Issues Paper No. 2

Is All Stewardship Equal?
Developing a Typology of Stewardship Approaches

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Issues Paper 2: Is All Stewardship Equal? Developing a Typology of Stewardship Approaches

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EXECUTIVE SUMMARY

The concept of “stewardship” is increasingly being looked to as a driver of contemporary public service practice in Australia, and elsewhere. The diversity of contexts in which stewardship has arisen suggests a concept that is capable of broad application to achieve many outcomes. But, an alternative reading could sound warning bells, suggesting a concept that is being applied beyond its logical and theoretical constraints.

In this Issues Paper we review the evidence relating to stewardship to explore what the existing literature tells us in terms of what stewardship is, how to steward effectively and the types of outcomes a stewardship approach is capable of producing. In doing so we find a limited evidence base for a universal concept that can be meaningfully applied across disciplines. Although much has been written about stewardship and its importance, rather less is available in terms of agreement about what this concept is and how it operates, and a solid evidence base that clearly demonstrates the outcomes of stewardship practice is largely absent. In this review we integrate what evidence exists to explore this important concept but note that further research is required to fully articulate what stewardship is and how it could most effectively operate in practice in different contexts.

We identify that no single meaning of stewardship can be found and its definitions vary across disciplines and policy fields. Although it is applied in a diverse range of ways, the concept does have a set of universal features: all stewardship models involve taking responsibility for something, within a context of constrained resources and for particular beneficiaries. In terms of who is stewarding, we identify that in a public policy context it is typically government agencies, but not exclusively – other partners play important roles in stewardship. In the context of the public service, stewards are not typically individuals, but collections of individuals who may or may not share similar sorts of goals and aspirations.

In terms of what is being stewarded, we find great variation across policy fields and different domains of practice. What is common across these fields and domains can be classified as stewardship processes, outputs and outcomes. We note that these classifications are linked in important ways and when operating effectively could reinforce one another in a virtuous cycle. The paper also explores the ways in which stewardship can be achieved, noting that a great array of different activities are undertaken under this broad umbrella. No single process or set of practices is associated with stewardship in a distinctive sense. Many of the kinds of activities that we find related to stewardship can also be observed in traditional approaches to the design and delivery of public services. What appears to be distinctive, however, is the context in which levers are used and the relative balance between the types of approaches.

Given that we did not find a single theory able to integrate different perspectives on stewardship, we have developed a typology of four composite stewardship approaches - the Guide, the Gatekeeper, the Giver and the Maximiser – each containing different perspectives in terms of what stewardship should achieve and how it can operate. We demonstrate how these approaches have subtle but important differences in terms of the ways in which they view the purposes and processes of stewardship. We argue that some of the challenges we witness in terms of stewardship approaches seem to stem from the interaction between different perspectives on what stewardship is and how it should operate.

Having set out what we know about stewardship, drawing on the research evidence, we consider where next for stewardship, outlining the range of gaps in our knowledge concerning this important concept. We conclude by pointing to the urgent need to fill these gaps with high quality interdisciplinary research.
INTRODUCTION

The concept of “stewardship” has recently risen to prominence and is considered an important driver of contemporary public service practice in Australia and internationally. The Productivity Commission considers it core to the reform and delivery of human services in Australia (Productivity Commission, 2017); the Commonwealth Superannuation Corporation identifies it as the crux of the trust relationship with its members (Commonwealth Superannuation Corporation, 2017); the Australian Future Fund has adopted it to guide its long-term asset strategy (Future Fund, 2017); and the Department of Prime Minister and Cabinet describes its entire role in stewardship terms (Department of the Prime Minister and Cabinet, 2017). Although stewardship might seem like a new term in a public service context, it is, in fact, one that has been around for some time and has been applied in a number of ways over the years. The diversity of contexts in which stewardship is central suggests the concept is capable of broad application across an array of outcomes. But, an alternative reading of this situation could sound warning bells, suggesting a concept that is being applied beyond its logical and theoretical constraints.

Part of the attraction of the term might be that it exhibits strongly normative dimensions, as a seemingly positive and desirable state. On a first read, “stewardship” connotes benevolent behaviour, working for a higher purpose and even self-sacrifice (Worrell and Appleby, 2000; Hernandez, 2012). Stewards accept responsibility for generating beneficial outcomes for a broader class, often in the absence of personal reward. As a term, stewardship has its linguistic roots in medieval times, and arguably predates these as a practice of First Nations people (Worrell and Appleby, 2000). Despite, or possibly because of, this extended history we see a lack of consensus regarding the range of activities that stewardship comprises, who should undertake these activities in different contexts, what it should achieve and how it should operate. If stewardship is to play a central role in the design, delivery and oversight of our public services, it is important that we understand this concept, have a sense of the tools available to support these processes and insight into the evidence base surrounding it. From our review of the literature we discover that not all stewardship practices are equal and develop a typology of stewardship approaches that can help inform the practice of stewardship in contemporary public services.

In this Issues Paper, we aim to advance the concept and utility of stewardship in contemporary public sector practice. We do so by reviewing the literature (see Appendix 1 for details on the method used for the review) to explore what stewardship is, what is being stewarded and by whom and how stewardship is achieved. Having identified different ways of thinking about stewardship, but a lack of an integrated model to bring these different theoretical perspectives together, we set out four stewardship types (the Guide, the Gatekeeper, the Giver and the Maximiser). We use these types to bring together a number of the different perspectives relating to what stewardship is and how it operates in different contexts. This development offers a framework to those working in stewardship roles or operating in stewardship contexts to consider what this agenda is aiming to achieve and where the levers for this work reside.

Before moving on to explore the definitions of stewardship in more detail, we briefly reflect on the contemporary resurgence of stewardship exploring why this term has come to such contemporary prominence.

Why stewardship and why now?

In developing our argument, we begin by exploring why stewardship has become an important concept within the context of Australian public services. Over the last quarter we have seen profound changes in our public service contexts that have served to render them more complex in nature (Dickinson, 2016). These shifts have significant implications in terms of what governments do and how they work with a range of partners. Stewardship has emerged within this context as a framework to aid in overcoming many of the challenges that these changes bring.
On the supply side, service delivery systems have become more disaggregated with an increasingly significant role for third party providers (Alford and O’Flynn, 2012). Governments have moved from being predominantly a provider of services into a context where, although they may still have some aspect of provision, they increasingly have the role of contracting with providers to deliver the majority of public services. This role is sometimes also known as commissioning and involves governments establishing the outcomes that they are aiming to deliver, determining the best ways to deliver those services and then working with partners to ensure that the services are delivered (Dickinson, 2015). Given the number of different providers within a system, an important role of stewards is to ensure continuity across different actors so that those accessing services experience them in a seamless way. Such a role not only involves working closely with providers who have been contracted, but also in managing a market of providers who are competing to deliver services. As the Productivity Commission (2017, p. 85) describes:

Government’s stewardship role involves making sure that those providers that are best placed to achieve outcomes are in a position to do so. Good stewardship should ensure that the only barriers to entering (and exiting) a market are those necessary to ensure positive outcomes for users and the overall effectiveness of service provision.

These observations echo those of Harper’s Competition Policy Review that explained the need for governments to retain a “stewardship function” to manage the market for providing services (Harper et al., 2015, p. 35). According to such a perspective stewardship is important as a means to ensure accountability and implement a high quality, user-driven service delivery model.

On the demand side, citizens and a range of other groups are commanding a greater voice in policy processes (Griffiths et al., 2009) and the types of problems that public services are seeking to resolve have become more complex in nature (Carcasson, 2016). We see increasing calls for consumer voice in the design and delivery of public services at a macro level through deliberative engagement processes, but also at a more micro-level through the levels of choice and control that individuals have over services. Current reforms in aged care and the creation of the National Disability Insurance Scheme aim to give more choice and control to individuals in terms of the services that they receive (Carey et al., 2017). An important stewardship role is to ensure that individuals are equipped to make choices and that appropriate providers are available to choose from. But, perhaps equally importantly, is a role for public servants to be stewards of the public interest amidst a political climate that can glorify individual freedoms seemingly “without regard for the common good, social equity, and need for shared sacrifice” (Stahl 2009, p. 8). In other words, a role is available for public organisations in stewarding the types of services that individuals access, while also attempting to ensure that this role does not compromise the creation of public good or create significant inequities (Williams & Dickinson, 2016).

The idea of the common good is also an important theme in terms of the kinds of policy challenges that governments face and the solutions that they develop in response. Stewardship has been seen as a way of helping to overcome complex policy challenges that cut across public and private domains. Such an approach involves considering how to influence actors so that private value can be leveraged for public good. For example in environmental policy, governments aim to influence private landholders to act in ways that might not always be in their direct interest but which accord with broader conservation efforts (Failey and Dilling, 2010).

From this brief review we can see that the idea of stewardship is a response to a variety of changes that have started to take place within our public service contexts and which will continue to have an influence for some time yet. Although stewardship has been identified as an important role for governments to engage with, as the Productivity Commission (2017) note, at present, a number of limitations exist regarding governments’ ability to act as a system stewards. This paper explores the evidence base to assist in understanding the role of system stewards. We start by delving into what it is precisely that is meant by ‘stewardship’.
WHAT IS STEWARDSHIP?

Before considering the many ways in which stewardship has been defined, we start with a brief comment on the nature of the evidence base. For this Issues Paper we undertook a scoping review to map the dominant concepts underpinning stewardship and get a sense of the main types and sources of evidence available (see Appendix for more details). Through the review process we found that, although some clear academic contributions are available, a number of gaps remain, specifically as the concept is applied across disciplines. First, clear definitions of stewardship remain elusive. It is a complex term, spanning many disciplines and replete with different meanings and definitions. Second, stewardship action is frequently called for without a clear indication of what exactly is meant and how stewardship functions should be organised across different levels of governance. It is a term that is frequently conflated with others, such as commissioning, strategic management and governance. Third, empirical assessments of the ‘outcomes’ of stewardship programs are largely absent, as is any meaningful discussion of how the concept manifests within policies. Fourth, a concerted effort to develop theory around the concept of stewardship was also largely absent, certainly as a broad, multi-disciplinary concept. In this paper we have sought to bring together the existing evidence base to explore in greater detail what stewardship is and how it operates, but note that further high quality research is needed in this space.

Is stewardship a magic concept?

One of the wonderful things about language is that concepts can be used in a whole range of different ways and do not necessarily have one fixed meaning. This feature of language, however, can be problematic when it gives rise to complications with precise meanings and applications. In such cases, a number of undesirable consequences can emerge. For example, a term could be so widely used as to become somewhat meaningless; if something means everything then it can mean nothing in practice (for example, see Dickinson, 2014). Pollitt and Hupe (2011) refer to such concepts as ‘magic concepts’, arguing that when concepts are used constantly they are not able to solve anything because of their ubiquity. Magic concepts have the following characteristics:

1. Broadness: they cover large domains and have a wide scope and high valency
2. Normative attractiveness: overwhelmingly positive connotations, it is hard to argue against them
3. The implication of consensus: they obscure conflicting interests and logics
4. Marketability: it is known and used by practitioners and academics

Upon reviewing the stewardship literature, we find that many of these characteristics are present. ‘Stewardship’ is broad in the sense that it is being used across a range of different policy areas, across numerous jurisdictions and to achieve a range of different aims (discussed further below). This point demonstrates the marketability of the concept and that it is an idea familiar to academics and practitioners alike. The term has positive connotations – it is something that is difficult to argue against. As Smith (2004) describes, stewardship involves making decisions that are for the long-term good of many others, when the competing alternatives might all be ethical. In many dictionary definitions, stewardship relates to the responsible use of resources in the service of a higher power. There are, therefore, strong overtones of paternalism and benevolence within many of the common language uses of this concept. In this way, stewardship is associated with a form of consensus that obscures conflict – another characteristic of the magic concept.

What these characteristics mean in practice is that it is important that where individuals and organisations talk about undertaking stewardship roles, they are clear what it is they think they are taking responsibility for, who (or what) the beneficiary/ies will be and why stewardship is important to enact. Poor identification of the benefits and beneficiaries could nullify the objectives of adopting a stewardship model or, worse still, result in perverse outcomes, despite the best of intentions.
Thankfully, within the literature, examples of clarity exist in terms of the application of the concept, suggesting something more to this than hollow platitudes or ‘feel-good’ marketing phrases. In medicine, the application of a stewardship approach has been reported as effective in the control of antibiotic resistant bacteria (see Box 1). In the environmental domain, a stewardship approach has been repeatedly demonstrated to deliver improvements in land use and conservation across Australia. These improvements have been achieved despite the inherent challenge of generating public goods on private land from (largely) voluntary actions (see Box 2).

**Box 1 – Application of stewardship to avoid mankind’s greatest threat**

Lawes et al. (2015) report on the success of applying a stewardship model to combat meticillin-resistant *Staphylococcus aureus* (MRSA) in Scotland through its first National Antibiotic Stewardship Plan. The urgency of combating antibiotic resistance has recently been compared to climate change in terms of the scale of the adverse effect on human survival if resistance rates are not arrested (Ayukekpong et al., 2017). This plan integrated responsibility for the problem across a broad range of Scotland’s NHS-funded health care professionals, including clinicians, regional management teams, pharmacists and infectious disease specialists. Nathwani et al. (2011) reported that the crux of the stewardship plan was fostering more efficient working across all stakeholders, aligning strategic and operational goals and responsibilities under an overarching umbrella of patient safety. Since inception of the plan in 2008, Lawes et al. (2015) report a 47% reduction in use of key antibiotics in hospitals and 27% reduction in the community and for the same period MRSA prevalence has declined by 54% in hospitals and 37% in the community. The authors attributed the results to a combination of improved infection control and removal of the key antibiotic selection pressures during the implementation of the stewardship intervention.

**Box 2 – Measuring the benefits of environmental stewardship in rural landscapes**

In 2005, it was estimated that US$14 billion worldwide was spent supporting producers to achieve environmental outcomes from their private property; $6.5 billion was spent in Australia from 1990-2013, including a $50 million environmental stewardship package (Hajkowicz and Collins, 2009). Despite these substantial investments, evaluations of the environmental and social outcomes are often missing. When evaluations have been undertaken, researchers have shown that modifying the weights and nature of indicators can result in substantial redistributions of funds into different land management activities and locations (Johansson and Cattaneo, 2006). Hajkowicz and Collins (2009) and others (e.g. Windle and Rolfe, 2008; Eigenraam et al., 2007) have attempted to measure the benefits of environmental stewardship programs using biodiversity or land management benefit indices. Researchers input various data sets into a metric, including stewardship sites, stewardship activities (e.g. fencing, tree planting, weed removal) and the ecological condition of the property. Farmers put forward a ‘bid’ for a stewardship contract, where they offer a price they would like to be paid to deliver stewardship outcomes. Projects are funded in descending order of benefit until the budget is spent. Because ecological condition is measured and calculated as part of the ‘value’ of the bid, changes in ecological condition can be assessed over time. These exercises often reveal the ‘stewardship services’ that landholders deliver as part of the farm business, that is, their public good contribution.

By identifying when and how a stewardship approach has successfully delivered public policy, we can avoid the danger of casting “magic” spells to create an illusion of success. In the next section, we further explore the many potential meanings of stewardship, revealing universal components that apply across disciplines and different policy fields.
Universal features of stewardship

When we examine what has been written about stewardship we find many differences. Stewardship models operate across a range of scales (local to global) and timeframes (immediate to long-term) in pursuit of different aims. We do find some commonalities, though, across these different meanings that start to map out the specific features of stewardship approaches. All stewardship models involve taking responsibility for something, within a context of constrained resources and for particular beneficiaries. We explore these features in turn.

Each definition or description of stewardship we came across in our review involved a steward taking responsibility for something or some cause to the benefit of others. As examples of this, authors have written about the stewardship of the Great Barrier Reef as an attempt to take responsibility for the conservation of globally important marine resources (Myers et al., 2012) and antimicrobials to take responsibility for increasing rate of bacterial resistance in hospitals (Shlaes et al., 1997). A steward does not necessarily own the entity that is being taken responsibility for, rather resources can be held in trust for others (Hamel, 2012). Nor will stewards necessarily have the right of control over the resources being taken responsibility for (Fairholm, 1996) and should certainly not seek to use these resources for personal gain (Brinckerhoff, 2004). Stewardship involves taking responsibility for both current achievements and safeguarding for future success. Risks may be taken to progress the mission of the entity for the long term. Stewardship is an active process, not a process of passive observation; it involves planning for the future and trading off short-term risks and benefits for future strategic ends (Wan, 2015).

A further shared feature of definitions of stewardship is that it is needed because of constrained resources. One of the reasons a stewardship approach is required is because we are operating within restricted resources, be these environmental (Seitzinger et al., 2012), financial (Productivity Commission, 2017), personnel (Hernandez, 2012), informational (Dawes, 2010), among others. In some of these cases, stewardship is required because individual actors do not recognise that the resource is constrained. For example, an individual might not consider their carbon emissions to be a problem, but collectively, emissions have significant consequences for the climate system. What this example also illustrates is that stewardship typically operates in a context where some form of contest over resources could lead to challenges of long-term sustainability. In other words, the potential for a range of different goals to be pursued through stewardship process exists, so one of the roles of stewards is to ensure that these different activities sit alongside each other effectively and do not compromise one another. This point is encapsulated by the World Health Organisation, who describe stewardship as a ‘political process that involves competing influences and demands’ (World Health Organisation, 2017).

The third common factor shared across definitions of stewardship is that of a beneficiary. Beneficiaries can be clearly identifiable as a group within the community, such as participants under the National Disability Insurance Scheme, or be of a more indeterminate character, such as the whole community (to varying degrees) in the case of environmental context, ecosystems and living organisms can become the beneficiaries. When considering a stewardship role in relation to public services, the beneficiary is typically the broad population or citizenry of that jurisdiction or a group with specific needs. Other stewardship roles, however, cross borders. The stewardship of the Great Barrier Reef is a good example here, given that the conservation of this resource has significant implications for other countries beyond Australia, in terms of marine resources and biological processes. It is worth noting that person, persons or entities that benefit from stewardship can include the steward – although these are typically not the sole beneficiary (Worrell and Appleby, 2000). What is common to all beneficiaries is accountability for managing the resource entrusted to the steward on behalf of the beneficiaries.
Who is stewarding?

As outlined above, one of the universal features of stewardship concepts is that a steward is taking some form of responsibility, but how does this feature of stewardship assist in identifying exactly who is stewarding? In the context of public services, typically we think of public organisations and public servants as those ‘doing’ stewardship. For example, departments of education take responsibility for marshalling public and private resources with the intention of ensuring their target population is educated and equipped in line with a set of expectations and standards. The Australian Public Service (APS) is charged with stewardship of the public service so that it has the capacity to serve successive governments, being efficient, able to manage effectively and trusted by a range of stakeholders (Edwards et al 2012). In health care, Primary Health Networks stewarding their local geographical area are charged with increasing the efficiency and effectiveness of medical services for patients [...] and to improve coordination of care to ensure patients receive the right care in the right place at the right time (Department of Health, 2015).

The idea that organisations or other public agencies act as stewards is fairly simple and straightforward in one sense. Yet, when we dig deeper we find this idea is more challenging; organisations do not have individual agency. They are not a single identifiable individual, but a collection of people working towards what may or may not be a shared set of goals, potentially underpinned by similar beliefs. In the context of public services, a steward is not generally a specific individual, although we note that for some forms of stewardship, particularly environmental stewardship, individuals are often identified as having a steward role (e.g. Cooke and Moon, 2015). Stewardship is not something that is done just by leaders of organisations, but represents the collection of activity that is undertaken by a particular entity. It is here where things get tricky though, because stewardship activities are typically comprised of a number of different ‘levels’ (Seitzinger et al., 2012). Stewardship may be carried out at the local level to promote and/or coordinate community programs say, for example, by local governments. As the Productivity Commission (2017) notes, major national policies also require stewardship such as the National Disability Insurance Scheme. Here, stewardship is shared across different levels of government (Commonwealth and State) and different agencies – requiring considerable collaboration and coordination (which is itself a challenge). Stewardship also crosses national borders, for example the World Health Organisation arguably plays a stewardship role in coordination transnational responses to infectious disease (World Health Organisation, 2017).

What is being stewarded?

Given the range of different layers that stewardship takes place over and the many policy areas that it covers, we observed a range of elements within a system that might be stewarded. Firstly, we observed a distinction between the outputs and outcomes of stewardship. Stewardship outputs are actions driven by a need or desire to achieve an outcome that might need to endure beyond, or operate independently, from a defined policy goal. Stewardship outcomes comprise measurable change/s in at least one of the three universal stewardship components as a result of the stewardship outputs:

• **Resource constraints**: constraints on a resource are measurably reduced or eliminated

• **Beneficiaries**: measurable increase in benefits to beneficiaries

• **Responsibility**: individuals or groups take on a (greater) level of responsibility for a resource, cause or process
We can also think of these changes to outcomes across different timeframes. Long-term stewardship benefits are long-term results that can be attributed to achieving stewardship outcomes. These benefits include:

- **Beneficiaries**: defined beneficiaries experience benefits independent from, or beyond the life of a particular policy or reform process

- **Responsibility**: stewardship contributes to or causes a permanent change in the behaviour or nature of the steward that has positive consequences for the resource

As we start to explore these longer-term benefits, we can observe feedback loops for some processes, which increase outputs or reinforce processes. The long-term stewardship benefit of ‘responsibility’ contributes to ongoing benefits to resource constraints, which feeds back to the long-term benefit of ‘responsibility’ and thereby has consequences for beneficiaries. Considering stewardship in this way also draws us to a distinction in terms of stewardship as a process and stewardship as an outcome.

We say more about how stewardship is done in the next section, but the distinction relating to the processes of stewardship is an important one. When we are looking to make long-term and sustainable changes then, typically, it is not just a matter of delivering particular programs or processes, but changing the behaviours and mindsets of a range of individuals that a steward may or may not have direct control over (Charan et al., 2001). Senge argues that stewardship is ‘almost solely a matter of attitude’ (1990, pg. 12). One of the aims of many stewardship approaches is to influence agents into particular forms of activity that might fall outside of their direct and immediate benefit. Stewardship approaches could involve attempting to influence individuals to trade off convenience and price in exchange for more expensive but healthier food, for example. Or asking landholders to engage in particular practices that go against their immediate benefit, but produce more effective environmental outcomes for all species over the longer term.

In their role as stewards, public agencies may find their behaviours and ways of working are scrutinised. If actors find that the actions of stewards are not consistent with their espoused aims then they may not buy into the notion of stewardship being promoted. For example, the Australian Government aspires to encourage diverse and inclusive workplaces, but if the workplace practices of government agencies are not seen to accord with this goal then others may not go to considerable effort to deliver change. Similarly, consider the consequences of a government that encourages landholders to make a commitment to be stewards of their land only to later grant a mining tenement over that land (Adams and Moon, 2013). If the steward does not do what they are asking others to do, it might feel like a clear signal that stewardship is not as important as other potential goals. Significant symbolic value is inherent in how stewards operate. What stewards do, therefore, can be as important as how they do it.

The reality is that within contemporary practice, stewards find themselves being charged with responsibility for both processes and outputs/outcomes. In doing so, stewards may contend with multiple (and potentially competing) goals. For example, within the National Disability Insurance Scheme, stewards oversee outcomes for people with a disability. This role means ensuring services for a wide range of disabilities across public, private and non-profit sectors. Here, the role of a steward is assumed to protect against service gaps. Inherent in this assumption is the idea of ethics and morality – that the system is being stewarded for the common good. However, stewards are not only required to ensure good outcomes (and design appropriate processes to achieve these outcomes), they must also secure economic efficiencies. These goals can, at times, be in competition with one another. Hence, being clear about the goals, processes and complexities of any stewardship activity is crucial to success.
HOW IS STEWARDSHIP ACHIEVED?

Given the breadth of stewardship applications, it was unsurprising to come across a great diversity of mechanisms and levers used in pursuit of stewardship outcomes. As the Productivity Commission (2016, p. 5) outlines, ‘Stewardship encompasses almost every aspect of system design, including identifying policy priorities and intended outcomes, designing models of service provision and ensuring that services meet standards of quality, accessibility and suitability for users’. In practice, no single routine or set of practices are associated with a stewardship process in any distinctive sense. Many of the kinds of activities that we find related to stewardship can also be observed in traditional approaches to the design and delivery of public services.

A significant literature that deals with the various policy instruments is available to governments in attempting to influence and shape the activities of stakeholders. Bemelmans-Videc et al. (1998) provide an overview of these instruments in their edited collection ‘Carrots, sticks and sermons’ that categorises policy instruments as either regulatory, economic or informational. The choice of instrument will depend on, among other factors, different power bases, making certain instruments more or less effective within a particular context. The job of the policymaker is to identify when and where it is most appropriate to use different instruments, or pull on particular levers, to achieve stated policy goals. Table 1 sets out a number of different scenarios and the different forms of power that stewards might consider.

Table 1: A cross-disciplinary analysis of alternative incentive systems (adapted from Uphoff and Langholz, 1998).

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<th>Economic</th>
<th>Social</th>
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<td>Types of social systems</td>
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<td>Types of outcomes in game theory</td>
<td>Lose-lose</td>
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<td>Types of responses to unsatisfactory situations</td>
<td>Exit</td>
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<td>Accommodate</td>
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Although many of the types of mechanisms for operating stewardship might be the same, the balance of how and when they will be used is different. Earlier we identified that one of the drivers of the stewardship agenda is the range of different agencies and actors that play a role in contemporary public services. As a number of commentators have argued, across many Western liberal democracies we see somewhat of a crisis of legitimacy and the dispersal of power across a range of different terrains (e.g Matthews, 2012). Those charged with a stewardship role have expressed concern over the fact that they need to influence a range of different actors but have at their disposal only ‘rubber levers of power’ (Diamond, 2013). That is, stewards have found in recent years that they lack direct power over actors to compel them into particular courses of action and instead have to find ways to influence through appeals to beliefs and values (see Table 1). Block (1993) argues that stewardship is not just about serving a particular group, but is related to the ways in which power is held and used. In other words, it is not just about telling people what to do but about finding a way to influence and to guide. Stewardship is, therefore, a way of empowering actors so that they take responsibility and accountability in delivering a set of outcomes (Rodin, 2010). **Under such an analysis, the role of stewardship is to set out a basic structure and governance strategy to support self-direction, giving individuals the necessary power and resources to achieve the policy goals.**

Table 2 summarises a number of examples of stewardship found in the literature, setting out the context that they operate in, the types of resources being stewarded and the processes that they draw on.
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</tr>
<tr>
<td>Environmental</td>
<td>Natural resources</td>
<td>Using and conserving</td>
<td>Worrell and Appleby, 2000</td>
</tr>
<tr>
<td>Health care</td>
<td>Economic and resource</td>
<td>Providing health care access,</td>
<td>World Health Organisation, 2002</td>
</tr>
<tr>
<td></td>
<td></td>
<td>equity, effectiveness</td>
<td></td>
</tr>
<tr>
<td>Market</td>
<td>Governments’ capacity to</td>
<td>Achieving public benefits</td>
<td>Carey et al., 2017</td>
</tr>
<tr>
<td></td>
<td>provide all public services</td>
<td>through the private/charitable</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>sector</td>
<td></td>
</tr>
<tr>
<td>Planetary</td>
<td>Natural resources</td>
<td>Improving sustainable and</td>
<td>Barendse et al., 2016</td>
</tr>
<tr>
<td></td>
<td></td>
<td>resilient activities</td>
<td></td>
</tr>
<tr>
<td>Product</td>
<td>Natural resources</td>
<td>Recognising imbedded resource</td>
<td>Australian Government, 2017</td>
</tr>
<tr>
<td></td>
<td></td>
<td>values</td>
<td></td>
</tr>
<tr>
<td><strong>Single-goal</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Climate change</td>
<td>Places to sequester carbon</td>
<td>Sequestering carbon</td>
<td>Failey and Dilling, 2010</td>
</tr>
<tr>
<td>Forest</td>
<td>Forests (and land)</td>
<td>Protecting forest</td>
<td>Ibisch and Schmidt, 2009</td>
</tr>
<tr>
<td>Countryside</td>
<td>Land (for multiple aspects)</td>
<td>Conserving rural landscapes</td>
<td>UK Government, 2015</td>
</tr>
<tr>
<td>GMO Product</td>
<td>GMO-free plants that could</td>
<td>Managing risks posed by GMOs</td>
<td>Excellence Through Stewardship, 2015</td>
</tr>
<tr>
<td></td>
<td>be lost if unmanaged GMO use</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>occurs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Patient</td>
<td>Patient’s capacity to ensure treatment and retain quality of life</td>
<td>Providing health care that meets patient needs holistically</td>
<td>McCue, 1995</td>
</tr>
<tr>
<td>Antimicrobial</td>
<td>Ongoing utility of antimicrobials in the face of developing resistance</td>
<td>Judicially using antimicrobials to preserve their effectiveness</td>
<td>Duguid and Cruickshank, 2010</td>
</tr>
<tr>
<td>Corporate/ governance</td>
<td>Capital; opportunities to generate income and effects of competition</td>
<td>Supporting and furthering the objectives of the company; contributing to general economic success</td>
<td>UK Financial Reporting Council, 2012</td>
</tr>
<tr>
<td>Information/Data</td>
<td>Quality data; unique data (e.g. identity data)</td>
<td>Protecting information as a resource</td>
<td>Rouse, 2013; Dawes, 2010</td>
</tr>
</tbody>
</table>
WHAT **COMPETENCIES AND SKILLS** DOES THE STEWARDSHIP WORKFORCE NEED?

As outlined above, different processes and levers are used in adopting a stewardship approach, so it may come as no surprise that an agreed upon set of competencies and skills that stewards require is not available. Many of the types of existing skills and competencies that are present in traditional organisations will be required in stewardship organisations, although the mix of these will be what is distinctive. As outlined above, given the levers of power available to stewardship organisations, a significant amount of interest has emerged around intrinsic motivators, particularly those associated with behavioural economics approaches (e.g. "nudge") (Thaler and Cass, 2008; Pollitt and Shaorshadze, 2011; Lunn, 2014). Within the stewardship literature, however, we find a distinct lack of evidence concerning what competencies and skills are necessary or useful in moving towards a stewardship approach. This lack of evidence is in need of urgent attention from researchers.

A number of debates are taking place in terms of what competencies and skills stewardship organisations need (see Dickinson and Sullivan, 2014 for a more detailed discussion). One of the more prominent debates concerns the competency and skill requirements of stewards who are divesting themselves completely of a provision role (Dickinson, 2015). That is, if an agency moves from being a provider of services to being solely a commissioner (with no direct involvement in provision) what does this shift mean in terms of organisations having competencies and skills relating to the provision of services? This question raises further questions about the core competencies the organisation might then need in relation to stewardship (Wade and Woodin, 2007). To date, this issue has not been suitably resolved within the literature. Even if provision does not make a significant tangible difference in terms of stewardship processes, symbolically we could see some value in the provision of services. Significant work was undertaken in the English health sector to identify the types of competencies and skills that commissioning organisations should comprise, resulting in the World Class Commissioning Competencies (Box 3, Department of Health, 2007). For a limited period of time these competencies were used to performance manage stewardship organisations in English healthcare, although they have long since been abandoned due to some critique (McCafferty, et al., 2012). It is clear that we still have a significant question mark regarding the competencies and skills that stewardship organisations require.

Box 3 – World Class Commissioning competencies

‘World class commissioning’ is achieved by ensuring investments meet local needs, are based on evidence, target priorities, provide good value and improve long term health outcomes and that this is undertaken in a transparent, objective and systematic manner. The competencies required to achieve ‘world class commissioning’ in primary care, as adapted from Health England (2017), are:

- Create a locally-led health service: Achieving long term health gain by deciding local priorities
- Work with community partners: Joint strategic needs to highlight joint priorities
- Collaborate with clinicians: Engagement with clinicians regularly to inform strategy and improve quality
- Manage knowledge and assets: Needs are to be based on reliable knowledge and evidence
- Prioritise investment: Investment decision are to be driven by needs, strategic priorities and key outcomes
- Stimulate markets: Local assessment of priorities, service gaps and service design
- Promote improvement and innovation: Innovation, knowledge and best practice applied locally to improve outcomes
- Make sound financial investment: Long term heal outcomes secured by sustainable investment
DEVELOPING A TYPOLOGY OF STEWARDSHIP APPROACHES

It is now clear that stewardship is applied across a number of different domains. As a consequence, a range of theories has been used to help make sense of the concept. Yet these theories often derive from quite different disciplines of study. For example, agency theory (Davis et al., 1997) is principally informed by economics and focuses on the use of resources, while stewardship psychology (Hernandez, 2012) focuses on the inner workings of those within systems of stewardship. Similarly, Ostrom (1990) developed critical insights into governing common-pool resources (finite public resources that are accessible by many) to avoid a ‘tragedy of the commons’ (Hardin 1968). To do this, she defined common-pool resources as complex adaptive systems (i.e. systems that have many interdependent moving parts and whose behaviour is unpredictable) – seeking to identify methods to manage resources. Despite the fact that stewardship has been used in an array of different contexts – or possibly because of this - a common theory that brings together these various contributions cannot be found. In fact, Hernandez (2012) goes so far to describe as “conspicuously absent” the theoretical development of the stewardship construct.

In this section we do not seek to offer a new theory of stewardship to add to an already congested terrain. Instead, we have built on the purposes, beneficiaries and levers of stewardship set out above to develop a typology of stewardship approaches, comprising four composites, each viewing the role and means of stewardship in different ways. As mentioned above, stewardship in the public service context is most often done by collectives – whether that be organisations, parts of government or across levels of government. Thus, these types are not intended to be understood as individuals, although they could be individuals within some domains (e.g. environmental stewardship, see Appendix, Table A2), but rather are collections of individuals who share beliefs about the purposes and activities of stewardship approaches. As we will go on to describe below in further detail, it is possible that a number of these different types might be present within one particular stewardship setting. We now move on to set out each type in more detail before considering the similarities and differences between them.

The Guide approach to stewardship

Remains responsible for the resource on behalf of the beneficiary

The dominant characteristic of the Guide stewardship approach is the occupation of a position of responsibility in relation to constrained resources that inevitably means making decisions of compromise. An example of this is a government agency tasked with allocation of public funding in a manner that seeks to achieve fair and equitable distribution of resources while best meeting the objectives of the community. Within this perspective, stewards retain some responsibility for the use of resources to achieve an identified goal, even though they might not have any direct control over the resource. Given the trust relationship governments seek to hold with their community in collecting and distributing public funds, the Guide approach is particularly driven to ensure accountability. An example is product stewardship (see Appendix, Table A2), where ‘the Guide’ remains responsible to achieve a particular outcome, but without direct control over the resource. A Guide stewardship approach is likely to operate at large scales and set goals over long temporal periods (e.g. government departments with broad responsibility for achieving reduced climate emissions).
The Gatekeeper approach to stewardship

Grants access to privately held or controlled resource

The dominant characteristic of the Gatekeeper approach is that the steward will not typically be involved in policy-making processes, but will have direct control over a resource. Engagement with these actors is necessary to meet policy objectives. Those operating within a Gatekeeper approach include landholders engaged in environmental conservation agendas, but could also include a private company that controls a publicly important resource (such as a social media company) or a hospital with good community relationships. Governments would seek to work with these kinds of stewards to gain access to these resources, but would often not seek to hold the resource directly. A Gatekeeper approach often operates on local scales and observes success over shorter timescales.

The Giver approach to stewardship

Makes a sacrifice for the ‘greater good’ that increases the value or abundance of a resource

The dominant characteristic of the Giver approach is that action is motivated by a desire to make a contribution by means other than financial or direct reward. In contrast to the Gatekeeper approach, ‘the Giver’ actively seeks to sacrifice individual benefit for that of the collective. Through such a sacrifice, they can effectively extend the resource base, for example, by augmenting payments made (e.g. a health worker that delivers a higher quality service beyond the value of their wages) or by making land or labour available at no cost. As with Gatekeepers, the Giver approach typically operates on a local scale, although the giving may be towards a globally significant goal. Such a perspective is likely to favour short-term goals, where efforts can be seen to make a positive contribution but can also lead to longer term collective goals. It is possible that the Giver and Gatekeeper approaches are adopted concurrently.

The Maximiser approach to stewardship

Distributes resources for maximum efficiency, utility and benefit of the collective

The dominant characteristic of the Maximiser approach is the goal of creating ‘collective benefits’ outside of any concept of ethics, volunteerism or sacrifice. According to such a view, stewardship is a means of avoiding the pitfalls of narrow-minded self-interest to improve the overall outcome to all beneficiaries. This approach might involve processes to help improve the efficiency of allocating resources within a system, attempting to reduce duplication or overlap between public and private resources to achieve greater ‘bang for buck’. For example, this type of approach might be used to achieve conservation biodiversity and primary production outcomes at the same time, through improved soil condition. It could also be used to generate multiple community health benefits by designing health education programs that simultaneously appeal to different sectors. Such a perspective also seeks to identify co-benefits by strategic allocation of resources. In doing so, a Maximiser perspective is not wedded to a particular temporal or spatial scale, but works according to context.
Articulating different types of approaches to stewardship in this way can be helpful in the sense that it sets out different ways of thinking about stewardship and the functions it can fulfil. In reality, these types do not exist as mutually exclusive models, but will have a degree of overlap. Some stewardship functions have aspects of all four types, although they might sit within different parts of an organisation or context. When challenges are encountered in enacting stewardship, it might be because different understandings of what stewardship is and what it should achieve come into contact with one another. As the descriptions of these types also demonstrate, ‘stewards’ are likely to draw on different types of levers according to their aims and power base. Where stewards attempt to draw on levers that do not fit their particular type they could experience a sense of jarring, to the extent that these actions do not necessarily fit with the overall aims and aspirations of a particular approach. For example, if a Giver approach to stewardship attempts to draw on legal or coercive forms of levers, they will likely misfire. This outcome in turn is likely to undermine overall stewarding efforts, making it more difficult to achieve goals. Some of the challenge in achieving complex aims may reside in the fact that many different perspectives of stewardship sit alongside each other and operate over different spatial and temporal scales. Table 3 compares the different types to one another in terms of their major characteristics.

We suggest that this typology can be a helpful tool in identifying the purposes, beneficiaries and levers of stewardship when developing such an approach. They can be a helpful resource to use with stakeholders to discuss the aims and objectives of any stewardship approach and help to identify where potential challenges might arise in terms of different stewardship initiatives encountering one another during implementation processes (e.g. Moon and Adams, 2016).

Table 3: Summary of the strengths and weakness of stewardship approaches as well as the dominant object of stewarding and dominant levers

<table>
<thead>
<tr>
<th>The Guide</th>
<th>The Gatekeeper</th>
<th>The Giver</th>
<th>The Maximiser</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strengths</td>
<td>Overarching, powerful</td>
<td>Controls the resource</td>
<td>Strongly motivated by social levers</td>
</tr>
<tr>
<td>Weaknesses</td>
<td>Politically sensitive, changeable, high level</td>
<td>Competing priorities</td>
<td>No direct resource access</td>
</tr>
<tr>
<td>Dominant object of stewarding</td>
<td>Outcome (change)</td>
<td>Output (action)</td>
<td>Output (action)</td>
</tr>
<tr>
<td>Dominant levers*</td>
<td>Administrative</td>
<td>Social</td>
<td>Social</td>
</tr>
</tbody>
</table>

* Refer back to Table 1
WHERE NEXT FOR STEWARDSHIP?

It is evident from our review that both an extensive literature on stewardship and a wide appetite for it exists within the public sector. At present, however, clarity is lacking in both these areas. We have developed this Issues Paper and the typology of stewardship approaches to work towards overcoming some of these ongoing limitations – providing different ways to think about the functions and purposes of stewardship. These insights, we anticipate, can protect against stewardship becoming merely a magic concept by ensuring it does not become devoid of useful meaning.

One of the critical issues to emerge from our analysis is that we can observe different approaches to stewardship that can overlap and lead to goal confusion. Moreover, stewards can experience competing demands that can make it difficult to achieve outcomes and design appropriate processes. We contend that the goals and actions of stewards need to be clearly defined before such activities are undertaken to minimise these risks.

When developing a stewardship approach we argue that a set of basic questions should be able to be answered – what is being stewarded and by whom, what are the stewardship processes, outputs and outcomes and what levers will be drawn on? The stewardship types we set out in this paper may be helpful in articulating the nature of the stewardship approach or approaches being developed.

What is clear from our examination of the evidence base is the urgent need for more research to help fill many of the identified gaps. One major gap in the existing literature relates to the types of skills and competencies that stewardship organisations need to discharge their functions. As this review found, very little literature and evidence is on offer that deals with this issue precisely. This gap is far from the only one needing additional research. Future research should be inter-disciplinary in nature and explore the practices, processes, outputs and outcomes of stewardship endeavours. In turn, such an evidence base should inform and improve practices of stewardship across the board. For the Public Service Research Group, stewardship will stay on the agenda as a major area of activity in an effort to work towards closing these gaps in the evidence base.
REFERENCES


FAIRHOLM, G. W., 1996. Spiritual leadership: fulfilling whole-self needs at work. Leadership and Organisation Development Journal, 17, 5, 11-17


MOON, K. & ADAMS, V. A., 2016 Using quantitative influence diagrams to map natural resource managers’ mental models of invasive species management Land Use Policy 50, 341-351.


APPENDIX

Methods

The stewardship literature can be found across disciplines and within both the academic and the grey literatures. As such, we used a scoping review to underpin this paper, the general aim of which is to “map rapidly the key concepts underpinning a research area and the main sources and types of evidence available”; scoping reviews are useful methods “especially where an area is complex or has not been reviewed comprehensively before” (Mays et al., 2001, p. 194, italics in original). More specifically, our aim was to summarise and disseminate research findings (Arksey and O’Malley, 2005). This kind of scoping study aims to “describe in more detail the findings and range of research in particular areas of study, thereby providing a mechanism for summarizing and disseminating research findings to policy makers, practitioners and consumers who might otherwise lack time or resources to undertake such work themselves” (Arksey and O’Malley, 2005, p. 21; see also Antman et al., 1992). Here, the scoping study is conceived as a method in its own right (Arksey and O’Malley, 2005). We followed the steps outlined by Arksey and O’Malley (2005, see Table A1).

Table A1: Summary of the scoping stages undertaken as part of the review

<table>
<thead>
<tr>
<th>Stage</th>
<th>Details of stewardship scoping review</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Identifying the research question</td>
<td>How is stewardship defined within and between disciplines?</td>
</tr>
<tr>
<td>2. Identifying relevant studies</td>
<td>ProQuest and Google Scholar: Search terms - “steward” OR “stewardship”</td>
</tr>
<tr>
<td></td>
<td>Reference lists: Hand searching for relevant citations</td>
</tr>
<tr>
<td></td>
<td>Google: Search terms – “steward” OR “stewardship”</td>
</tr>
<tr>
<td></td>
<td>Grey literature: Hand searching for reports and policies</td>
</tr>
<tr>
<td>3. Selecting studies to include</td>
<td>• In one of the relevant fields (environment; health/medical; markets/corporates; information systems)</td>
</tr>
<tr>
<td></td>
<td>• Provided definition or discussion of the concept of stewardship</td>
</tr>
<tr>
<td></td>
<td>• Offered theory on the concept of stewardship</td>
</tr>
<tr>
<td>4. Charting the data</td>
<td>• Broke down the elements of stewardship into component parts to identify similarities and difference within and between disciplines</td>
</tr>
<tr>
<td></td>
<td>• Developed concept diagrams and tables to sort through components, identify common threads and make sense of the data</td>
</tr>
<tr>
<td>5. Collating, summarizing and reporting the results</td>
<td>• Located definitions in different applications</td>
</tr>
<tr>
<td></td>
<td>• Identified universal components</td>
</tr>
<tr>
<td></td>
<td>• Identified spatial and temporal elements</td>
</tr>
<tr>
<td></td>
<td>• Isolated stewardship levers</td>
</tr>
<tr>
<td></td>
<td>• Discovered differences between conventional and stewardship policy pathways</td>
</tr>
</tbody>
</table>
## Definitions of stewardship

### Table A2: Range of stewardship types as defined or revealed in the literature and applied within sectors

<table>
<thead>
<tr>
<th>Stewardship type</th>
<th>Definition/application</th>
<th>Dominant discipline</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>ENVIRONMENTAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental</td>
<td>“Responsible use (including conservation) of natural resources in a way that takes full and balanced account of the interests of society, future generations, and other species, as well as of private needs, and accepts significant answerability to society.”</td>
<td>Environmental management</td>
<td>Worrell and Appleby, 2000, p. 269</td>
</tr>
<tr>
<td>Climate change</td>
<td>“…a fundamental mediator of carbon storage—the decision context of the landowner. The pattern of ownership and influences on decision making make up the ‘carbon stewardship landscape’, or how decision making will ultimately control carbon sequestration.”</td>
<td>Environmental management</td>
<td>Failey and Dilling, 2010, p. 1</td>
</tr>
<tr>
<td>Forest</td>
<td>Private forest stewardship: “covering the opportunity costs of private landowners”. Government fund (as steward): “strengthens government institutions in the process of improving management and protecting and monitoring forest areas… supports social-welfare programs of forest-dwelling people”. Public forest stewardship: “rewards forest-dwelling people, including indigenous people, for good forest stewardship, which would be based on performance indicators”.</td>
<td>Environmental management</td>
<td>Ibisch and Schmidt, 2009, p. 20</td>
</tr>
<tr>
<td>Countryside</td>
<td>Countryside Stewardship provides financial incentives for land managers to look after their environment through activities such as: conserving and restoring wildlife habitats; flood risk management; keeping the character of the countryside; preserving features important to the history of the rural landscape.</td>
<td>Public administration</td>
<td>UK Government, 2015</td>
</tr>
<tr>
<td>Planetary</td>
<td>“Principles and actions aimed at improving sustainability and resilience of social-ecological systems at various scales and in different contexts. Participation in stewardship is voluntary, and is based on values of altruism and long-term benefits.”</td>
<td>Environmental management</td>
<td>Barendse et al., 2016, p. 1</td>
</tr>
<tr>
<td></td>
<td>“Active shaping of trajectories of change on the planet, that integrates across scales from local to global, to enhance the combined sustainability of human well-being and the planet’s ecosystems and non-living resources.”</td>
<td>Environmental management</td>
<td>Seitzinger et al., 2012, p. 787</td>
</tr>
<tr>
<td>Product</td>
<td>“Those involved in producing, selling, using and disposing of products have a shared responsibility to ensure that those products or materials are managed in a way that reduces their impact, throughout their lifecycle, on the environment and on human health and safety.”</td>
<td>Public administration</td>
<td>Australian Government, 2017</td>
</tr>
<tr>
<td>GMO Product</td>
<td>Responsible management of a (genetically modified organism - GMO) product from its inception through to its ultimate use.</td>
<td>Corporate management</td>
<td>Excellence Through Stewardship, 2015</td>
</tr>
<tr>
<td>Plant species/variety preservation</td>
<td>Harnessing the expertise to grow and propagate plants that fall out of fashion or are superseded to properly conserve vital genetic traits of garden flora significant threat and so they remain available for the enjoyment and use of generations to come.</td>
<td>Environmental management</td>
<td>National Council for the Conservation of Plants and Gardens, 2017.</td>
</tr>
<tr>
<td>Stewardship type</td>
<td>Definition/application</td>
<td>Dominant discipline</td>
<td>Source</td>
</tr>
<tr>
<td>------------------</td>
<td>------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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<td>-----------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>HEALTH/ MEDICAL</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health care</td>
<td>“A function of a government responsible for the welfare of the population and concerned about the trust and legitimacy with which its activities are viewed by the citizenry.”</td>
<td>Public administration</td>
<td>World Health Organisation, 2002, Chapter 7</td>
</tr>
<tr>
<td></td>
<td>The limited natural resources used daily to run the health care delivery system must be managed in a manner that is environmentally, economically and socially responsible for those in need of health care services today (and for the generations … that follow).</td>
<td>Public administration</td>
<td>Block, 2016, page 20</td>
</tr>
<tr>
<td>Medical - death</td>
<td>“Preventing the overtreatment and overtesting of modern medicine’s approach to the dying…addressed openly through collaborative work, institutional policies on limitation of treatment, and support building among physicians and other caregivers.”</td>
<td>Public administration</td>
<td>McCue , 1995, page 1039</td>
</tr>
<tr>
<td>Antimicrobial</td>
<td>A systematic approach to optimising the use of antimicrobials … to reduce inappropriate antimicrobial use, improve patient outcomes and reduce adverse consequences of antimicrobial use (including antimicrobial resistance, toxicity and unnecessary costs).</td>
<td>Public administration</td>
<td>Duguid and Cruickshank, 2010, page xiii</td>
</tr>
<tr>
<td></td>
<td>Optimal selection, dose and duration of an antibiotic, resulting in the cure of an infection with minimal toxicity to the patient and minimal impact on selective pressure.</td>
<td>Public administration</td>
<td>Paskovaty et al., 2005. p. 2</td>
</tr>
<tr>
<td><strong>MARKETS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Market</td>
<td>Oversight actions of government that fully support the functioning of public service markets. This includes active support for innovation and diffusion of best practice, protecting against ‘thin’ markets and market failure in order to ensure equity of choice and control.</td>
<td>Public administration</td>
<td>Carey et al., 2017 p. 3</td>
</tr>
<tr>
<td>Market place</td>
<td>All the things that government has to do to make sure that services are provided properly by private companies and charities. Markets also sometimes include government (i.e. state or local government actors)</td>
<td>Public administration</td>
<td>Gash, 2015</td>
</tr>
<tr>
<td>Theory of management</td>
<td>“Situations in which managers are not motivated by individual goals, but rather are stewards whose motives are aligned with the objectives of their principals… Given a choice between self-serving behavior and pro-organizational behavior, a steward’s behavior will not depart from the interests of his or her organization. … According to stewardship theory, the behavior of the steward is collective, because the steward seeks to attain the objectives of the organization (e.g., sales growth or profitability).”</td>
<td>Organisational development</td>
<td>Davis et al., 1997, p. 1 - 4</td>
</tr>
<tr>
<td></td>
<td>The extent to which an individual willingly subjugates his or her personal interests to act in protection of others’ long-term welfare.</td>
<td>Organisational development</td>
<td>Hernandez, 2012, p. 174</td>
</tr>
</tbody>
</table>
Corporate governance  Making sure that companies’ operational processes and policies are robust and responsible…. [and to] take more responsibility for the way in which goods are produced, services are provided and resources are used.
Promoting the long term success of companies in such a way that the ultimate providers of capital also prosper. Effective stewardship benefits companies, investors and the economy as a whole.


**DATA AND SYSTEMS**

<table>
<thead>
<tr>
<th>Systems</th>
<th>The nature and outcomes of a policy are often adapted by many different actors working together in a system; system stewardship involves policy makers overseeing the ways in which the policy is being adapted, and attempting to steer the system towards certain outcomes, if appropriate.</th>
<th>Organisational development</th>
<th>Hallsworth, 2011, p. 8</th>
</tr>
</thead>
</table>

**Information/ Data**  Management and oversight of an organization’s data assets to help provide business users with high-quality data that is easily accessible in a consistent manner.

"a conservative principle that recognizes that government information shares some of the characteristics of public goods like clean air and safe streets. Stewardship is concerned with accuracy, integrity, preservation, and protection of information.”

Public administration  Rouse, 2013
Public administration  Dawes, 2010 p. 6
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Jessamy Gee