they are trying to correct against”*

Evaluation is a strong negative feedback loop.

6. *“The structure of information flows (who does and does not have access to what kinds of information)”*

Evaluation enhances the availability of information, and can drive the provision of novel information to novel areas.

VPS culture that is willing to trial

“...another change would be public service culture. And that would be more aligned to really try to drive an outcome-focused achievement collaborative culture, that is willing to trial things quickly and fail quickly. Balancing, you know, trying to be innovative with really being smart about its use of public sector funds”.^{19a, SV}

A ‘safe’ way to gain confidence in adopting novel ideas for meeting the needs of today’s problems is to look to others for opportunities for policy transfer - the idea of ‘borrowing wheels’ or seeing ‘what works’ elsewhere-, a common formal and informal practice (Lovell, 2016; Luetjens & ’t Hart, 2019; PC, 2018, 2019; Stone, 2012; UK Cabinet Office, 2014). Recognition that the differing parameters in one jurisdiction, or indeed the same jurisdiction at a different point in time, mean that what works in one place and time may not in another is also widespread, suggesting the need for caution when importing approaches (Dovers, 2005, pp. 139-142; Luetjens & ’t Hart, 2019; Mossberger & Wolman, 2003; Rose, 1991; Slavin, 2010). A way to address both discourses and be open to other ideas is to be open to the idea of the public sector trialling approaches rather than providing ‘fixes’.

The notion that public decision-making is an evolution and governments cannot simply ‘fix’ things every time, can be politically difficult and there can be *“political risk aversion to, say, ‘We tried this actually it didn't work as intended. We're gonna stop doing what we were doing, we're gonna try something different’”*.^(10a) All policies have both winners and losers, even with unlimited resources differing ideologies will favour differing entities, and it can be embarrassing for governments to highlight the losers of past decisions by saying, *“Well, you know, hang on we've been doing something and it's not really working very well”*.^(13b)

Such concessions can also be challenging for the public decision-makers involved. The public interest motivates most people working in the public sector (82% of survey participants agree an effective decision is one that ‘makes people’s lives better’), so if:

“...we've been working on something for 10 years that we thought was making a difference and, you know, someone else comes along and tells us that, ‘Well it sort of did, but actually in these sorts of ways, it had a whole lot of limitations and we could have done a lot better’. Some people can find that threatening. Either in terms of a, ‘Oh, well, okay so what you're saying is why did I bother?’. Through to, ‘Well, actually, does

that mean that this is gonna be closed down? Resources allocated elsewhere? Or I'm gonna have to significantly change what I do and how I do it?".^(13b)

Accepting that a decision one is directly involved in or that is only made every decade or two as an 'experiment' can be difficult.^(1a) Both for the public and the decision-makers themselves. Nevertheless, much of the literature and those with greater depth of public-sector experience recognise public decision-making as experimentation (Harrar & Lee Bawden, 1972; Nair & Howlett, 2016, 1a, 12b, 18a; van der Heijden, 2014). In response to this, there are many tested mechanisms to help reduce the risks of such experimentation, for example, temporally or spatially staggered rollout of decisions, and effective feedback loops through inbuilt mid-implementation reviews and mechanisms to adapt policy (Howlett, 2019, p. 123).

Some put failure of the public sector to innovate down to central agencies:

"[I would] reduce the influence of Treasury on public service process and decision making. They are immovable and traditional and conservative and do not understand modern government or the potential role of government in innovation. I would also suggest the Secretary DPC should take a leadership role as the true thought leader on public service innovation, the evolving role of the public sector and the reduced importance of policy and need to be more agile and commercially astute". *Survey Participant*

However, the case for trials and iterative public decisions is also apparent when looking at the economic literature on stated and revealed preferences: while surveys can be done to understand the community's stated preference, it is the preferences they reveal when a policy is in place that more clearly illustrate whether a public decision has achieved what it set out to (Beshears, Choi, Laibson, & Madrian, 2008; Li, Hensher, & Ho, 2018; MacLeod, Harris, & Mahal, 2016; Samuelson, 1948; Small, Winston, & Yan, 2005).

Similarly, largely due to public sector innovation teams set up in the Department of Premier and Cabinet, 'agile philosophy', human-centred design and applying the mantra of 'fail fast, fail often' to help increase risk appetite for trials and pilots were prominent within public sector discourse at the time of the fieldwork for this research (Donaldson, 2016a; Easton, 2016; IPAA Victoria, 2017; Sullivan, 2018; The Mandarin, 2016). Anecdotally the 'fail fast' mantra, in particular, has since reached its zenith

with some *“scepticism about how it applies to public policy development and service delivery”* (pers. comms. VPS Public Official, 2020; Easton, 2018, 2019b). This outcome was foreshadowed by 10a, who anticipated that pressure from and success of businesses who *“live and breathe fail fast, fail often”*, would increase ministerial risk appetites, but also be limited in its impact to a degree, because, *“Sometimes you can't afford to fail. In this department, a lot of things that we deal with you just can't afford to fail because if you do, someone might lose their life”*.^(10a) Further, even if it should theoretically be possible to try things, evaluate them, and evolve policy accordingly, *“with every program there is a group of stakeholders that have an interest, sometimes a pecuniary interest in that program so stopping that can be very hard”*.^(10a)

This contrast between approach and what is socially acceptable highlights the importance of increasing evaluation as standard practice, and civic engagement in the public decision-making process. Doing so may yield greater acceptance of the policy process as iterative, as responding to the evidence and needs of the day, with outcomes that will sometimes favour some and sometimes favour others, as being improved by testing ideas under the conditions present within that society and through citizens engaging where they have a view (as discussed under, ‘PDMing seen as an iterative process’, below). Without clear communication of the rationale and approach of such processes and opportunities for the community to participate - for example, *‘This is what we’ve done, this is why this is how it’s better (or worse), this is the next step’*, or better still they are actively engaged, *‘This is the problem. This is what’s been tried, and the outcomes. These are some options but we’re open to others. What do you think? What ideas do you have?’* -, the Executive will likely struggle to routinely obtain the mandate required to give public decision-makers the authority to run pilots or take the time to gather the evidence and conduct evaluations of current policy to enable the next iteration to better reflect what has been learnt (Noonan, 2018, p. 9).

Iterative and engaging public decision development has been achieved before though. Terry A’Hearn noted that the team who came up with the EREP program *“would have found it disappointing if we’d*

borrowed an idea from someone else ...if it wasn't a world first idea we weren't particularly excited".^(31aē) Indeed, EREP was considered by many to be an innovative and exciting program,^(32bē) and support for it achieved through engagement with the business community and internal negotiations resulting in an atypical sunset date for the overarching regulations (AiGroup, 2020; EPA Victoria, 2009; Parliament of Victoria, 2006b).^(31aē, 32bē, 33cē, 34cē) The idea had been to run the program, gather the low hanging fruit and then connect it into others or revamp it based on what was learnt. It was not intended to run forever but to help inform the next step toward a more sustainable future.^(24aϩ) More public decisions with this outlook and level of self-awareness, coupled with active evaluation programs, may assist in delivering public outcomes better aligned with sustainable development.

Survey participant support:



No/neutral response, 7.2%; Support, 33%; Strongly support, 59.8%

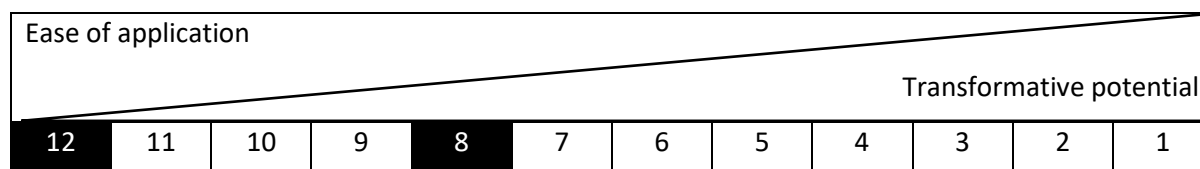
Other ideas this relates to:

- Increased emphasis on evaluation
- Increased emphasis on engagement & consultation
- PDMing seen as an iterative process

Influences this could impact:

- Appetite for change
- Businesses/non-govt. actors
- Complexity
- Culture
- Engagement
- Evaluation
- Evidence
- Framing
- Implementation
- Mandate
- PDMing considerations
- PDMing processes
- Relationship between PDMers & community
- Risk

Leverage points this could interact with:



Rationale:

12. *“Constants, parameters, numbers (such as subsidies, taxes, standards)”*

Trials provide opportunities to test rather than merely hypothesise the impact of differing parameters.

8. *The strength of negative feedback loops, relative to the impacts they are trying to correct against”*

The presence of trials creates efficient loops back into the decision-making system.

An outcomes focus

“So, to have a more outcomes focus... It's great that it's happening already, I would really like to see that accelerated and supported through the org structure. Through the levels of management 'cause I think it is being driven top-down but it's not necessarily through all the middle”.^{9c, DHHS}

An outcomes focussed approach to public decision-making is one which sees emphasis placed on the tangible effects felt by the public (i.e. what it achieves) rather than the deliverables of government itself (i.e. what it does, spends, etc.), and establishes new mechanisms to ensure accountability for them (DPC, 2016; R. Scott & Boyd, 2016a, 2016b). It is an approach that measures what counts. In response to the perceived success of such a focus in New Zealand and Scotland (Donaldson, 2016b), the Victorian Department of Premier and Cabinet (DPC) began advocating an outcomes focus within the VPS in 2016 - and more recently through its *Outcomes and evidence framework* (DPC, 2016; Eccles, 2016b; State of Victoria, 2019a).

A number of places across the VPS have taken up the outcomes focussed approach, most prominently within the Department of Health and Human Services (DHHS), possibly due to the encouragement of its Secretary who has also been a strong advocate for an outcomes focus (DHHS, 2016, pp. 38-43; 2019; Peake, 2016). This encouragement highlights the importance of those in formal leadership roles promoting and embedding innovative ways to conduct public decision-making. Doing so may also enhance their staff performance and attract new employees (as aforementioned 82% of survey participants agree that an effective decision-making outcome is to ‘make people’s lives better’).

Interviewees who spoke directly to the need for an outcomes focus were unsurprisingly from DHHS and focused on the need to accelerate the transition perhaps by looking at how middle and lower-level staff can support it through *‘inclusion of some further measures’*,^(9c) and also to extend the thinking to look at altering cost-benefit analyses to place greater emphasis on the *‘real impacts on people’s lives’*.^(8a) In the latter example, the suggestion was that improved understanding of real impacts would come from activities such as surveying people across the state, for example, *“How long’s it take them to cross the city? If they’ve got a job in the city, what’s their commute? If we change*

this train line what would it really do? The train line stops there, how far away is their house from the train line? So, ...how do we live our lives?" ^(8a)

The original New Zealander and Scottish outcomes programs have since evolved further. Additional public sector reforms are underway in NZ (New Zealand State Services Commission, 2017, 2019), and both countries have adopted an increased focus on measures of success that reflect societal wellbeing, as per the Wellbeing Economy Government partnership (Coscieme *et al.*, 2019; New Zealand Government, 2019; Ryan, 2019; Scottish Government, 2017, 2019; Trebeck, 2019). It remains to be seen whether Victoria, which has a similar population size to the governments performing in WEGo, will follow their lead again.

Survey participant support:



Oppose, 1%; No/neutral response, 6.2%; Support, 35.1%; Strongly support, 57.7%

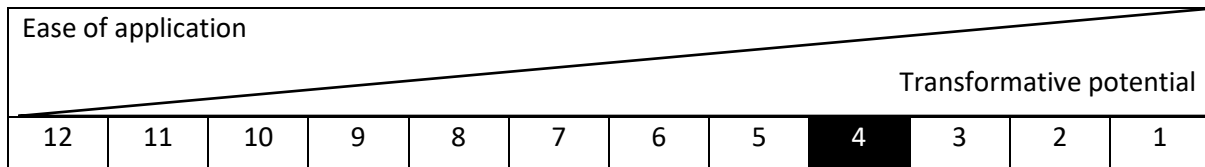
Other ideas this relates to:

- Increased emphasis on problem definition
- Strategic/Scenario Planning

Influences this could impact:

- Alignment of SD & PDs,
- Appetite for Change
- Commitment to concepts
- Complexity
- Culture
- Engagement
- Evaluation
- Evidence
- Funding
- Governance
- Implementation
- Institutions
- Leadership
- Paradigms
- PDMing considerations
- PDMing processes
- Public awareness
- Risk
- Strategic Planning
- Time

Leverage points this could interact with:



Rationale:

4. *“The power to add, change, evolve, or self-organize system structure”*

Recognising and acting on the ability to alter the focus on the system structure changes the system function and considerations within it.

Increased emphasis on data

“...if you could actually as a senior bureaucrat have the opportunity to make a reasoned case to a minister on something. I've been fortunate, I've had very good ministers on the whole, but there are always exceptions and some very bad public policy outcomes were essentially a result of ministers, governments, just not being interested in the evidence. You know, for political reasons or whatever reasons. So, in that case, public money could have been more effectively spent if the public sector had had a fair hearing based on the evidence”.²¹⁻

There have been significant calls for and focus on evidence-based public decision-making across the world over the last decade or so (Cairney, 2016; Donaldson, 2017; Freiberg & Carson, 2010; Head, 2010, 2013; Likens, 2010; Newman, Cherney, & Head, 2016). Sentiments in Victoria are no different, as indicated by over 90% of survey participants supporting the suggestion that there be greater emphasis on evidence. However, interviewee conceptions and survey participants responses to a separate question on what defines evidence show reasonable variation (Figure H1).

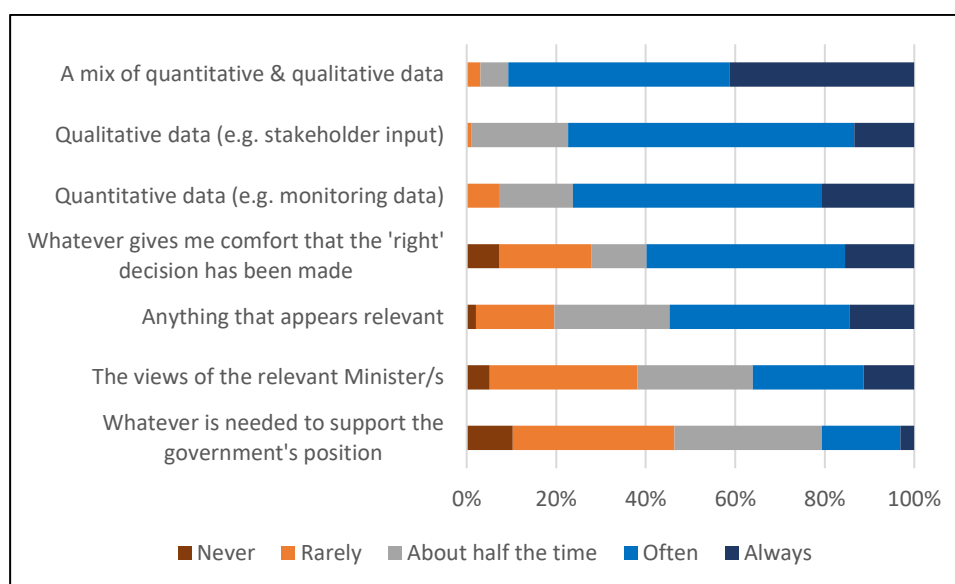


Figure H1. Survey participant use of evidence types.

Survey responses to the question: “How frequently do you rely on the following as ‘evidence’ when making public decisions?” (n=97). Response options are derived from interviewee responses to the question, “How do you define evidence?”.

That is, PDMers want evidence to play a role in our public decisions but, are not in agreement on what can actually form evidence - from quantitative data, as a scientist might consider it, to qualitative data, as a social theorist might see it. This variation aligns with the literature around evidence. Indeed there are now literature and websites devoted to the ontology of evidence generally and across differing

fields (Giglio *et al.*, 2019; Niederdeppe, Bu, Borah, Kindig, & Robert, 2008; Reynolds & Reynolds, 2002). Notably, while qualitative and quantitative data are regularly used, just over 7% of survey participants say they rarely use quantitative data.

Interviewees who noted there ought to be a greater emphasis on evidence, also noted that “*there is no single source of truth... a weight of evidence can't sway conviction*”^(11b) and that, “*politicians have a different evidence base. They have the pointy end of the community in a way that public sector never can*”.⁽²¹⁻⁾ Irrespective of these variations, that there was broad consensus that increased access to meaningful data and monitoring improves public decisions and that there are areas where the collection and availability of that data are lacking, illustrates improvements can be made. Particularly when considering the low-order ranking of *Evidence* in the earlier leverage points analysis (Table G2) - improving access and collection of data is not a change that will result in whole-system transformation but it is a comparatively easy change to put in place and, provided transparency is retained, may subsequently form the basis of more meaningful future policy evolution and public decision-maker collaboration. For example:

“Ongoing monitoring is important. If you're designing a good evaluation system, you presumably have some key points that which you monitor... Good evaluation relies on ongoing good data collection. In the agriculture world that I've worked in a fair bit of my career and the mining world and, the manufacturing sort of world in a policy sense there's no lack of good data in that. We've measured it for years. We're good at measuring it. We can analyse impacts reasonably easily but when we come into other areas like social policy, like this issue about parole and terror we don't seem to have the data. And I think also there's been a default position by most departments or agencies not to share data”.^{18a}

Data is an expansive topic and there are other issues associated with its collection and use that are not able to be covered here in great detail (e.g. see PC, 2017a). One such issue is data accessibility, which is partly driven by governments no longer being the primary source of data. Ways to address this include buying it from sources (such as the use of Telstra ‘location insights’ data (Readify, 2020; Whyte, 2018a, 2018b), recommending government sourced data collections (also a costly exercise), or legislating that available data be shared.

For example, Division 10.5 of the *Motor Accident Injuries Act 2017 No 10 (NSW)* provides the New South Wales' State Insurance Regulatory Authority with the ability to "*obtain data from insurers, from relevant insurance or compensation authorities, from hospitals, from government agencies and from any other source*" in relation to a wide number of functions and activities, and to "*exchange data concerning third-party policies, claims and other related matters*". A Victorian Local Government Official (*pers. comms.*) advised that consequently in New South Wales, "*the government and insurers 'trade' information - in that the government provides 'driver record data' so that people can't lie about not having speeding tickets etc. and the insurers provide maps of claim locations*". The shared information can then inform public decisions about modifications and management of built infrastructure to reduce the number of accidents and associated social and economic costs. This Official's advice is corroborated by a submission by the Insurance Council of Australia (2016, pp. 2, 3, 13) to the Productivity Commission's Inquiry into *Data Availability and Use*. Conversely in Victoria, data is only available for accidents to which the Police are called and which tend to be more significant in nature (VicRoads, 2020). While data from police attended accidents is invaluable in informing decisions on investment in road safety, the absence of data on more minor incidents results in the dataset being relatively small, making it harder to predict and effectively reduce future road trauma.

Survey participant support:



No/neutral response, 9.3%; Support, 53.6%; Strongly support, 37.1%

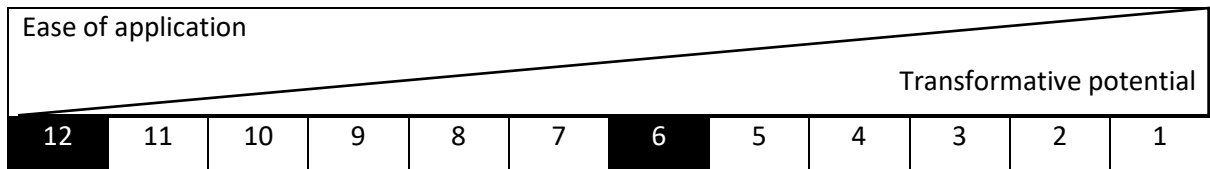
Other ideas this relates to:

- Environmental data analytics capability
- Application of SEEA in CBAs

Influences this could impact:

- Businesses/ non govt. actors
- Complexity
- PDMing considerations
- Collaboration
- Evaluation
- PDMing processes
- Evidence

Leverage points this could interact with:



Rationale:

12. *“Constants, parameters, numbers (such as subsidies, taxes, standards)”*

What counts as evidence, and what the numbers say informs discussions and decisions.

6. *“The structure of information flows (who does and does not have access to what kinds of information)”*

Whether evidence is available, accessible and interpretable by those making and supporting decisions impacts system functioning.

Frank and fearless advice

“I look around and I talk to people and I see things that are happening and I've alluded to it, but I don't think there's that frank and fearless advice. I think, people need to have the courage of their convictions. I don't see enough of that... But, people here go apoplectic, in the Department, when I'm saying, 'Well, I'm just going to go and talk to the Minister.' 'What? What about? You can't-- but-- we're going to have to brief—', you know”.^{20a}

The idea that bureaucrats must be frank and fearless in their provision of information to the elected government has been present in the Australian policy vernacular since at least 1994 when emphasised by Dr. Mike Keating (Ayres, 1995). Indeed, even Northcote and Trevelyan (1854) alluded to the need for public servants *'to be able to advise, assist, and to some extent, influence, those who are from time to time set over them'*. Increasingly there has been criticism of civil services shirking this responsibility and fawning to the government of the day due to self-interest motivations or politicisation of what ought to be an apolitical institution (Behm, 2015; MacDermott, 2008; Mares, 2015; Mulgan, 2016; Thodey *et al.*, 2019; Tilley, 2019, pp. 16-18, 127, 315,; Whyte, 2019).

Further, being frank carries risk, hence the need to be fearless, and interviewees reflected on the tension between *'saying it like it is'*,^(27a+b) and respecting the elected government authority to make whatever decision it sees fit.^{(6b, 26-c, see also Eccles (2015c))} Claxton, Owen, and Sadler-Smith (2015) raise the idea of Hubris Syndrome: that people in leadership positions, after a time, develop a psychological disorder characterised by over-stated self-confidence and self-belief and where the advice of others is rejected. With such persons at the helm, frank advice will most likely be soundly rejected, but also be what is most needed - as was the case of MI6 and CIA intelligence in the invasion of Iraq (Claxton *et al.*, 2015). At that point, careful navigation of the decision to offer advice and the response to it is required:

“It's very much a political call about whether you wanna have the debate or not. And the public service can put only advice up to ministers, and if that advice [back] is, 'Nup, we don't want to do that. Don't wanna do that', then that's your answer”.^{4a}

This quote highlights one of the risks leading to the apparent reduction in the provision of frank and fearless advice; the potential, real and perceived, for it to ruin one's career (Behm, 2015; Burris,

Detert, & Romney, 2013; Chamberlin, Newton, & Lepine, 2017; Wiltshire, 2013). This risk extends beyond the PDMer-Minister relationship, to the PDMer-PDMer relationship. Burris *et al.* (2013) found that while generally there are positive perceptions from both employees and managers concerning employees speaking up with ideas and concerns, when specific relationships are compared employees who overstated the level of voice they believed they could exercise were seen poorly by managers and more likely to be fired.

Pre-existing time and resource constraints on decision-makers resulting in their reliance on intuition ahead of the procedural frameworks designed to help them make better decisions are additional barriers (as discussed in Chapter 5). Under such pressures and alongside the career risks mentioned, it is not hard to understand why many public servants may feel disinclined to put in the time to background fearless advice, especially if prior attempts have seemingly fallen on deaf ears.

One interviewee reflected on an experience where such advice was provided based on their formal legal training, noting the decision to pass this on ultimately represented a difficult judgement call for his superiors:

*“I sort of said, ‘Look, we have to be frank and fearless and we have to tell the government this is the possible consequence. Of course, you can do what you want. And of course, whatever you decide we will deliver. You know, we’re not gonna obfuscate. We’re not gonna like stand in the way of your decisions. We’re here to serve. But before you make the decision we are gonna give you the advice and you need to know that this is probably gonna breach a free trade agreement.’ And we gave that advice. **I convinced my senior executives against their, probably, against their better interest, their better kind of instinct, to tell the government ‘no’.** And it's harder for executives ‘cause they’ve got the personal relationship they need to manage with the advisors. And they need to build trust. So, they can't just be saying no and poking people in the eye all the time. They have to be judicious about when they really push on what's good advice or good actions and what really, what's not”.^{7c}*

Thus, it is also understandable that public decision-makers balancing their role in government, the risks to one’s career and the likelihood that any advice not well-aligned with government policy will be heeded may be a little gun-shy in being frank and fearless.

Nevertheless, EPA's Chairman noted that the public sector holds the skills, knowledge, experience and data for intergenerational problems, and that elected officials, "*can't be all wise and all-knowing*", but that "*what is missing*" in the public sector today is an ability to, "*put to a Minister, 'Minister, this is a looming issue that we need to deal with and no, it might not even be in your elected term, but we do need to deal [with it]'*".^(15a) Similarly, hindsight shows the importance of frank and fearlessness to cautioning elected decision-makers, as is illustrated in third party reviews of the terrible consequences that resulted from well-intentioned but under-informed governments (Hanger, 2014; Shergold, 2015).

Further, it is heartening that when surveyed participants continue to see the importance of frank and fearlessness to improving the effectiveness and longevity of public decisions. The importance of continuing to provide that advice was highlighted by another interviewee who reflected that in hindsight the public decision-makers associated with EREP ought to have been more robust in their advice to government, such that program specifics were not compromised in anticipation of a policy that never materialised:

"I think we should have stared them down when it came to the carbon price, because in the end, we jettisoned all these programs, and didn't get a price on carbon, either. So that was, that was disappointing".^{32bē}

While applicable to the APS, recommendations from the Thodey *et al.* (2019) review concerning potential Freedom of Information exemptions for '*material prepared to inform deliberative processes of government*' (p. 121) and greater rigour in termination process for senior public decision-makers (p. 296) would likely also have value in increasing public decision-maker risk appetites in sub-national jurisdictions. In particular, such recommendations if implemented may help to ensure that public decision-makers do not feel they must retire before they can provide candid advice to government, as became evident in 2019 with politicians insisting advice from emergency chiefs regarding bushfire resources was followed and former chiefs repeatedly stating that it was not (Emergency Leaders for Climate Action, 2019; SBS News, 2019; Truu, 2019).

Conversely, the New Zealand experience is to provide greater transparency around decision-making, such that advice provided has to “*withstand ministerial scrutiny and, in time, public scrutiny*”.^(13b) As New Zealand has subsequently embraced policies aligned with sustainable development, for example, in legislating a pathway to net zero carbon emissions by 2050, and joining the Wellbeing Economy of Governments (WEGo), a more nuanced balance between what is and is not made publicly available may enhance sustainable development achievement within Australia and Victoria (Fisher, 2019; Ministry for the Environment, 2019; New Zealand Government, 2019; Parliamentary Counsel Office, 2019; Treasury, 2018).

Another approach is for individuals to act with greater agency - either in isolation or by banding together. On the latter, Advocacy Coalitions - groups with similar core values who over an extended period of time come together to gain a collective strength and argue the merits of a position - are widely discussed in the literature, though their ability to co-ordinate resources to deliver impactful outcomes is ‘extraordinarily difficult’ (Sabatier, 1987; Sabatier & Weible, 2007). On the former, James R Detert (2018) argues that those who succeed in being frank, “*lay the groundwork for action; they carefully choose their battles; they manage messaging and emotions; and they follow up afterward*”.

Boards are another model of individuals acting with collective agency for the greater good. Members must: Act with responsibility for the good functioning of the whole organisation (government), representing the best interests of stakeholders (the public), accept that not all of their ideas will go forward and that many will be shot down immediately, and retain the courage to keep respectfully raising ideas and concerns for the good of the organisation and stakeholders. This approach is not dissimilar to that required for senior officials and greater awareness of such considerations may help those further down the hierarchy to better understand whether raising an idea or concern is appropriate, or indeed how to perhaps reframe their thoughts for greater impact. Moreover, broader acceptance of the institutional cultures suggestions of Hanger (2014) could also enhance recognition that senior officials and ministers do not have to act on PDMer advice, and also that advice is not

necessarily a criticism of senior official or executive proposals. Such recognition could also lead to and be benefited by public officials being encouraged to think widely and act with courage. Hanger (2014, p. 307) suggests that the simple insertion of a 'devil's advocate' section in briefing templates might help to facilitate these perspectives.

While frank and fearlessness is widely accepted as a desirable characteristic of public decision-makers, it is clear that both systemic and individual changes to practice are required to increase practical application of it. Wanting to be fearless and having the space and support to do so are very different things, as was illustrated by interviewees who described being attacked from within for speaking up, doing what they can to raise the profile of sustainable development principles falling through the cracks, or not knowing where to begin to implement the SDGs amongst the other priorities they have to manage.^(23-u, 26b, 34cē)

If sustainable development is to be advocated for and achieved, institutional mechanisms need to be improved to enhance support for public decision-makers to be frank. Insights gleaned across these interviews indicate that in order to encourage speaking-up, institutions need to provide the capacity to think, the provocation to ponder, and a culture that encourages the sharing of ideas. With these attributes in place, public decision-makers with the gumption to put forward unexpected advice will feel better supported to humbly exercise courage and draw more senior decision-makers to the evidence and attendant risks.

Survey participant support:



No/neutral response, 10.3%; Support, 37.1%; Strongly support, 52.6%

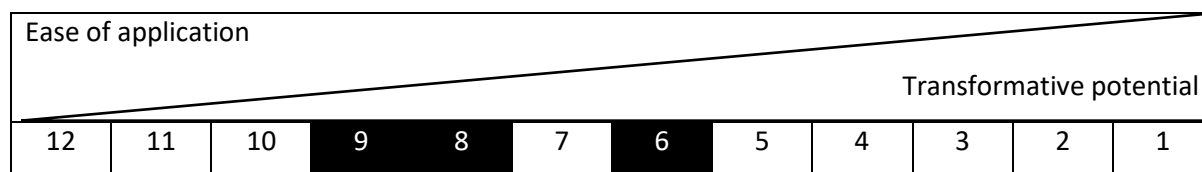
Other ideas this relates to:

- Senior-junior PDMer links

Influences this could impact:

- Cognitive biases
- Collaboration
- Culture
- Evidence
- Framing
- Governance
- Institutions
- Leadership
- PDMing considerations
- PDMing processes
- Personal characteristics of PDMers
- Relationship between bureaucracy & ministers
- Resources - capability/capacity
- Risk

Leverage points this could interact with:



Rationale:

9. *“The lengths of delays, relative to the rate of system change”*

Fearlessly providing advice reduces the delay in information being received by the ultimate decision-maker. In the absence of such advice, undesirable consequences may still emerge but the ability to mitigate them will likely be reduced.

8. *“The strength of negative feedback loops, relative to the impacts they are trying to correct against”*

Frank and fearless advice can be a significant feedback loop, interrupting misheld beliefs that past or proposed decisions are appropriate to the issues faced.

6. *“The structure of information flows (who does and does not have access to what kinds of information)”*

Creates new information loops, such that senior officials and parliamentary representatives have access to a broader array of considerations.

Increased emphasis on engagement & consultation

“Oh, I get excited about this, but engagement, like real engagement, real consultation. Talk to people, listen to people, in fact listen first then talk. But we don't do consultation, genuine consultation. I mean, I'm sorry. We do. Some. But you've got to work hard at it”.^{17b, DELWP}

There is a wealth of literature on the importance of engagement (Althaus *et al.*, 2013, Ch. 7; R. Carey *et al.*, 2016; Curşeu & Schruijer, 2017; Dryzek *et al.*, 2019; Engage Victoria, nd; Head & Ryan, 2003; IAP2 Australasia, 2020; IAP2 International Federation, 2014; Keil, 2014; Sandman, 1993; C. Scott & Baehler, 2010, pp. 237-239; Skoric *et al.*, 2016; Sunstein, 2017; VAGO, 2015; van Reybrouk, 2016). Yet, belief that “*politicians know what ordinary people think*” is low (Cameron & McAllister, 2019b, p. 103), and, as was earlier discussed (see Chapter 1), the gap between those making the decisions and those who experience their outcomes remains large in places. Interviewees raised numerous reasons for this, but equally numerous were the calls and rationale for bridging that gap. A common theme was the mistaken view that public decision-makers know best, one participant likening the consultation provided to a bad restaurant experience:

“What EPA usually does is, say you go into a restaurant like this, and you sit down. And you don't see anybody, so no one comes to the table, you hear a lot of noise in the kitchen, and then eventually, someone comes out with a plate of food, and puts it in front of you. So, no discussion about, ‘What do you want? What's on offer? What are the options?’, ‘I'd like a bit of this, or a bit of that’, or, ‘This will be useful, or that’ ... sort of staying behind closed doors, cooking something up, and then putting it in front of someone”.^{32bē}

A potential, though not sanctioned, rationale for public decision-makers shying away from engagement and consultation because they, “*don't necessarily wanna bring other people into the conversation for fear or losing control of that agenda*” was raised by Richard, a departmental Secretary. He considers this short-sighted approach, the opposite of what is required, “*My honest view is we keep more out of people's knowledge, and more discussions away from their participation than is really sustainable in a highly educated and increasingly sceptical, unleadable, public. You know, [the] public isn't gonna be told, ‘Government knows best’. It's not even working that well in China anymore*”.^(3a)

Chris, an Executive Director at EPA similarly reflected on the hesitation to consult that he sometimes sees in the public sector, with decision-makers being “*sick of getting yelled at by angry nutbags*”, but also needing to exercise accountability and leadership and to, “*go back and talk again and again until they [the community] see that: One, you're a human; two, that you're prepared to listen; three, you're prepared to respectfully push back. You're prepared to defend your decisions*”. He believes that if public decision-makers were more prepared to “*engage early, genuinely, seek their views first, understand your audience before you start the process*”, then society would, “*get better quality public decisions being made. Because we're all blinkered, we all have our own frames of reference and we're kidding ourselves if we think we know everything*”.^(17b)

In addition to misplaced beliefs about controlling agendas and defensiveness about how the public will receive them, concerns around additional time and resource imposts may be a factor discouraging public decision-makers from speaking to those whom their decisions ought to represent. The Deputy Director of the Channel Deepening Project reflected that sometimes public engagement results in organisations needing to undertake activities with little programmatic value but which help to address public concerns:

“We did a program, which was more about public assurance than any technical reason. And that's the Bay wide monitoring programs. But I think they were valuable. Not only valuable, invaluable, we had to do 'em. Because that was something that the public understood. But in a terms of a [environmental management] control sense, that wasn't of much value. But we needed that to be able to address the public concerns”.^{29a†}

This view was elaborated on by another public decision-maker involved in CDP:

“My role is never to convince you. My role is to respond. So, the role of the Office is to respond to your questions. So, I'm not trying to close this gap [in risk appetite between public and government]. I have to give you all the information to allow you to make your own judgment, whatever your risk appetite is. ... Acknowledging they're [concerns] real, that that's real. And that's around creating a space in which a discussion can occur about the risk. The way we see risk. The way we weight evidence, the strength and quality of evidence, and the nature of the lines of evidence”.^{23-†}

However, the point was also made that:

“Decision makers and policy makers can't be made timid by the challenges of implementing things that people don't like, because mostly people don't like changing.

So whilst you've got to work with them, you can't actually do what they say. Otherwise you won't change anything, because everyone just wants things to stay the same”^{12b}

Interviewees, particularly those in the case study cohorts, also reflected on the need for engagement to be undertaken by people at all levels, including by more senior public decision-makers who may traditionally be more removed from the coalface, in order to enhance credibility and give the community confidence that their concerns are being heard by those in a position to make a difference.^(24a⚡, 28a⚡, 29a⚡, 31aě) Though it was acknowledged that this can be difficult both from the perspective of the community believing that a PDMer can follow up their concerns,^(29a⚡) and the internal media and legal teams ‘allowing’ it to happen:

“Adam Fennessy [former Secretary, DELWP] went to a public meeting and stood up in front of the community. The Minister was there too. But Adam stood up, and he started by-, and it was a very big public meeting-, and he started by saying, ‘I'm sorry. I'm sorry, we did the wrong thing. We don't yet know what the investigation is but it is our fault.’ Now, his legal team and his comms team spent two days trying to talk him out of doing that. It totally changed the mood of that room. He was human and he cared about what happened to them. And he did that in a really authentic way. And the Minister who had to come on after him got a much easier ride as a result of that.

Now, it has to come from the top, you know. There was Adam's entire organisation was trying talking him out of doing it”.^{15a}

Examples such as this illustrate that it is essential to continue to try to engage stakeholders authentically. To not ‘hide behind our public service personas’,^(15a) to ‘create trust’ by laying out our arguments and listening,^(15a) to do so in language appropriate for the audience,^(29a⚡) to adopt a mindset of “testing early and often rather than waiting til we think we have all the answers then consulting when there is not enough time or political space to really change the outputs”.^(S-Undisclosed) And, further, to recognise that, “people aren't sitting around after a day at work, or, you know, going to the football, wondering when the government's gonna invite them to [a] workshop and what we're going to do in terms with the transport system”,^(3a) and so we need to seek to engage them. By doing so, opportunities are created to talk about what matters, find resolutions, and bring the community into policy thinking and policy thinking into the community. When PDMers do this, they engage society's broader desire to have a say on how things should be, which can lead to changes in community

appetite and increase mandates for action: *“We need to get people involved in this conversation. And when they're involved in the conversation, we then get the regulatory changes that we want to see”.*⁽¹⁰⁾

Survey participant support:



Oppose, 1%; No/neutral response, 12.4%; Support, 56.7%; Strongly support, 29.9%

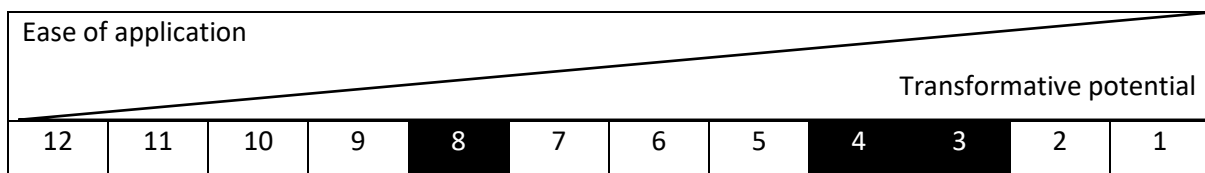
Other ideas this relates to:

- VPS culture that is willing to trial
- Strategic/Scenario Planning
- Increased discourse to discourage one term governments

Influences this could impact:

- Appetite for change
- Businesses/ non govt. actors
- Commitment to concepts
- Engagement
- Governance
- Mandate
- PDMing considerations
- PDMing processes
- Public awareness
- Relationship between PDMers & community
- Risk
- Strategic planning,

Leverage points this could interact with:



Rationale:

8. *“The strength of negative feedback loops, relative to the impacts they are trying to correct against”*

Consultation and engagement provides opportunity for robust feedback to be provided back to decision-makers.

6. *“The structure of information flows (who does and does not have access to what kinds of information)”*

Provides new information to the community and decision-makers alike.

4. *“The power to add, change, evolve, or self-organize system structure”*

Engagement with the community provides the ability to test and obtain support for changes to the functioning of the system.

3. *“The goals of the system”*

Discourse has the power to introduce new ideas and thought processes and alters appetites for what is desirable.

Increased emphasis on problem definition

"I think one thing that maybe I've become harder-nosed about here is, just being more clear about what you're trying to achieve from the decision and from the process". ^{11b, DPC}

The need for managing expectations and the narrative up the line and on to ministers makes the value of spending time on defining the issue and options clear:

*"So, your advice would go forward to say, 'We have a problem. This is the burning deck or the issue that we have before us. If we do nothing, this will become a compounded, expensive, drawn out, public issue that we'll be suffering for many years to come.' So, **you have to have the problem definition** and then you say, 'So doing nothing is an option, but really it isn't because we'd rather you didn't just sit and do nothing. So therefore, there's a number of options for you to do something. You can do something that, deals with the symptoms over a short period of time that doesn't cost a lot of money. Or, you can do something which is a fundamental reform that is enduring, long term and will mean that this problem is dealt with from not only from the symptomatic perspective, but we get to the core drivers underneath.'" ^{4a}*

This insight is further supported by the starting point of the policy cycle in many textbook discussions relating to problem definition (Althaus *et al.*, 2013), and longstanding recognition of the value of problem definition within the academic literature (Kingdon, 1995, e.g. p. 109-113; J. A. Weiss, 1989). Yet, "...often people will bring you an issue or, you know, a piece of advice, and the articulation of the problem is not clear. As a former DPC Secretary said, 'If you can define the problem, that's a very good start'". ^{10a}

13b articulated the reason this problem arises clearly:

*"In general terms you'd like to think that if the quality of the analysis, and evidence, and advice that you put up was sound. That you'd spent a bit of time upfront trying to understand fully what the issue and problem was, acknowledging issues around limited gaps and knowledge and uncertainty. Designing policies, or options, that try and respond to those as best as we can and building in review mechanisms. You like to think that, that would be a way of building sustainability and longevity. **But that's also, you know, perhaps a little bit too rational. And it doesn't necessarily suit some of the sorts of issues and challenges the government's facing today**".* ^{13b}

Others expanded upon some of the issues and challenges 13b alluded to, for example: cutting down the resource base of policy thinkers and being "*terribly reactive now in the making of our public policy decisions*";^(15a) staff needing training and engagement from public decision-making experts within the public sector - which people can be hesitant to take up,^(18a) seeking to define the problem at the right

scale and degree of openness (e.g. *“Why is this building not built to a sustainable development, international standard level five?”* c.f. *“Why don't buildings at large have higher ratings of sustainable development?”* c.f. *“Why is sustainable development generally not higher up the batting list”*^{8a}); ^(8a, 18a) not having somebody leading the project who can understand the problem and respond to it;^(22a^u) the value of time spent on problem definition not always being realised in the short-term, as illustrated in crises demanding an immediate response,^(18a) or through the scale of stakeholders,^(32b^e) and, needing to appreciate multiple perspectives to see that problems are not black and white, but grey:

“When you're sitting in a junior position in an environment department or in a non-position at all at the universities, you know, the obvious truth can seem so clear. And then, when you're in a different position, and you're exposed to -- it's not just the environment you're talking about here. It's social welfare outcomes for local communities, and it's mental health issues and, you know, suicide, from people losing their jobs and mortgages and, the complex nature of societal outcomes. ... I think it probably just the understanding of how difficult decisions are. And, you know, anyone that writes into 50/50 in the Herald Sun or tweets, ‘This is the obvious answer’, probably has missed the point, how difficult making good public policy decisions are”.^{11b}

Of course, as was discussed in Chapter 5, each barrier can also be an enabler. Thus, these concerns can be addressed to some extent to form solutions in and of themselves, should public decision-makers choose to look for them. For example, by:

- Shifting the focus upfront to ensure clarity:

“Being really clear in my head, like, absolute clarity about what problem are we solving? Like, at the nub of it, that sounds easy, but sometimes I've spent weeks defining a problem...really understanding, defining what the problem is, understanding the problem, taking a long time and looking at a lot of, sort of data, whether it's quantitative or qualitative to understand what problem am I solving”.^{2a}

- Alternatively, where that is not available, using time and external pressures to drive problem definition:

“And I mean it [internal collaboration] was driven by time pressure. It was driven also by that absolute need for, to be seen, to have that sort of co-creation piece with industry”.^{32b^e}

- Inviting dialogue and assisting others to consider their problem definition:

“So, the tools that we use in this, in terms of the ultimate goal being to facilitate fully informed decision-making, is we actually talk to people we have meetings, we engage with them, we run training, specific training if they need it, general training for the public

service, otherwise.....I think it has helped to make them less intimidated by the people here".^{18a}

12b highlighted that clarifying the problem is not the only issue. Once defined there is a need to reflect the impact of different leverage points in the system by building acceptance for that problem over time:

"I think transformational policy has a long gestation and enduring transformational policy has a long gestation. Not necessarily in the detail, but in the concepts. 'Cause I think there are a lot of people who will end up caring about details, so details matter. Because, particularly when you're talking about people's lives, often it's the details of policies that affect them the most. But I think, building acceptance for a problem and then working with people to develop the solution and iterate on the solution or possible solutions [is important]. You're part of achieving that kind of sea change of or attitude shift..."^{12b}

As has been discussed in many places, numerous consultancies, online, textbook and guideline frameworks exist to aid people through the process. Subtly encouraging others to recognise the presence of a problem can help to build a coalition of like-minded decision-makers who are willing to advocate for resolution of it. Thus, should policymakers choose to look for and use them, tools to facilitate problem definition do exist.

Survey participant support:



No/neutral response, 13.4%; Support, 33%; Strongly support, 53.6%

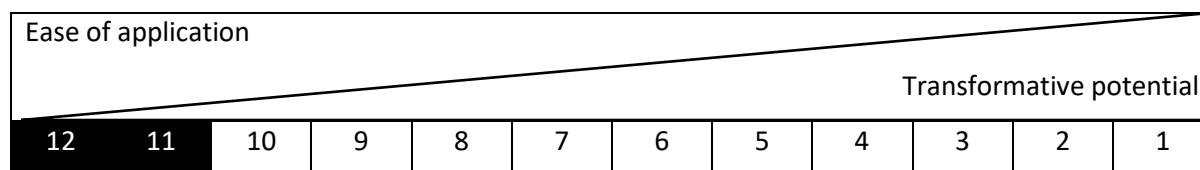
Other ideas this relates to:

- An outcomes focus

Influences this could impact:

- Cognitive biases
- Collaboration
- Commitment to concepts
- Complexity
- Evaluation
- Evidence
- PDMing considerations
- PDMing processes
- Personal characteristics of PDMers
- Relationship between bureaucracy & ministers
- Relationship between PDMers & community
- Strategic planning,

Leverage points this could interact with:



Rationale:

12. *“Constants, parameters, numbers (such as subsidies, taxes, standards)”*

An enhanced focus on problem definition would help drive debate around what matters to that area of PDMing.

11. *“The sizes of buffers and other stabilizing stocks, relative to their flows”.*

Robust problem definition ensures that policy process is not jumping at shadows and is well informed by the available evidence and desired outcomes.

Strategic/Scenario Planning

"I think we should invest in really forecasting what public policy we need for 2050. We do that in little bits, planning, infrastructure. Victoria's doing it, but what's the bigger picture? What's the joined-up picture of that? ...let's get us all around the table, who all have these specialists siloed roles and talk about what's going to happen in 2050. You know, what will be the impacts? ... [bring] everybody together to think holistically about the society that we all service and will service in 2050". ^{15a, DELWP}

Participants spoke to scenario and strategic planning in overlapping ways. Some emphasised the need to engage society in collectively determining the future being aiming for,^(31aè) others discussed the need to better marry approaches across siloes.^(7c) Several Senior Officials talked to the need for multidecadal interdepartmental planning, to enable a more holistic approach to anticipating and delivering the needs of Victorians.^(3a, 5c, 15a, 20a)

This research considers 'scenario planning' to be a process of collective determination: where multiple possible futures are explored, the most desired is ascertained, and steps are taken to identify and implement mechanisms to achieve it. Whereas, 'strategic planning' is considered to be a process that acknowledges predetermined goals, charts a course toward those goals within a timebound period, and puts provisions in place to mitigate unacceptable risks, for example, organisational 5-year forward plans.

Arguably, uninhibited scenario planning with well-engaged stakeholders is a prerequisite for robust and meaningful strategic planning. For example, the process that led to agreement on the need for and high-level content of the SDGs represents *scenario* planning. While the detail within the Goals, accompanying tools - such as the Addis Ababa financial agreement (United Nations General Assembly, 2015a)-, and the jurisdiction-specific action plans to achieve them by 2030 represents *strategic* planning.

Public decision-makers are unquestionably more familiar and comfortable with strategic planning in practice. Organisations undertake strategic planning activities annually, and many undertake medium-term planning (~2-5 years) semi-regularly, often coinciding with a new minister, organisational leader, or renewal of a senior leader's position. Medium-term strategic planning is in effect often used as a

performance plan for senior leaders (VPSC, 2019c). Even so, scenario planning has a long history, has been used in significant global decisions and is increasingly used to understand points of difference and commonality to reach negotiated consensus and provide a mandate to make public decisions with a longer-term focus (Cork *et al.*, 2015; Costanza *et al.*, 2017; Kahane, 1992; Raupach *et al.*, 2012; Schoemaker, 1995).

Some participants were uncomfortable with public decision-makers taking on more of an *'Honest Broker'* role, i.e. being more active in connecting the dots between data and possible outcomes and suggesting mechanisms to achieve desired courses of action (Pielke Jr., 2007). However, Ministers are not omniscient,^(15a) and, far from stepping on their toes, without strategic planning, public decision-makers can leave the Executive in an unenviable position:

"When Victoria had a major water crisis, Millennium drought. You know, Thompson Dam shrinking. I remember talking to John Thwaites about it at the time as Water Minister. He was terrified by the situation. There had been no strategic planning, for this scenario".^{3a}

The value of scenario planning is also recognised by Victoria's Department of Treasury and Finance as a tool to help *"departments in identifying strategies to address future service needs"* (DTF, 2019). Further, planning need not be rigid. A plan that is adaptive and cyclically revisited to ensure that public decision-making outcomes are trending in the desired direction is more likely to be carried forward by differing political persuasions, and ensure continuity of message to the community.^(3a, 6b, 21-)

As many participants noted, it is the senior leaders signature that finalises a public decision, but leaders themselves noted that when they put pen to paper, they are *"actually standing on the very tip of the apex of a significant group of people who have a very, very deep understanding of a lot of very important information"*.^(4a) While organisational leaders often instigate and approve planning, the work is often led by mid-Level officials who have the opportunity to adopt or at least suggest different tools in identifying options as part of their scenario and strategic plans, and rarely are decisions made higher up the chain going to completely turnover a decision that has reached them.^(7c)

Survey participant support:



No/neutral response, 15.5%; Support, 44.3%; Strongly support, 40.2%

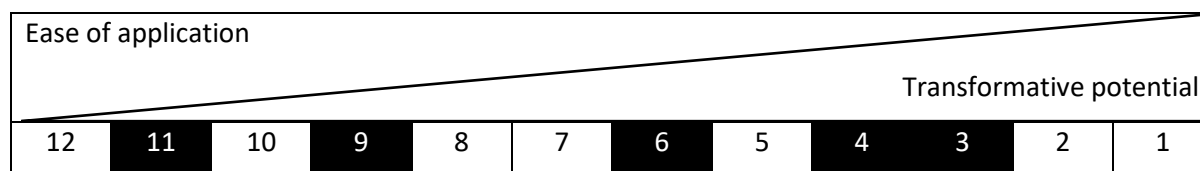
Other ideas this relates to:

- An outcomes focus
- Increased emphasis on engagement & consultation

Influences this could impact:

- Appetite for change
- Commitment to concepts
- Leadership
- Mandate
- PDMing considerations
- PDMing processes
- Relationship between bureaucracy & ministers
- Strategic planning,
- Time

Leverage points this could interact with:



Rationale:

11. *“The sizes of buffers and other stabilizing stocks, relative to their flows”.*

Facilitates better operation of the system by creating opportunity to foresee issues and create multiple pathways to pivot pending circumstance, i.e. provides distance from crises.

9. *“The lengths of delays, relative to the rate of system change”.*

Assists in making delays appropriate to the system, through the provision of foresight.

6. *“The structure of information flows (who does and does not have access to what kinds of information)”*

Creates opportunities for new information loops to be made through broadening of PDMer thinking/mindset.

4. *“The power to add, change, evolve, or self-organize system structure”.*

Creates space for System 2 thinking increasing opportunities for innovation and change at a holistic level.

3. *“The goals of the system”*

Scenario planning provides an opportunity to reaffirm or change the goals of the system.

Senior-junior PDMer links

“It's about Executives spending more time with teams, and sharing more problems and hearing more, having more collaboration with teams. Understanding what they're doing, what they know. And sharing notes, obviously. You know, the lower levels of the VPS, or the VPS staff in general, up to six, don't know everything but they have an experience that I don't think always gets translated up to the Executive level. And, if you're then in busy times, you don't always get access... There's a lot of points of failure for trying to communicate what's happening on the ground. I don't mean every single detail, I mean the important ones”. ^{9c, DHHS}

There is a significant literature on giving voice and agency to staff in the workplace and their dis/incentives to use it. For example, see: Mowbray, Wilkinson, and Tse (2015) for a review and contrast of differing schools of thought, Gollan and Xu (2015) or A. Wilkinson and Mowbray (2019) for a review and identification of factors influencing middle manager and organisational behaviour, Morrison (2014) reviewing why employees do not exercise their voice, and Burris *et al.* (2013) or Chamberlin *et al.* (2017) for exploration of the importance of agreement on *what* voice is acceptable. James R. Detert and Burris (2007) found that demonstrating ‘openness behaviours’ such as ‘approachability, action-taking and accessibility’ provides greater encouragement to subordinates to close the gap in knowledge between them, than ‘transformational leadership’ (such as inspirational motivation) does. Thus, the role of leaders in setting clear boundaries on what they consider acceptable communication from their subordinates, making time to understand the issues and policies they are working on, and setting up processes to ensure that even during busy times communication lines are kept open, appears important.

Of course, the issue 9c raises above is not only one of staff feeling they can speak up (as per the ‘frank and fearless’ section), but also that their superiors have the capacity to genuinely hear them:

“I feel like there's quite a lot of legwork around, just having good relations with people, and good conversations in passing, and all that sort of stuff. And that seems to be somehow the best way to keep your issues in their minds. When governance is not working for you. And that's hard to work with on an ongoing basis”. ^{9c}

This illustrates a need for formal and informal mechanisms to be put in place such that public decision-makers at all levels are acting to close the gap from both ends. Such mechanisms can include an open-door policy, as has been popular in parts of the VPS in recent times (*pers. comms. VPS Agency*

Official), but can also be more proactive on the part of the superior to include things like regular informal team catch-ups and skip-level meetings, transparency regarding decisions, closing the loop on team discussions (James R. Detert & Burris, 2016; Mowbray et al., 2015; Pentland, 2012), or even regular co-location with one's team - i.e. sitting at a spare desk in the team area to provide greater opportunity to build trust, remove barriers to knowledge sharing such as hierarchy dominance or insufficient interactions, and increase opportunities for bidirectional osmotic learning (Coradi, 2015; Frisch, 2012; Lee, Brownstein, Mills, & Kohane, 2010).

Such attention can also provide opportunities to enhance the reach of programs. For example, 31a reflected that the EREP team had built strong relationships with the businesses involved in the scheme and that an opportunity had been missed for greater engagement between the CEOs of the companies and EPA, which may have increased publicity and support for it from both business and broader community perspectives.

The operating environment and interaction with those outside of it is particularly important for teams less focused on the mainstream efforts of their organisation. For example, those working on projects that are not the primary purview of their organisation may struggle to capture the attention of senior staff who are more alert to the bread and butter of the organisation.^(9c, 14c) Thus, even where people are working on projects with a sustainable development focus, they can struggle to maintain the interest of their superiors as their work is less frequently front-of-mind or reflected in priority key performance indicators. Improving mechanisms for exchange across all levels would help with this, as would a mandate for agencies to more robustly consider sustainable development.

Survey participant support:



No/neutral response, 22.7%; Support, 44.3%; Strongly support, 40.2%

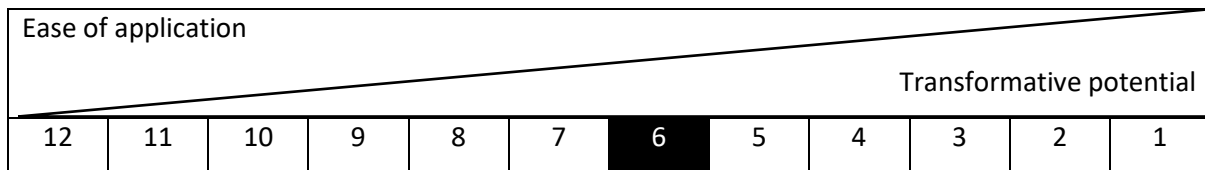
Other ideas this relates to:

- Frank and fearless advice

Influences this could impact:

- Alignment of SD & PDs
- Cognitive biases
- Collaboration
- Commitment to concepts
- Culture
- Governance
- Institutions
- Leadership
- PDMers' understanding
- PDMing considerations
- PDMing processes
- Personal characteristics of PDMers
- Resources - capability/capacity
- Risk

Leverage points this could interact with:



Rationale:

6. “The structure of information flows (who does and does not have access to what kinds of information)”

Increasing interactions between senior and less senior staff would provide greater opportunity for informal knowledge exchange, i.e. add additional loops through which information can be transferred.

Retained organisational knowledge balanced with new ideas

"I'm not quite sure we have right in parts of government, the balance between institutional knowledge, retaining and utilising institutional knowledge, and the freshness of new ideas and perspectives".^{13b, DTF}

In 2019 the VPS embarked upon a centralised system of advertising secondment opportunities, and preferencing of internal candidates, the 'Jobs and Skills Exchange' (Easton, 2019a; VPSC, 2019a). Whether such a system aids or detracts from the pool of expertise in the long term, or is merely another example of the bureaucratic pendulum swinging from this way to that, obviously remains to be seen. A recent report by the Australian New Zealand School of Government (Noveck & Glover, 2019) indicates it is not considered current international best practice. This contrast in approaches illustrates a point many raised in the course of the research: on the need to better balance staffing ratios in terms of internal expertise and organisational memory, against new perspectives. On the one hand *"...there are places in which we turn over probably a little bit too quickly. So something gets lost in that regard"*,^(13b) on the other, *"If there are people that are around for too long, you have a long store of institutional memory but you lack that freshness of perspective and an ability to take a step back and ask those sort of questions"*.^(13b)

The desire for increased knowledge and ideas sees the consulting industry benefit greatly from public contracts, a point the Victorian Treasurer made when linking the Jobs and Skills Exchange with anticipated budget savings (Committee, 2019, pp. 14-15). Often the consultant or labour-hire is co-located and performing tasks alongside departmental employees. As earlier discussed (Chapter 2), this has its benefits and limitations, not least of which being the disempowerment of agency staff to raise ideas, leading to *"some employees [being] more likely to leave the public service to build their careers"* - 8.7% of ongoing and 24.3% fixed-term employees left the VPS in 2017-18 (VPSC, 2019a; 2019b, p. 10).

A possible solution one might suggest is quotas. Questions that would need resolution in regards to this idea include what ratio is ideal and how it is policed, and whether particular projects or line

agencies get first right of refusal on the make-up of their teams? Comparison of the case studies considered in this research suggest that historically higher-profile projects have had greater say over their staffing makeup: the CDP team was refreshed with ‘winners’ and ‘believers’ for the second EES because it was *“not a place for learners, trainees, or people who think they can get a career leg-up by learning something”*; ^(28a+) while the EREP Manager recounts being hired into the role to find she had no real team and being told, *“Oh here's a couple of people who don't fit neatly anywhere else in the organisation who we think can help you with it”*. ^(32bē)

Another mechanism could be to broaden the exchange to include staff within local government or the Australian Public Sector. However, the DPC Deputy Secretary for the Jobs & Skills Exchange responded that this was not being considered or likely, when asked following her presentation at the Victorian Institute of Public Administration Australia Public Sector Week Conference in August 2019 (IPAA Victoria, 2020).

The Noveck and Glover (2019) report identifies ‘job-hopping’, ‘career breaks’, public sector ‘sabbaticals’, ‘innovation exchanges’ between public and private entities, encouraging the use of ‘tiger teams’, and mentoring programs as tools used in other sectors and government agencies to help encourage innovation in the public sector. A workforce strategy from the UK also identified making movement in and out the public sector easier and considering former public decision-makers as alumni that can build linkages in and out of the sector as mechanisms to increase innovation within it (UK Civil Service, 2016, p. 10). Closer to home the Victorian Department of Premier and Cabinet has run innovation funds and trialled programs to develop an innovation mindset, with mixed ongoing results (McGann, Lewis, & Blomkamp, 2018; Policy Lab, 2019; State of Victoria, 2019b). The use of long service leave or leave without pay are also options available to some public decision-makers wanting to expose themselves to other perspectives (VPSC, 2019d). However, neither of these tools are available to all public servants or tools which would be financially viable for those with pre-existing financial commitments such as mortgages and school fees. Further, the value of such actions to the

public sector is not always appreciated by others within it, making the personal return on investment for those who choose this path questionable.

Only time will tell whether the current VPS approach delivers the desired budgetary and sector developments as well as the initiation and appetite for new ideas, such as the uptake of the Sustainable Development Goals. One thing is clear, however, the right balance of new and institutional knowledge will vary pending the context, not only as it relates to the sector as a whole but also each organisation and team within it, making a suite of tools rather than one single approach more likely to succeed.

Survey participant support:



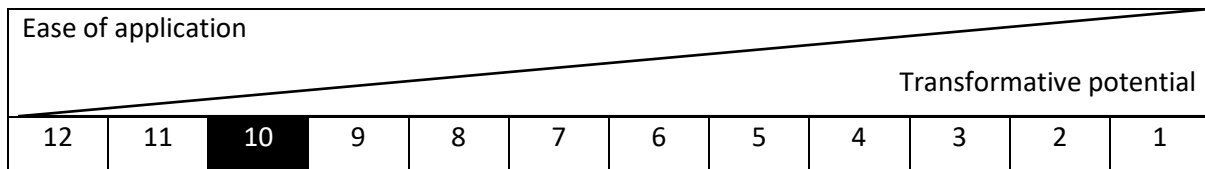
No/neutral response -22.7%; Support - 50.5%; Strongly support - 26.8%

Other ideas this relates to: N/A

Influences this could impact:

- Appetite for change
- Cognitive biases
- Culture
- Institutions
- PDMers' understanding
- PDMing considerations
- Personal characteristics of PDMers
- Resources - capability/capacity

Leverage points this could interact with:



Rationale:

10. *“The structure of material stocks and flows (such as transport networks, population, age structures)”*

The structure and operation of organisational systems is dependent upon who the staff are, their knowledge, internal and external interconnectedness, and the flows that they strengthen through these characteristics.

Environmental data analytics capability

“At a State level I'd invest in an environmental data analytics capability”.^{2a, CES}

The foremost change Victoria's present Commissioner for Sustainability and Environment would bring about to create more enduring public decisions is the creation of an environmental data analytics capability. The last four words sound very science-based, very technical and some may mistake the idea they represent as narrow in focus, a tool for a select part of government. However, Dr. Sparkes explains it is not necessarily about collecting more data overall, rather making sense and practical use of the data society does have and focusing future data collection activities in a more targeted way. In so doing adding transparency, rigour, and greater foresight to public decisions (Commissioner for Environmental Sustainability, 2015; Sparkes, 2018). Such a capability would strengthen the connection between experts, government data, and the community. While in places respect for experts remains, it is widely acknowledged that the trust once afforded to experts has been eroding for some time (Cummings, 2014; House of Lords, 2000; Mathieson, 2016; Shafik, 2017; Shaw, 2016). For example, Auty noted:

“Regional people are much more likely to accept scientists because they have had the use of agricultural scientists and extension over decades. And they know that those people are reliable. They're not selling a product. They're not there to bamboozle them with science. They want to try and make outcomes better. So, the way in which a community in the Northeast for instance would warm to a person who is a scientist might be a little different than what you would find in Frankston or Werribee”.^{1a}

Sharing information in a timely manner and presenting it in multiple frames and narratives so that all can understand it, may help to halt and minimise this diminishing trust (Goodwin & Dahlstrom, 2014). Further, citizens science initiatives have shown that encouraging people to help collect and engage with the data not only enhances their interaction with the environment but also increases the volume of information beyond what governments could otherwise afford to collect. For example, Auty contrasts the differing values of two different kinds of citizen scientists:

“[the Friends of Beware Reef] down there in East Gippsland. They are local people. They're mostly retired public servants and they scuba dive and they go out on the calm days. And in doing so, they've added to the Tasmanian Red Map which tells you what fish are coming down the Eastern Seaboard, and that's changing associated with climate change as we know. So, their observations as citizen scientists are priceless, because of

course by the time you could get somebody down there from the Department, the weather would have clouded over, the sea's got murky, nobody wants to be out there. So, they're absolutely in the right place at the right time with these skills.

...And we know that if you get kids out there measuring water quality, it's not necessarily going to be the best data but it's useful in another range of ways. It's about educating them in a way of thinking. It's about getting their teachers involved in what you want to see happen. It's about the teachers scrutinising the material that they need to know about because they need to inform their students. It's about parents signing approvals to say their kids can go out, so they're asking themselves, 'What are they doing it for?'. It's engaging a public which otherwise would be, as you say, sitting in their office writing a report".^{1a}

Spending an afternoon at the beach measuring water quality might not appeal to all but, providing data on air quality and the like in a manner as easily accessible as checking the weather on one's phone may.^(2a) And in so doing improve the lives of many. For example, consider the broader use and media reporting on EPA Victoria's beach report as a measure of whether water is too polluted to swim in (EPA Victoria, 2019a), or 'thunderstorm asthma' and pollen count warnings in weather reports and government warning sites enable those at risk to better prepare themselves (Better Health Channel, 2020; Vic Emergency, 2020). Further, community awareness of the world around them and involvement in shaping public decisions has been shown to increase through improved collection or access to synthesised data on environmental conditions and quality (Bonney, Phillips, Ballard, & Enck, 2015; Johnson *et al.*, 2014; McKinley *et al.*, 2017; Wang, Sun, Yang, & Yuan, 2016).

The terrible bushfires of the Australian 2019/20 summer have illustrated Victoria's enhanced co-ordination of management and provision of clear and timely community information regarding emergency events (e.g. www.emergency.vic.gov.au). These capabilities are largely in response to and can be contrasted with the events and community experiences during the 2009 Black Saturday and 2014 Hazelwood Mine fires (Teague, Catford, & Petering, 2014, pp. 28, 31; Teague, Catford, & Roper, 2016, Parts 5, 7; Teague, McLeod, & Pascoe, 2010). Despite this, the 2019/20 fires have also shown the expectations of many Victorian's that environmental data will be provided to them in real-time and frustrations when it does not occur (e.g., @AAisenberg, 2020; @EPA_Victoria, 2020a, 2020b, 2020c). These revealed preferences highlight a potential shift in the public's view on the role of

government to be, “no longer just about gathering information and owning it and having the power that goes with that”,^(2a) but also providing it to the public in a timely and readily understandable fashion.

Instilling a suitably resourced data capability across Victorian government, with connections to relevant institutions and community groups, that can provide a reliable source of information would go beyond providing information in a crisis, however. It would allow government to not only look for answers but better divine the questions that ought to be asked.^(12b) To, “get ahead of the curve, rather than waiting for something to go wrong and fixing it”.^(2a) Doing so would likely require some rethinking of the skills and systems needed in the public sector. However, such upskilling need not happen overnight so long as ongoing investments are made to better position public decision-makers to authenticate and make sense of big data, and feed it “into policy and our thinking, so we've got much better, more sophisticated, more timely evidence bases on which we're making decisions”.^(2a)

Survey participant support:



Oppose, 1%; No/neutral response, 21.7%; Support, 36.1 %; Strongly support, 41.2%

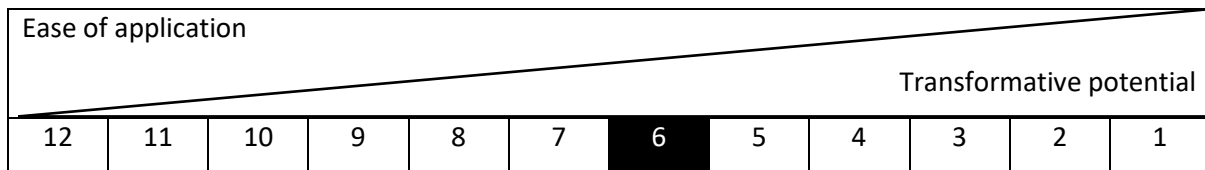
Other ideas this relates to:

- Increased emphasis on data
- Increased emphasis on engagement and consultation
- Application of SEEA in CBAs

Influences this could impact:

- Appetite for change
- Cognitive biases
- Commitment to concepts
- Engagement
- Evaluation
- Evidence
- Mandate
- Media
- PDMing considerations
- Public awareness
- Relationship between PDMers & community
- Resources - capability/capacity
- Scale

Leverage points this could interact with:



Rationale:

6. *“The structure of information flows (who does and does not have access to what kinds of information)”*

If implemented in such a way that the community more readily has access to information in practical terms, this would provide opportunity for enhanced environmental awareness and public discourse on the state of the environment and it’s impacts on the community.

PDMing seen as an iterative process

"I mean policy reform isn't a process that ends. People's lives don't stop changing and stop evolving because you've dealt with that. You know, you've made a decision, you've initiated a program, you've had a review, you've passed legislation three years ago and therefore the problem's fixed. It's just, you're resetting or you're changing the nature of the environment, which people are acting, living, being and therefore, new sets of challenges and version. The question is how you deal with the next iteration of that challenge, right? Reform doesn't stop".^{12b, DPC}

There can be an expectation in society reflected into and perpetuated by the Executive and bureaucratic arms of government that an effective decision is one that solves a problem that the community sees as one (80 % of survey recipients agree or strongly agree with this, just 2% disagree). That effective public decision-makers 'fix' the problem and move on.

This expectation is rarely reflected in reality, however. The nature of a complex system, such as that represented in a society, is that changes at one point inevitably impact another, and not always in a foreseeable way (Meadows, 2008; Sparrow, 2000). Consequently, whereas "*decent public development*" is "*built on bluestone foundations, rather than just sand*",^{22a+} many so-called 'fixes' prove unsustainable in the long term:

"It's not to say they're not good programs but they were they were bequeathed to us out of the issue of the day. We've got a lot of those. And they didn't come to us out of a framework or a policy. We didn't look from the bottom up at where the need was and where the programs are and decide, 'Here's the obvious gap, we should design a program in that area'"^{7c}

In '*The science of 'muddling' through*', Lindblom (1959) argues that while the perfect omniscient, 'rational-comprehensive' public decision-maker would systematically review all of the available information and consider all of the available theory to determine which approach is best, this is 'of course impossible'. Nevertheless, he recognises such an approach is widely espoused within the public policy and decision-making literature. Instead, building on the earlier work of Simon (1955), Lindblom argues for the setting of more straightforward goals, and for past experiences with direct relevance to be relied upon more so than interesting but not directly applicable academic theories. He concludes by arguing as 12b does above, that '*Policy is not made once and for all; it is made and re-made*

endlessly'. In essence, the best that can be hoped for is that the decisions made today hold society in good stead to take another step forward tomorrow, perpetually enhancing the prosperity of the people.

Survey participants indicatively agree with Lindblom 69% signalling that an effective decision 'acts as a stepping-stone, building a base for future decisions', and 53% of survey participants agree that public decisions 'will always need to be made again as contexts change'. The Chief Scientist involved in Chairing its Independent Expert Group, considered CDP to be "*an excellent example of how things should be done*", from the perspective of being an iterative and meaningful process.^(27a) And, reflecting on her time as Victorian Commissioner for Sustainability and the Environment, Kate Auty acknowledged that each time a public decision is made it is building on a foundation so that things are incrementally getting better. Yet, "*that's something that the environment movement really struggles with. ...it's terribly frustrating for people to think, well, you can't just do it top-down or bottom-up. It's gotta be everything and that's simple, but hard*".^(1a)

Acceptance that policy decisions are not forever but evolutionary steps may drive a broader realisation that changes to the policy 'architecture' rather than 'fixes' are what is required.^(4a, 13b) Or, at least drive 'a greater willingness to pilot or trial' on a smaller scale so that there are public and public decision-making cultures of, "*Okay, well, before we roll out large scale programs, maybe these things are worth testing to see, you know, does our logic stack up?*"^(13b)

Regulatory programs, which have a finite legislative life, are a good example of an existing mechanism which invites this acceptance and perspective (Greenstone, 2009). Of course, as is the case with all public decisions, there are ways to circumvent the intent of such mechanisms if one is feeling particularly subversive, but that is all the more reason to faithfully implement the processes that have been created by our forebears - rather than side-step them to suit short-term public sector needs or

resourcing issues-, while also considering new tools that may help drive broader engagement and improved outcomes.

Some interviewees also acknowledged that the need to evolve past decisions can be an opportunity to drive transformation and for Ministers to make their mark, for example, “*to be the government/minister who has fundamentally changed the direction from a historical perspective*”, rather than to, “*just put a sling over it and wrap it, and pretend it didn't exist, so the next government comes along and has to deal with it*”.^(4a) This dichotomy presents as a barrier where Ministers choose to play it safe or do not feel they have the support of their electorate or party. Conversely, where Ministers do see the potential to be part of something great it also presents an enabler, as was the case of the Victorian government with the EREP Program:

“And then when you turn up with an Al Gore, they all want to shake his hand. Right? And he doesn't mind shaking their hands. But he'll ask them some questions. ...[we] brought Al out, that pushed the friendship within government. They didn't want to have to answer the sustainability question. The Treasurer was against it, but he could smell something in the air. And then John Thwaites had a meeting with Al Gore, from my memory and we also talked about bringing Suzuki out. And at that stage people were saying, 'Well you're mad? You know, we don't do this stuff.' And the meeting John Thwaites had was very powerful, changed him, changed him. I wasn't at that meeting, but he got it”.^{24a+}

Policy decisions and political experiences such as the latter are reflective of the larger scale abrupt policy changes recognised in Baumgartner and Jones' punctuated equilibrium theory, which extends Lindblom to argue that incrementalism occurs but so too do more substantial transformative shifts (True, Jones, & Baumgartner, 2007).

Recognising that no public decision is permanent in a democracy - though each will inevitably forever change the lives of some individuals within society-, may help to increase risk appetites and alter risk mitigation regimes. With a higher risk threshold, public decision-makers and their ministers may feel emboldened to try new approaches to old problems. Application of sustainable development and the Sustainable Development Goals to whole-of-government decision-making could be one such approach.

Survey participant support:



Oppose - 1%; No/neutral response -23.7%; Support - 43.3%; Strongly support - 32%

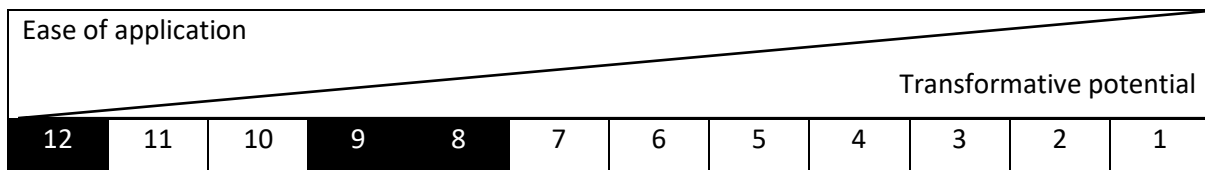
Other ideas this relates to:

- VPS culture that is willing to trial

Influences this could impact:

- Appetite for change
- Complexity
- Culture
- Engagement
- Implementation
- Legislation
- Mandate
- Ministers
- PDMing considerations
- PDMing processes
- Public awareness
- Relationship between bureaucracy & ministers
- Relationship between PDMers & community
- Risk
- Role of PDMers/Govt.
- Scale
- Strategic planning,

Leverage points this could interact with:



Rationale:

12. *“Constants, parameters, numbers (such as subsidies, taxes, standards)”*

Recognising PDMing as an iterative process might increase willingness to try different things and help remove some of the heat from debates around constants.

9. *“The lengths of delays, relative to the rate of system change”*

As a consequence of the impact at LP 12, decision timeframes may also reduce enabling changes to be made at a rate more reflective of the system rate of change.

8. *“The strength of negative feedback loops, relative to the impacts they are trying to correct against”*

An iterative approach provides greater opportunity for feedback on what works and why.

Funding cycles that fit the project

“I would think the most difficult thing we have is funding. We are so significantly hindered by uncertainty around funding....So that’s probably the one thing that would make it easier - if we could come up with a model that was a little bit more fluid to allow for these uncertainties”. ^{14c, DTF}

There is widespread recognition within the public service that funding given for one project or reform is money taken from another and that it is not possible to fund everything.^(5c, 7c, 11b, 13b, 14c, 17b, 26-⊕) There is equally widespread frustration at existing processes not reflecting the realities of sound public decision-making, even within the Department of Treasury and Finance.^(14c) Again, given the finite pool of money and the absolute necessity to balance and publicly report on the State budget at regular intervals, it is understandable that existing budgetary request processes are shorter-term in focus (long-term is defined in Victoria’s Resource Management Framework as ‘5+ years’ (DTF, 2019, pp 34, 95). Nonetheless, these budgetary processes present issues, for example, around political influence, institutional continuity, maintenance of adequately expert staff and policy direction.

The exception appears to be for projects of high political importance, for which there appear to be multiple mechanisms to obtain funds outside of annual appropriations (DTF, 2019, *Financial Management Act 1994* (Vic)). For example, when the CDP project came to undertake its second Environment Effects Statement (EES), the chequebook was very much open, drawing on ‘approved borrowings’:

“I needed also to get an agreement from the government that they were serious about this. And that this wasn’t going to be too hot for them and that in the end, they would say, ‘No, no, we’re not going to proceed’. And I did that by asking the Treasurer directly, John Brumby, if I could get a guarantee for a budget to pay for the EES and he said, ‘Yep, how much do you need?’ and I said, ‘100 million dollars for the EES’, considering the other one cost 12. And his response was really what really got me going because he said, ‘Yep, you’ve got a hundred million. If you need more come back’. He said, ‘This project needs to happen’”. ^{29a⊕}

28a⊕ confirmed this, drawing a comparison between the funding allowed for by the State for the EES and what a private entity would be able to access without the certainty of an approval, noting the risk would be too high for the private sector. He also noted the same process was followed in the redevelopment of Webb Dock, another politically important infrastructure project.^(28a⊕) Arguably,

previous political bruising for the government on the Channel Deepening Project enabled the project's Deputy Director to request a larger funding envelope in which to propose and undertake a more detailed assessment upfront to more fully understand the project area, therein reducing uncertainties and limiting surprises during the project works. The benefits of this budget, however, extended beyond politics and the project to the broader community, leading to a more detailed scientific understanding of Port Phillip Bay being developed, such that the ecosystems of the Bay are now far more widely understood than before the project. ^(26-4, 29a4)

However, while on high profile projects surety of available budget may be present, for more routine programmatic works and policy decisions a firmer governance process applies, with biannual invoicing of expenditures and annual reporting (DTF, 2019), or reporting in-line with grant or fund milestones that can easily fall out of alignment with project milestones:

*"As part of that Sustainability Fund you then need to allocate the funds and put together a list of milestones for each of these projects, **and as soon as I started that project, all those milestones were out.** Because, there was so much uncertainty ... So, once we started the work we were like, 'Ok we've done some assessment. Actually, we need to do some further assessment to address the data gaps we've just addressed'. So that pushes all the milestones out, which changes the whole project plan that we're now stuck with. And I'm required to submit reports on a quarterly basis. **The funding model doesn't work so I'm continually manipulating that,** but you need to get to a point where you say, 'All right, well I've got to settle on a particular project basis, or, a milestone target for each of these projects', but I just can't, you know, [laughs] I just don't have the information".^{14c}*

"I think sometimes that through that [ERSC] process things can be bastardised to the extent where the problem can't now be addressed with the funding that's provided or something else has actually been funded and there's been no work and logic been applied to what that funding can achieve".^{19a}

Funding certainty alters not only because of the mechanics of year-on-year budgets and grants but with changes in government, as incoming governments have altered ideologies and priorities. Changes in government are an inherent feature of Australian democracy and in the absence of a shift to longer-term strategy and policy direction - which can be more robust to changes in government-, or greater community unity and thus pan-partisanship on policy direction, this scenario is unlikely to

change. Nonetheless, it is important to highlight the issues changes in government appetite create by linking politics, PDMing considerations, funding, and resourcing, as illustrated in this exchange:

Interviewer: *Okay, you mentioned there, when the government was interested then there were resources.*

4a: *Yeah.*

Interviewer: *Does it affect your ability to achieve outcomes in sustainable development, but I guess any of the outcomes that you're trying to achieve really, where you don't have that continuity of resources?*

4a: *Oh, God yes! Yeah. Because when you know, under one government, we aren't allowed to talk about climate change. We're not even allowed to write into a brief, could've talked about climate variability and all this other nonsense. So the impact that that has is that, not only do people become incredibly cynical and demoralized but it's a direct reflection that the things that they do well and the things they know a lot about are not valued at all. You know? They just don't, there's no value in it. And then, politically, no interest in progressing any policy, in having any public discussions. And, in fact, there's decisions to withdraw long-standing funding for certain programs, then it says to you that, that this is not a place for a lot of creative policy programmatic implementation. **It becomes a stagnant space and people, therefore, go and work somewhere else.***

Interviewer: *Yep, and then the government changes and you need to get them all back.*

4a: *And you go, 'Where's your resources?' You know.*

Sustainability Victoria experienced these linkages in 2010 when its budget was cut mid-cycle (SV, 2011, p. 39) and remains acutely aware of them today:

"...each year our ongoing core-funding is determined by the Minister. So we've got no guarantee on what each year looks like. ... A few years back, our funding changed significantly and we were asked to provide \$17.5 million dollars funding back. We negotiated out of that and still survived. And in a sense, that's why we are very conscious now of making sure that we can support any flavour of government that comes in".^{19a}

The other situation in which project needs may receive more favourable funding consideration is where they are recognised as "a fundamental duty for government in terms of protecting the community and nobody questions it".^(5c) In Victoria this has become the case in areas like emergency management where the government will set "quite broad policy directions and we the bureaucracy will just go and sort it out. The government will provide adequate funding and so on so these things will just happen".^(5c) However, participants acknowledged that this kind of direction and funding is not present in many other areas, including those more directly considering sustainable development,

suggesting that consensus on the link between the concept and the role it has in protecting the community is still missing.

While a shift to a model where every project has an open-ended line of credit is not possible, nor what public decision-makers acutely aware of the need for public accountability are calling for, other models may be. A straightforward adaptation could be to adopt some of the mechanisms within the Commonwealth *Charter of Budget Honesty Act 1998*, such as the regular publication of an intergenerational report to ensure alignment between policy objectives and financial decisions and encourage the application of medium-term expenditure frameworks (such that rolling budgets exist to allow both certainty and responsiveness). Similarly, in its *Shifting the Dial* report, the PC (2017b, p. 188) noted, “a 10 year horizon on the projected impacts of selected major programs would better inform decision-making”. While this comment was about Commonwealth fiscal policy, it also has value for States and would provide greater policy certainty. For example, if the implementation of the Sustainable Development Goals was identified as a significant program for Victoria, a 10-year horizon would provide greater certainty of funding envelopes until the anticipated end on the Goals. Further, if both the States and Commonwealth had aligned 10-year horizons for implementation of the SDGs, it is plausible that greater clarity of effort and outcome in common and related policy areas would prevail (PC, 2017b, p. 190) - increasing the likelihood of the SDGs being implemented.

Survey participant support:



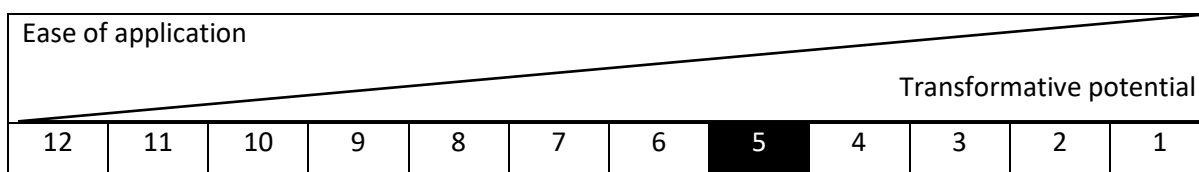
Oppose - 2.1%; No/neutral response - 25.8%; Support - 44.3%; Strongly support - 27.8%

Other ideas this relates to: N/A

Influences this could impact:

- Central & review agencies
- Commitment to concepts
- Economics
- Funding
- Governance
- Implementation
- Institutions
- PDMing considerations
- PDMing processes
- Politics
- Relationship between bureaucracy & ministers
- Resources - capability/capacity
- Strategic planning,
- Time

Leverage points this could interact with:



Rationale:

5. “The rules of the system (such as incentives, punishments, constraints)”

In the short term, alteration to funding cycles would represent a change to which projects and programs receive funding, when, how and why. The flow of funding would be much the same, but the rules that enable it would have changed.

Remove political influence from PDMing

“Number one would be to take politics out of it. Because then, I think, you get a real balanced decision-making and it’s systematic and long-term, rather than the shorttermism that you do tend to get”.^{19a, 5V}

Interviewees recognised the tension of respecting ‘wonderful democratic-ness’ coupled with the ‘problematic’ inefficiencies created by changing political fortunes,^(5c 6b, 7c, 21-) and the impact of partisan politics on the resolution of longer-term and holistic policy issues: “...when ideological issues mean that we can't deal with climate change, for instance, and then we find ourselves as the laggard... then that's an issue”.^(1a)

Participants from both case studies reflected on how concerns about elections or changes in government stemming from them resulted in conversations and outcomes that are less than desirable if trying to develop an evidence base or evolve a program to achieve sustainable development:

- In the Channel Deepening Project, a desire to be able to say that something was ‘done’ before an election created incentives to finalise work more quickly than the science allowed:

“But I remember, I can say this, Premier Bracks talked to us. He said, -oh, it was about nine months before, bit more. And he said, ‘I wanna approve this before the election’.

And I said, ‘Premier, you don't want this approved before the election, because three months from election, you're going to have to make a hard decision. Because the science won't be complete. It will be advanced, but it won't be complete. So, therefore, you have to make a decision with incomplete science. And why would you do that’

And he said, ‘I want to get this done.’

‘I know you wanna get it done. I wanna get it done. But if you go do a six-month penguin study, you can't do it in four months.’”^{28a+}

- For EREP, a change in government resulted in the early sunset of the already unusually short regulatory program. A decision, which associated interviewees say, mean that further advancement of a sustainable development-consistent program with public support from industry was cut short:

“It was cut short and then sort of, I guess, unpalatable politically. You know, **climate change was no longer a word you could say. Again, you couldn't talk about energy efficiency anymore.** So, that all changed with governments. So, I guess, if climate change for that period where you weren't allowed to talk about climate change. If you could change that, and that continued being an issue that was of concern to the government.

Obviously, that might have kept EREPs going on for longer. And then, again, you know, you could review and have another round. You could extend the Regs so that you could capture another [tranche of businesses]”.^{34cē}

The challenge of making long-term strategic decisions such that there is policy continuity and short-term incentives do not drive the process or outcomes but, the decision-maker also remains publicly accountable was a primary concern, because “*you don't want billions of taxpayer dollars being spent with the taxpayer having no say over what they get for their money*”.^{7c} Reflections were made on the impacts of the quality of political discourse and community engagement, the amount of time politicians are afforded to consider complex issues, the alignment of decision-making processes across jurisdictions, and how greater continuity of parliamentary voices might be established, all of which are discussed in detail in subsequent sections of this appendix.^(1a, 6b, 7c, 10a)

Reflections were also made about the value of independent advisers who can hold governments to account by publishing a view not subject to electoral terms, such as the former practice of outsourcing the Chief Scientist and more recently the creation of Infrastructure Victoria.^(7c, 27aⓂ) While the success of Infrastructure Victoria in providing an independent voice to government has already been questioned (A. Carey, 2018; Terrill, 2019), others proposed models based on other independent government bodies whose advice is more routinely accepted by government and the community:

*“It's a bit like, the setting of interest rates at a federal level. You know, **the Reserve Bank just does it, and everyone just thinks, ‘Yep, that's fine’**. We could have a bipartisan approach that said, ‘Here are a key list of environmental problems, environment protection problems for Victoria. Here's the top ten, this is what we're going to do’, both sides sign up to and it becomes the Victorian Environment Protection Strategy, or something like that, it's bipartisan. The Department, EPA etc. are given sufficient funding over ten years to do these things and reports back to the public etc, as it sort of progresses”.^{5c}*

Essentially the latter is what the Sustainable Development Goals provide at a higher-order level. As discussed in Chapter 4, the United Nations, has brought the globe together to agree upon a set of common goals to be achieved by 2030 (United Nations General Assembly, 2015b). As also aforementioned, Australia is a signatory to this but so far its actions toward the SDGs are insufficient (Allen *et al.*, 2019). Thus, while the roadmap has been set, localising this through a set of subnational plans that map back

to the national and international Goals agreed to is now required. Further, implementation planning needs to occur across all of government, not just environmental agencies. There is a need for all of us *“...to park the way we get really locked into oppositional politics about things”*^(1a) and instead to look at the bigger 50-year+ picture. That takes leadership but, it has been achieved before.^(1a, 4a) Where it is, “nobody’s retreating from it” and it makes it easier for public decision-makers to say this is what government has already done well, “now here's the next leadership challenge”.^(1a)

Survey participant support:



Strongly oppose, 6.2%; Oppose, 9.3%; No/neutral response, 35.1%; Support, 18.6%; Strongly support, 30.9%

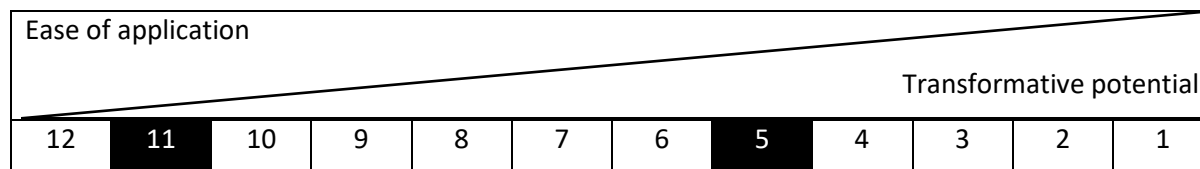
Other ideas this relates to:

- Politicians to use more time on key decisions
- Standard Commonwealth election cycles

Influences this could impact:

- Appetite for change
- Businesses/ non govt. actors
- Commitment to concepts
- Complexity
- Evaluation
- Implementation
- Institutions
- Leadership
- Mandate
- Ministers
- Paradigms
- PDMing considerations
- PDMing processes
- Politics
- Public awareness
- Relationship between bureaucracy & ministers
- Role of PDMers/Govt.
- Scale
- Strategic planning,
- Time

Leverage points this could interact with:



Rationale:

11. *“The sizes of buffers and other stabilizing stocks, relative to their flows”.*

Reducing political influence would increase the buffer between PDMing and temporary political winds.

5. *“The rules of the system (such as incentives, punishments, constraints)”.*

Reducing political influence would represent a change to what is considered and how public decisions are made in many places.

Politicians to use more time on key decisions

“There are way too many decisions of consequence that are made way too quickly in government”.^{10a, DJR}

The amount of time politicians have to consider and make a decision was also acknowledged as a potential place to alter practice in order to drive different outcomes.^(7c, 10a, 15a, 31aë) In particular, a Deputy Secretary within the Department of Justice had much to say on the issue. For example, that:

“...there is not nearly enough of a distinction between the decision-making processes used for comparatively small decisions and the decision-making processes used for big decisions. In other words, high stakes decisions, I don't think, are identified early and given separate and appropriate treatment”.^{10a}

And, that it is often the options analysis that is truncated:

“People don't use enough time, using a deliberative process to really explore the relative merits of different options. There are a whole load of heuristics that people use, at senior levels in the bureaucracy and in the political realm, to come to a preferred option”.^{10a}

His suggestion that more time be spent on important decisions was echoed by 31aë, who argues mechanisms should be put in place to drive more holistic decision-making across government, for example requiring cross-portfolio sign off on major decisions (see discussion in Chapter 6). 31aë estimates such a mechanism may extend the decision-making process by several months but save billions by minimising the perverse outcomes that arise from more siloed thinking. However, he also noted that applying such mechanisms across the whole of the public sector would require the mandate of the Premier and Treasurer as, *“the only people who oversee the entire system”.*^(31aë)

The public might expect that those paid to act on their behalf should be capable of integrating the multifaceted needs of the state and to determine for themselves how much time they should spend on a decision (Medvic, 2013; Young, 2000). For example, the 2019 Australian Election Study indicates the winning Prime Minister was considered more favourably on characteristics such as intelligence, competence and leadership than his counterpart (Cameron & McAllister, 2019a). However, such expectations do not reflect the humanity of these people nor the nature of Cabinet discussions: *“I mean all the Ministers should be able to represent all the interests. But by the time you get people*

around a table for a half-hour, 20-minute discussion in Cabinet, the level of complexity they can get into is very low”.^(7c)

It also fails to recognise that Ministers, while they may have had time to wargame integrated policy solutions while in Opposition, are quickly ‘captured’ by their portfolio. This capturing occurs not because the bureaucrats have been too fearless in telling them what they should think but because they “*don’t have time to talk about all the issues and the complexity*”.^(7c) So,

“If you’re the Health Minister, and you’re responsible whether people are living or dying, you don’t give a stuff about Education. You might understand it. But if you’re sitting with a couple whose child has died and they’re arguing that it shouldn’t have happened. It’s very hard for you to focus on anything except that”.^{31aë}

Politicians will struggle to slow the cycle they are a part of, but public decision-makers can assist them to focus on the decisions of consequence, and similarly to consider the broader situation by putting up proposals that reflect integrated decision-making, for example, through seeking the input of or suggesting collaboration with other portfolios.^(19a, 31aë) Further, given major policy decisions are reviewed through central agencies, if those agencies encourage submissions which do reflect integrated decision-making (e.g. through the provision of training or more responsive and favourable turnarounds), public decision-makers will soon be shaken from their heuristics to provide more integrated proposals, benefitting the whole system, and the government of the day as it delivers more ‘joined-up’ policymaking. Such encouragement, practice and outcomes would arguably be a reflection of the integrated decision-making principle of sustainable development put into routine practice.

Survey participant support:



Strongly oppose, 5.2%; Oppose, 9.3%; No/neutral response, 38.1%; Support, 27.8%; Strongly support, 19.6%

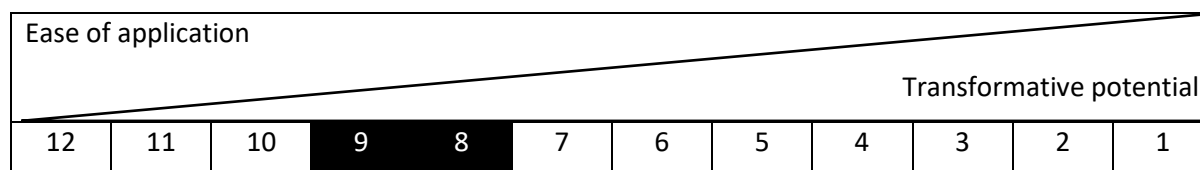
Other ideas this relates to:

- Remove political influence from PDMing

Influences this could impact:

- Cognitive biases
- Commitment to concepts
- Complexity
- Economics
- Framing
- Funding
- Implementation
- Legislation
- Ministers
- PDMing considerations
- PDMing processes
- Relationship between bureaucracy & ministers
- Resources - capability/capacity
- Risk
- Strategic planning,
- Time

Leverage points this could interact with:



Rationale:

9. *“The lengths of delays, relative to the rate of system change”*

Ministers spending more time on key decisions, would alter delays in the system and the amount of time PDMers take in preparing a decision - possibly taking longer to make sure that the proposal the Minister receives is water tight but also possibly taking less time so as not to lengthen the whole process on account of the decision sitting with ministers for longer.

8. *“The strength of negative feedback loops, relative to the impacts they are trying to correct against”*

Ministers and Cabinet are the last stop on a decision, providing them with more time to thoughtfully consider the merits or otherwise of what is before them would provide greater opportunity for bidirectional information exchange to improve public outcomes.

Increased discourse to discourage one term govts

“...that our political discourse and develops to a level where single-term governments become rarer again”^{6b}, DELWP

A Higher-Level Official raised this idea in passing, after suggesting a great many ideas on how to create the settings necessary for public decisions to endure. In his view, the rise of single-term governments “pose big challenges for the longevity of public decision-making”.^(6b) The chop and change of Victoria’s Metropolitan Planning Strategy is given as a manifestation of this:

“So, under the Bracks/Brumby Government, Melbourne 2030 was developed. Then under Minister Guy, we did Plan Melbourne, and then Plan Melbourne was refreshed under this government. Now, plan hierarchy is a pretty stable thing, you’ve got a CBD, you’ve got activity centres that operate under a hierarchy. There are some differences, undoubtedly between the different party’s views of city structure, but they’re not worlds apart, but there’s this desire to put your own kind of, you know, stamp on the city. And if government is changing every four years, then it kind of makes a bit of a mockery of a city structure that’s meant to have a 30-year lifespan. And that has impacts on business confidence and on resident’s certainty, and, ultimately I think on economic activity and on investment decisions and the like. So there’s real impacts to that.

And I don’t think there’s going to be much hope of trying to get people to buy into them from both sides of the aisle. But if you have people in government for longer then these documents and these plans can have more impact over a longer period of time. They become more embedded in the way things work and therefore, kind of take on almost a helpful inertia of their own”.^{6b}

His argument was corroborated by a mid-level official: “Governments used to assume they’d get two terms, and no-one assumes they’re gonna get two terms now”.^(7c) Such examples clearly have parallel implications for sustainable development and the Sustainable Development Goals: If governments are not in power for long enough to create momentum and properly embed action on SD or the SDGs and are instead regularly reframing programmatic action concerning them, it stands to reason that stakeholder confidence and appetite for the concept and Goals may waver. Further, where the appetite is weak or weakening, it reinforces a lack of action in the sustainable development arena as an acceptable public decision and outcome.

The role of broader public discourse in influencing understanding of the processes and constraints of public decision-making, *and* choices to retain or remove elected government is not widely documented. Thus, extensions have to be drawn between various literatures to support this theory.

While some of the literature explores problems with collective-action and the rationality of political engagement (Somin, 2014), other deliberative democracy literature considers that through greater participation in public decision-making citizens become more engaged in decision-making and aware of the trade-offs and limitations public decision-makers face (Ackerman & Fishkin, 2002; City of Melbourne, 2015). Coupling these latter findings with work such as that of Adams, Clark, Ezrow, and Glasgow (2004) - which found political parties were more responsive to changes in public opinion than prior electoral results-, and that which documents altered political behaviour and drivers of those seeking re-election (e.g., Bernecker, 2014; Owen & Davidson, 2009; Whitfield & Therkildsen, 2011), provides ground for the formation of new hypotheses:

If public opinion is of greater import to politicians than past electoral results, and public understanding of PDMing processes can improve through their participation in them, increasing public dialogue and engagement to draw attention to the limitations of single terms (see Figure 2) may well result in greater appreciation of the need for successive terms in office as was suggested by 6b. *Or*, greater policy continuity across governments irrespective of political persuasion, i.e. lowered appetite or indeed no appetite for repetition of prior works but rather reforms only where evidence suggests there is a need to alter past strategic decisions.

If such a hypothesis were confirmed as valid, then it may also add support to the proposals of several participants that longer-term strategies be put in place for departments to work toward rather than shorter-term campaign policies that do little to drive meaningful societal progress.^(3a, 5c) The Sustainable Development Goals are an example of a framework which supports such strategies.

In doing so, caution would also need to be exercised such that there is no misconstruction of this as a call to retain the same parties or people in power *ad infinitum*. Similarly, those in power would need to remain accountable to the broader public and prevented, where possible, from developing what has been termed, '*Hubris Syndrome*' (Owen & Davidson, 2009). However, this might also be overcome

through greater civic engagement, which may correspondingly increase public demand for improved elected representatives accountability (e.g., Sarker & Hassan, 2010). It could also allow for public decisions to become “*more embedded in the way things work and therefore take on almost like a helpful inertia of their own*”,^(6b) such that change occurs only when it is needed leaving more time to be spent on building the case for new decisions in pursuit of societal progress rather than a perpetual rebadging of the same decisions under governments of different political persuasions.

Survey participant support:



Strongly oppose, 5.2%; Oppose, 7.2%; No/neutral response, 41.2%; Support, 20.6%; Strongly support, 25.8%

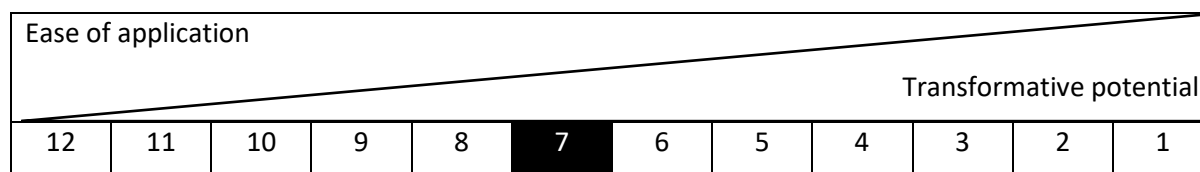
Other ideas this relates to:

- Increased emphasis on engagement and consultation
- Standard Commonwealth election cycles

Influences this could impact:

- Alignment of SD & PDs
- Appetite for change
- Businesses/ non govt. actors
- Commitment to concepts
- Election cycles
- Framing
- Implementation
- Institutions
- Mandate
- Ministers
- PDMing considerations
- PDMing processes
- Politics
- Public awareness
- Relationship between bureaucracy & ministers
- Relationship between PDMers & community
- Resources - capability/
- Strategic planning,

Leverage points this could interact with:



Rationale:

7. *“The gain around driving positive feedback loops”*

At present a lack of certainty around length of office beyond one term appears to be driving a lack of commitment to public decisions with a longer-term focus, which drives public focus on shorter-term commitments leading to more flippant ballot box outcomes. Encouraging greater public discourse could act to break or alter this feedback loop.

Consistent structure within legislation

"I think, we get very confused in Victoria about the way different Acts and different entities are established, and therefore what is the way that we are governed in relation to organisations. We've got the major departments and we've got state agencies and then we've got bodies and we've got this and we've got that and there's just too much confusion when in fact we're all public servants alright? I just can't imagine the amount of time that's wasted with people trying to work out what each of the bodies etc. do... there's just no level of consistency [or authorising Acts]".^{16b, DELWP}

In Victoria, the Office of the Chief Parliamentary Counsel drafts all government Bills and almost all amendments to them, and has a publicly available handbook on drafting (OCPC, 2019). Additionally, the Office of the Commissioner for Better Regulation also has a guide and provides one-one guidance to agencies developing subordinate instruments (OCBR, 2016), and the *Interpretation of Legislation Act 1984* (Vic) provides clarity on how legislation ought to be developed and construed. So, one would expect consistency between legislative tools of equal standing. Nonetheless, variation persists in interpretation, ideas on best practice, the desired outcomes of legislative tools, and the degree of input from line agencies and non-legally trained staff (who are often heavily involved in the drafting of legislation). It could be argued that this variation reflects the flexibility differing areas of the law demand, which may be why this suggestion recorded the most opposition from survey respondents. However, the interviewee who raised it argues consistency is needed to address the somewhat flip-a-coin nature with which decisions can be made, and that luck and serendipity rather than any particular best-practice governance position can determine outcomes, particularly for legislation relating to the establishment of new bodies:

"I think people are trying to be clever actually. I think that they want to establish a new body and they go 'Is this going to be a Commission? Is it going to be a Statutory Authority? Is it going to be a body that sits underneath the Department? Is it independent? Does it have a Board? Does it not have a Board?' They just all get confused and I think it just depends on who what side of bed somebody gets out of. Drives me nuts".^{16b}

Survey participant support:



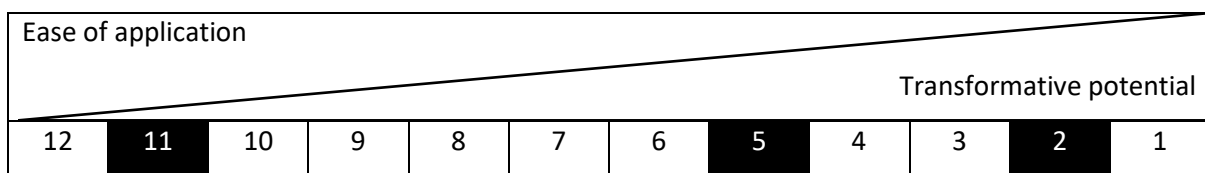
Strongly oppose, 2.1%; Oppose, 18.6%; No/neutral response, 36.1%; Support, 26.8%; Strongly support, 16.5%

Other ideas this relates to: N/A

Influences this could impact:

- Cognitive biases
- Governance
- Institutions
- Legislation
- PDMing considerations
- PDMing processes

Leverage points this could interact with:



Rationale:

11. *“The sizes of buffers and other stabilizing stocks, relative to their flows”*

Legislation is a stabiliser (see LP2), consistent legislative structure would further stabilise the system.

5. *“The rules of the system (such as incentives, punishments, constraints)”*

Legislation determines the structure and malleability of the system, rules around the structure of the legislation would impact on this function.

2. *“The mindset or paradigm out of which the system—its goals, structure, rules, delays, parameters—arises”*

While itself set by the mindset of those who write it, legislation also sets non-negotiables and the mindsets of those who implement it, consistent structures would extend this to create more consistent thinking across the VPS.

Consistent VPS corporate governance

"We should have the ability to have common systems across government in those core things. You know, finance, HR, even the technology platform. All of that. The basic fundamentals so that at any point in time, a public servant can go, "Today, I'm working here. Tomorrow I'm in this new Department, turn my computer on, log in. Same everything, same desktop, same systems to get paid, same way to apply for leave, same way to book a car, same way to get approval for financ[e]".^{20a}

The personal characteristics of PDMers were raised by a senior official advocating for consistent governance structures across the VPS. As he reflected on repeated attempts to reform shared services, he concluded that these are rarely successful because, "*...when things start to spin and get a bit too far out. They [bureaucrats] want to pull it back to the centre and they want to pull it back to their own absolute control. And everybody reckons they're different*".^(20a) Further, he noted that:

"...your sort of Directors of Corporate Services or your lead Dept. Secs with that responsibility couldn't just control everything in house. And that's a big threat for public servants, to let go. And also it's a big threat to be held accountable for defining what it is you actually need, the sort of level you need the service at, how much you're gonna pay for it, and that you're actually monitoring that bottom line. In the private sector, you live and die by your bottom line. Here the bottom line disappears into budget paper number three. And, you know, a [shared service centre] type concept requires a level of accountability, that I don't think people are comfortable with".^{20a}

Information and communications technology, library, and building management services within the VPS have been centralised for some years now (e.g. <https://www.ssp.vic.gov.au/>) and several departments share human resources capabilities (Shine, 2010). Yet, these services are not consistently applied or advertised and the efficiencies of being able to have a decision-maker log-off at one agency and seamlessly log-on at another the next, remain out of reach on many fronts (Dollery & Grant, 2009; pers. comms VPS Officials). Such costs impact not only on the time available for new starters to get into the work they were hired for, but also that of those overseeing them as their energies are diverted from resolving public issues to administrative duties (*pers. comms VPS Officials*).

On the other hand, shared services themselves have come under much scrutiny for the costs they incur relative to the savings they deliver. For example, Elston and MacCarthaigh (2016) identify five areas in which cost savings may not be as anticipated. Centralised services also run the risk of being outsourced which, as discussed in Chapter 2, is currently diminishing in favour due to the hollowing out of government skills and associated costs (Donaldson, 2016c). It is thus not surprising that this suggestion yielded mixed support. On the one hand, it promises to free up resources such that they can focus on more complicated public decisions, on the other, it has been shown to have a neutral or negative impact on government bottom lines (Dollery & Grant, 2009).

Survey participant support:



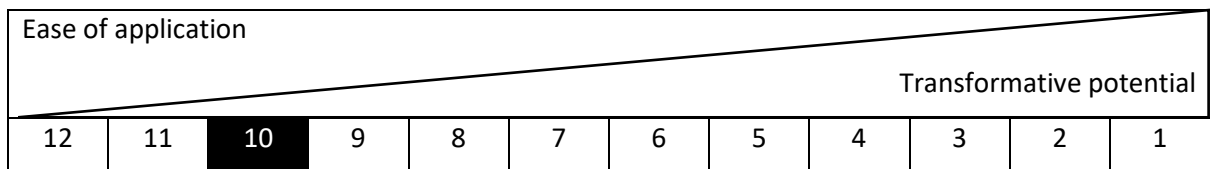
Strongly oppose, 5.2%; Oppose, 9.3%; No/neutral response, 45.4%; Support -15.5 %; Strongly support, 24.8%

Other ideas this relates to: N/A

Influences this could impact:

- Funding
- Governance
- Institutions
- Resources - capability/ capacity

Leverage points this could interact with:



10. *“The structure of material stocks and flows (such as transport networks, population, age structures)”*

Corporate governance structures determine who does the work, where, at what cost, creating consistency within them will aid the rate of flows.

Application of SEEA in CBAs

“I think there's a very significant change that could be made, if we were able to get environmental economic accounting embedded in decision-making within the Treasury frame that meant that it was possible to put a value, -an economic value-, on all of the environmental or ecological goods and services that are used in the economy but aren't currently recognized”^{4a}, DELWP

The concept of the System of Environmental Economic Accounting ('SEEA') was raised at the 1992 Rio Earth Summit and steps to achieve it set out in Agenda 21 (United Nations, 1992, see sections 8.41-8.54). Subsequently, the SEEA was developed with the input of many hands, including the United Nations, the World Bank and the Australian Bureau of Statistics, and guidance on how to apply it finalised in 2012 (United Nations, European Union, Food and Agriculture Organization of the United Nations, International Monetary Fund, *et al.*, 2014; United Nations, European Union, Food and Agriculture Organization of the United Nations, Organisation for Economic Co-operation and Development, & World Bank, 2014). A Deputy Secretary illustrates the value of the SEEA as follows:

“If you had a chart of accounts that said to you, you're gonna invest dollars in this decision but the downstream impact [is x]. Let's say, for example, we're gonna expand commercial forestry and we're gonna take that forestry into the protected catchments [of] Melbourne's water source. Right. But you're environmental economic accounting said, 'Well actually if you do do that, the impact on water purification and water supply over the long term will tell you that the value of the water and more importantly the value of the filtration service provided by that stable intact catchment is far greater than the value that you're gonna derive out the end by way of wood. Because you're gonna have to replace that filtration service with a filtration mechanism like a reverse osmosis plant and something that does all of the purification and takes all the bugs out, so you're probably gonna have to use UV and all those other things they end up having very high intensity, like a desalination plant to replace the services provided by a closed intact catchment’”^{4a}.

The Australian Bureau of Statistics has produced national accounts incorporating SEEA since 2014 (ABS, 2014, 2019). Further, in 2016 Australia's Environment Ministers agreed on the need for a common approach and in 2018 a National Strategy and Action Plan to implement Environmental Economic Accounting across Australia was released (Commonwealth of Australia, 2018). The latter appears to be a complement to work done in subnational jurisdictions, for example: The Australian Capital Territory (ACT) published a proof of concept for how SEEA could be used in State of the Environment reporting (Smith, Summers, & Vardon, 2017); and, following some positive pilot projects,

the Victorian Department of Environment, Land, Water and Planning (DELWP) developed a five-year strategy to adopt SEEA to, “*improve reporting, decision-making and evaluation by DELWP, portfolio partners and the Victorian government*” (DELWP, 2015). This strategy provided for interim and post-strategy reviews. A search of the DELWP website was unable to locate any such reviews, suggesting perhaps State-momentum for the strategy was lost - DELWP representatives confirmed that no such reviews had been undertaken as of January 2020. It could also be the case that interjurisdictional efforts led to a pausing of State ones, however, the ACT remain active in supporting the tool and seeking opportunities to use it where possible (Australian Capital Territory Government, 2019; Office of the Commissioner for Sustainability and the Environment, 2020).

Even with this encouraging national and subnational interest, when surveyed in early 2018, PDMers associated with the VPS still lacked awareness of SEEA; only 60 out of 97 people gave their views on this idea for increasing the longevity of public decisions received the second lowest number of responses. Interviewees who had a view on environmental economic accounting or the Treasury frame more generally talked to the following factors as barriers and enablers:

- Political appetites for broader conversations:

“When all of the cards have fallen the government's way, economically - and, for that matter, politically - it's easier to have a fruitful discussion about social justice outcomes, environmental outcomes, and other things. When they're not falling that kind of way, Maslow's hierarchy kind of kicks in there a bit, and so you end up with very basic considerations about, ‘How much does it cost? What could we otherwise spend the money second-lowest? And what's the outcome from the perspective of people getting jobs and investment coming to Victoria?’. So you end up with very, sort of economic rationalist thoughts being brought to bear over, or criteria being brought to bear over decisions. It's not a proposition to have a sort of multi criteria analysis that puts together, you know, ‘Oh look, we're going to achieve all these sustainability and environmental outcomes’, because it's more considered to be- it's not my view- but considered to be more of a moral challenge and something we can kick down the road, whereas the real meat and potatoes of government today is about jobs and investment”.^{4a}

“We also need to be seen to be giving all the people of Victoria the best outcome. So, we have examples of, well, hang on, this group here wants to turn this place into a park, and they want us to hand it over to council. Well. That's great for the local community but that doesn't really provide any benefit to the rest of Victoria. So, ...it probably comes down to the government of the day, what [outcome] they would prefer to see”^{14c}

- The training and mindset of Treasury economists:

“You’ve gotta look at what dominates the intellectual frameworks of senior bureaucrats. And for quite a long time now that has been the discipline of economics. And it’s been economics of a certain variety. One might say quite a narrow kind of liberal-neo-liberal variety that is being taught in the major economic departments of our universities. ...There are very few people around who are knowledgeable about environmental economics. ...if you want to advance the ideas of sustainable development, you’ve gotta look at what people are actually taught as undergraduates”.^{10a}

*“And Treasury, in particular, was outraged over the proposal... **There’s a particular type of economic thinking where this just doesn’t make sense** if you’re a Treasury official, “Yeah, that’s fair enough, for an EPA to do that [regulate polluting industries], but this [EREP] is, you’re really starting to mess around with markets without proper reasoning”*.^{31aě}

*“[Treasury] simply don’t see this. **Sustainability is not in their lexicon**. Everything has to be about economics and about the systems around economics. And if you can’t see clean air, you can’t count it. And you can only count it when it gets really, really bad. And then, I mean we do count it ‘cause we do know what the cost of hospital admissions and things like [that are], they’re not keen to pick that up”*.^{15a}

- Acceptance and familiarity with differing accounting processes:

*“Having been in the private sector for a very long time, I understand how accounting standards work. Our companies live by accounting standards. We report by accounting standards. They’re very mature now, they are international. Whether I’m in France or here, we’re effectively reporting in the same way in terms of the way the numbers work. The way we account for our assets, the way we account for our expenditure, the way we account for our revenue is a system which is now an extraordinary system, which means that we can have confidence. ...**We have no way of doing that for externalities and until there is**, the community will - and I suppose I’m speaking to it in the environment sense here [too] - the community will continue to bear the public policy cost of not being able to count the externalities”*^{15a}

- Treasury processes driving behaviour around a perception that their only interest is the financial budget bottom line:

*“Treasury will have a focus on why should we spend money on this? So **you have to really justify this**”*^{5c}

*“Every year ... we try and bid for our dollars to achieve a certain government outcome. So we influence around that, there’s all these wonderful templates, etcetera, that we use for that, and **a lot of that is still about influence**”*.^{19a}

*“It starts off with the getting the funding through the business case process but then there’s some gateways. So, you know, theoretically, that’s where this level of detail would be picked up. But **it comes down to the people and what they’re putting forward, and the people in Treasury** of how much they’re recognising that dimension and you know giving it time and energy”*.^{9c}

*“Treasury's usually the only one that's saying these things cost a lot of money. And there is a budget constraint that exists and you have to trade things off, the government has to trade things off. It's got a limited pot of money and it's got a set of proposals or ideas that exceed that available pot of money
 ...So you're effectively trying to say, ‘Well, okay, so we want to spend money to improve the environment and we want to spend money to improve the health of, Victorians. We want to [spend] money to improve the quality education for their children and we want to spend money to reduce the commuting times into the city or to wherever they may need to get to’. All of those are worthy things to try and do, but you can't do all of them. So **how do you make choices amongst those?** You make choices by assessing the merits of each one in isolation”.^{13b}*

- Building and using internal and external stakeholder relationships to convince Treasury and Cabinet to consider broader perspectives:

*“EPA's strength is to line up business people and say, ‘No this is okay’. So if you look at all those Bills that we pass like the landfill tax Bill and others, a lot of my job was to work with businesses, the big trade bodies like PACIA and AiG and a lot of the companies did say, ‘Yeah, this is okay, we can live with this’. Or sometimes even say it's good. So, **if a 28-year-old Economist in Treasury says this is gonna damage the economy, and the head of Australian Industry Group representing 4,000 members says, ‘No this is okay’, what's a Minister gonna [do]?”**^{31a&}*

*“John Thwaites was a good carrier of the messages and the thinking as well. So, he was pretty much on board. He could feel it, smell it, taste it. ‘This makes sense. Even if I don't know how to do it and what drives it’. And **it took us a while but the Treasurer agreed that we should bring about that regulatory setting, and that was only after I took it to those who do the regulatory processes...** [who] said, ‘You're crazy if you don't do this’.
 ...So we used VCEC saying to the Treasurer, ‘I'll go with it if you go with it. And we'll walk and talk as we go. We're flexible enough’. And in the Committee room, for the Cabinet they supported that”.^{24a&}*

- Taking personal responsibility to frame proposals and reset the narrative to Treasury:

*“...everyone sits and whinges and moans about the fact that, ‘Oh, but it doesn't matter what we try to do as regulators because Treasury just tells us what to do’. Well, Treasury's narrative about what regulation's all about is the narrative. Because we don't have an alternative one. So who else is gonna come up with a narrative? Who else can? It's us. So, get off our arses as regulators and **let's develop our own narrative about what good regulation is”**.^{17b}*

There was also consensus that existing processes can overlook externalities and opportunities. And, that a lack of communication from both those proposing public decisions and those in Treasury reviewing them can result in poorer public outcomes, misunderstandings of agency role, and opportunities to improve public outcomes within the State's budget.^(9c, 13b, 15a, 18a)

*“And **there's a lot of opportunity costs. That are definitely not captured.** You know, you can build something to eight star or nine star. And have really comfortable, healthy, happy tenants, possibly - a lot of assumption in there too. Or you can build something to*

six star. And it's just a different outcome along the building's life cycle, but you still make your time and your cost objectives, so".^{9c}

"I think repeat engagement goes both ways: [To] sort of say, 'Well, Treasury are not just sort of these heavy handed, hard-nosed bunch of economists and bean counters that sort of sit in an ivory tower and just make pronouncements from up high', to go for a caricature. So engagement, sort of, demystifies that. But it also cuts the other way as well, you know, sometimes Treasury needs to understand where and how ideas are being generated from. 'cause sometimes the value is not gonna be just about finding ways to say, 'No', but it's gonna be finding ways to go, 'Well actually that, sort of, make sense. Can we help to make that bid better?'"^{13b}

Some of the broader suggestions raised in this appendix can seem a little obtuse or hard to achieve without access to experts who fully understand and can explain them to public decision-makers wishing to use them. When it comes to SEEA, Victoria is well placed to execute this tool. Subnational and national strategies have been developed, architects and public servants expert in the development and use of SEEA are easily accessible and able to talk to the concept in lay and technical terms (e.g. <https://www.ideeagroup.com/about-us/>), and pilot trials have proven the concept. Essentially, all public decision-makers wanting to learn more about or apply SEEA need do is ask. As Vardon, Burnett, and Dovers (2016) conclude, not asking risks a lot more:

"Without integrated environmental-economic accounting the risks of most current approaches remain: that the impact of the declining state of the environment on the economy and human wellbeing more generally will be under-appreciated and that the choice of remedies to arrest the decline will be sub-optimal".

Survey participant support:



Strongly oppose, 1%; Oppose, 2.1%; No/neutral response, 63.9%; Support, 18.6%; Strongly support, 14.4%

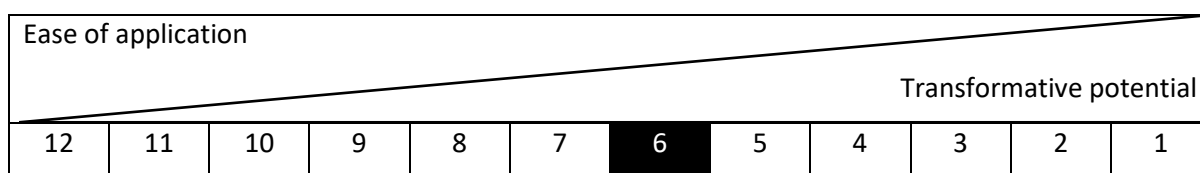
Other ideas this relates to:

- Increased emphasis on data
- Environmental data analytics capability

Influences this could impact:

- Alignment of SD & PDs
- Appetite for change
- Central & review agencies
- Cognitive biases
- Commitment to concepts
- Complexity
- Culture
- Economics
- Evidence
- Framing
- Funding
- Institutions
- Paradigms
- PDMing considerations
- PDMing processes
- Relationship between bureaucracy & ministers
- Relationship between PDMers & community

Leverage points this could interact with:



Rationale:

6. “The structure of information flows (who does and does not have access to what kinds of information)”

Changing what is considered to be important in forming public decisions and how those things are considered represents new flows of information within the system - where people have previously thought it not possible to include intrinsically-valuable things in cost-benefit analyses there is now an internationally recognised method for doing so.

Standard Commonwealth election cycles

“...electoral cycles really do challenge a lot of decision-making. It forces decisions to be made faster than you would ideally like. It forces decisions to be made with shorter term horizons than you would like. And there's not really an obvious way to get around some of these things. Four year electoral terms in in the Commonwealth at least. That would help”. ^{7c, DET}

While this research is focused on Victoria, politics at the Commonwealth level does impact public decision-making at the State level, as discussed by Parkin and Anderson (2007), and illustrated in the early cessation of the EREP program (Armytage *et al.*, 2016, pp. 155, 159; Commissioner for Environmental Sustainability, 2013, p. 350), and the creation, amendment and repeal of Victorian legislation concerning climate change: The *Climate Change Act 2010* (Vic) ('CC Act') was reviewed and amended two years after its introduction in response to the introduction of the Commonwealth *Clean Energy Act 2011* ('CE Act') (State of Victoria, 2012). Subsequently, governments changed at both the Commonwealth and State level, leading to the repeal of the CE Act in 2014, followed by a second independent review of the CC Act in 2015, and the introduction of the *Climate Change Act 2017* (Vic) (State of Victoria, 2016).

As noted in Chapter 2, Victorian elections are required by law to occur on the last Saturday in November every four years. The Commonwealth arrangement is somewhat different: Section 28 of the *Commonwealth of Australia Constitution Act 1900* sets Commonwealth parliamentary terms of the Lower House, “for three years from the first meeting of the House, and no longer, but may be sooner dissolved by the Governor-General”; Australia follows Westminster tradition in that the Prime Minister (PM) determines the date of the election within these parameters, though Section 158 of the *Commonwealth Electoral Act 1918* also requires it be on a Saturday. Thus, while the election must be held within three years of their sitting as Prime Minister of the Parliament, unlike the Victorian Premier, the PM has some control over when to hold the election. Owing to changes to Australia's Constitution only being possible by the passing of a referendum, and just 8 of 44 referenda held to-date having been passed, these circumstances are unlikely to change (AEC, 2012).

The benefit to the incumbent of flexible election dates is that they can nominate a date that they perceive will give them the highest chance of electoral success. The disbenefit from a public decision-making perspective is that it creates uncertainty around the available window in which to create, amend, grow support for and implement policy.

“Governments used to assume they’d get two terms, and no-one assumes they’re gonna get two terms now. That means they have to get everything done that they want, every change they want to make to society to make a better place, they have to do it four years. That’s their window. But to get done in four years, really, they have to have [everything] done in three years. If you’re in Canberra, it’s two. So, that really, really affects decision-making”^{7c}

Delivering transformative policy at the State level in areas which may overlap with national heads of power, such as action to meet international climate change commitments or the implementation of the Sustainable Development Goals, can be especially difficult. It requires an astute political hand to attempt to align the policy and political ducks within rarely aligning narrow windows of policy-focus in the election cycle - consider further Figure 2, or the decision to reduce the length of the EREP regulations and the reflection of several interviewees that this was in anticipation of Commonwealth programs.^(32bě, 33cě, 34cě)

Both lengthier Commonwealth election cycles, and standardised electoral periods, would widen and provide clarity to the window in which public decision-making can occur across both jurisdictions. Which could, in turn, reduce efforts spent on anticipating political gameplay and enable decision-makers to get on with the job of developing and implementing government decisions, and backgrounding frank and fearless advice.

Survey participant support:



Strongly Oppose - 4.1%; Oppose - 7.2%; No/neutral response - 59.8%; Support -12.4 %; Strongly support - 16.5%

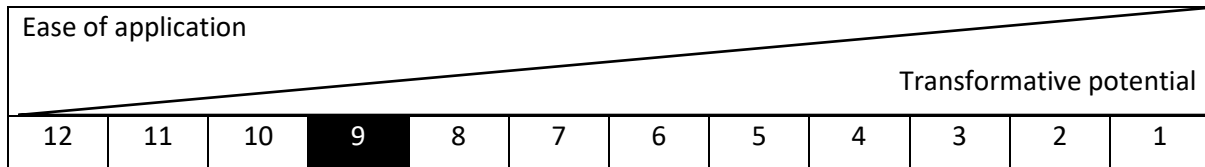
Other ideas this relates to:

- Increased discourse to discourage on term governments

Influences this could impact:

- Complexity
- Election cycles
- Jurisdiction
- Legislation
- Mandate
- PDMing considerations
- Politics
- Strategic planning,
- Time

Leverage points this could interact with:



Rationale:

9. *“The lengths of delays, relative to the rate of system change”*

The time delay between Commonwealth action, inaction, support or lack thereof all impact upon Victorian decision-making when issues are interjurisdictional in nature as is often the case in the achievement of international agreements.

Partial dissolution rules across Parliament

“I mean it's kind of an inevitable intention of a parliamentary system of government as well. So where you have your Executive drawn from the party that controls the Lower House of parliament. As soon as you have a change of government you inevitably have such a shift in power, assuming you don't have a minority government, because you know they can impose their policy will legislatively.

So, I mean obviously the Upper House acts as a bit of a check and that ensures a bit of longevity and changes and can kind of mitigate that seesawing nature of changes in government to some extent. That's why it's really good that you have a different voting system and only half elections in the Upper House”.^{6b, DELWP}

The survey option of partial dissolution arose from the latter quote, which does not explicitly suggest it, but does suggest the significant shifts in power can create issues. 6b described many more innovative ideas in their interview, and understanding the breadth of support for these provided insights into the broader public sector and the scale of change that people are willing to consider.

This suggestion is, however, the only one for which there was more survey participant opposition than support. It also received the largest neutral response. This data combined with the fact that this was a passing comment indicates that this is not a solution to focus on. Nonetheless, it does highlight the challenge of maintaining consistent decisions amidst changing directions from the Executive.

Survey participant support:



Strongly oppose, 5.2%; Oppose, 8.3 %; No/neutral response, 81.4%; Support, 3.1%; Strongly support, 2.1%

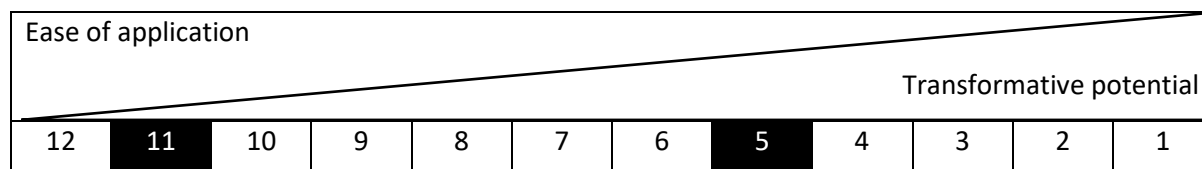
Other ideas this relates to:

- Remove political influence from PDMing

Influences this could impact:

- Election cycles
- Mandate
- Ministers
- PDMing considerations
- Politics
- Relationship between bureaucracy & ministers
- Relationship between PDMers & community
- Time

Leverage points this could interact with:



Rationale:

11. “The sizes of buffers and other stabilizing stocks, relative to their flows”

How long parliamentarians remain in power for is a system buffer.

5. The rules of the system (such as incentives, punishments, constraints)”

Changing how long parliamentarians remain in office for would represent a significant change to the rules of the system.

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