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Change towards sustainability in Dutch central government

A case study of seven pilots related to Circular Economy

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List of abbreviations

<i>C&D</i>	Communication and discussion
<i>CDI</i>	Coördinered directeur inkoop; coordinating director procurement
<i>CE</i>	Circular economy
<i>CM</i>	Category manager
<i>CPO</i>	Chief procurement officer
<i>CTS</i>	Change towards sustainability
<i>IUC</i>	Inkoop-uitvoeringsorganisatie; procurement implementation centre
<i>OCM</i>	Organisational change management
<i>OCMS</i>	Organisational change management for sustainability
<i>PO</i>	Public organisation
<i>TCO</i>	Total cost of ownership

Summary

In the last decades, sustainability has become a more pressing topic in research, society, business and policy alike. Oftentimes, the focus of organisations is on technocratic solutions, such as production processes and raw material use. However, for many organisations implementing technical sustainability solutions is a big change in behavior for their employees. Hence, the human side of sustainability should not be neglected. This is where organisational change management is useful, as it can provide insight in how to make a change lasting. Organisational change towards sustainability is studied often in the private sector, while the public sector has not often served as the empirical context. This is where this research fills a gap in literature. It studies eight pilots and projects in the procurement office of Dutch central government, in which the transition is made from a linear product to a circular one. Literature on organisational change in public organisations, and literature on organisational change towards sustainability in the private sector is combined in a conceptual framework based on Lewin (1947)'s three-step model of organisational change. It focuses on drivers of change, barriers to change, and strategies to effect the change over time in three phases (unfreeze, move, freeze). Through desk research and semi-structured interviews the conceptual model is tested in the empirical context. The data is subsequently coded in NVivo. In the initial stages of the change process, main drivers of change include intrinsic motivation, leadership, and the government's exemplary role. As the change progresses, cost savings, leadership and the organisational culture move it forward. Early in the change process, main barriers include organisational culture, lack of knowledge, misunderstandings and lack of resources, while in later stages increased costs, ill fit with current systems, lack of knowledge and organisational culture inhibit the change process. The most important strategy identified was communication and discussion, but leadership, collaboration across departments and with external parties, research and empowerment were also identified often. Overall, this study was partly able to confirm the conceptual model, but also found contradictions, and found drivers, barriers and strategies previously not seen in literature. This way, it was able to provide new insights on organisational change management for sustainability in public organisations.

1. Introduction

Over the past centuries, corporations' pursuit of economic growth through increasing production has led to unprecedented prosperity, mainly in the western world (Dunphy, Griffiths, & Benn, 2006; Hopwood, Mellor, & O'Brien, 2005). The environment served humanity in this process, since humans consistently exploited the environment for economic growth (Hopwood et al., 2005). As a result, many environmental problems arose. As understanding arose that these growing environmental issues were linked to this economic growth (Doppelt, 2009; Hopwood et al., 2005), sustainable development became a popular concept (Hopwood et al., 2005). Sustainable development has been defined many times, most famously in the Brundtland report: "meeting the needs of the present without compromising the ability of future generations to meet their needs" (Brundtland, 1987). An important concept in sustainable development is the interdependency between its three dimensions: economic, environmental and social (Henriques & Richardson, 2004).

Understanding what sustainable development means and what it can bring has led to many initiatives in society, business and government alike. Environmental laws (e.g. Clean Water Acts and Clean Air Acts (McMurry & Ramsey, 1986)) as well as voluntary initiatives (e.g. Industrial Ecology, Green Chemistry, the Natural Step (Lozano, 2012)) have popped up in the last decades. Many of these initiatives have concerned technocratic solutions focused on processes, products and raw materials (Lozano, 2012). To comply with these laws and agreements, and to implement technocratic sustainability solutions successfully, organisations must implement many changes. Although good in intention, few organisations have actually succeeded in thoroughly institutionalising such changes towards sustainability (CTSs) (Doppelt, 2009).

A major issue that prevents CTSs from becoming permanent is the complexity of organisations. Organisations are not 'black boxes' with resources going in and out, but have subcultures and intra-organisational differences (Linnenluecke & Griffiths, 2010). Focusing on 'soft issues' such as mental models, management, and organisational systems is therefore necessary to achieve institutionalisation of any change, CTS being no exception (Lozano, 2013; Millar, Hind, & Magala, 2012). By addressing individuals, groups and the organisation, and accounting for their interactions, these soft issues can be addressed. Thus, organisational change management (OCM) theory has been brought into organisational sustainability to understand CTS better (Lozano, 2013).

While OCM has been researched for decades (e.g. Lewin, 1947), organisational change management for sustainability (OCMS) is a much more recent concept (Lozano, 2006). A number of topics have been covered: drivers for and barriers to CTS (Lozano, 2013, 2015), sustainability in organisational culture (Linnenluecke & Griffiths, 2010), leadership and CTS (Doppelt, 2009), and collaboration for CTS (Lozano, 2008). While these topics have been researched, they have not been covered systematically yet, and in very few empirical contexts.

In terms of empirical context, most of this work on OCMS has focused on private sector companies (Dyllick & Hockerts, 2002) with less attention to the public sector (Farneti & Guthrie, 2009). This is understandable, as firms have generally been held responsible for most of climate change (Doppelt, 2009; Dunphy et al., 2006; Hopwood et al., 2005). However, a broader scope of knowledge that includes the public sector is desirable for a more complete understanding of OCMS. Public Organisations (POs) are an equally interesting and important subject of study as private organisations in the context of OCMS for two reasons. First, the government is often a

nation's biggest consumer (Walker & Brammer, 2009). In 2013 governments spent on average 21% of GDP on goods and services (OECD, 2016); in the Netherlands, all POs together spend 60 billion euros annually (Rijksoverheid, n.d.-a). Clearly, governments have considerable impact with their spending, which has the potential to steer behaviour of the private sector and to achieve broader governmental (sustainability) goals (Ho, Dickinson, & Chan, 2010; McCrudden, 2004; Meehan & Bryde, 2011; Thai, 2001; Walker & Brammer, 2009). Second, assuming a government has drafted laws and goals regarding sustainability, governmental organisations fill an exemplary function to showcase compliance with their own laws and regulations (Kuipers et al., 2014; McCrudden, 2004; Moore, 1995). Public managers are often publicly scrutinised (Rainey, 2003): do they practice what they preach?

Because of the lack of research on OCMS in POs, the aim of this paper is to gain a deeper understanding of organisational change towards sustainability in the public sector. Specifically, the focus is on drivers for and barriers to change towards sustainability and strategies to effect this change, as those have been researched in the private sector primarily. In other words: OCM has been researched in POs, and OCMS has been researched in the private sector, but OCMS in POs has only infrequently been researched (*cf.* Lozano, 2009, 2013, 2015). This leads to the following research question: *What are drivers for and barriers to change towards sustainability in the public sector, and what strategies are applied to effect this change?*

In Dutch central government, sustainability has been on the agenda for years now (e.g. Green Deals, Stimuleren Duurzame Energie+ (RVO, 2016)) and the public expects their government to comply with its own rules in its operational management. Although there are numerous governmental objectives and projects, sustainability efforts have been concentrated to certain departments and employees and there is a lack of embeddedness throughout the organisation. Sustainability efforts differ greatly between ministries and initiatives appear *ad hoc* ("Rapportage Duurzame Bedrijfsvoering Rijk," 2005). Recently, however, Dutch ministries have expressed the ambition to transition towards a circular economy (CE) as part of broader nationwide sustainability goals, showing there is ambition to become more sustainable. Therefore, Dutch central government is an interesting case to study.

The relevance of this research is threefold. For academia, it shifts the focus of OCMS literature from the private sector towards the public sector, providing novel insights in drivers, barriers and strategies for CTS, supplementing already existing insights from the private sector and providing the option to compare them. Second, the societal relevance lies in the examination of the transition towards CE, which is currently a popular and promising approach to sustainability issues. This research makes observations and gives recommendations about how a change towards CE can be successfully implemented and thus move CE forward. This relevance overlaps with the usefulness for public managers dealing with CTS. For those, this research provides an overview of common drivers of and barriers to CTS and strategies to effect this change. These, in combination with the recommendations, gives them practical ideas on how to manage such changes.

2. Theory

This chapter discusses the theory necessary to conduct this research. First, the basics are discussed: organisations in general. What are they and what is the difference between public and private organisations? This distinction is relevant to be able to transfer literature findings from private organisations to public organisations. After having insight in what public organisations entail, organisational change is discussed. What is it, and what model can represent organisational change? The factors influencing organisational change are then presented: drivers, barriers and strategies. Finally, all these concepts are combined in the conceptual model used to guide this research.

2.1 Organisations: public versus private

To understand OCM, one must first understand what constitutes an organisation. An organisation consists of a collection of groups such as teams and departments, which in turn consist of a collection of individuals (Luthans, 1989; Porter, Lawler, & Hackman, 1975; Stacey, 2011). These different units are interlinked, working jointly to accomplish a goal (Rogers, 1995). Organisations are not isolated; they are part of a larger environmental system with which they interact (Stacey, 2011). Broadly, two organisation types exist: private and public organisations.

The private sector consists of privately owned organisations (i.e. not government-owned) (Rainey, 2003). The public sector is defined as “public organisations which provide utilities and services to the community which traditionally have been seen as essential to the fabric of our society” (Broadbent & Guthrie, 1992, p. 9). POs engage in four types of economic activities: providing laws and regulations guiding economic activities, redistributing wealth through taxation and spending, providing public services such as education and infrastructure, and public procurement (Thai, 2001).

Many argue that public and private organisations are more similar than different (Simon, 1946). Some argue that the size and task of any organisation has more effect on its characteristics than it being public or private (Rainey, 2003). Moreover, people in POs fulfil the same functions as in private organisations (e.g. secretary, HR-manager) (Rainey, 2003), and there is increasing blurring of the two sectors due to public-private partnerships (cooperative ventures between the state and private business (Linder, 1999)) and New Public Management (the notion that approaches used in the private sector are useful in the public sector too (Farazmand, 1999)).

Conversely, significant differences between public and private organisations have been reported (Bozeman & Bretschneider, 1994; Brewer, 2011; Rainey, Backoff, & Levine, 1976). Nonetheless, they must always be approached with caution. Many assertions are contended and scholars report mixed results on whether differences exist or not (for an overview, see Rainey, Bozeman, & Tech (2000)). Moreover, the distinction is possibly oversimplified and misleading (Rainey, 2003), as the differences often lie in other organisational characteristics than what the similarities look at. Therefore, when utilising this distinction in research, it is important to underline what role it plays.

Both the similarities and the differences between public and private organisations are relevant to this paper. Results from research in private organisations can be, and have been, transferred to POs (Fernandez & Rainey, 2006; Kickert, 2014). As most OCMS research has been done in the private sector, most theory in this paper stems from such research. Therefore, understanding the differences and similarities of public and private organisations allows for a better assessment of the extent to which private sector results can be generalised to the public sector.

The differences lie in three aspects: environmental factors, organisation-environment transactions and organisational roles, and structures and processes (Rainey, 2003). First, environmental factors for POs differ from those for private organisations. POs do not create output for economic markets and rely on government funding. This absence of market control gives lesser incentive to become more (cost-)efficient. Instead of market control, POs operate under stronger and more elaborate formal constraints such as procedures and objectives. This results in more formal administrative controls and less freedom in decision-making for public-sector managers than their private-sector counterparts. Moreover, POs are more exposed to political influences than private organisations (Rainey, 2003).

Second, organisation-environment transactions are distinctive. POs produce public goods, oftentimes with broad impact and symbolic relevance, that generally cannot be sold at a market price. They are typically produced in a coercive and monopolistic manner, as opposed to the competition between private companies on the market. This monopoly leads to intense public scrutiny for public managers. They are expected to operate fairly, responsively, honestly, openly and accountably more than private managers (Rainey, 2003).

Finally, organisational roles, structures and processes are different in POs resulting from the distinctive environmental factors and organisation-environment transactions. Goals are more abundant, ambiguous, conflicting and debatable, and harder to measure than in the private sector. (Rainey, 2003; Rainey & Bozeman, 2000) Due to this goal complexity combined with strict government controls, there is more bureaucracy in POs and decision-making involves more stakeholders and layers of approval. This leaves public managers with weaker authority and autonomy than their private counterparts, leading to constraints in rewarding, disciplining and firing employees (Rainey, 2003).

Overall, in this research the differences as well as the similarities between public and private organisations play a role. The similarities between the two types of organisations can help understand which literature insights from private organisations can be transferred to POs, since OCMS research has only limitedly been done in the public sector. The differences help understand and explain when results differ from those in private organisations.

2.2 Change in organisations

Change is ever-present, in some form and to some degree (Lewin, 1947). For organisations, not adjusting to changes can result in loss of competitive advantage and economic losses (Lozano, 2013). Change may be incremental, with slow changes through adaptation, or radical, with drastic and discontinuous alterations (Doppelt, 2009; Stacey, 2011). The former can bring long-term changes without much disruption, while the latter is more difficult and brings forth resistance (Doppelt, 2009; Stacey, 2011). Change can be planned, but it can also be emergent, where the organisation cannot control or even predict the change (Osborne & Brown, 2005). How people react to change and how committed they are depends on the context and process of change as well as on the content (Devos, Buelens, & Bouckennooghe, 2007).

Content-wise, there are many topics change may concern. One topic is change towards sustainability. CTS in organisations is often desirable as well as necessary due to growing environmental concerns. For effective OCMS it needs to address several organisational components: operations and production (e.g. technologies and energy sources), management and strategy (e.g. objectives and products), organisational systems (e.g. management skills and problem-solving approaches) and procurement and marketing (Lozano, 2009). To make CTS

lasting, organisational culture needs to become more sustainability-oriented (Doppelt, 2009; Kotter, 2007; Seel, 2000; Stapley, 1993).

In OCM, many models of change have been proposed. Some are specific to CTS (Lozano, 2008) or to POs (Osborne & Brown, 2005); still others are generic (Kotter, 2007; Lewin, 1947). Although reasons for change or strategies employed to effect change differ, the core remains the same: the organisation moves from their present state to some desired future state (Jones, 2007). Therefore, there is no reason to believe the general process of change differs between different types of change or different sectors. This paper thus sticks to a classic change model that can be applied to any type of change, not specific to POs or CTS. Specifically Lewin's (1947) model of change is used, supplemented by extensions and interpretations from others. Lewin's model is used widely because it is easy to understand and provides insight in the way change happens and can be influenced over time.

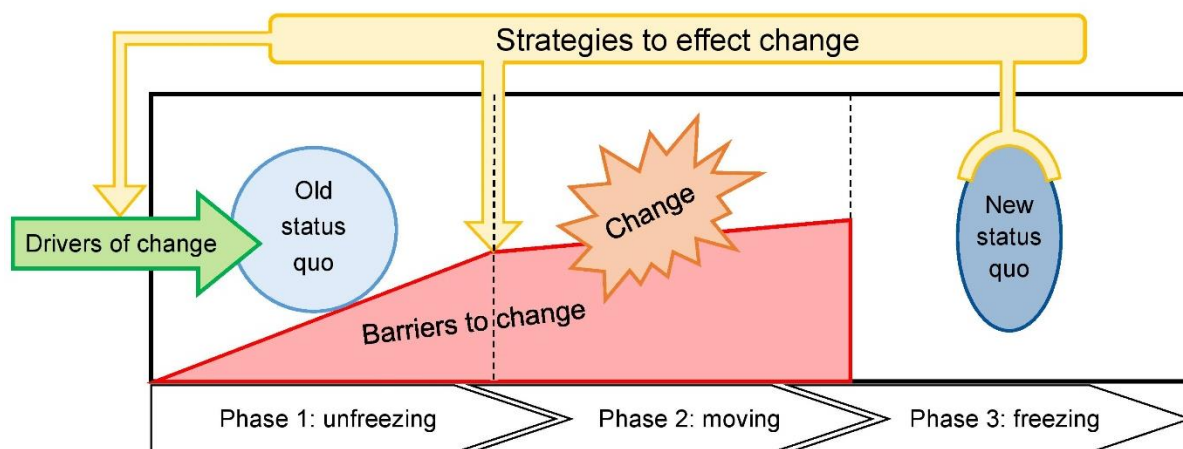


FIGURE 1: MODEL OF CHANGE, BASED ON LEWIN (1947)

Lewin's (1947) model has three stages: unfreezing, moving, and freezing (Figure 1). First, the present 'level' is unfrozen, meaning the status quo is broken. Old beliefs are challenged and discarded (Barr, Stimpert, & Huff, 1992) by increasing driving forces, diminishing restraining forces, or both (Judge & Robbins, 2015; Lewin, 1947). Unfreezing is a preparatory stage; once the old assumptions are 'unlearned', the organisation can proceed with the actual change (Barr et al., 1992).

Phase 2 is moving to a new level (Lewin, 1947), or implementing the change. Here, people look for new ways to do things through forming new understandings (Barr et al., 1992) and re-education (Bargal, 2006). Resistance to change is overcome and new values surrounding the change are slowly accepted (Bargal, 2006).

Finally, the new level must be frozen (Lewin, 1947) to ensure sustained implementation of the change: a new status quo. Without this step, the old status quo will be maintained for people fall back into old routines (Judge & Robbins, 2015). This is done by integrating the change into values and traditions (Kritsonis, 2005); the change must be embedded in the organisational culture (Doppelt, 2009; Kotter, 2007; Osborne & Brown, 2005; Seel, 2000; Stapley, 1993). Organisational is defined as "the way the [organisation] collectively thinks, feels and behaves, and its values are lived out through its day-to-day practices" (Robinson & Boule, 2012, p. 43).

2.3 Drivers of change, barriers to change, and strategies to effect change

In the proposed model, three factors influence the change process: drivers of change, barriers to change, and strategies to effect change. Papers concerning OCM take the notions of drivers, barriers and strategies as a given, sometimes creating confusion. This paper utilises the following definitions, based on OCM literature and dictionary definitions. Drivers to change are factors that stimulate the change to happen without the organisation's active efforts. Barriers to change are factors that stop, delay or alter the change, i.e. resistance to change. Strategies to effect change are plans of action consciously devised by the organisation to make the change happen. The key distinction between drivers and strategies, although sometimes overlapping, is whether the action is deliberate or not. In case of confusion, Appendix A provides some definitions.

The following sections discuss drivers for and barriers to CTS and strategies to effect CTS. Each section first gives a general description, linking back to the three-phase model, followed by an overview of which drivers, barriers or strategies are especially relevant in POs, and for CTS.

2.3.1 Drivers of change

Why does change happen? Many factors drive change; there is a distinction between internal drivers (inside the organisation's boundaries), external drivers (outside the organisation's boundaries) and connecting drivers (surpassing the organisation's boundaries) (Lozano, 2015). External drivers can be categorised in competitive, economic, political, global, demographic, social, ethical (Jones, 2007) and technological (Osborne & Brown, 2005) drivers. Internally, leadership is regarded as the most important driver for change in private (DeSimone & Popoff, 1997; Doppelt, 2009; Gill, 2002; Kotter, 1996) as well as public (Charlesworth, Cook, & Crozier, 2003; Fullan, 2002; Ridder, Bruns, & Spier, 2005) organisations. Leaders can mobilise everybody in the organisation and convince them to reach a goal (Gill, 2002). In sustainability-related literature, such leaders are often called sustainability champions (Lozano, 2008). Another important driver is culture (Robinson & Boule). Organisational culture is important in OCM as it influences how people perceive and receive change (Johnson, 1992; Stapley, 1993).

External and internal drivers are important during unfreezing, as reasons to instigate a change may come from both within (e.g. leadership) and outside of (e.g. new government policies) the organisation. In the move phase, internal drivers are important, as internal factors such as leadership move the change process forward. Freezing does not face many drivers as the change has already been implemented.

For the POs, some drivers are more important than others. As noted, internally, leadership is very important (Charlesworth et al., 2003; Fullan, 2002; Ridder et al., 2005). Employees' moral obligation and intrinsic motivation drive POs too (Parry & Proctor-Thomson, 2003). Externally, financial crises (Hendriks & Tops, 2003), government policies (de Boer, Enders, & Leisyte, 2007), and the global economy (Osborne & Brown, 2005) are important drivers.

Considering the multidisciplinary of sustainability, it is expected that CTS is more prominently driven by some factors than other types of change. Indeed, important external drivers are regulation and legislation, and stakeholder expectations (Lozano, 2015). Internally, intrinsic motivation and cost savings drive CTS (Lozano, 2015). Culture is also relevant for

Drivers of change	Important in phase(s)	Important in change in the public sector	Important in change towards sustainability
<i>Internal drivers</i>			
Leadership	<i>Unfreezing, moving</i>	x	x
Culture	<i>Unfreezing, moving</i>	x	x
Cost savings	<i>Unfreezing</i>		x
Moral obligation	<i>Unfreezing, moving</i>	o	o
<i>Connecting drivers</i>			
Reputation	<i>Unfreezing</i>		o
<i>External drivers</i>			
Financial crises	<i>Unfreezing</i>	x	
Regulation and legislation	<i>Unfreezing</i>	x	x
Global economy	<i>Unfreezing</i>	x	
Meeting stakeholder expectations	<i>Unfreezing</i>		o

TABLE 1: DRIVERS OF CHANGE, PER PHASE AND IN POS AND FOR CTS. (CHARLESWORTH ET AL., 2003; DE BOER ET AL., 2007; DESIMONE & POPOFF, 1997; DOPPELT, 2009; FULLAN, 2002; HENDRIKS & TOPS, 2003; JONES, 2007; KOTTER, 1996; LOZANO, 2015; OSBORNE & BROWN, 2005; PARRY & PROCTOR-THOMSON, 2003)

ITALIC = NOT BASED ON A SOURCE

X= NAMED AS A DRIVER IN GENERAL, O = ONLY NAMED FOR POS OR CTS

organisational sustainability, as it strongly influences how employees view and act on sustainability (Linnenluecke & Griffiths, 2010; Linnenluecke, Russell, & Griffiths, 2009). An important connecting driver is (brand) reputation (Lozano, 2015). Table 1 gives an overview of drivers of change in POs. In the leftmost column, a list of drivers can be seen, grouped in internal, connecting and external drivers. In the second column, it is shown in which phase they play a role. If the phase is in italics, this means this was not found in literature, but rather deduced from the type of driver. The third and fourth column show whether the importance of this driver is based on literature on OCM in POs, or on literature on OCMS in private organisations. An x indicates the driver was found in general OCM literature, while an o signifies they were specifically found in literature about POs and/or OCMS.

Barrier to change	Important in phase(s)	Important in change in the public sector	Important in change towards sustainability
<i>Internal barriers</i>			
Misunderstandings	Unfreezing, moving		
Inadequate communication	Unfreezing, moving	x	x
Lack of long-term planning	Unfreezing		x
Lack of top-management commitment	Unfreezing		
Change fatigue	Unfreezing	x	
Resistance to the idea itself	Moving		x
Threat to job security	Moving		
Fear of extra workload	Moving		o
Lack of trust	Moving		
Uncertainty	Moving		
Lack of knowledge	Moving		x
Group culture	Moving		
Bureaucracy	Moving	o	
Ineffective leadership	Moving	o	
Lack of awareness	<i>Unfreezing, moving</i>		o
The change not considered a priority	<i>Unfreezing</i>		o

TABLE 2: BARRIERS OF CHANGE, PER PHASE AND IN POS AND FOR CTS (DEL VAL ET AL., 2003; DENT & GALLOWAY- GOLDBERG, 1999; JONES, 2007; LOZANO, 2009; OREG, 2003; OSBORNE & BROWN, 2005)

ITALIC = NOT BASED ON A SOURCE

X= NAMED AS A DRIVER IN GENERAL, O = ONLY NAMED FOR POS OR CTS

2.3.2 Barriers to change

Although change is often necessary, individuals do not like change; they are happy with the status quo (Lozano, 2006; Senge, 2006). Changing behaviour usually means lower efficiency and confidence levels (Esther Cameron & Green, 2005). Resistance to change can be shown explicitly by verbal disagreement or unwillingness to contribute, or it may be less pronounced and more under the surface (Lewin, 1947).

Literature has identified many barriers to change (Lozano, 2009). They may be internal (e.g. misunderstandings), or from outside the organisation, e.g. from restrictive legislation. These barriers are often not recognised in literature (*cf.* Jones, 2007; Lozano, 2009), but in this paper are termed 'external barriers'. Both types may occur throughout the change process, but the final phase (freezing) should theoretically not encounter any barriers since these have ideally been straightened out during the move phase, so that the path towards institutionalisation is clear.

Many barriers are common regardless of the type of change. During unfreezing, common barriers to change are misunderstandings and inadequate communication (Dent & Galloway-Goldberg, 1999; Lozano, 2015), lack of long-term plans (del Val et al., 2003; Lozano, 2009; Oreg, 2003), and lack of top management commitment (del Val et al., 2003; Lozano, 2013). In the moving stage, common barriers are resistance to the idea itself (del Val et al., 2003; Lozano, 2009), lack of resources (Osborne & Brown, 2005), threat to job security (Dent & Galloway-Goldberg, 1999; Lozano, 2009), lack of trust (Dent & Galloway-Goldberg, 1999), uncertainty about the future (Dent & Galloway-Goldberg, 1999; Oreg, 2003), misunderstandings, inadequate communication, group culture, and bureaucracy (Lozano, 2009). In the freezing stage, barriers are less prominent as the change has already been implemented.

As with drivers to change, some barriers appear to be more relevant in POs, and for CTS. Common barriers to change in POs include bureaucracy (Rainey, 2003), change fatigue (Dent & Galloway-Goldberg, 1999; Piderit, 2000), ineffective leadership, unclear strategy and poor communication (Osborne & Brown, 2005). Common barriers to CTS are a lack of awareness, short-term thinking, lack of communication, sustainability not being a priority and fear of an increased workload (Lozano, 2012, 2013). Table 2 gives an overview, read in the same way as table 1.

2.3.3 Strategies to effect change

Organisations employ strategies to effect change: strategies to strengthen drivers, to overcome barriers (Lewin, 1947) and to embed the change into the organisational culture (Kotter, 2007). Strategies can be based on leadership (Lozano, 2009; Osborne & Brown, 2005), collaboration (Lozano, 2008; Osborne & Brown, 2005), education, emotional support, negotiation and bargaining, coercion and manipulation (Dent & Galloway-Goldberg, 1999; Jones, 2007; Lozano, 2009), communication and discussion, and participation and empowerment (Dent & Galloway-Goldberg, 1999; Jones, 2007; Lozano, 2009; Osborne & Brown, 2005). For an overview of how the different authors' classifications of strategies led to this list, see Appendix B.

Unfreezing, moving and freezing each require different strategies. Unfreezing first requires communication. In the unfreezing phase, employees need to know the logistics: what the change will be, when it will take place and how (Esther Cameron & Green, 2005). On top of that, a sense of urgency and a compelling reason why the change is necessary must be communicated (Kotter, 2007), e.g. by communicating shocking numbers relating to the need for change or concrete visual evidence (e.g. videos or posters) (Kotter & Cohen, 2002). The focus

should not exclusively be on the rational aspect, but also on playing into people’s emotions (Kotter & Cohen, 2002). This can be done through e.g. newsletters, bulletin boards, internal memos, one-on-one meetings, and presentations (Jones, 2007).

Leadership is also crucial during unfreezing, by being positive role models (champions) supporting the change and engaging in storytelling so employees can be convinced of the need for change (Esther Cameron & Green, 2005). Champions are responsible for directing the change with a vision and communicating it throughout the organisation (Kotter, 2007). Leadership was also named as a driver before; therefore it may be useful to revisit the definition of drivers versus strategies here. Drivers are stimulating factors that happen without active efforts, while strategies are intentional. For leadership, this means that it is a driver when someone shows leadership which inspires others, while it is a strategy when there is a conscious decision of someone to take the lead.

Finally, education is also necessary during unfreezing as employees often must learn new skills for the change (Esther Cameron & Green, 2005). Education reduces uncertainty by preparing employees for the change (Jones, 2007) through training, workshops and courses.

In the moving phase, key is to overcome resistance to change (Judge & Robbins, 2015; Kotter, 2007; Lozano, 2009). Important to note is that barriers to change and strategies to overcome them do not match one-on-one, and there is no set approach that always is effective. Rather, strategies of a type must be used to overcome the same type barriers, in a way that is applicable for the organisation in question (Lozano, 2009).

Strategies to effect change	Important in phase	Important in change in the public sector	Important in change towards sustainability
Leadership	Unfreezing, moving, freezing	x	x
Collaboration		x	x
Education	Unfreezing, moving	x	
Emotional support	Moving, freezing	x	
Negotiation	Moving	x	
Coercion and manipulation		x	
Communication and discussion	Unfreezing, moving, freezing	x	
Participation and empowerment	Moving, freezing	x	x
Political support	Freezing	x	

TABLE 3 **STRATEGIES TO ENFORCE CHANGE PER PHASE, IN POS AND FOR CTS** (ESTHER CAMERON & GREEN, 2005; DENT & GALLOWAY- GOLDBERG, 1999; JONES, 2007; JUDGE & ROBBINS, 2015; KOTTER, 2007; KOTTER & COHEN, 2002; KRITSONIS, 2005; LOZANO, 2009; OSBORNE & BROWN, 2005)

While moving, communication is also crucial. As the change is implemented, progress must be communicated (e.g. through monthly updates). Specifically, short-term wins should be communicated to show the change is effective and successful (Kotter, 2007; Kotter & Cohen, 2002). Those who are involved in the improvements should be recognised and (financially or otherwise) rewarded (Kotter, 2007; Kotter & Cohen, 2002), a form of manipulation. Communication in dialogue is also important: setting up problem-solving groups or discussion boards around the change to keep people involved while valuing and using their input (Osborne & Brown, 2005). This is simultaneously a form of participation and empowerment. Employees are also empowered by putting them in new roles, making them see from a different point of view, by reducing bureaucratic procedures and providing a framework consistent with the change (Kotter, 2007; Kotter & Cohen, 2002). People who oppose the change may also be convinced by bargaining with them about the change and their role in it (Kotter, 2007). Once again, leadership here is crucial as they can employ these strategies, provide employees with encouraging anecdotes and show how committed they are to the change by acting on it themselves (“walk the talk”) (Kotter & Cohen, 2002).

To freeze the change, communication is again important as the links between the new behaviours and success must become known (Kotter, 2007). New employees, who might have mindsets conflicting with the new status quo, must be educated on the new culture, e.g. through videos (Kotter & Cohen, 2002). The change can also be consolidated by empowering employees through reinforcing the new behaviours and routines in formal and informal mechanisms (Kritsonis, 2005). Leadership is important; leaders can continually make the need for the change clear and act as role models (Esther Cameron & Green, 2005). Promoting people who actively use and support the change can ensure it becomes embedded in the organisational culture (Kotter & Cohen, 2002), a form of political support. Providing emotional support, e.g. through counselling, sensitivity training and team-building helps institutionalise the change further (Jones, 2007).

Overall, going over OCMS literature, no significant differences between strategies to effect change between public and private organisations were found. This makes sense as New Public Management has brought private sector management practices to the public sector (Dunleavy, Margetts, Bastow, & Tinkler, 2006; Osborne & Brown, 2005). However, for CTS, empowerment, leadership and collaboration (between departments and with competitors, suppliers, governments, NGOs and stakeholders) are important strategies (Lozano, 2012). Table 3 gives an overview.

2.4 Conceptual model

As is clear from the previous sections, each phase in the change process has a unique set of drivers, barriers and strategies common for POs and CTS. Taken together, they form an image of how CTS in POs works, which can be overlaid with the model in Figure 1. Figure 2: Drivers, barriers and strategies for CTS in POs per phase shows an overview of the drivers, barriers and strategies per phase as outlined in the theory. This model will be tested in this study; the factors in the conceptual model will be compared to empirical data.

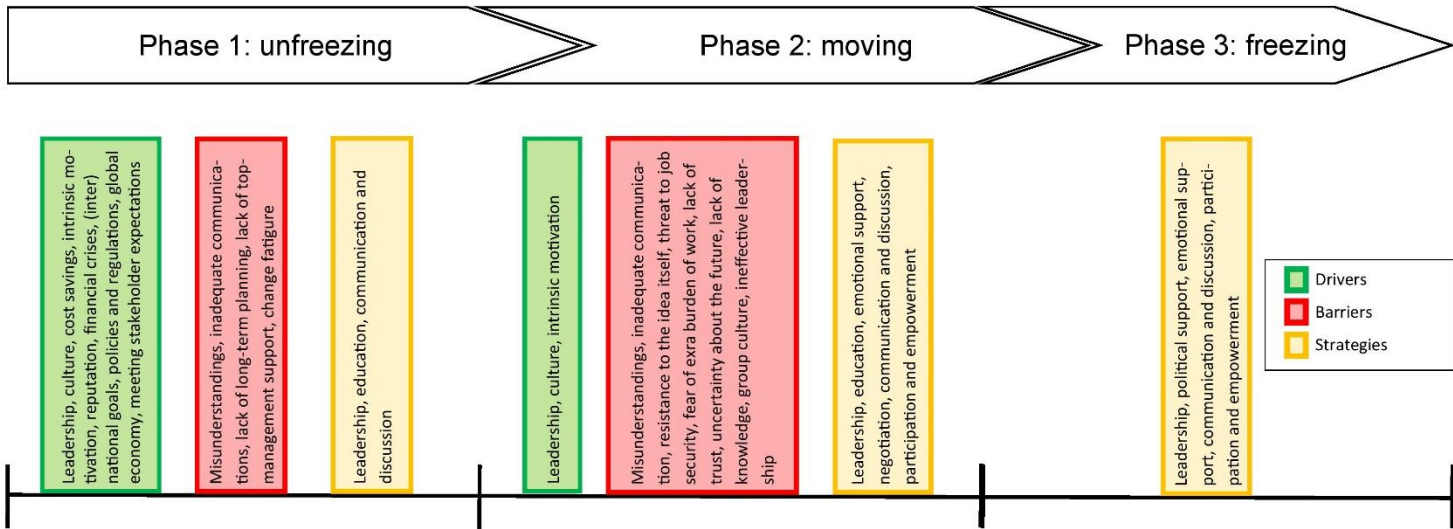


FIGURE 2: DRIVERS, BARRIERS AND STRATEGIES FOR CTS IN POs PER PHASE

3. Methods

3.1 Research design

Considering the aim of this study, which is to gain a deeper understanding of what drivers, barriers and strategies for CTS are present in POs, conducting an embedded multiple case study is deemed most appropriate. A case study design is chosen because it allows for insight in the context (Saunders, Lewis, & Thornhill, 2007) of the change: changes are not a stand-alone process, but are directed by e.g. the political or organisational context. Doing a case study allows for understanding how such factors influence the change process. Multiple cases pursuing a common goal are chosen to analyse differences, similarities and possible patterns within the organisation of the case study.

The research is exploratory in nature, as it views OCMS from a new angle, namely in POs. It identifies key factors influencing OCMS in POs and establishes priorities regarding drivers, barriers and strategies in public-sector OCMS. On the other hand, the research contains some explanatory aspects as well, as it attempts to provide relationships between drivers, barriers and strategies and the success of pilots and projects in the case study.

3.2. Empirical context and case selection

The cases studied for this research are multiple CE pilots and projects in Dutch central government, together working towards a more sustainable organisation and Netherlands. As the government-issued Program CE details, the Dutch government aspires a CE in the Netherlands by 2050 (Ministerie van Infrastructuur en Milieu & Ministerie van Economische Zaken, 2016). CE is an economic system that is effectively closed: no waste exists as everything is reused, recycled, or returned to the earth. Toxic materials are avoided and only renewable energy is used (Ellen MacArthur Foundation, 2015).

The Dutch national government wants to set an example by implementing circular principles in its own procurement practices. A number of CE projects in different procurement categories have been done, or are still going on. The projects are planned change, implemented incrementally. Some of these are pilots, which are small-scale, only involving a few products. The pilots serve as a testing ground, in general to substantiate arguments for implementing the change on a government-wide scale. The projects, on the other hand, are immediately implemented government-wide, without a prior pilot. As the projects are immediately implemented broadly, there is no aim to scale up. There is one exception, where the aim is to make the whole procurement category circular. Table 4 gives an overview of which pilots and projects are studied, which procurement category they belong to, and what the aim for scale-up is. From now on, to avoid redundancy, all pilots and projects will be called projects.

The transition to CE was chosen as a case study for several reasons. First, this transition is ahead of the policies guiding it, from which useful lessons can be drawn. Second, projects are varied in their success rate and their running time, providing a variety of input. Third, CE is currently a widely popular topic in sustainability, making it highly relevant to examine.

The pilots specifically were chosen in consultation with the Manager Sustainable Operational Management at the Dutch government's procurement office. This manager's role is to stimulate sustainability in the government's procurement practices, and hence he has a solid overview of sustainability projects, and knowledge on what CE entails. He identified what changes were by monitoring sustainability indicators, the number of projects, and the scope of the projects.

Project	Description	Procurement category	Aim for scaling up?
“Ban the Shredder”	Internal policy says all phones and laptops that have been written off need to be shredded for data security reasons. The pilots test how secure wiping the phones is, and what it means financially to sell them afterwards	ICT hardware	Aim to wipe and sell all iPhones government-wide, eventually other brands too
“Laptops schonen”			Aim to change internal policy, allowing for wiping and selling all used laptops
Recycled content towels & coveralls	By trying out two products, the pilot is a testing ground for closing the loop: purchasing textiles with recycled content, and recycling them after use	Workwear	Aim is to eventually also close the loop for other products in the category as well
Biobased coffee cups	A small-scale pilot was done to test if biobased coffee cups, met the same quality standards as plastic cups and were user-friendly	Catering	The decision has been made to make all coffee cups biobased, as soon as current contracts end
Temporary, circular courthouse	Temporary location while permanent courthouse is renovated. After being used for 5 years, will be broken down and reused for ~70%	Not part of category management	No goal to make this a structural thing, but aim to make other suitable projects circular too
Waste separation	Move away from personal bins at each desk, towards central recycling stations	Waste management	Immediately implemented government-wide
Confidential paper	Closing the loop, from downcycling to upcycling: change towards purchasing recycled paper, and recycling to paper up to seven times instead of one-use tissue	Confidential paper and data carriers	Immediately implemented government-wide
Governmental marketplace	An eBay-style platform on which government organisations place their excess furniture. Procurers must check it before buying from the market	Office furniture	Immediately implemented government-wide, but aim to make entire category circular

TABLE 4: PROJECTS PART OF THE TRANSITION TO CE IN DUTCH CENTRAL GOVERNMENT

Projects in this research fit the following criteria: they recycled or used materials or products, or focused on biobased materials (i.e., were part of CE); they necessitated a change in behaviour from procurers, users or both (i.e., it constituted a change); it was clear what activities fell under the scope of the project; and it was clear who could be interviewed about the project. The manager's input on whether or not the projects were interesting was also valued.

In addition to the small-scale change towards CE, Dutch government also aims to become fully circular in 2050. Their nationwide Program CE details plans for both the country as a whole and their own organisation; the start is making the office furniture category fully circular, and other categories will follow suit in the coming years (Ministerie van Infrastructuur en Milieu & Ministerie van Economische Zaken, 2016). Hence, the organisation's overall transition to CE was analysed with the help of the pilots and interviewees who guided this overall transition.

For each project, three layers of management exist. First, different ministries construct the country's policies on CE sustainability; most importantly, Economic Affairs (EZ), and Infrastructure and Environment (IenM). Input from this level was mostly used to understand the overall transition towards CE. The Ministry of the Interior and Kingdom Relations (BZK) then translates this into policies for public procurement. Finally, there is the implementation: procurement implementation centres (IUCs) and each ministry's general director procurement (CDI) apply these policies to their activities. Not part of this chain of command is PIANOo, a Dutch expertise centre for public procurement. They have knowledge on public procurement and CE that is useful for this research (PIANOo, 2016).

The unit of analysis for this research was a project within its procurement category, which is further embedded in the overall transition towards CE. Essentially, this allowed for analysis on three levels: level 1, the project level; level 2, the procurement category level; and level 3, the overall operational management level. The results were analysed on these three levels.

The unit of observation was employees of Dutch ministries and agencies that are somehow involved in the case study. Employees selected for this study may be related to the case in two ways: by creating relevant policies, or by carrying out those policies. For each project, at least one representative was interviewed, supplemented by any documents about the project. In addition to project-related interviews, some interviewees gave their input on the overall transition towards CE. Overall, subjects filled a range of positions, operating in different departments. An overview can be found in table 6. Government employees that fit the criteria participating in the study were invited via phone call wherever possible and with a follow-up e-mail for confirmation. For all abbreviations of government organisations, see Appendix C.

3.3 Data collection and participant selection

Data was collected via two approaches: desk research and interviews. As a first step, relevant papers, such as policy documents and project evaluations were reviewed. Many projects, being pilots are precursored by research, have been reviewed and evaluated, and have garnered media attention. These documents were suitable for desk research. The Facilitator Circular Operational Management and the Manager Sustainable Operational Management, who both have a good overview and insight in the projects, were asked for internal documents regarding the projects. Interviewees were also asked to provide any reports or other written material on the project in question. Websites such as PIANOo.nl and Rijksoverheid.nl furthermore contained useful written pieces, and a Google search further revealed media reports on some cases. Table 5 gives an overview.

Desk research did not only function as a method of data collection, but also to gather knowledge on the projects before doing interviews. In terms of data collection, documents mostly gave insight in drivers and barriers, and strategies to a lesser extent. In terms of interview preparation, they often contained information on who was involved, timelines of the projects, the scope of the project and reasons it was established.

Document	Project	Source
Blog: Ban the shredder	Ban the shredder	Internal (confidential)
Evaluation pilot wiping data carriers	Laptops schonen	Internal
Report processing ICT	Laptops schonen	Internal
Category plan workwear	Recycled content towels & coveralls	Internal
Interview Rob van Arnhem	Recycled content towels & coveralls	MVO Nederland
Sustainable procurement in practice	Recycled content towels & coveralls	PIANOo.nl
Recyclable clothing stewards	Recycled content towels & coveralls	Rijkswaterstaat.nl
PhD: Opening Innovation Procurement: Roles for Standardisation, Collaboration, & Intermediation	Recycled content towels & coveralls	TU Berlin
Evaluation Coffee Cups	Biobased coffee cups	Internal
Final report Coffee Cups	Biobased coffee cups	Internal
Biobased Procurement Coffee Cups	Biobased coffee cups	Internal
In conversation about biobased coffee cups	Biobased coffee cups	PIANOo.nl
The route to a circular category	Marketplace office furniture	Internal
Ambition Document Temporary Courthouse	Temporary, circular courthouse	Rijksvastgoedbedrijf.nl
The search for a sustainable paper sector	Confidential paper	PIANOo.nl
Netherlands Circular in 2050	Overall	Rijksoverheid.nl

TABLE 5: DOCUMENTS REVIEWED FOR THIS RESEARCH

The second step consisted of semi-structured interviews, providing primary data. In Appendix D, a setup for the semi-structured interviews can be found. The duration of the interviews was 30 to 90 minutes. First, open-ended questions were asked: what drivers, barriers and strategies were encountered in the project? After that, any drivers, barriers or strategies from the conceptual model not mentioned by the interviewee were presented to them: were these encountered, and if yes, were they important? This allowed for both new input from the interviewees and accurate testing of the conceptual model.

Interviewee	Function and organisation	Input on project, procurement category or overall
1	Former Program Manager CE, RVO	Ban the shredder
2	Management Support ICT, DRZ	Marketplace office furniture; laptops schonen; ban the shredder
3	Category Manger ICT, BZK	Overall; laptops schonen; ICT procurement category
4	Deputy Category Manger ICT, BZK	Overall; laptops schonen; ICT procurement category
5	Category Manager Workwear, DEF	Overall; recycled content towels & coveralls; workwear procurement category
6	Advisor Socially Responsible Procurement Textile, RWS	Recycled content towels & coveralls; workwear procurement category
7	Advisor Socially Responsible Procurement Textile, RWS	Recycled content towels & coveralls; workwear procurement category
8	Category Manager Catering, RWS	Biobased coffee cups; catering procurement category
9	Supplier Manager Catering, FMH	Biobased coffee cups
10	Policy Officer Socially Responsible Procurement, BZK	Marketplace office furniture
11	Advising Architect, RVB	Temporary, circular courthouse
12	Category Manager Paper, VenJ	Confidential paper
13	Advisor Operational Management, FMH	Waste separation
14	Category Manager Waste Management, EZ	Waste separation
15	Facilitator Circular Operational Management, RWS	Overall
16	Manager Sustainable Operational Management, BZK	Overall; marketplace office furniture; paper; waste management; biobased coffee cups; recycled content towels & coveralls; laptops schonen
17	Advisor Circular Economy, PIANOo	Overall; marketplace office furniture
18	Deputy Central Director Procurement, SZW	Overall
19	Former Chief Procurement Officer, BZK	Overall; marketplace office furniture
20	Secretary Dutch Resource Strategy, EZ	Overall
21	Policy Coordinator Waste to Resource, IenM	Overall
22	Special Envoy Natural Resources, BZ	Overall

TABLE 6: INTERVIEWEES IN THIS RESEARCH, ANONYMISED

A number of interviewees was also presented with a list of the drivers, barriers and strategies from the conceptual model and asked to rate their importance in the change process from not important to very important. Due to time restraints during interviews, only 11 subjects were presented with this list; others were simply asked if they encountered these, but not asked to rate their importance.

In total, 22 interviews were conducted. Subjects occupied various positions: some were managers whereas others were not, some were policymakers whereas others were involved in implementation, and still others were advisors. Some policymakers made national policy whereas others focused on internal policies, some were involved in setting up the project, and others were involved in later stages. Some interviewees were involved in more than one project, others in just one. Some interviewees were not involved in any of the projects, but rather gave input on the overall transition towards CE. All projects but the temporary courthouse were discussed with at least two interviewees. Table 6 gives an overview of all interviewees, their position and organisation, and what project they were interviewed about.

Not all potential subjects were able to attend an interview due to their personal circumstances. Due to this, some projects were only studied from one angle, or mostly seen from the unfreeze phase. Most notably, the office furniture project results are mostly focused on the unfreeze phase. Moreover, due to the fact that the courthouse project was outside of the coordinated procurement categories of the Ministry of the Interior, but rather was part of the separate Governmental real estate company” (RVB), it proved difficult to find more than one interviewee. Table 7: Number of interviewees and documents per project gives an overview of how many interviewees and documents were consulted for this research.

	Number of interviewees	Number of documents
“Ban the Shredder”	2	1
“Laptops schonen”	4	2
Recycled content towels & coveralls	4	5
Biobased coffee cups	3	4
Temporary, circular courthouse	1	1
Waste separation	3	0
Confidential paper	2	1
Governmental marketplace office furniture	4	1
Overall	9	1

TABLE 7: NUMBER OF INTERVIEWEES AND DOCUMENTS PER PROJECT

3.4 Operationalisation and data analysis

First, all interviews are transcribed from their recording. Not only were the exact words transcribed, wherever relevant the way the interviewees said it and nonverbal cues were also considered. A summary of the document was made and sent to the interviewee for verification as soon as possible after the interview. Any comments were taken into account.

After interviews were transcribed, the documents and the transcribed interviews were analysed and coded. First, the drivers, barriers and strategies of the project itself were coded, which is level 1 in this study. Generally, the projects are meant to be scaled up eventually, and the

factors influencing this change were coded separately as well (level 2). Finally, the government-wide transition towards CE was coded (level 3).

Code tree		
Drivers of change Drij*, stimul*, aanwakker*, bevorder*, aanleiding, reden, omdat, motiv*, motief	<i>Internal drivers</i> Organisatie, ministerie, agentschap, *naam agentschap/ministerie*, ons, wij, binnen, het Rijk	SG, leider*, cultu*, besparing, kosten, geld, budget, business model, verdienmodel, impact, efficiënt, waarden, doel*, samenwerk*, moreel, zelf, ik, ethisch, toekomst, verantwoordelijk*, intrinsiek, toekomst, kinderen, support, steun
	<i>Connecting drivers</i>	Stakeholders, verwacht*, tevreden, rapport, verslag, imago, grondstof*, samenwerk*
	<i>External drivers</i> Wereld, Nederland, anderen, bevolking, omgeving, milieu, ontwikkeling, uitdaging	Economi*, wet*, regel*, crisis, overheid, regering, kabinet, verdrag, convenant, VN, UN, EU, OESO, OPEC, buitenland, globaal, mondiaal, Europa, diversiteit, protest, onrust, NGO, rechten, innovatie, markt
Barriers to change Belemmer*, tegenwerk*, tegenslag, probleem, hinder, dilemma, kwestie, moeilijk*, uitdaging, punt, lastig, complicatie, barrière, drempel, mis, obstakel, obstructie, ontmoedig*, in de weg, ingewikkeld, tegenstand, tegenargument, gebrek aan, niet, niet eens	<i>Internal barriers</i> SG, organisatie, DG, team, ministerie, agentschap, *naam agentschap/ministerie*, ons, wij, binnen	Misverstand, communic*, plan*, support, steun, onzekerheid, effectief, druk, stress, geld, budget
	<i>Connecting barriers</i>	Stakeholders
	<i>External barriers</i> Wereld, Nederland, anderen, bevolking, omgeving, milieu, ontwikkeling, uitdaging	Economi*, wet*, regel*, crisis, overheid, regering, kabinet, verdrag, convenant, VN, UN, EU, OESO, OPEC, buitenland, globaal, mondiaal, Europa, diversiteit, protest, onrust, NGO, rechten, innovatie, markt
Strategies to effect change Strategi*, beleid, project, doel, stimul*, verder, helpen, hulp, onwikkell*, toegepast, toepassen, gedaan, doen, proberen, succes, slagen, slaagt, ervoor zorgen, zodat, sturen, goede richting, dirigeren, reguleren	<i>Strategies to stimulate drivers</i> Versterken, beter, meer, opdrijven, sterker, bekrachtigen, voeden	Leider*, vergader*, besprek*, manager, team, groep, afdeling, praten, geld, tijd, mensen, middelen, macht, plann*, kans geven, monitor*, steun*, educatie, leren, train*, cursus, opleiding, presentatie, inform*, poster, mail, nieuwsbrief, artikel, intranet, rijksportaal, bonus, belon*, erkenn*, promotie, discussi*, steun, gesprek, onderhandel*, verplicht, dwingen, dwang, empower*, macht
	<i>Strategies to overcome barriers to change</i> Verminder*, wegwerk*, overwin*, minimalis*, reduce*, terugdringen, verkleinen, verlagen, afnemen, minder, lager, weg, opheffen	
	<i>Strategies to institutionalise the change</i> Blijvend, cultuur, langdurig, duurzaam, permanent, vast, bestendig, termijn	

TABLE 8: CODE TREE USED TO GUIDE THE ANALYSIS OF DATA

Coding was done in NVivo. First, the data was divided in categories: drivers, barriers or strategies. After this, it was determined what specific driver, barrier or strategy it was. For some data units, this distinction was straightforward; especially in interviews, question preceding the answer could usually reveal what it referred to. However, documents did not follow the same structure, and sometimes interviewees digress. This is where the code tree (Table 8) provided guidance. Certain words should prompt what the data unit refers to, which are grouped in the code tree. Not only does the code tree contain key words that indicate whether the data unit is a driver, barrier or strategy, it also contains words for specific drivers, barriers and strategies. It contains those found in the conceptual model, but also others found in literature. This ensures (almost) all data units can be coded, rather than just the ones corresponding to the conceptual model. If there was still any doubt, the definitions of drivers, barriers and strategies (see Appendix A) guided the coding of data units. This allowed coding to be reliable, replicable and transparent.

The barriers, drivers and strategies were then assigned to the relevant phase (unfreezing, moving or freezing). Here, the context was key: indications of time (e.g. in the beginning, now, early in the process) showed which phase the factor was relevant in. After coding was done, the drivers, barriers and strategies were visualised in a diagram showing the different phases. An example is seen in Figure 3. In this figure, it also is shown by how many interviewees each factor is named. Although this may sometimes be an indicator of the importance of the factor, this is not always the case. Because interviewees had different roles in the project, and thus different perspectives, not every interviewee could see every factor. The documents also did not focus on every aspect of a project, hence some factors are mentioned more there. Therefore, the number of times a factor was mentioned was not a direct indicator of their importance. Thus, the overall importance of a factor was determined by additional indicators. The context provided insight in the importance of a factor, sometimes interviewees were asked directly how important the factor was. These figures allow for within-case analysis, as well as cross-case analysis. For intra-case analysis, the comparison mostly focused on the development over time. Which factors were at play in the beginning, and how did this change later? How did this differ between the project level and the procurement category level? For cross-case analysis, the focus was mostly on overall trends and similarities.

3.5 Research quality indicators

The chosen research design has presented several threats to research reliability and validity. Reliability may be lowered due to observer bias (the way data is interpreted (Saunders et al., 2007)). However, using the code tree and concept definitions, this was minimised. Due to these two tools, the research increased in reliability and is also replicable.

Reliability was likely threatened due to the timing of the study. As some projects are not finished yet, and scaling up is still in initial stages, replicating this research in e.g. 1 year time may yield different results. However, it should then mostly yield additional results due to insights that come as the projects develop. It is unlikely the results found in this research will not be found later in time.

The interview questions may have threatened construct validity: did the questions actually measure what was intended to be measured? To improve this, the concepts used were defined carefully (Appendix A) and reviewed by professors.

Internal validity may also be threatened: although interviewees may mention certain drivers, barriers or strategies as important or decisive for the project, they may overlook certain other factors that affected it.

External validity should also be carefully considered in this case study. The generalisability is limited by the organisation being a national government, which is different in size, function and power than other POs, e.g. schools, hospitals or universities. The large procurement budget of the Dutch national government (10 billion euros annually (Rijksoverheid, n.d.-b)) also makes it a unique case.

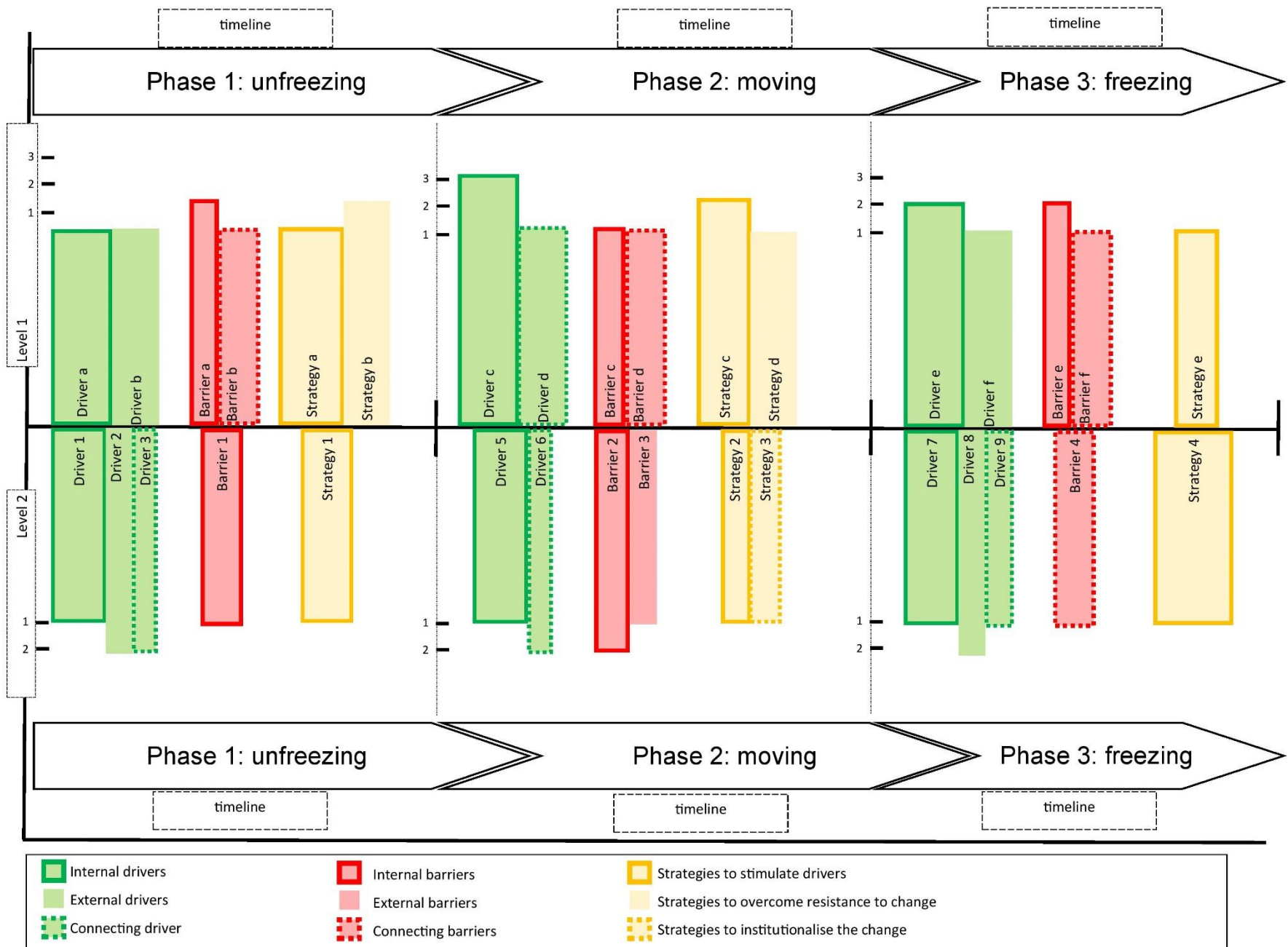


FIGURE 3: EXAMPLE OF HOW DATA WILL BE VISUALISED IN THE RESULTS

4. Results

This section discusses the results of the interviews and the desk research according to the conceptual model. Several levels of change are discussed. First, there is the project level (level 1), which is a small-scale try-out project generally requiring few layers of approval. If the project is deemed successful, the aim is to scale up and apply it in operational management government-wide. This is done in government-wide procurement categories, representing the second level of change (level 2). Finally, the central governments operational management overall is another change trajectory, in which the projects and their procurement categories are embedded (level 3). In this section, the projects and their procurement categories are discussed first, followed by the overall operational management. Note that a factor being named more often does not automatically mean it is more important. Sometimes the context was used to determine the importance of a factor, other times was asked directly. The most important factors are discussed in-text; others may be found in the figures.

4.1 Level 1 and 2: Projects and the corresponding procurement category

4.1.1 ICT hardware

In the past, all written-off hardware was wiped clean of data and subsequently sold. However, as technology developed, AIVD, the Dutch intelligence agency, could not keep up with certifying cleaning software, and hence the decision was made to shred all data carriers, as data security could not be guaranteed. Nowadays, employees are attempting to revert this change, to diminish wastefulness. Two projects in the ICT category were studied: one with reselling laptops instead of shredding them, and an equivalent, albeit smaller one, with phones. Figure 4 gives an overview of the results from this case study.

Laptops

The project with laptops was executed in 2016, and was immediately done on a large scale, with over 23,000 devices. DRZ, the organisation responsible for all redundant government goods, charged €17,50 per shredded computer. The goal of the project was dual: on the one hand reducing wastefulness, and on the other hand to use reselling to fund shredding (for e.g. unsellable or highly confidential laptops), thus cutting costs. One project was done first, subsequently evaluated, and a second one was done integrating the lessons learned from the first project. After that, both projects were evaluated together. Overall, it was found that reselling could not cover the costs, mainly because too few computers were sellable. Some government organisations were not used to selling computers, so they handled them carelessly and damaging them, whereas others did not trust DRZ's cleaning process and removed hard drives before delivering computers to DRZ. Moreover, recent cleaning software was not certified, not allowing for newer laptops to be wiped and sold. This caused the project to reach a plateau after evaluation. Laptops were being shredded again, and no decision was made to change to wiping and selling. Some champions, however, were still trying to make it standard practice. Recently a CE motion in parliament finally led to the decision restart the project. This indicates the project is in the freeze phase, possibly past it already.

Phones

The project with phones is much smaller in scale: 100 phones have been sent to DRZ to be wiped and sold. This was a bottom-up project, as opposed to the top-down approach of the laptop project. One sustainability champion was very dedicated to the project. First, she gathered top management support, and after that she researched issues such as cleaning

software and data security, internal rules, and costs. Eventually, after getting a test batch of phones cleaned and analysing what data was left on it, she “got the green light”. Now the project is a reality she is working on scaling up, involving other government organisations. As the project has not finished yet, but scaling up is being worked on, the project is edging towards the freeze phase.

Level 1

Unfreeze phase

Drivers in the unfreeze phase of both projects are similar: the goal of reducing waste and cost savings are important instigators, whereas intrinsic motivation and leadership further stimulate the project. Other drivers, such as (inter-)national goals and policies and the government’s exemplary role, were used as arguments to legitimize the projects rather than a direct motivation to start them. “*The motivation for myself was my intrinsic motivation, and my boss had the same. [...] besides that, what I used as argumentation was: guys, [CE] is national policy [...] so we also need to do this as an organisation. Well, that did help.*” The key difference between the projects is that one was top-down, while the other was bottom-up. In the phones project, a sustainability champion approached their manager in order to get their idea from the ground, while the laptops project came from managers who asked relevant parties to implement it.

Both projects faced similar barriers as well: data security issues, which resulted in restrictive regulations and bureaucracy with removing such regulations. Lack of knowledge about data security and an organisational culture that is risk-averse further complicated the process in the unfreeze phase.

While lack of knowledge was a problem, a lot knowledge was available in different departments, such as a department called REBus, and the data security team. Thus, collaborating across departments helped stimulate drivers as well as remove barriers. Research and learning by doing were other important strategies to gain knowledge, while communication and discussion and lobbying were crucial in gaining support.

Move phase

As the projects progressed to the move phase, enthusiasm of colleagues and the prospected cost savings fuelled its development. As noted before, some barriers were also encountered in this phase. Lack of trust in DRZ caused issues, as this resulted in laptops without a hard drive or disposal outside of the official routes (no compliance with rules). Other laptops were damaged, due to laziness and not handling laptops carefully. Moreover, the current infrastructure did not distinguish between different gradations of confidentiality, making execution of the projects difficult. External issues included a lack of demand for the used goods. By communicating about the pilot and explaining proper handling of devices, as well as pressuring data security officers to work according to the rules, these problems are attempted to be diminished.

Freeze phase

Currently, champions are working on scaling up the project, by communicating (e.g. lobbying at other departments), and working on anchoring it in policy. “*I have a meeting at EZ soon [to see if they can join], and I am bringing it to the attention of the Programma Versnelling Duurzame Bedrijfsvoering Rijk*”. Moreover, a vote in Dutch parliament recently pressured decisionmakers to make the projects permanent.

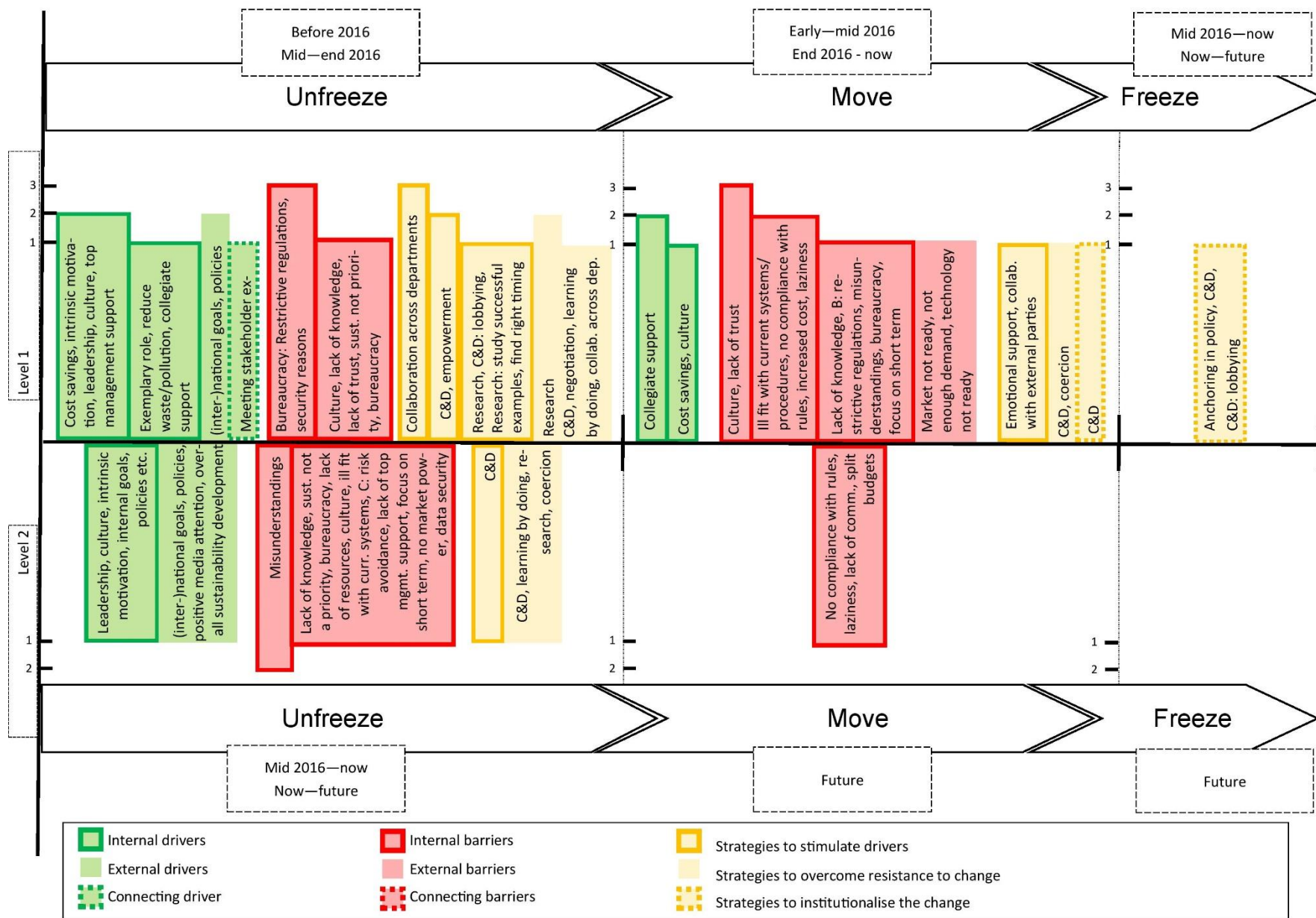


FIGURE 4: RESULTS FROM THE ICT PROJECTS AND THE RESPECTIVE PROCUREMENT CATEGORY

Level 2

Drivers on level 1 and 2 are generally comparable, centring around leadership, intrinsic motivation, (inter-)national goals and policies, and reducing waste. On both levels, concerns about data security are the main barrier. This barrier is the main reasons the procurement category as a whole has remained the unfreeze stage for an extended period of time. The projects are used as successful examples to show people CE can work, but data security concerns (*"I'd rather see it being shredded. [...] Who guarantees the software is wiping it completely?"*) are more powerful. These concerns have led to the "regulation equipment management" (*Regeling materieelbeheer*). This rule formally obligates the agency handling written-off goods to shred hardware. Recently, however, a vote in parliament overruled this rule, and has revived the project. Hence, politics is an important driver on this level and allowed it to start the move phase soon.

4.1.2 Workwear

The category plan, written by the category manager (CM) workwear, describes the ambitions for the category as a whole. It is considered ambitious in its sustainability vision, for example by awarding tenders 50% on sustainability criteria. It was approved in 2014. One of the goals is to contribute to *"closing the textile-loop"*. The project with towels and coveralls for the military, started shortly after approval of the category plan, is an execution of this, by buying products with recycled content and recycling the material at the end of life. Implementing this project was relatively easy: the infrastructure to collect and sort material was already there for security reasons (making sure military goods do not end up on the market), it saves burning costs, and in addition it employs people with poor job prospects. All in all, it is often cited as a good example of CE, and the CM is hence looking to expand the project to other products, as far as the market allows. This indicates the project is in the freeze phase. Figure 5 gives an overview of the results from this case study.

Level 1

Unfreeze phase

According to many, the success of the project is thanks to the CM with a strong vision, who remarked about the category's goals *"I made up all this myself!"* Other people indicate he is indeed proactive: *"he is very much like: "we are going to do this!"*. This can be seen in the drivers in the unfreeze phase: intrinsic motivation and leadership are major instigators. Other drivers, such as cost savings and organisational culture, have aided the development of the project. Still other drivers, most notably the government's exemplary role and (inter-)national goals and policies were used to convince people.

Barriers are mostly in the past, early the unfreeze phase. Most notably, although sustainability ambitions were communicated, it was not a priority as tenders were still awarded on the lowest price. Furthermore, the market was not ready to deliver recycled products. Another problem identified was, and still is in the move phase, the risk-averse organisational culture.

The CM states he identified barriers, worked to remove them or work around them. Most notably, he collaborated with the market by asking them about their capabilities and communicating his ambitions and his upcoming tenders. This way, he prepared and stimulated the market, which allowed the government to change. In another example, he states *"uniforms [...] have strict quality requirements, in which recycled content cannot be used. So, I put it in the lining. [...] The market decides. My ambition is higher than the market can cope with, but I adjust my speed to the market."* To circumvent the risk-averse culture, the CM states: *"I just*

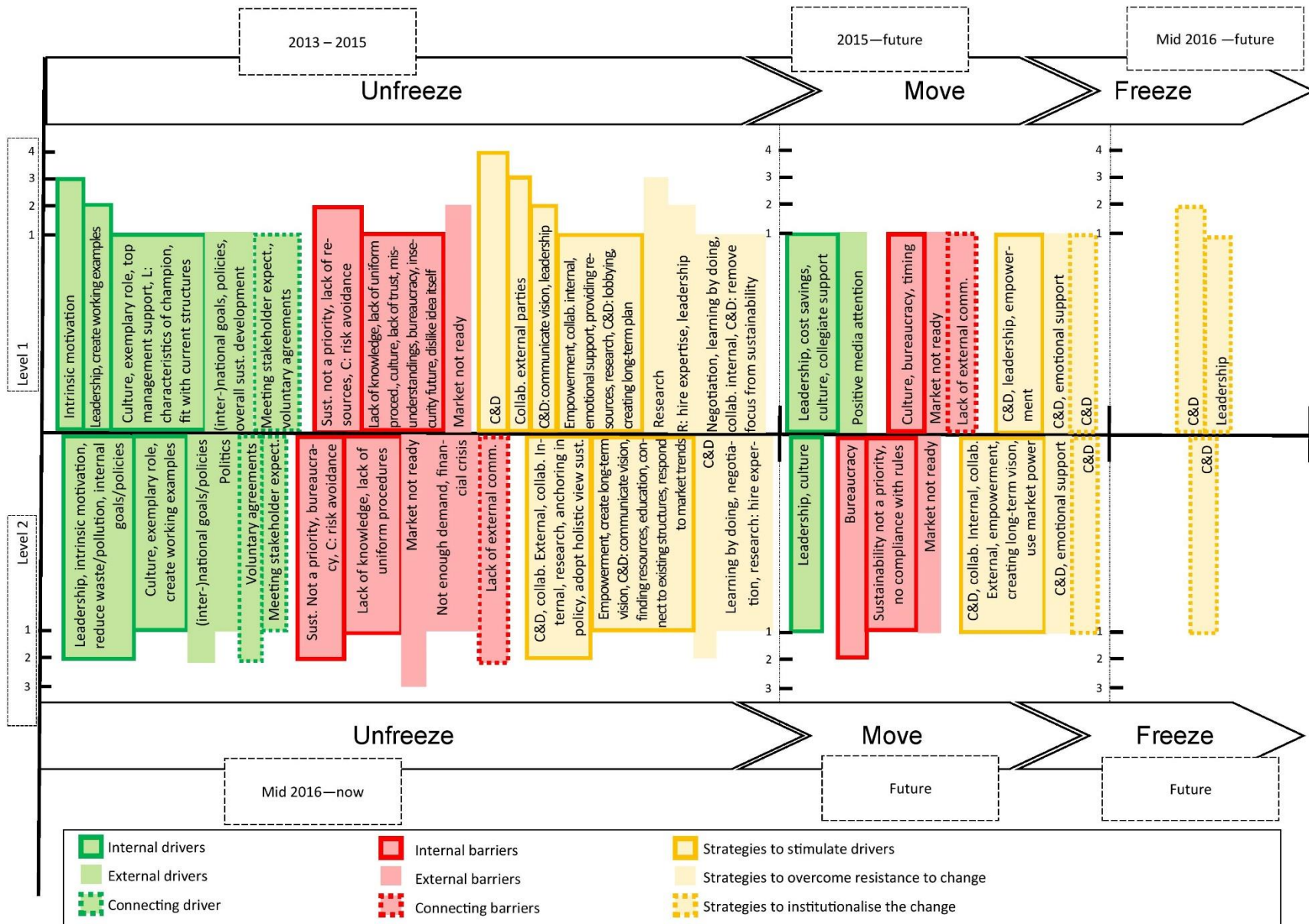


FIGURE 5: RESULTS OF THE RECYCLED CONTENT WORKWEAR PROJECT AND THE RESPECTIVE PROCUREMENT CATEGORY

called it a pilot, because then the attention is gone. If it is a regular tender, then I suddenly attract [...] attention. I really don't want that, so I give it a pilot status, so I have much more freedom." In other words, he did not specifically call attention to the sustainability of the project.

Move phase

In the move phase, leadership still drives the project forward, aided by the cost savings and positive media attention. The market is still not always ready to deliver what is desired, but overall barriers are limited. Few are mentioned, and those that are, are identified once only. As few problems were encountered overall, there are also few strategies in the move phase. However, communication and discussion is still identified three times total in the move phase, to stimulate drivers, remove barriers, and to institutionalise the change. Mainly, the CM communicates with suppliers in order to ensure the highest quality and highest percentage of recycled fabric. Moreover, the CM is vocal about the successes he has achieved with the workwear project.

Freeze phase

Communication and discussion is also used to institutionalise the change in the freeze stage, in combination with leadership.

Level 2

The CM actively works on doing more pilots and further making the category circular. However, this is not consistent yet, indicating that level 2 is in the unfreeze stage, but is transitioning to the move phase. Scaling up still runs into problems, such as sustainability not being a priority, and *"the market is not at all ready at this moment"* to do everything the CM wants. This prevents the CM from implementing all the projects he wants to do. Following the category's category plan, more pilots and projects are being developed, further indicating the category is edging into the move phase. Factors influencing the change do not differ significantly from level 1.

4.1.3 Catering

Since several years, the catering procurement category has struggled with sustainability issues surrounding coffee cups. Although their impact on total waste is small, it is a visible product, as employees use several a day. Questions arose about the health effects of plastic cups, and people wondered what is more sustainable: plastic, paper or other biobased, or ceramic cups? Opinions differed, and an official research gave no clear answer. In the end, the CM decided on biobased coffee cups, because *"the discussion never ended [...] so I just wanted to make a choice"*. This choice was based on internal goals of reducing waste, and (inter-)national policies to stimulate biobased economy. Figure 6 shows the results from this case study.

To test if this choice was viable, one restaurant was selected for a pilot, mainly focusing on practical and cost aspects. *"The government-wide decision to use biobased cups everywhere, the pilot was [...] a way to try it out, what consequences does it have."* As practical issues were not unsolvable, and cost effects were minor, the decision has been made to implement biobased coffee cups government-wide.

Level 1

Unfreeze phase

Although leadership and intrinsic motivation were named four and three times respectively in this project, external drivers such as environmental issues, and (inter-)national policies to stimulate biobased economy were the key drivers behind the change. *"Well look, I of course believe that [...] resource scarcity, plastic soup, that we should move away from the fossil fuel*

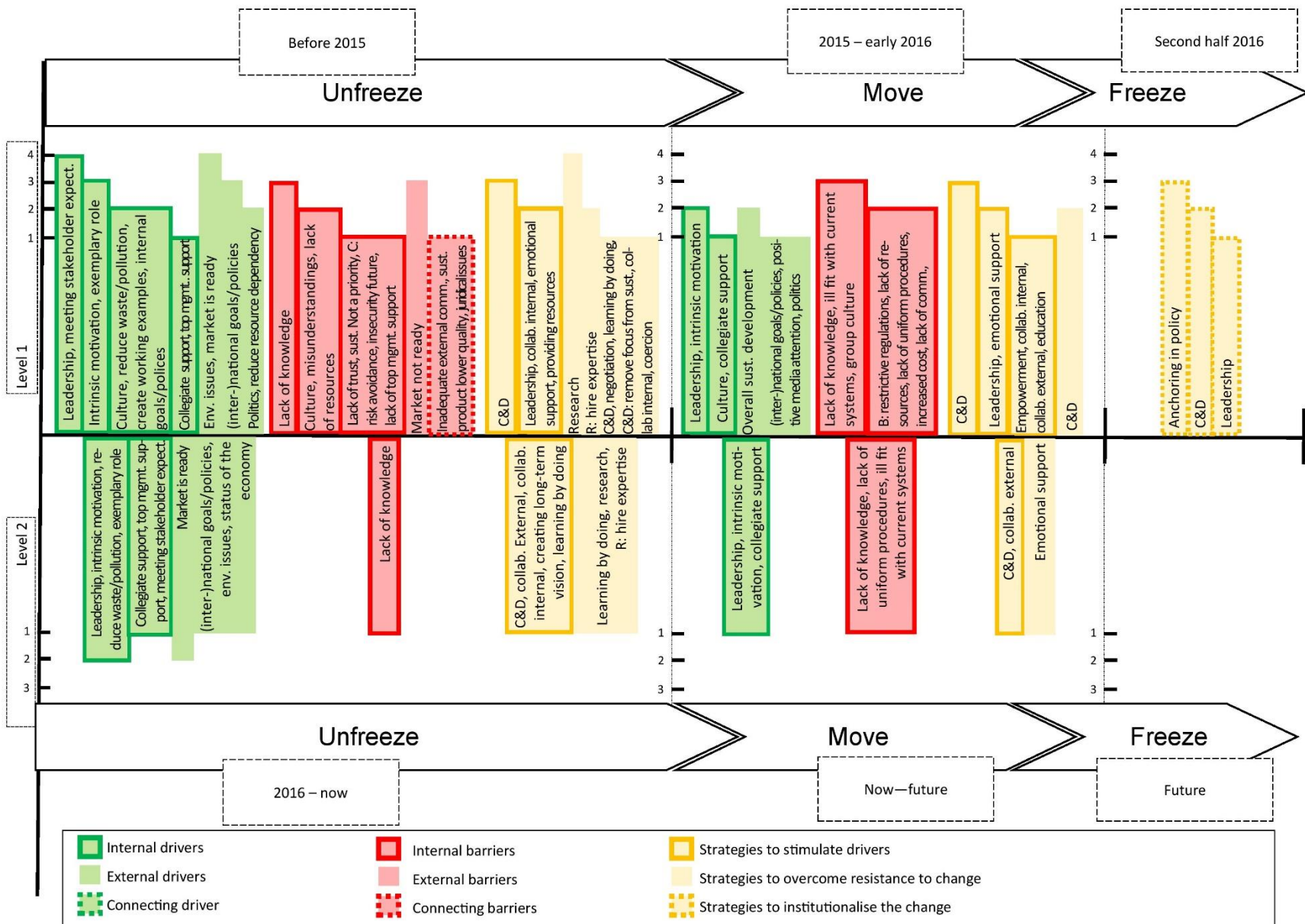


FIGURE 6: RESULTS OF THE BIOBASED COFFEE CUPS PROJECT AND THE RESPECTIVE PROCUREMENT CATEGORY

economy, and that we as a government should have a leading role in this. I am convinced of that. [...] But well, the general policy is that procurement should contribute to policy goals, so in that sense it is just our job.”

Barriers in the unfreeze phase mainly stem from people: organisational culture and misunderstandings played a role. Lack of knowledge also posed a problem. Involved employees responded to this by doing research and learning by doing (i.e., executing the pilot).

Move phase

In the move phase, leadership as well as growing awareness on sustainability further pushed the change. Communication was further used to stimulate these drivers, for example about the importance of reducing waste. In this phase, barriers stem from more practical issues, such as biobased cups causing vending machine malfunctions. By putting the cups next to the machine instead of in it, this problem was circumvented.

Freeze

Through communication and discussion, and showing the pilot was successful (i.e., did not increase costs a lot), the need to scale up the pilot was made clear. Subsequently, it was anchored in policy to implement biobased coffee cups government-wide.

Level 2

As noted before, the project was a testing ground for implementing biobased coffee cups government-wide. Factors affecting the change on level 2 do not differ substantially from level 1, except that running contracts, containing plastic cups, prevent the change from being implemented immediately. Therefore, it is implemented step-by-step, as contracts end, or wherever current contracts permit. Thus, the procurement category is in the move phase, and as long as those contracts are running, it cannot advance to the freeze phase. Due to this step-by-step implementation, every implementation is relatively small, closely resembling the projects. One problem encountered is differences in group culture and processes per location. *“It turns out to be a lot of thinking [at every new location]. [about putting coffee cups next to the machines, fitting everything in place, and how people will react].”*

4.1.4 Office furniture

The project “Rijksmarktplaats” celebrated its fifth birthday in March 2017. In the time it was launched, the effects of the financial crisis were still felt, so all throughout the government people were tasked with reducing expenditure. One group, members of the non-ended Program Sustainable Operational Management, came up with the idea of an eBay-like platform where government organisations exchange redundant office furniture free of cost (except transport). While they were motivated for sustainability reasons, the main reason it was picked up was because the concept was easy, workable and most importantly, profitable. They were fully supported by their superiors, such as the Chief Procurement Officer, who saw value in the idea.

The program members started with investigating stock inventory and working methods of procurement employees, to make sure a government-wide platform would be useful for all. It appears not everyone was happy with this survey, probing into their work methods, resulting in some distrust. Eventually, by communicating and negotiating a lot, all parties came to an agreement about how the marketplace would be implemented. Some ‘rules of the game’ were agreed upon, such as the obligation to first check Rijksmarktplaats before buying any new furniture. Over the years, it has saved the Dutch government over 30 million euros, which is

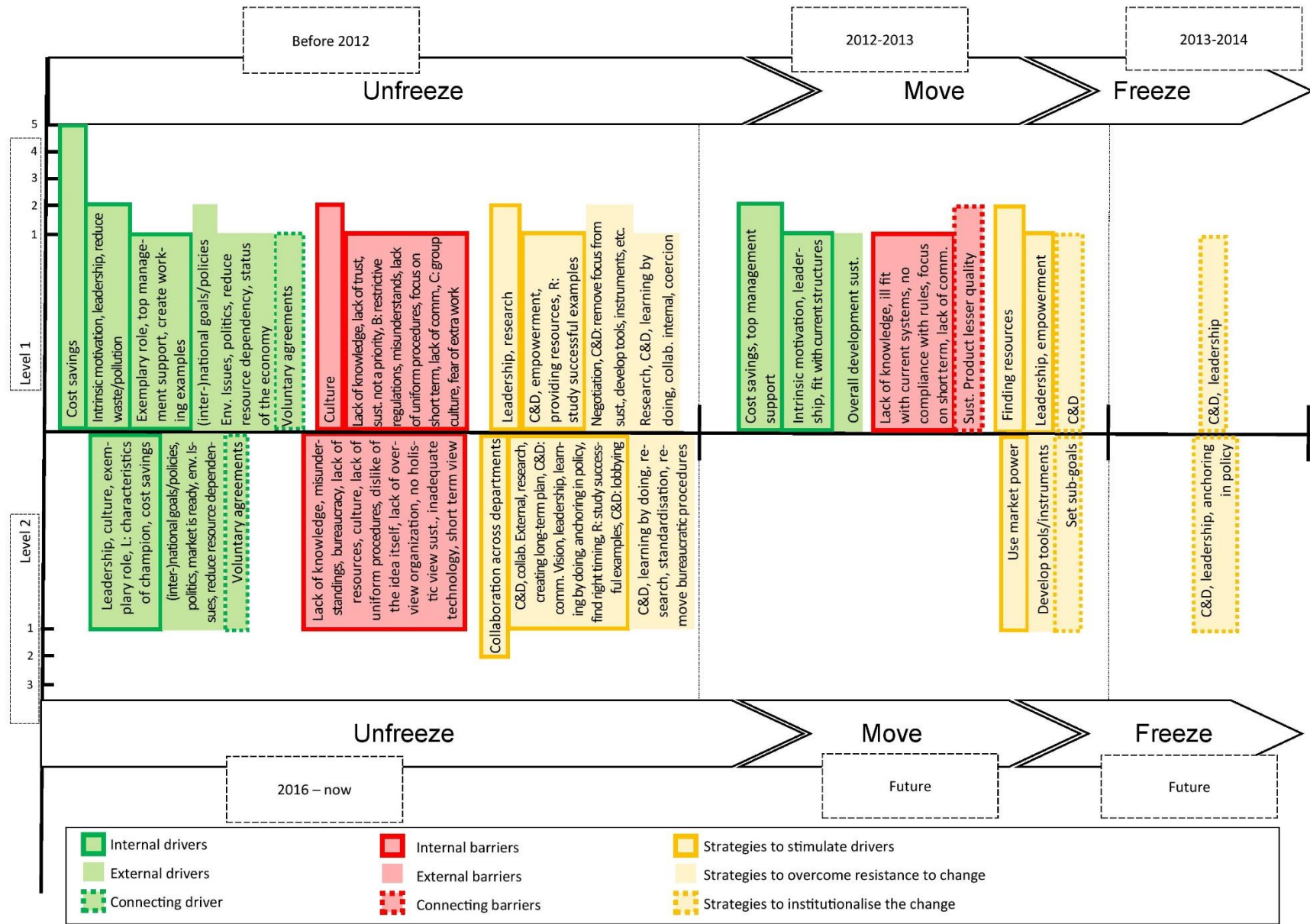


FIGURE 7: RESULTS FROM THE OFFICE FURNITURE MARKETPLACE AND THE RESPECTIVE PROCUREMENT CATEGORY

more than expected. This shows implementation has been effective and the platform is used often.

Overall, it is clear this project is successful; the platform is used by many and has exceeded expectations in terms of cost savings. There is no need to further promote the platform, as it is already used extensively. *“I don’t have to meddle with that anymore [...] it is part of our regular, daily work.”* This shows the project is well past the freeze phase and is part of regular processes now. Figure 7 shows the results from this case study.

Level 1

Unfreeze phase

In this phase, cost savings is clearly an important driver, identified by five sources. Leadership and intrinsic motivation played a minor role here. *“We wanted to progress with sustainability, but we noticed that cost savings was a bigger driver than sustainability for very many parties.”* The Chief Procurement Officer (CPO) at the time, supported the project, by showing leadership. He *“[pulled] the decisions through the [relevant groups]”* and had second-hand design chairs in his office, which he proudly showed everyone. These drivers appear both in the unfreeze phase and the move phase. By communicating about the benefits of the project, and being a leader “walking the talk”, these drivers are further stimulated.

Organisational culture was sometimes an impediment in the unfreeze phase; people wanted new furniture and second-hand furniture had a scruffy image. As noted before, lack of trust was another barrier encountered here. Important strategies to combat these issues were communication and discussion, and negotiation. Specifically, negotiation about the best way of implementation, and communication about cost savings rather than the sustainability aspect. By making the marketplace mandatory (coercion), some of the problems were also combatted.

Move phase

Although some problems were still encountered in the move phase, interviewees indicate these were only minor impediments. The major cost savings were enough to push it forward, coupled with the simplicity of the project. Therefore, it was also unnecessary to apply many strategies in this phase, although some personnel were assigned to the project to ensure its sustained success, such as a communications advisor and stock keepers.

Freeze phase

In the final phase, further communication and leadership froze the change.

Level 2

The success of the marketplace has inspired the office furniture procurement category to go fully circular. This ambition is slowly taking shape: in August 2016, an 82-page report detailing the goals, motivations, obstacles and approaches to a circular category was published. Moreover, extra personnel are hired for this task. Although this clearly indicates preparations are in full swing, actual implementation is not yet underway. Evidently, the procurement category is still in the unfreeze phase, thoroughly planning for the move phase.

Overall, drivers at level 2 are similar to those on level 1, such as cost savings and leadership. Broader, external developments play a bigger role here, though; examples are (inter-)national goals and policies and voluntary agreements (specifically, the Green Deal Circular Procurement, a public-private agreement to do several circular procurement pilots).

As this is a bigger endeavour, and officially is officially termed a CE project rather than focusing on cost savings, other barriers and strategies become apparent. Specifically, lack of knowledge about CE, lack of resources (for initial investments), and a short-term view (yearly budgets instead of Total Cost of Ownership (TCO)). Strategies include collaboration with external parties (e.g. through Green Deals), collaboration across departments, and learning by doing (possibly doing more pilots). Otherwise, strategies are comparable to those at level 1, focusing on communication and discussion, and leadership.

4.1.5 Courthouse

During a five-year period, between 2016 and 2021, the courthouse in Amsterdam is being renovated. Hence, hearings and other activities are moved to a nearby, temporary location. Conventional practice is to demolish the temporary building afterwards, but a few of those involved were morally opposed to that. *“We should do something with all this material, we can’t just throw on a dump after five years.”* Hence, they brought it up with involved parties. Although concerns about cost were expressed, these were quickly dismissed by showing costs could in fact decrease, and implementation could commence. The temporary courthouse opened in November 2016. Overall, there are very few complaints about the project, and involved parties highlight they learned a lot from this project. Those who initially called for this project are now working on finding other suitable projects and bringing to the attention of relevant departments, indicating the freeze phase is in progress. Figure 8 shows the results from this case study.

Unfreeze phase

As may be clear for the above description, drivers in the unfreeze phase centred around intrinsic motivation and reducing waste. Other drivers, such as the government’s exemplary role and (inter-)national goals and policies were mostly brought up to convince others. Some barriers were present in the unfreeze phase (such as organisational culture, insecurity about the future and lack of trust), but were not considered very important. Those involved indicate overall barriers were overcome effectively, e.g. by using leadership, empowerment, and learning by doing.

The main concern was extra cost, but with input of university professors those worries were easily dealt with. *“As soon as the financial component was resolved, [...] not a lot of resistance was met. [...] a lot of the problems were outsourced to the market.”* Lack of knowledge about CE was another issue, but by doing research and developing a calculation method for the most circular design those involved gained knowledge and became confident in their endeavour.

Move phase

Drivers in the move phase closely resemble those in the unfreeze phase, with cost savings and intrinsic motivation being main stimulating factors. Some barriers were present in this phase (such as the market not being ready), but they were generally the concern of the contractor and not of the RVB. Therefore, the RVB experienced few barriers in the move phase, and also had to implement few strategies to move it forward.

Freeze phase

Having learned from this project, those involved are now lobbying for the institutionalisation of the developed methodology concerning CE. *“We [...] are lobbying in the RVB [...] to make this methodology more standard, [...] at the real estate strategy department. [...] By having conversations with them and suggesting other projects that would be suitable.”*

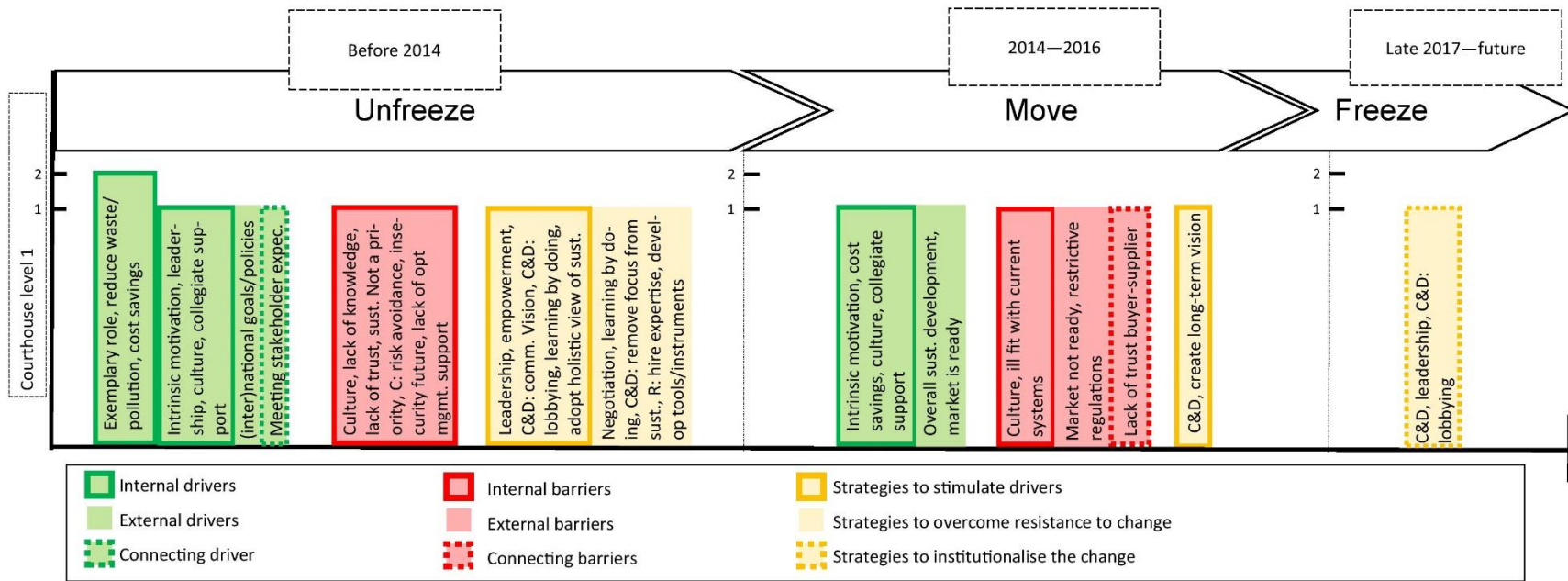


FIGURE 8: RESULTS OF THE TEMPORARY COURTHOUSE PROJECT

The real estate department is not part of formal category management, so there is no procurement category to implement this change government-wide.

4.1.6 Paper

To reduce waste streams, the CM paper devised a strategy to move from virgin paper to recycled paper. To fully close the loop, paper must also be upcycled at the end of life. At the time, it was downcycled to tissue paper which could be used once, while paper has the potential to be upcycled to high quality paper seven to eight times. However, during this time, a running contract (2010-2014) prevented this from happening. Moreover, the market was not ready: recycled paper was often yellow or bleached with harmful substances, making recycled paper undesirable.

By finding the right timing, with the start of a new contract in 2014, it was possible to make the change later. By this time, the market was also ready for the change, supplying high-quality white paper with a less polluting production process. The contract obligates waste paper buyers to gradually increase their ratio of downcycled to upcycled paper over the course of the contract. This is done to minimise market disruption, as tissue producers pay more for waste paper than printing paper producers. As the change is well underway (although has not reached full potential), the paper category is in the freeze category. Figure 9 shows the results from this case study.

Unfreeze phase

Notable about this project is that the unfreeze phase took several years, including one failed change. In this project, external issues were leading, mainly focused on environmental issues and reducing impact. Other factors, such as organisational culture and leadership, helped move the change forward. Drivers such as national policies and the government's exemplary role were used as arguments to legitimise the change.

Move phase

Drivers do not change a lot from the unfreeze to move phase, although the move phase centres around internal drivers mostly. The simplicity and continuous demand of paper have made this an easy change; barriers encountered are not very limiting. As the CM notes, "*internally, there are only a limited number of people [involved]. [...] I do not have to explain to you that we are using recycled paper. [...] it's just there, you don't have to think about it. Indeed, you probably don't even know about it. [...] So, it is something very simple. People are not involved, as long as it does what it should do, and thus it was very easy to implement it.*" Because of this, also a limited number of strategies was used. The most notable ones are finding the right timing (the change from one contract to another) in the unfreeze phase and coercion in the move phase (obligating waste paper buyers contractually to upcycle rather than downcycle) in the move phase.

Freeze phase

Overall, as the change to recycling paper was relatively easy and impacted few people, it was unnecessary to put much effort into institutionalising the change other than anchoring it in policy.

As this change was implemented government-wide immediately, no pilot was done and thus there is no aim to scale up.

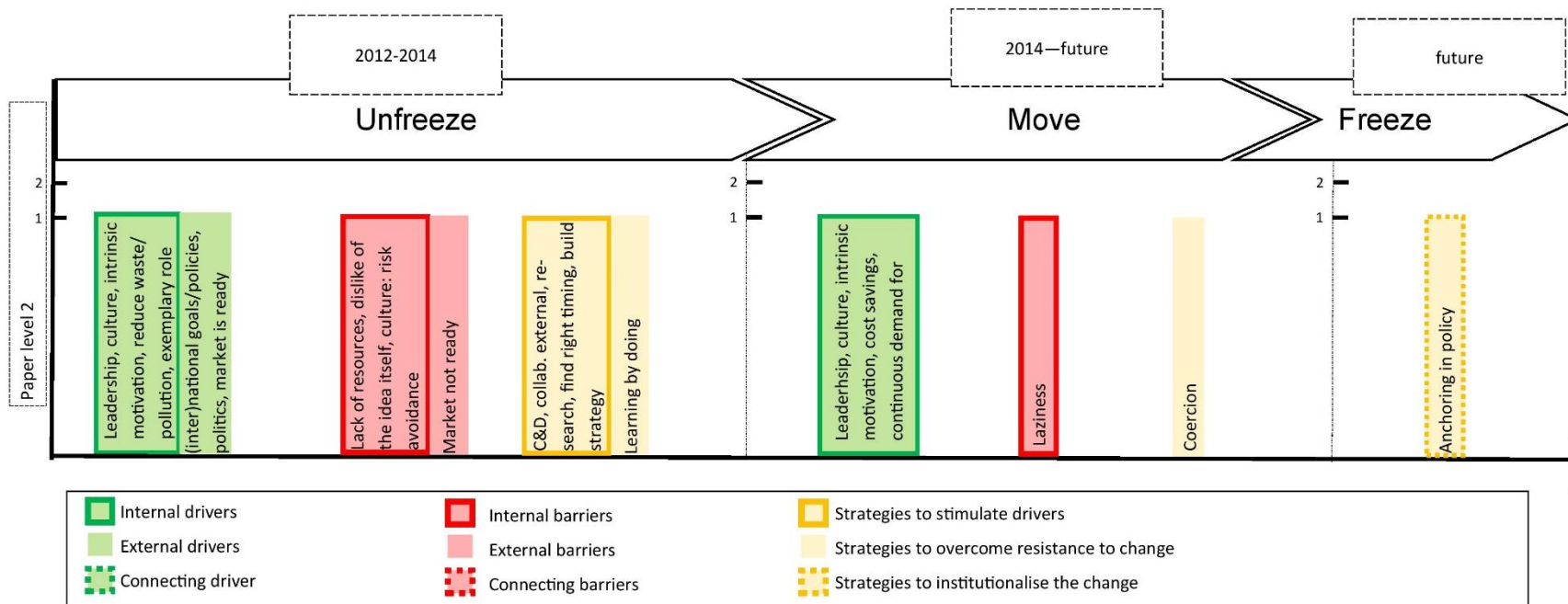


FIGURE 9: RESULTS OF THE PAPER PROJECT

4.1.7 Waste management

Several years ago, a government-wide decision was made to separate all waste, to contribute to national waste reduction goals. Although the change is mandatory, in practice this still disappoints. Many government organisations are used to and attached to their personal bins at their desks, and refuse to remove them. Often, there is only one recycling station per floor. Hence, personal bins are used more than the recycling station. Before June 2016, CM attempted to force ministries to use the recycling stations and remove bins. However, a new CM has started since, who has identified that coercion is apparently ineffective. Thus, his idea is that as long as waste is separated, it does not matter how it is done, whether it is done at the source or afterward. In order to make this work, the current CM has extended the deadline to implement the change to 2018, since problems had not been resolved yet. This indicates the change is still in the move phase. Figure 10 shows the results from this case study.

Unfreeze phase

Main reasons to start this project are external drivers, such as (inter-)national goals and policies, politics, and environmental issues. However, a number of sustainability champions actively communicated and promoted the change, indicating drivers such as intrinsic motivation and strategies such as leadership also stimulate the change. Barriers in this phase include lack of knowledge, lack of communication and lack of top management support.

Move phase

Drivers and strategies in the move phase are similar in the move phase as in the unfreeze phase. Considering the nature of this project, which relies heavily on user involvement and cooperation, the considerable number of barriers in the move phase is unsurprising. Examples of barriers that play a role are lack of knowledge (*“people don’t know how to separate trash, or where”*), laziness (*“they don’t want to remove personal bins at their desk”*), and lack of trust (*“we can separate trash now, but later on it will be thrown together anyway”*).

As many barriers exist, those involved also apply many strategies to implement the change. By e.g. showing leadership and communicating the vision of a CE with no waste, drivers such as the Dutch habit of separating trash are stimulated. Problems are tackled by negotiation about bins, empowering organisations to separate waste rather than coerce them, and educating people about waste separation. However, it appears these strategies have not worked (yet), as the goal of reducing waste and increasing recycling is not reached yet.

Freeze phase

Although the freeze phase has not been reached yet, those involved are aiming to anchor waste separation in organisational policy. As this change was implemented government-wide immediately, there is no scale-up goal.

4.2 Cross-case comparison

In this section, the projects are compared to each other. Apart from comparing the results from the separate projects, the cross-case comparison also looks at the cumulative results from the projects. Figure 11 and Figure 12 give an accumulative overview of what drivers, barriers and strategies have been identified in all the case studies together.

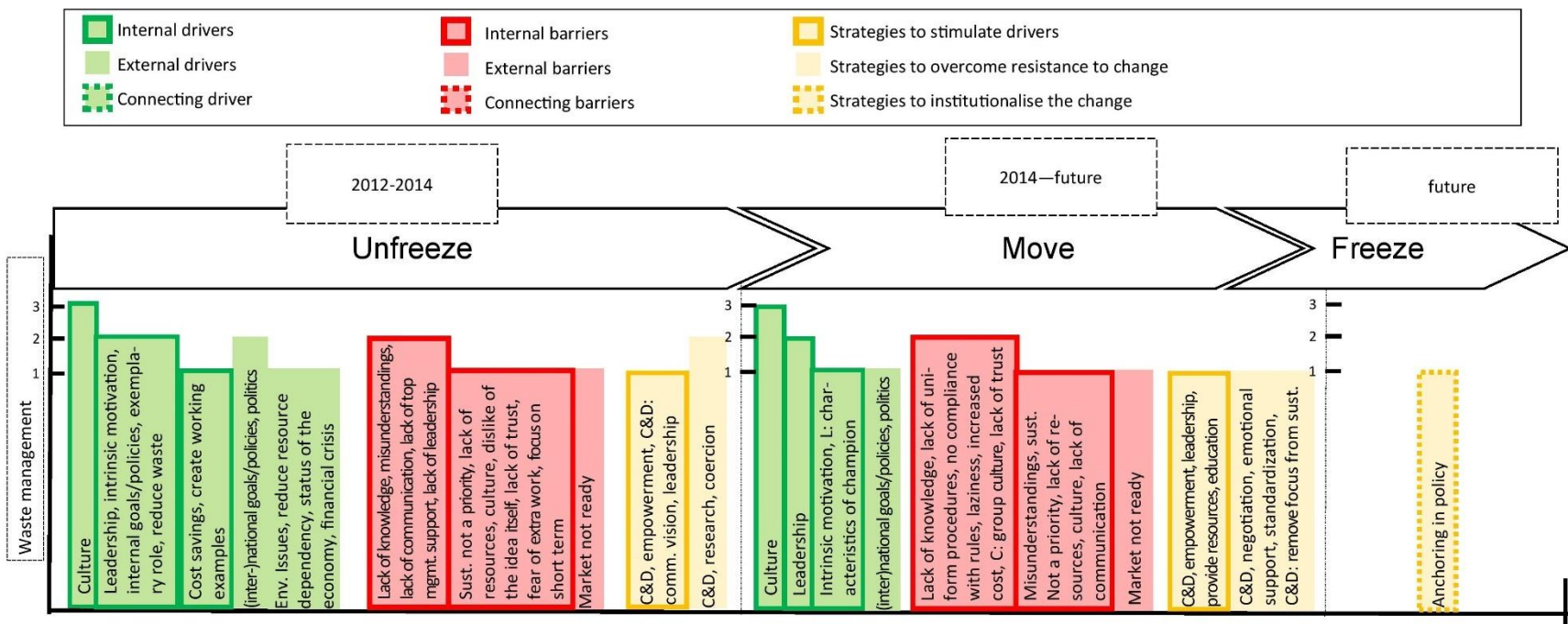


FIGURE 10: RESULTS OF THE WASTE SEPARATION PROJECT

Similarities

Overall, the majority of drivers are internal, focusing on issues such as organisational culture, leadership and intrinsic motivation; the 'softer' drivers. Interestingly, 'too much internal focus' was also identified as a barrier by one of the interviewees. Drivers identified in every project are leadership, intrinsic motivation, organisational culture, and the government's exemplary role. National and international goals and policies were also a driver in many projects.

Interviewees also clearly distinguished between three types of drivers, different from the categories in this research. First, they identified drivers that were direct reasons to start their project (e.g. reducing waste and pollution, intrinsic motivation). A second category of drivers are those that were not necessarily deemed major drivers by those involved, but could still be used to convince others. Examples are internal or (inter-)national goals and policies, or the government's exemplary role. This makes them closely connected to communication strategies. Here, communication is used to draw attention to drivers that people would otherwise have not considered. Finally, some drivers made the change possible and drove it forward, such as organisational culture and top management support.

There are a few barriers that appear in (almost) all projects. Most notably, lack of knowledge is named often. Another often-named barrier is organisational culture. Specifically, representatives from several projects emphasised the risk-averse culture, which discourages innovation and experimentation. Lack of resources is another common barrier; this includes time, funds, and staff. Relatively common too is lack of trust; this may be between government organisations, or between buyer and supplier. Externally, the market not being ready to supply what is desired has slowed down several of the projects as well.

The most common strategy used, to stimulate drivers, overcome barriers and institutionalise the change, is communication and discussion. However, when dividing it in different types of communication, another image appears. Office furniture, catering and the courthouse communicate their vision, and ICT, office furniture and the courthouse lobby to get their project off the ground. To overcome resistance to change, all projects have relied on negotiation. Only some (workwear, catering and the courthouse) shifted the focus of their communication from sustainability to other topics such as security, quality and cost savings.

As most projects are in, or are nearing the freeze phase, most champions had thought about ways to institutionalise the change. However, only few strategies were identified. Many respondents noted that they had trouble with making the change permanent, thus brought up few of such strategies. Communication and discussion was brought up most, sometimes specified to lobbying.

Differences

One can make clear distinction between the projects based on their primary drivers. Most projects are primarily driven by the intrinsic motivation and leadership of the sustainability champion in question. They feel strongly about 'their' project, do research, gather support, work on overcoming barriers, show leadership and communicate about the project. This results in a bottom-up approach, as many sustainability champions are not managers, and is most strongly seen in the ICT hardware and courthouse projects.

Other projects are driven by larger developments, including reducing waste and pollution, internal and (inter-)national goals and policies, and environmental issues. This results in a more top-down approach, as seen in catering and waste management. However, this is not to say intrinsic motivation does not play a role; in such projects, employees motivated by sustainability

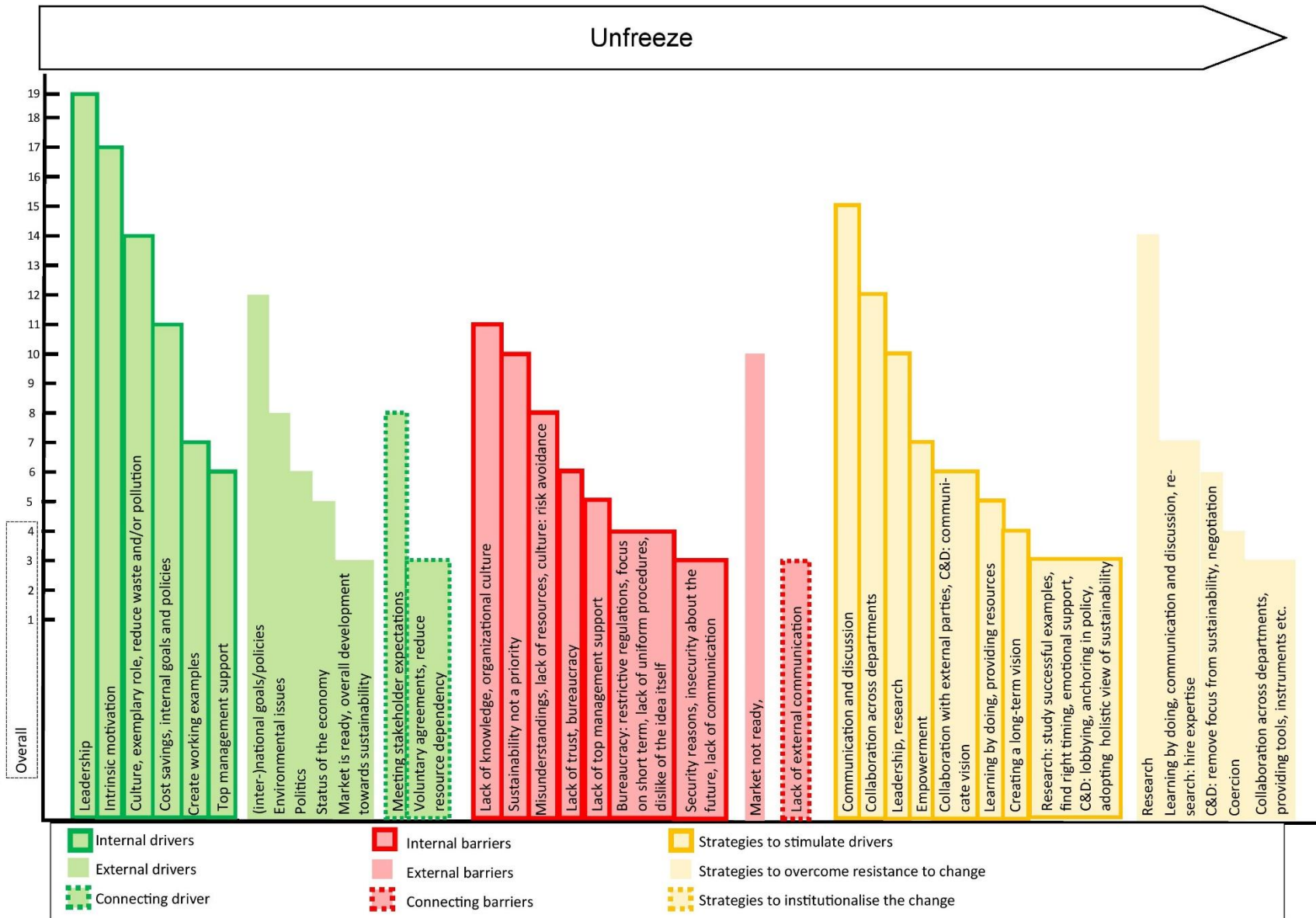


FIGURE 11: CUMULATIVE RESULTS OF THE PROJECTS, UNFREEZE PHASE

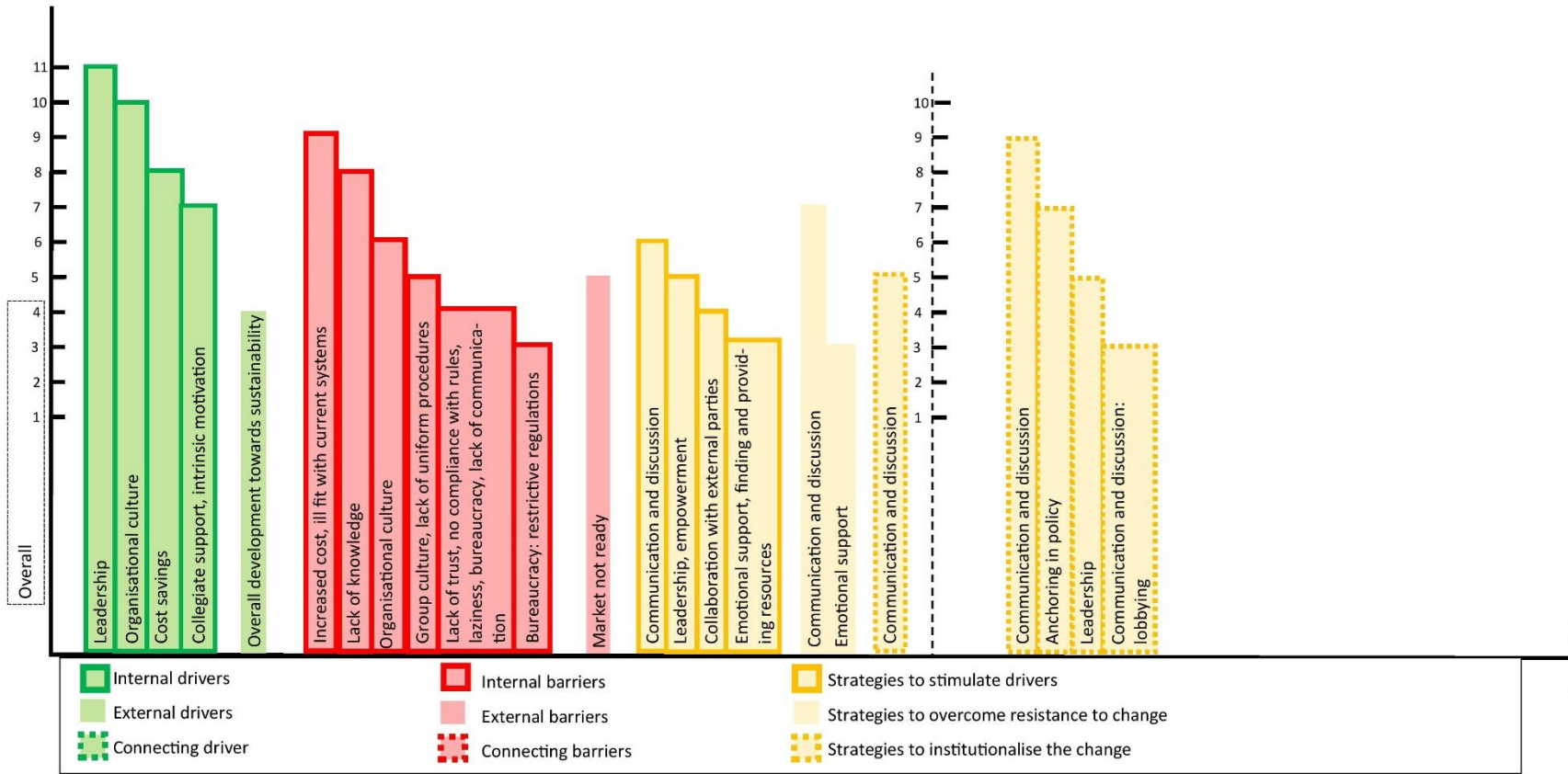


FIGURE 12: CUMULATIVE RESULTS OF THE PROJECTS, MOVE AND FREEZE PHASE

still got involved and helped move the project forward, but were not the direct reason the project was set up.

In the office furniture marketplace, the approach is a mix between top-down and bottom-up. On the one hand, champions were tasked with realising cost savings. However, they managed to take this duty and translate it into a circular project in which cost savings are realised, making it a bottom-up project as well. The paper and workwear category are also a mix of top-down and bottom-up, as the category managers setting up the projects do it top-down in their category, but still need approval from appropriate commissions at the Ministry of the Interior.

A significant difference between projects to elaborate on is the target group of the change effort. In most projects, nothing changes for the user. They may be provided with a different product, but a key requirement for every project was that the quality of the circular product must be the same as the conventional one. Therefore, the success of the change primarily depended on those in charge of decision-making, because users did not notice a difference. However, waste management is the exception. Virtually all government employees must change their behavior, making it a bigger and more challenging venture. While this only limitedly affects what drivers, barriers and strategies are identified, the context is starkly different. The barriers stem from issues with the user group not changing their behaviour, and strategies such as communication and discussion are targeted at them.

In terms of barriers, there are a few that are specific to their projects. Data security concerns only occur for ICT projects, and those are also one of the few experience bureaucracy as an issue. A small number of projects is also hindered by what the market is able to supply, but for others the market is well-developed and can easily supply sustainable or circular products.

An interesting factor to highlight is timing. Although not identified very often, it is identified as a driver, a barrier and strategy. As a driver, it helped some projects; for example, the office furniture project. *“It was in a time that there was a lot of shrinkage within the central government, [...] so there was a lot of furniture available, which included good quality furniture”*. Another interviewee, in the paper project, mentioned that *“the transition from one supplier to another supplier [...] was supporting the change.”* Here, the good timing was primarily accidental; the project happened to have been implemented at a convenient time.

Conversely, at the waste separation project, timing was an impediment. *“Waste separation at that organisation did not work out at all, but that was because it was announced during a reorganisation. People were told their job was on the line, and in the same week waste separation was started. Yeah, not very smart.”* Because of this reorganisation, people had different things on their mind and did not take the time to learn about recycling. Thus, here the timing was a barrier to the implementation of the change.

Still others consciously sought to use timing to their advantage. One interviewee mentioned that they *“did it in summer break, so fewer people were around to interfere”*. Another interviewee said: *“We were lucky so many cabinets fell. [...] a new group of ministers is still in their honeymoon phase. [...] if a cabinet falls, and you respond quickly, you can catch them during their honeymoon and they’ll do something they wouldn’t even consider a year after that. In that way, we have been able to take step with every new cabinet.”* Here, interviewees knew that in certain times (during summer break or soon after the swearing in of a new cabinet) the change was more likely to stick, hence they deliberately implemented the change during this time.

This makes it clear that timing can work to your advantage, be a hindrance, and be used to circumvent barriers.

4.3 Level 3: Circular economy in central government as a whole

As is clear from these projects described before, an effort is made to make the government's operational management more circular. Many of these are a way for the government to 'practice what it preaches', since it has policies to stimulate CE in the Netherlands. However, an often-heard criticism is the fragmentation of such initiatives. There is not enough cohesion between projects, and they are not working towards a common goal. To combat this, member of parliament Yasmin Çegerek called for a vote to create a comprehensive framework on CE, which was approved. The resulting "Netherlands Circular in 2050" mainly contains national policies on CE, but also has a small section on operational management. It mentions the projects from this study, and further explains it *"has the ambition to make the first procurement category [office furniture] circular from 2017 onwards, and learn from this to also make five other categories circular after that"* (Ministerie van Infrastructuur en Milieu & Ministerie van Economische Zaken, 2016).

Reasons to aim for CE are generally external: e.g. the Paris agreement, the societal trend towards sustainability and the "hype" around CE, and the urge to combat environmental issues. Internally, intrinsic motivation and leadership are main drivers. A few select champions are actively working on making the organisation more circular, most notably members of the "Program Acceleration Sustainable Operational Management" and several CMs. These drivers closely resemble those on level 1 and 2.

As is clear, ambitions for CE in operational management are high; it is quite uncommon to commit to become fully circular in a high number of product categories. However, this commitment to becoming circular is only taking shape relatively slowly. In practice, only a small number of projects have been done in a limited number of procurement categories, most of which are discussed in this paper. In many cases, it remains in a pilot stage for a long time. Although the aim to scale up is there, and a number of pilots are indeed scaling up, it often is a complicated process because scaling up from pilot to standardised project involves risks that are preferably avoided. Many barriers prevent the scale-up from happening. For example, one interviewee said: *"how can you work with total cost of ownership when you give people yearly budgets?"* Several other interviewees supported the notion that yearly budgets prevented employees from working on long-term sustainability. Many interviewees also noted that the organisational culture is very risk-averse, making it hard to try new things; *"You're eliciting harsh words from me... [...] you don't become a civil servant because you are such a revolutionary, I will say."* Moreover, since CE is such a new topic, many note lack of knowledge is an issue: how to determine if something is circular?

Sustainability champions apply several strategies to ensure operational management becomes more circular. Learning by doing, i.e. executing pilots, is a key strategy for many. It allows them to gain knowledge on a topic that is relatively unknown, and doing small-scale pilots means risks are relatively low, thus they meet less resistance. Communication and discussion is another key strategy: most champions indicate they often communicate their vision, their ideas, the importance and the benefits of CE at any opportunity they get. By anchoring the change in policy, champions aim to solidify their efforts, ensuring it is a long-term change rather than a short-term change.

Although there is currently a lot of buzz around CE, and many people are motivated and enthusiastic about it, there are few signs the move phase is happening. Most projects are pilots, and concern only a small amount of all goods used and bought. Only one of the procurement categories is on their way to becoming circular, but is not there yet. This shows CE has not been embedded in the culture yet, nor has the change fully taken place. Thus, the unfreeze phase is still in full swing.

Barriers at this level are also less situational and more all-encompassing and general. However, this does not mean barriers are from those at level 1 and 2, but rather the context they appear in is distinctive. For example, in the waste management project lack of knowledge mentioned in relation to employees not knowing what waste belongs in which recycling bin. On level 3, lack of knowledge is identified as an issue about general CE knowledge and how to make operational management circular.

Strategies largely are comparable to those at level 1 and 2, with a few notable exceptions. Studying successful examples becomes a more important strategy here; the projects are evaluated and lessons learned are used in new projects. Anchoring issues in organisational policy is used in the unfreeze phase, as a starting point to start moving; at the project level, it is used as a strategy to institutionalise the change, after the project has been deemed successful.

Figure 13 gives an overview of the drivers, barriers and strategies on level 3.

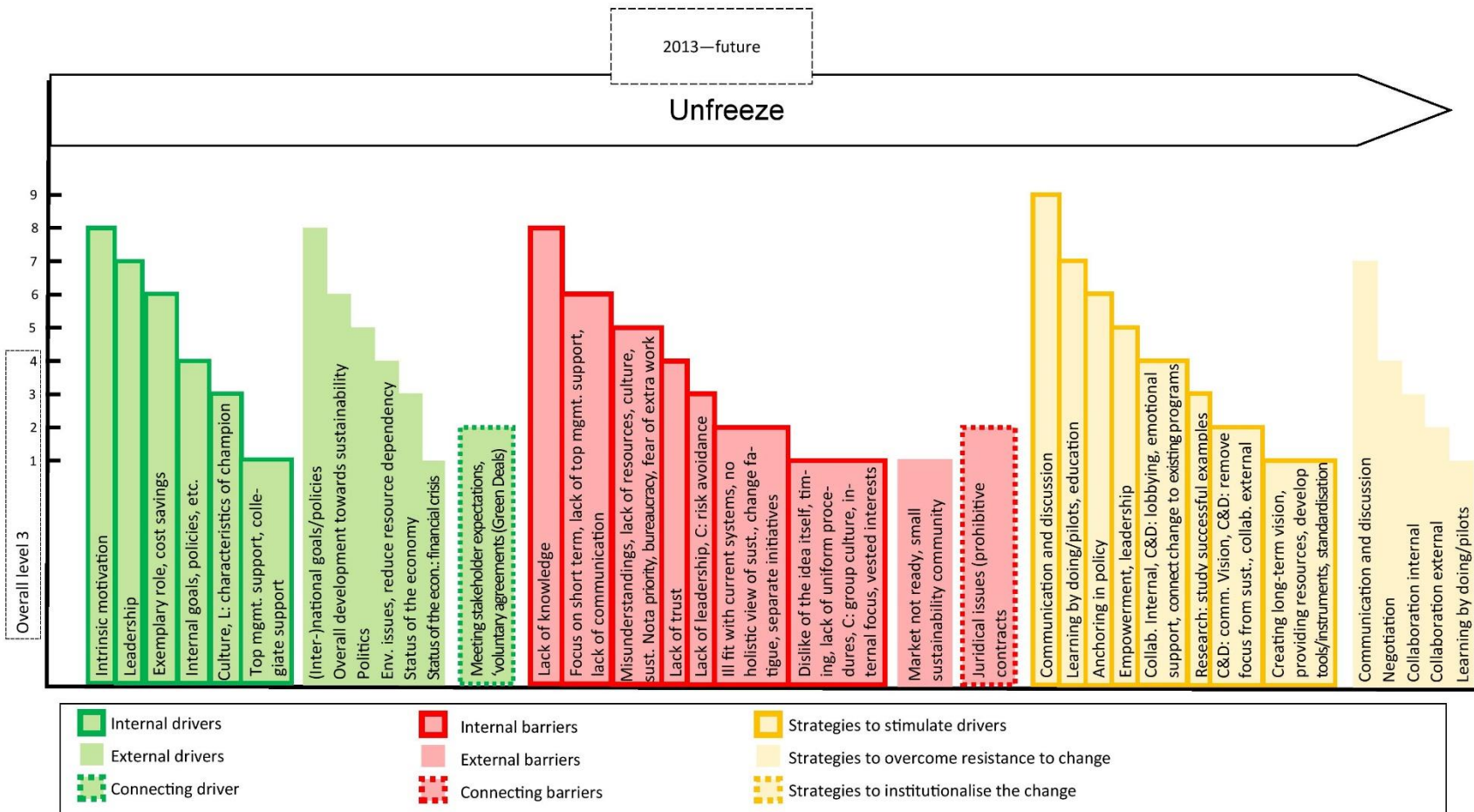


FIGURE 13: RESULTS OF THE OVERALL TRANSITION TOWARDS CIRCULAR ECONOMY

5. Discussion

This research identified a very clear gap in the literature. Organisational change management is an age-old field of study, both in public and private organisations. It is increasingly applied to organisations aiming to become more sustainable, but mostly to private organisations. While OCMS literature has focused on private organisations over POs, POs do play a prominent role in the development towards sustainability. Especially central government organisations, being responsible for passing sustainability legislation, are often also expected to set the example concerning sustainability in their own operational management. Hence, this research aimed to fill part of that gap by researching organisational change management for sustainability in the public sector. After gathering information on what drivers, barriers and strategies play a role in OCM in POs and OCMS in the corporate sector, the conceptual model was tested in the setting of OCMS in POs.

5.1 Comparison of results and conceptual model

Similarities

The results broadly follow the conceptual model in multiple ways. Drivers and barriers appear in the unfreeze and move phase. Strategies to stimulate drivers and overcome resistance were found in the unfreeze and move phase, while strategies to institutionalise were found in the move and unfreeze phase. This follows the conceptual model.

Zooming in, many individual drivers, barriers and strategies also correspond to what is found in literature. Specifically, leadership and intrinsic motivation are named often in both the unfreeze and move phase, highlighting the role of sustainability champions. Many other authors find the same, see DeSimone & Popoff (2000); Doppelt (2009); Gill (2003); Kotter (1996); Charlesworth, Cook & Crozier (2003); Fullan (2002); Ridder, Bruns & Spier (2005). Cost savings also are often named as a driver in these phases; this is also found in Lozano (2013). An external driver named often is (inter-)national goals, policies and regulations, which is in line with what De Boer Enders & Leisyte (2007) and Lozano (2013) found. However, the focus is slightly different, which will be discussed later in this section.

Apart from many drivers, barriers found also correspond to literature. One of these is organisational culture, which Johnson (1992) and Senge (2006) also identify as an important barrier. In the case of this study, the organisational culture condemns risk-taking, meaning scaling up pilot projects is often under a lot of scrutiny to understand the risks, sometimes preventing it from happening. Misunderstandings are another common barrier, for example about the definition of CE, just as Dent & Goldberg (1999) and Lozano (2015) found. This emphasises the importance of communication as a strategy. Lack of trust is another common barrier, also found in Dent & Goldberg (1999).

Finally, a number strategies identified in this research is also in line with literature. Communication is an often-identified strategy; in fact, it is the most named for strategies to stimulate drivers, overcome barriers, and institutionalise the change. This is also found in Dent & Goldberg (1999); Jones (2007); Lozano (2009) and Osborne & Brown (2005). Other crucial strategies for OCM are leadership (as also found in Cameron & Green, 2012; Lozano, 2009), and empowerment (found in Dent & Goldberg (1999); Jones (2007); Lozano (2009) and Osborne & Brown (2005). Negotiation is often used to overcome resistance to change, further confirming what Dent & Goldberg (1999); Jones (2007) and Lozano (2009) note. In this research, very few strategies to institutionalise the change were identified. Kotter & Cohen (2002) also note that embedding the change in culture is often considered the hardest part of change management.

Differences

Besides some results further confirming what is found in literature, some of the results deviate from it. Many of these differences stem from the empirical context. Looking at the overall conceptual model, most barriers, and strategies to overcome resistance are identified in the unfreeze phase, while literature places most of them in the move phase (Judge & Robbins, 2015; Kotter, 1996; Lozano, 2009). This may be explained by the fact that some projects are still in the move phase, or have not even reached it yet. Thus, they are in the middle of an ongoing change. While the change is ongoing, it is hard to analyse the change and objectively judge what factors have influenced it. Once the change has occurred, it is easier to identify what made it happen using hindsight (Benne & Birnbaum, 1969). Hence, interviewees may not have identified all factors influencing the change process yet.

When looking at the results overall, it appears factors influencing the change are more focused on the exterior (e.g. the market) than what would be expected when looking at the literature. This may stem from the setting of the case studies. Procurement professionals are inherently externally focused, as their job involves responding to, collaborating with, and buying from the market of their corresponding procurement categories. Hence, the market being ready, the market not being ready, lack of trust between buyer and supplier, collaboration with external parties, and responding to market trends are drivers, barriers and strategies that appear in this study.

Looking at individual drivers, barriers, and strategies, some key differences are found as well. Meeting stakeholder expectations was only identified by two subjects, while OCMS literature in corporate settings indicates this is an important driver (Lozano, 2013). Although most interviewees responded negatively to the question of stakeholder expectations, many did identify the overall development of sustainability in society as a driver to implement CE projects. This driver is not found in literature. Clearly, interviewees do not experience that governments have formal stakeholders (*“it is hard to define who our stakeholders are, it is not as clear-cut as in corporations”*), but they do need to monitor trends in society and respond to them. Hence, it appears that some drivers found in this study are government equivalents to corporate ones. Besides the aforementioned, the exemplary role of the government is named often in this research, whereas brand reputation is an important driver in OCMS in private organisations (Lozano, 2009). POs conceptualising this differently from their private counterparts makes sense, as their organisation-environment transactions are different. POs provide public goods with broad impact, and hence are under intense public scrutiny (Rainey, 2003), forcing them to take on an exemplary role.

Another driver that deviates from literature is (inter-)national goals, policies, regulation and legislation. Although it is an important driver in this research just as in literature, the focus is slightly different. Interview subjects stated that goals played a bigger role than policies or regulation. This can be explained by the organisational roles, structures and processes in POs. Their close relationship with the cabinet leads to high involvement with such goals. Moreover, governments are generally expected to contribute to (their own) national goals.

Two drivers, reducing waste and pollution and reducing resource dependency, are more important in this study than one would expect while looking at the literature. However, considering the nature of government organisations, this outlier can be explained. Reducing waste and pollution, and becoming independent of other countries' resources are issues the cabinet is concerned with (Circulaire Economie Nederland, n.d.), hence government officials consider these important issues as well. Moreover, these topics are also highly relevant to sustainability-related changes, hence it is no surprise these were identified as drivers.

A driver not found in the conceptual model, but identified frequently by interview subjects, is creating working examples. This may be explained by the fact that many of the projects were started as a testing ground before implementing it on a bigger scale. Successful pilots, after being evaluated, can then be used later to illustrate why the change should be government-wide. Considering Dutch central government is a large organisation, it makes sense it is tried out this way first. Related to this is a strategy to stimulate this driver, “learning by doing”, which is not found in literature. Possibly, this driver and the related strategy is dependent on the size of the organisation (which necessitates trial periods and pilots before scaling up), and may thus be visible in other large organisations too.

Some barriers in the conceptual model were not important in the results of this study. Resistance to the idea itself is not described as an important barrier, while del Val et al. (2003) and Lozano (2009) do. In this research, it may have been lower due to the fact that procurers only implemented the change if the product did not change quality. In many cases, it was a boundary condition that users would not notice the difference, so only procurers were concerned with the change.

Also, financial crisis was only identified a few times, while literature Hendriks & Tops (2003) name it as an important driver in POs. Additionally, Hendriks & Tops (2003) identify threat to job security as an important barrier to change. Hendriks & Tops (2003) research reorganisations in POs mainly, which are often triggered by financial crises. Moreover, reorganisations often pose a threat to job security, hence they are identified as a barrier in that research, but not so much in this research.

Conversely, some barriers relevant in this research do not occur in the conceptual model at all. Those are an ill fit with current system, and a lack of uniform procedures. An example of the former is where biobased coffee cups do not properly fit into current vending machines, causing outages. An example of the latter is where one government organisation manages and disposes of their office furniture in another way from their colleague ministry, making it hard to come to an agreement on how to design a government-wide process. It is possible these were more prominent at the time of interviewing at Dutch government than it would have been at an earlier or later time. Relatively recently, the Dutch government switched from each ministry doing procurement for itself, to government-wide procurement in categories. Most procurement categories are less than five years old, and many interviewees remarked not everyone was completely comfortable with it yet. Thus, they still struggle with a lack of uniform procedures throughout the organisation and feel some changes do not fit well.

When looking at strategies, the results also sometimes contradict the conceptual model. Education is not named often, in contrast to what Cameron & Green (2005) and Jones (2007) write. This may be because many of the pilots are small-scale, involving few employees. In most projects, only procurers and policymakers were participating and needed new knowledge, for whom formal education may be unnecessary.

It was found many strategies to overcome resistance to change are research-related, more so than expected: these are hiring expertise, research (both formal and informal) and studying successful examples. Considering CE is a relatively new idea, and lack of knowledge was identified as a barrier by many, it is not surprising research is an often-used strategy.

Specific to this study are two strategies: creating working examples, and learning by doing. These were not identified as important in the conceptual model, nor were they encountered in the literature. This may be explained by the fact that many of the case studies are pilots. Pilots are by their very nature learning processes, aimed at removing problems, and are thus a case of learning by doing. If this learning process is successful, it can then be used to

promote the change further. With this idea in mind, many sustainability champions have started pilots as a preparation of a government-wide project; hence they aim for creating working examples. These two strategies are possibly unique to pilots. Studying successful examples is a further derivative from these strategies, although examples from local governments and private companies are also studied.

5.2 Limitations and recommendations for future research

The conceptual model used for this study has drawbacks. Most importantly, many argue that Lewin's (1947) model is too simplistic and static, assuming the organisation is in a stable state. Also, they argue it can only be applied to small-scale projects (Burnes, 2004). Despite these limitations, the Lewin model is deemed suitable for this research. First of all, the changes studied are planned rather than emergent, which fits with the different stages of Lewin's model of change. Moreover, in this context, the addition of different levels in the model allows it to be continuous and fluid, contrary to what critics say. This research has added the different levels (pilot level (1), procurement category level (2), and overall level (3)), which flow into each other. The freeze phase of level 1 is partly the unfreeze phase of level 2, and elements of level 2 overall are also found in the unfreeze phase of level 3. This allows Lewin's model to be both fluid, and applicable to large-scale changes.

During data collection, it appeared that the distinction between top-down and bottom-up approaches in projects may be relevant. The projects were a mix between both approaches, while this distinction was not taken into account when analysing the data. Hence, there are openings for future research. For example, one could consider which drivers, barriers and strategies are more relevant in either type of project, or whether this distinction plays a role at all.

By presenting interviewees with a list of drivers, barriers and strategies found in the literature, interviewees may have been more prone to identifying those as factors that played a role in the change trajectory. However, by first asking open-ended questions, it was ensured interviewees first thought for themselves. Indeed, many drivers, barriers and strategies were identified outside of the conceptual model and proposed list. When presented with the list, whenever it was observed interviewees were trying to think of a situation to fit the driver, barrier or strategy just mentioned, interviewees were reminded to not come up with far-fetched ideas simply because it had been mentioned. Moreover, interviewing more than one person per project, supplemented with policy documents allowed for a more complete, and thus more valid, view of the case studies. Working at the location of the case studies and therefore gaining an understanding of the pilots outside of the interviews also allowed subject bias to be minimised wherever possible.

Despite not being able to interview everyone, the interviewee pool is overall mixed and complete. All but one pilot was discussed with at least two interviewees. The interviewee pool consists of executors, policymakers from different levels (CPO to procurer). Of these, some were part of the initial idea formation, others were involved decision-making, while others were part of the change because they had to follow internal policies. Interviews were supplemented by a myriad of documents, ranging from articles in the media to confidential internal documents. Thus, it is clear that as a whole, the results are thorough due to being obtained from a large and diverse pool of interviewees supplemented by documents, providing reliable results. Missing out on a few interviewees hence does not impact the conclusion.

As noted, not all interviewees were asked to rank how important they considered the drivers, barriers and strategies from the conceptual model. Although having these results would have helped analysing and drawing conclusions, it was not a crucial part of this study. The main

focus was on what factors influenced OCMS, rather than their importance. The interviewees that did not give input on the importance of these factors were still able to give valuable input, namely whether or not these factors were relevant. For future research, the research question could focus on the relative importance of drivers, barriers and strategies in OCMS, using statistical methods to analyse them. This has been done in neither public nor private organisations.

This research can be generalised internally. All suitable cases were studied, and together they form a varied group: just started versus well-established, small pilots and big, government-wide projects, more and less successful. The results should thus give a good perspective of the organisation as a whole. Generalisability to other public organisations is limited due to the large size of the organisation studied in this research, both in terms of employees and procurement budget. Many other POs, such as hospitals and schools, are likely too different from central governments in this respect to allow for generalisability of the results. However, generalisations may still be made due to many of the pilots being small-scale. For a better understanding, future research should look into OCMS in other, differently sized POs, to determine how OCMS factors are impacted. Moreover, as the results show many similarities with large private organisations, generalisability is higher than one first may assume. Future research could compare public and private organisations in terms of OCMS: are there differences in how the change occurs?

5.3 Theoretical implications

Despite limitations, this study was able to provide important contributions to literature. On the one hand, numerous drivers, barriers and strategies found in OCM literature in POs and sustainability settings were found in this research, further confirming what is already known. On the other hand, some drivers not considered important in literature were found to be relevant in this case study, challenging notions of other authors. In addition to resembling or differing from literature, the results also provided novel drivers, barriers and strategies in OCMS.

Most new factors are specific to either sustainability-related change, governmental organisations, procurement settings, and pilot projects, or a combination of those. This sheds light on the debate on whether the distinction between public and private organisations is relevant. On the one hand, many factors influencing the change are similar to those found in changes outside of POs. In fact, the most named factors (leadership and intrinsic motivation as drivers, lack of knowledge and misunderstandings as barriers, and communication and leadership as strategies) are comparable to those found in most OCM literature (e.g. Jones (2007) and Lozano (2009)). Others may appear specific to governments at first, while they are in fact the same, with just the way they are expressed being specific to governments. Examples include organisational culture, bureaucracy and collaboration across departments. This can be interpreted as the type of organisation does not influence the factors influencing the change. However, as is explained a number of times, a number of factors are specific to POs: e.g. the government's exemplary role and (inter-)national goals.

Besides some factors stemming from the change taking place in a public organisation, other factors appeared due to the fact that the change was related to sustainability. For example, both intrinsic motivation and lack of knowledge played a disproportionately large role compared to non-sustainability-related change, both stemming from sustainability-related changes. Hence, this shows research into organisational change management for sustainability specifically is a relevant field of research.

Considering the distinction between public and private organisations, as well as sustainability-related and non-sustainability-related changes, it may be said the key drivers, barriers and strategies are universal, whereas smaller factors are specific to the type of

organisation, or the type of change. However, a true comparative research has not been done yet; future research may pick up on this.

The use of different levels of change in Lewin's change model also provides new insight in how to describe change. While others have described it as a too-static representation of reality, the different levels show it can be applied to a fluid change process, where goals and scales change along the way. Hence, this provides new insight in how the model can be used in research.

6. Conclusion

In this study, the following research question was asked: *What are drivers for and barriers to change towards sustainability in the public sector, and what strategies are applied to effect this change?* To answer this question, a literature review was performed first, outlining organisational change management for sustainability and providing an overview of drivers, barriers and strategies that are expected to be relevant in the given context. These factors were taken from studies looking at organisational change management in public organisations, and organisational change management for sustainability in private organisations.

The drivers, barriers and strategies were placed in an altered version of Lewin's (1947) three-step change model, existing of an unfreeze phase (preparing the organisation for the change), a move phase (implementing the change) and a freeze phase (institutionalising the change).

To test this conceptual model, a multiple-case study was done at Dutch central government. Dutch central government is aiming to become more circular in their operational management, and is currently on their way with a number of pilots. Eight pilots related to circular economy, in seven procurement categories, were studied, by conducting interviews and analysing internal and external documents concerning the pilots and their drivers, barriers and strategies. The research aimed to be mainly exploratory in nature, and to shed light on factors influencing OCMS in POs.

So, what drivers, barriers and strategies were relevant in this case study? To what extent does the conceptual model correspond to the results? In terms of drivers, this paper finds that intrinsic motivation and leadership are key to get the ball rolling in the unfreeze phase, and further stimulate the project in the move phase. Contributing to (inter-)national goals, aiming to reduce waste and wanting to be a good example are also common reasons to start a CE-related project. Cost savings and an open organisational culture are a crucial way to ensure prolonged support, throughout the move phase.

Lack of knowledge, either about circular economy or about the change itself, is a common barrier in the unfreeze phase. The organisational culture, mainly a culture where risk minimisation is encouraged, is also experienced as hindering to change processes, mainly in the unfreeze phase. Oftentimes, sustainability was not considered a priority als, which presented a barrier. Furthermore, interviewees experience misunderstandings and a lack of resources as an impediment to implementing change. Outside of the organisation, a market that cannot supply the sustainable or circular goods the procurers desire prevented a number of changes from happening. Finally, it was noted that in the move phase, circular economy did not always fit well with current systems, and implementing changes government-wide was challenging due to increased costs.

Unsurprisingly, communication in all its forms is the most applied strategy, in the unfreeze phase, move phase and the freeze phase. Communication may be used to stimulate drivers (e.g. by reinforcing positive ideas on CE), to remove barriers (e.g. discussions to clear up misunderstandings) or to institutionalise the change (e.g. lobbying with relevant groups to make the change permanent). Leadership and empowerment are nearly equally common, and are also used throughout the unfreeze, move and freeze phase. Collaboration, either within an organisation or with external parties, also happened frequently in the studied cases, mostly in the unfreeze and move phase. This was often done to remove barriers, such as a lack of knowledge or lack of trust, but also to stimulate drivers, such as the desire to create working examples. This study also featured many research-related strategies, especially in

the unfreeze phase, most notably hiring external expertise, in order to remove the lack of knowledge.

Due to the specific empirical context, which looked at pilots in the procurement office in Dutch central government, this study was able to shed light on OCMS by on the one hand confirming what is already known, but more importantly by adding new drivers, barriers and strategies previously unheard of.

7. Recommendations for the organisation

It appears that overall, those involved have a solid understanding of their respective pilots and projects. There is insight in what is happening, what issues pose a problem, and what improvements are necessary. However, scaling up and moving the pilot to a higher level is where most difficulties lie, hence this section will focus on this transition, level 2 in this study. Level 3, the government-wide transition towards sustainability is discussed briefly at the end.

During the entire change process, from unfreeze to move and freeze, leadership and (their) intrinsic motivation are key drivers. There are a number of enthusiastic, motivated and passionate sustainability and CE champions active in Dutch central government. A good portion of the projects studied is a direct result of these champions' efforts and enthusiasm. For the transition towards CE, it is thus key to continue to recognise and reward the efforts of the champions. Rewards may be monetary, and recognition may be calling attention to an accomplishment in front of a champion's peers, or a personal thank you. Publishing success stories on the "intranet" has worked in the past for champions to feel recognised and appreciated, as the comment section contained plenty of motivating remarks. It is especially important to ensure champions feel supported for their efforts, since a number of issues has been identified by such sustainability champions, affecting their performance and motivation.

One of these issues is that some people do get the feeling that "*if [they] hadn't done it, no one would have done it*"; they do not always feel supported by their non-sustainability-oriented peers, or their higher-ups. Gaining wide-spread support could be achieved by giving organisation-wide sustainability workshops or trainings; it was noted these are not always given to a broad group of colleagues, while this could be useful for increasing awareness. It simultaneously may improve the lack of knowledge on CE experienced by many. Moreover, continuous communication about the need for CE, the benefits of CE and the successes of CE pilots could make non-sustainability employees more conscious of it. Commitment from high-level leaders ("management buy-in") would furthermore strengthen the position of sustainability champions. Some of the pilots are very interesting, with captivating stories and surprising and remarkable results. This provides a solid ground for their superiors to "talk the walk", i.e. communicate what is good about the projects and inspire others.

A second issue is that the job sometimes may feel as an uphill battle, with too few resources (in terms of money, time, and staff). Overworking appears to happen more than it should. The simple recommendation here is to ensure sufficient resources. If not, one should not be afraid to reconsider what is feasible and what is not.

In the unfreeze phase, where the change is prepared and promoted, an important barrier is the lack of knowledge on CE. Many strategies are already applied to combat this issue. Research is being done, formally in collaboration with research institutes producing detailed reports, and more informally by collection of information or discussions with experts. Conducting the pilots also is an effective way of 'learning by doing', especially if the pilot is evaluated afterwards. It is thus recommended these activities are kept up, as they provide important insight in CE and how it can be applied in Dutch government. One strategy increasingly gaining attention is to share knowledge and collaborate across departments. Especially now that more and more pilots are done, there is a wealth of information available on what works and what does not, hence it would be beneficial to utilise this knowledge and experience. Two platforms provide promising ways to do this. The Program Acceleration Sustainable Operational Management organises networking events, workshops and knowledge sessions where sustainability-oriented employees meet their peers and are able to share experiences and inspire each other. Second, public-private collaborations in the form of Green Deals also bring knowledge from outside of the organisation to central government.

Another issue in this phase is the organisational culture in which risk is discouraged. While pilots are still low-risk, scaling up increases risk and hence this issue is likely to play a significant role in the future. Here, framing the arguments in different ways is important. Focusing on benefits of CE that do not centre around sustainability may help convince those who are still sceptical. CE may provide cost savings, and can also bring a better-quality product, e.g. through physical quality, durability or a flexible, hands-off business model. Effectively using the available knowledge and successful CE examples, and thus focusing on the benefits instead of the risks may also help convincing others. Reward when risks pay off, discuss and learn when risks materialize.

In the move phase, multiple issues play a role. Some have already been discussed when going over leadership and intrinsic motivation, but one that has not been touched upon yet is annual budgets. Annual budgets often make CE projects appear costly and unattractive, because the bulk of initial investments are made in one year. However, working with total cost of ownership, or even total cost of use, can suddenly make it look much more positive than a non-sustainability-oriented option. Total cost of ownership or use allows for a fairer judgement, as it looks at total costs of a product's lifetime.

A very common problem in all change projects, and no less in this one, is that the final phase of changing, institutionalising the change and embedding it in culture, is often neglected or even forgotten. Once a memo or policy is written, it is frequently assumed that is enough, while continuous efforts are often necessary to make the change permanent and effective. Obviously, embedding the change in organisational culture is a very difficult task, so it is no surprise this is struggled with. One way to approach it is to already prepare decision-making groups while the change is being implemented, i.e. during the move phase. Keep them updated about successes, necessary improvements, and promising prospects.

Communicating short-term successes is especially important, balanced with communicating the long-term vision. On the one hand, the long-term vision may be too far-fetched for most, so short-term goals and successes keep people interested and motivated. It is important to remember that the ones involved in the change are very aware of it, but those not involved may easily forget about it. And if no one knows about the successes, is it really a win (Kotter & Cohen, 2002)?

On the other hand, the long-term vision is necessary to keep up the urgency and not become complacent with the current situation. Although the long-term vision is important and should be kept in mind, one should not be afraid to adapt the change to what is more feasible, especially if circumstances change. One should continuously ask themselves what is most important and what adds value (Kotter, 2007).

Finally, there is the Dutch central government's overall transition towards CE, level 3 in this study. The main problem here is that initiatives appear *ad hoc*. Luckily, the recently formed project team for the *Program Acceleration Sustainable Operational* is aware of this issue and actively works on diminishing it. The first focus of this team should be on bringing sustainability champions together and sharing knowledge, not only from inside the organisation but also from the outside. Secondly, the team should be the guardian of the overall CE vision (as outlined in *Netherlands Circular in 2050*) and ensuring people are working towards a common goal.

8. References

- Bargal, D. (2006). Personal and intellectual influences leading to Lewin's paradigm of action research: Towards the 60th anniversary of Lewin's "Action research and minority problems" (1946). *Action Research*, 4(4), 367–388.
<https://doi.org/10.1177/1476750306070101>
- Barr, P. S., Stimpert, J. L., & Huff, A. S. (1992). Cognitive change, strategic action, and organizational renewal. *Strategic Management Journal*, 13, 15–36.
<https://doi.org/10.1002/smj.4250131004>
- Benne, K. D., & Birnbaum, M. (1969). Principles of changing. In W. G. Bennis, K. D. Benne, & R. Chin (Eds.), *The Planning of Change* (Second ed.). New York: Holt, Rinehart and Winston, Inc.
- Bozeman, B., & Bretschneider, S. (1994). The "publicness puzzle" in organization theory: A test of alternative explanations of differences between public and private organizations. *Journal of Public Administration Research and Theory*, 4(2), 197–223.
<https://doi.org/10.2307/1181777>
- Brewer, G. A. (2011). Parsing Public/Private Differences in Work Motivation and Performance: An Experimental Study. *Journal of Public Administration Research and Theory*, 21(Supplement 3), i347–i362. <https://doi.org/10.1093/jopart/mur030>
- Broadbent, J., & Guthrie, J. (1992). Changes in the public sector: A review of recent "alternative" accounting research. *Accounting, Auditing & Accountability Journal*, 5(January 2016), 3–31. <https://doi.org/http://dx.doi.org/10.1108/09513579210011835>
- Brundtland, G. H. (1987). *Our Common Future: Report of the World Commission on Environment and Development. Medicine, Conflict and Survival*.
<https://doi.org/10.1080/07488008808408783>
- Burnes, B. (2004). Kurt Lewin and the Planned Approach to Change : A Re-appraisal. *Journal of Management Studies*, 41(6), 977–1002.
- Cameron, E., & Green, M. (2005). *Making Sense of Change Management*. (E. Cameron & M. Green, Eds.), *Leadership & Organization Development Journal* (4th ed.). KoganPage.
- Charlesworth, K., Cook, P., & Crozier, G. (2003). Leading Change in the Public Sector: Making the Difference. *Management Services*, 47(11), 12–15.
- Circulaire Economie Nederland. (n.d.). Grondstoffenakkoord. Retrieved from <https://www.circulaireeconomienederland.nl/grondstoffenakkoord/default.aspx>
- de Boer, H. F., Enders, J., & Leisyte, L. (2007). Public sector reform in Dutch higher education: The organizational transformation of the university. *Public Administration*, 85(1), 27–46. <https://doi.org/10.1111/j.1467-9299.2007.00632.x>
- del Val, M. P., Fuentes, C. M., Val, M. P. del, Fuentes, C. M., Pardo del Val, M., Martínez Fuentes, C., ... Fuentes, C. M. (2003). Resistance to change: A literature review and empirical study. *Management Decision*, 41(1), 148–155.
<https://doi.org/10.1108/00251740310457597>
- Dent, E. B., & Galloway- Goldberg, S. G. (1999). Challenging "Resistance to

- Change" *The Journal of Applied Behavioral Science*, 35(1), 25–41.
<https://doi.org/10.1177/0021886399351003>
- DeSimone, L. D., & Popoff, F. (1997). Eco-efficiency: The business link to sustainable development. *European Management Journal*, 12(3), 322–331.
[https://doi.org/10.1016/0263-2373\(94\)90067-1](https://doi.org/10.1016/0263-2373(94)90067-1)
- Devos, G., Buelens, M., & Bouckenooghe, D. (2007). Contribution of content, context, and process to understanding openness to organizational change: two experimental simulation studies. *The Journal of Social Psychology*, 147(6), 607–629.
<https://doi.org/10.3200/SOCP.147.6.607-630>
- Doppelt, B. (2009). *Leading Change Toward Sustainability - A Change-Management Guide for Business, Government and Civil Society*. Government and Civil Society (2nd ed.). Sheffield: Greenleaf Publishing.
- Dunleavy, P., Margetts, H., Bastow, S., & Tinkler, J. (2006). New Public Management is Dead - Long Live Digital-Era Governance. *Journal of Public Administration Research and Theory*, 16, 467–494. <https://doi.org/10.1093/jopart/mui057>
- Dunphy, D., Griffiths, A., & Benn, S. (2006). *Organizational Change For Corporate Sustainability: A guide for leaders and change agents of the future*. *Organizational Change For Corporate Sustainability*. London: Routledge.
- Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy & the Environment (John Wiley & Sons, Inc)*, 11(2), 130–141.
<https://doi.org/10.1002/bse.323>
- Ellen MacArthur Foundation. (2015). Circular Economy Overview. Retrieved October 1, 2016, from <https://www.ellenmacarthurfoundation.org/circular-economy/overview/characteristics>
- Farazmand, A. (1999). Globalization and Public Administration. *Public Administration Review*, 59(6), 509–522. <https://doi.org/10.2307/3110299>
- Farneti, F., & Guthrie, J. (2009). Sustainability reporting by Australian public sector organisations: Why they report. *Accounting Forum*, 33(2), 89–98.
<https://doi.org/10.1016/j.acfor.2009.04.002>
- Fernandez, S., & Rainey, H. G. (2006). Managing successful organizational change in the public sector. *Public Administration Review*. <https://doi.org/10.1111/j.1540-6210.2006.00570.x>
- Fullan, M. (2002). the Change Leader. *Beyond Instructional Leadership*, 59(8), 16–21.
<https://doi.org/10.1002/npr.4040190203>
- Gill, R. (2002). Change management--or change leadership? *Journal of Change Management*, 3(4), 307–318. <https://doi.org/10.1080/714023845>
- Hendriks, F., & Tops, P. (2003). Local Public Management Reforms in the Netherlands: Fads, Fashions and Winds of Change. *Public Administration*, 81(2), 301–323.
<https://doi.org/10.1111/1467-9299.00348>
- Henriques, A., & Richardson, J. (2004). The Triple Bottom Line: Does it all add up? *Pacific Accounting Review*, 16, 186. <https://doi.org/10.1080/13549830120073275>

- Ho, L. W. P., Dickinson, N. M., & Chan, G. Y. S. (2010). Green procurement in the asian public sector and the Hong Kong private sector. *Natural Resources Forum*, 34(1), 24–38. <https://doi.org/10.1111/j.1477-8947.2010.01274.x>
- Hopwood, B., Mellor, M., & O'Brien, G. (2005). Sustainable development: Mapping different approaches. *Sustainable Development*, 13(1), 38–52. <https://doi.org/10.1002/sd.244>
- Johnson, G. (1992). Managing strategic change--strategy, culture and action. *Long Range Planning*, 25(1), 28–36. [https://doi.org/10.1016/0024-6301\(92\)90307-N](https://doi.org/10.1016/0024-6301(92)90307-N)
- Jones, G. R. (2007). *Organizational theory, design, and change : text and cases. Organisation theory design and change*. New York: Pearson Education Limited.
- Judge, T. A., & Robbins, S. P. (2015). Essentials of organizational behavior. *The Effects of Brief Mindfulness Intervention on Acute Pain Experience: An Examination of Individual Difference*, 1, 1689–1699. <https://doi.org/10.1017/CBO9781107415324.004>
- Kickert, W. J. M. (2014). Specificity of Change Management in Public Organizations: Conditions for Successful Organizational Change in Dutch Ministerial Departments. *The American Review of Public Administration*, 44(6), 693–717. <https://doi.org/10.1177/0275074013483871>
- Kotter, J. P. (1996). *Leading change. Harvard Business Review*. <https://doi.org/10.1007/s13398-014-0173-7.2>
- Kotter, J. P. (2007). Leading change: Why transformation efforts fail. *Harvard Business Review*. <https://doi.org/10.1109/EMR.2009.5235501>
- Kotter, J. P., & Cohen, D. S. (2002). *The Heart of Change: Real-life Stories of How People Change Their Organizations*. Boston, Massachusetts: Harvard Business School Press.
- Kritsonis, A. (2005). Comparison of Change Theories. *International Journal of Management, Business, and Administration*, 8(1), 1–7.
- Kruse, K. (2013). What Is Leadership? Retrieved September 29, 2016, from <http://www.forbes.com/sites/kevinkruse/2013/04/09/what-is-leadership/2/#65c88283e825>
- Kuipers, B. S., Higgs, M. J., Kickert, W. J. M., Tummers, L. G., Grandia, J., & Van der Voet, J. (2014). The management of change in public organisations : A literature review. *Public Administration*, 92(1), 1–45. <https://doi.org/10.1111/padm.12040>
- Lewin, K. (1947). Frontiers in Group Dynamics: II. Channels of Group Life; Social Planning and Action Research. *Human Relations*, 1(2), 143–153. <https://doi.org/10.1177/001872674700100201>
- Linder, S. (1999). Coming to terms with the public-private partnership: A grammar of multiple meanings. *The American Behavioral Scientist*, 43(1), 35–51. <https://doi.org/0803973233>
- Linnenluecke, M. K., & Griffiths, A. (2010). Corporate sustainability and organizational culture. *Journal of World Business*, 45(4), 357–366. <https://doi.org/10.1016/j.jwb.2009.08.006>
- Linnenluecke, M. K., Russell, S. V., & Griffiths, A. (2009). Subcultures and sustainability practices: The impact on understanding corporate sustainability. *Business Strategy and the Environment*, 18(7), 432–452. <https://doi.org/10.1002/bse.609>

- Lozano, R. (2006). Incorporation and institutionalization of SD into universities: breaking through barriers to change. *Journal of Cleaner Production*, 14(9–11), 787–796. <https://doi.org/10.1016/j.jclepro.2005.12.010>
- Lozano, R. (2008). Developing collaborative and sustainable organisations. *Journal of Cleaner Production*, 16(4), 499–509. <https://doi.org/10.1016/j.jclepro.2007.01.002>
- Lozano, R. (2009). Orchestrating Organisational Changes for Corporate Sustainability. *Greener Management International*, 57, 43–64. <https://doi.org/http://dx.doi.org/10.9774/GLEAF.3062.2007.sp.00005>
- Lozano, R. (2012). Towards better embedding sustainability into companies' systems: An analysis of voluntary corporate initiatives. *Journal of Cleaner Production*, 25, 14–26. <https://doi.org/10.1016/j.jclepro.2011.11.060>
- Lozano, R. (2013). Are Companies Planning their Organisational Changes for Corporate Sustainability? An Analysis of Three Case Studies on Resistance to Change and their Strategies to Overcome it. *Corporate Social Responsibility & Environmental Management*, 20(5), 275–295. <https://doi.org/10.1002/csr.1290>
- Lozano, R. (2015). A holistic perspective on corporate sustainability drivers. *Corporate Social Responsibility and Environmental Management*, 22(1), 32–44. <https://doi.org/10.1002/csr.1325>
- Luthans, F. (1989). *Organizational behavior (5th ed.)*. *Organizational behavior (5th ed.)*. New York: McGraw-Hill.
- McCrudden, C. (2004). Using public procurement to achieve social outcomes. *Natural Resources Forum*, 28(28), 257–267. <https://doi.org/10.1111/j.1477-8947.2004.00099.x>
- McMillan, K., & Perron, A. (2013). Nurses amidst change: the concept of change fatigue offers an alternative perspective on organizational change. *Policy, Politics & Nursing Practice*, 14(1), 26–32. <https://doi.org/10.1177/1527154413481811>
- McMurry, R., & Ramsey, S. (1986). Environmental crime: The use of criminal sanctions in enforcing environmental laws. *Loyola of Los Angeles Law Review*, 19, 1133.
- Meehan, J., & Bryde, D. (2011). Sustainable procurement practice. *Business Strategy and the Environment*, 20(2), 94–106. <https://doi.org/10.1002/bse.678>
- Millar, C., Hind, P., & Magala, S. (2012). Sustainability and the need for change: organisational change and transformational vision. *Journal of Organizational Change Management*, 25(4), 489–500. <https://doi.org/10.1108/09534811211239272>
- Ministerie van Infrastructuur en Milieu, & Ministerie van Economische Zaken. (2016). Nederland circulair in 2050. Retrieved October 1, 2016, from <https://www.rijksoverheid.nl/actueel/nieuws/2016/09/14/kabinet-nationaal-grondstoffenakkoord-voor-recycle-economie-in-2050>
- Moon, J. (2004). Government as a driver of corporate social responsibility. *ICCSR Research Paper Series*, 44(20), 1–27. <https://doi.org/http://hdl.handle.net/123456789/1102http://hdl.handle.net/123456789/1102>
- Moore, M. (1995). *Creating public value: Strategic management in government*. Cambridge: Harvard University Press.

- OECD. (2016). *OECD Factbook 2015-2016: Economic, environmental and social statistics*. Paris: OECD Publishing. Retrieved from <http://dx.doi.org/10.1787/factbook-2015-en>
- Oreg, S. (2003). Resistance to Change: Developing an Individual Differences Measure. *Journal of Applied Psychology*, 88(4), 680–693. <https://doi.org/10.1037/0021-9010.88.4.680>
- Osborne, S. P., & Brown, K. (2005). Managing Change and Innovation in Public Service Organizations. *Erasmus*, 84, 794–796. <https://doi.org/10.4324/9780203391129>
- Parry, K., & Proctor-Thomson, S. B. (2003). Leadership, culture and performance: The case of the New Zealand public sector. *Journal of Change Management*, 3(4), 376–399. <https://doi.org/10.1080/714023843>
- PIANOO. (2016). Circulair Inkopen. Retrieved October 11, 2016, from [https://www.pianoo.nl/themas/maatschappelijk-verantwoord-inkopen-mvi-duurzaam-inkopen/mvi-thema-s/circulair-inkopen %0A](https://www.pianoo.nl/themas/maatschappelijk-verantwoord-inkopen-mvi-duurzaam-inkopen/mvi-thema-s/circulair-inkopen%0A)
- Piderit, S. K. (2000). Rethinking resistance and recognizing ambivalence: A multidimensional view of attitudes toward an organizational change. *Academy of Management Review*, 25(4), 783–794. <https://doi.org/10.2307/259206>
- Porter, L. W., Lawler, E. E., & Hackman, J. R. (1975). *Behavior in Organizations*. New York: McGraw-Hill.
- Rainey, H., Backoff, R., & Levine, C. (1976). Comparing public and private organizations. *Public Administration Review*, 36(2), 233–244. <https://doi.org/Article>
- Rainey, H., & Bozeman, B. (2000). Comparing Public and Private Organizations: Empirical Research and the Power of the A Priori. *Journal of Public Administration Research and Theory*, 10(2), 447–469. <https://doi.org/Article>
- Rainey, H. G. (2003). *Understanding & Managing Public Organizations* (5th ed.). New York: John Wiley & Sons Inc.
- Rapportage Duurzame Bedrijfsvoering Rijk. (2005). Retrieved from <http://www.indianet.nl/bedrijfsvoering.pdf>
- Ridder, H.-G., Bruns, H.-J., & Spier, F. (2005). Analysis of Public Management Change Processes: The Case of Local Government Accounting Reforms in Germany. *Public Administration*, 83(2), 443–471. <https://doi.org/10.1111/j.0033-3298.2005.00457.x>
- Rijksoverheid. (n.d.-a). Aanbesteden. Retrieved October 8, 2016, from <https://www.rijksoverheid.nl/onderwerpen/aanbesteden>
- Rijksoverheid. (n.d.-b). Inkopen door het Rijk. Retrieved October 16, 2016, from <https://www.rijksoverheid.nl/onderwerpen/inkopen-door-het-rijk>
- Robinson, D., & Boulle, M. (2012). Overcoming organizational impediments to strong sustainability management. *The Business Review, Cambridge*, 20(1), 42–48.
- Rogers, E. M. (1995). *Diffusion of innovations*. Macmillian Publishing Co. (3rd ed.). New York: Free Press. <https://doi.org/citeulike-article-id:126680>
- RVO. (2016). Duurzaam Ondernemen. Retrieved September 7, 2016, from <http://www.rvo.nl/onderwerpen/duurzaam-ondernemen>

- Saunders, M., Lewis, P., & Thornhill, A. (2007). *Research Methods for Business Students*. Business. New York: Pearson Education Limited.
- Seel, R. (2000). Culture and Complexity: New Insights on Organisational Change. *Organisations & People*, 7(2), 2–9.
- Senge, P. M. (2006). *The Fifth Discipline: The Art & Practice of the Learning Organisations*. United Kingdom: Random House Business Books. London: Random House Business Books. <https://doi.org/10.1108/eb025496>
- Simon, H. a. (1946). The Proverbs of Administration. *Public Administration Review*, 6(1), 53. <https://doi.org/10.2307/973030>
- Stacey, R. D. (2011). *Strategic Management and Organisational Dynamics: The Challenge of Complexity*. New York: Pearson Education Limited. [https://doi.org/10.1016/0024-6301\(94\)90218-6](https://doi.org/10.1016/0024-6301(94)90218-6)
- Stapley, L. F. (1993). *The personality of the organisation: A psycho-dynamic explanation of culture and change*. Sheffield Hallam University. Retrieved from <http://shura.shu.ac.uk/3163/>
- Thai, K. V. (2001). Public Procurement Re-examined. *Journal of Public Procurement*, 1(1), 9–50.
- Walker, H., & Brammer, S. (2009). Sustainable procurement in the United Kingdom public sector. *Supply Chain Management: An International Journal*, 14(2), 128–137. <https://doi.org/10.1108/13598540910941993>
- What is Economics. (n.d.). What is a Financial Crisis? Retrieved October 31, 2016, from <http://www.whatisecomomics.org/the-global-financial-crisis/what-is-a-financial-crisis/>

Appendix A: Definitions of drivers, barriers and strategies

(Gill, 2002; Jones, 2007; Kruse, 2013; Lozano, 2009, 2012, 2013, 2015; McMillan & Perron, 2013; Moon, 2004; Osborne & Brown, 2005; Robinson & Boulle, 2012; What is Economics, n.d.)

Driver of change <i>“factors that stimulate the change to happen without the organisation’s active efforts”</i>	Definition
Leadership	<p><i>Definition of leadership:</i> “Leadership is a process of social influence, which maximises the efforts of others towards the achievement of a goal.”(Kruse, 2013)</p> <p><i>Definition of leadership as a driver:</i> When a leader holds values and beliefs that are expressed in his leadership, thus socially maximising the efforts of others towards goals and changes corresponding to his beliefs and values</p>
Culture	<p><i>Definition of organisational culture:</i> “the way the [organisation] collectively thinks, feels and behaves, and its values are lived out through its day-to-day practices.”(Robinson & Boulle, 2012)</p> <p><i>Definition of culture as a driver:</i> When the organisation collectively thinks, feels and behaves in a way that stimulates the change, either by being in support of the specific change or being open to change in general</p>
Cost savings	<p>When the prospect of lower expenses prompts the organisation to change its ways</p>
Moral obligation	<p>When someone decides to change something in an organisation because they consider it an obligation arising out of considerations of what is right and wrong</p>
Reputation	<p>When an organisation is prompted to change in an effort to improve its reputation, or because it fears its reputation will otherwise be damaged</p>
Financial crises	<p><i>Definition of financial crisis:</i> “a situation where, for some reason or another, an institution or institutions lose a huge part of their value.”(What is Economics, n.d.)</p> <p><i>Definition of financial crises as a driver:</i> When a local, national, or global financial crisis cause an organisation to lack resources, forcing it to implement changes dealing with the lack of resources</p>
Regulation and legislation	<p>When an organisation is forced to change in order to comply to (new) government regulations,(Lozano, 2015) or changes to anticipate future changes in government regulation.(Moon, 2004)</p>
Global economy	<p>When (global) economic forces impact an organisation’s ability to conduct business in the same manner it did before</p>

Barrier to change <i>“factors that stop, delay or alter the change, i.e. resistance to change”</i>	Definition
Misunderstandings	When people fail to understand correctly what is communicated
Inadequate communication	When communication lacks the quality or quantity required and is insufficient to implement the change
Lack of awareness	When the organisation is unaware of the necessity or opportunity for change, or when employees do not know about the change to be implemented
Lack of long-term planning	When only short-term goals and strategies are defined concerning the change, while neglecting to consider what must be done in the long term to reach the goal
Lack of top-management commitment	When high-ranking executives do not approve of the change or are indifferent to it
Change fatigue	When employees become tired of change initiatives after multiple have been implemented (McMillan & Perron, 2013)
Resistance to the idea itself	When employees disagree with the change content-wise or the way it is implemented
Threat to job security	When employees fear the change may cause them to lose their job
Fear of extra workload	When employees worry that the change may increase their workload
Lack of trust	When employees do not trust their higher-ups to do well in implementing the change
Uncertainty	When the change causes employees to be unsure about the future
Lack of knowledge	When employees do not know how to implement the change
Group culture	When group culture, or the organisational subculture, causes employees to think, feel and act in a way that blocks the change, either by not being in support of the specific change or being resistant to change in general
Bureaucracy	When administrative procedures are prohibitive of the change in any way, for example by being complicated, long and slow, rigid and inflexible, fragmented, patriarchal, redundant or useless, and/or meaningless
Ineffective leadership	When the leader does not have a good vision and strategy to make the change a success, does not develop a culture of shared values that support the strategy, and/or does not empower, motivate and inspire those who are affected by or involved in the change (Gill, 2002)
The change is not considered a priority	When top management or employees consider the change unimportant compared to their other (main) work tasks

Strategy to effect change <i>“plans of action consciously devised by the organisation to make the change happen”</i>	Definition
Leadership	When a company appoints one or more leaders (be it existing managers or interim managers) to use their social influence to maximise the efforts of others towards the achievement of the change
Collaboration	When employees, groups or organisations work together to achieve a successful change
Education	Providing employees in an organisation with knowledge and skills relating to the change, so that they know how to implement or use it
Emotional support	Helping employees deal with the emotions (such as stress) that arise with implementing change, for example by letting them have time off or providing words of encouragement (Jones, 2007)
Negotiation and bargaining	Coming to a mutual agreement on who does which tasks or has which responsibilities concerning the change, or about the content of the change
Coercion and manipulation	To directly or indirectly force employees to partake in the change initiative, for example by threatening with negative consequences for non-compliance or offering them (monetary) rewards for compliance
Communication and discussion	Communicating with employees about the change, in any form or with any purpose. For example, communication may be monologic or dialogic (Osborne & Brown, 2005), playing on emotions or purely informative, electronic or in person, individually or in groups, authoritative or inclusive, instructive or asking for input
Participation and empowerment	When employees are enabled to personally be actively involved in the change, for example by being asked for input, involving them in decision-making, or giving them responsibility to implement the change
Political support	Gathering support of higher-ups, or if higher-ups actively support the change, for example by giving promotions to employees who support and implement the change

Appendix B: Strategies to effect change in literature

Strategies to effect change	Lozano, 2009	Lozano, 2006	Dent & Galloway - Goldberg, 1999	Jones, 2013	Cameron & Green, 2009	Brown & Osborne, 2012
Leadership	X					X
Education	X		X	X		
Facilitation	X		X	X		
Discussion	X		X			
Financial benefits	X		X			X
Negotiation	X		X	X		
Manipulation	X		X			
Participation	X		X	X		X
Use of fear	X					
Political support	X		X			
Coercion	X		X	X		
Emotional support				X	X	X
Collaboration		X				
Communication	X			X		
Empowerment	X			X		
Bargaining				X		
Teambuilding				X		

Combined strategies:

- Communication and discussion
 - Negotiation, bargaining and financial benefits
 - Coercion, manipulation and use of fear
 - Participation and empowerment
- Facilitation, emotional support and teambuilding

Appendix C: Abbreviations of government organisations

Abbreviation	Organisation
BZK (Binnenlandse Zaken en Koninkrijksrelaties)	Ministry of the Interior and Kingdom Relations
IenM (Infrastructuur en Milieu)	Ministry of Infrastructure and Environment
EZ (Economische Zaken)	Ministry of Economic Affairs
Def (Defensie)	Ministry of Defence
VenJ (Veiligheid en Justitie)	Ministry of Security and Justice
FMH (Facilitair Management Haaglanden)	Facility Management The Hague
RVB (Rijksvastgoedbedrijf)	Central Government Real Estate Agency
RWS (Rijkswaterstaat)	Department of Waterways and Public Works
BZ (Buitenlandse Zaken)	Ministry of Foreign Affairs
AIVD (Algemene Inlichtingen- en Veiligheidsdienst)	General Intelligence and Safety Agency
DRZ (Domeinen Roerende Zaken)	Domains Movable Property (Keeper of seized goods and take care of redundant government goods)
PIANOo (Professioneel en Innovatief Aanbesteden, Netwerk voor Overheisopdrachtgevers)	Professional and Innovative Tendering, Network for Government Contracting Authorities (expertise centre for public procurement)

Appendix D: Interview questions

Introductie

- Masterstudent UU SBI, scriptie verandermanagement voor duurzaamheid
- Doel: wat drijft veranderingen voor duurzaamheid, wat zijn belemmeringen, wat voor strategieën worden toegepast?
- Supervisor BZK: Ivo Bonajo

Introductievragen

- 1) Hoe lang werkt u al bij [ministerie/agentschap]?
 - a) Als ik het goed begrijp, is uw functie [...]. Wat zijn uw voornaamste verantwoordelijkheden?
 - b) Hoe lang zit u in deze functie?

Case study vragen

- 2) Zoals ik al zei ligt mijn focus op duurzaamheid. Specifiek ga ik kijken naar de circulaire economie en hoe de Rijksoverheid hiermee bezig is. Zoals u vast al weet is onlangs het Rijksbrede programma circulaire economie gepubliceerd. U bent betrokken bij [pilot], wat onderdeel is van een aantal pilots rondom circulaire economie.
 - a) Wanneer is deze pilot opgestart?
 - b) Kunt u kort beschrijven welke stappen er zijn gezet?
 - c) Wie is er betrokken geweest bij het opstellen en uitvoeren van de pilot?
 - d) Is deze pilot afgerond?
 - i) Zo ja, wanneer?
 - ii) Zo nee, wanneer zal hij eindigen?
 - e) Zijn er plannen voor vervolgstappen en uitbreidingen?
 - f) In hoeverre mogelijk, hoe zou je het succes van deze pilot (tot nog toe) beoordelen op deze schaal?: Likert aanbieden
- 3) Ik neem aan dat er verschillende aanleidingen zijn geweest om deze pilot te starten.
 - a) Wat was de aanleiding voor u specifiek? Waarom heeft u meegedaan?
 - b) En als we kijken naar het grotere geheel, zoals uw directe collega's, uw organisatie of het Rijk, of nog daarbuiten, wat is dan de reden geweest om deze pilot te starten?
 - c) [als het programma circulaire economie genoemd wordt als reden] en waarom is dit programma ontwikkeld?
 - d) Toen de pilot eenmaal bezig was, wat waren toen belangrijke drijfveren die de pilot verder hielpen?
 - e) U hebt een aantal drijfveren genoemd. Uit mijn literatuuronderzoek blijkt dat deze drijfveren belangrijk zijn: [LIJSTJE]. *We zien hier al overlap/of niet.* is dit in het geval van deze pilot ook zo of juist niet?
 - i) Hoe belangrijk vindt u deze? [likert aanbieden]
 - f) Kwamen de aanleidingen/drijfveren meer van binnen uw organisatie of daarbuiten?
 - i) Kunt u hier voorbeelden van geven?
- 4) En ik neem ook aan dat er ook wel moeilijkheden zijn geweest, waardoor de pilot vertraagde of zelfs mislukte.
 - a) Waar bent u persoonlijk tegenaan gelopen?
 - b) Waren er ook belemmeringen die elders uit voortkwamen? Zoals uit uw team, hogerop, elders binnen het Rijk of externe bezwaren?
 - c) [indien toepasbaar bij toekomstplannen/onafgeronde pilot] Voorziet u problemen in de toekomst?
 - i) Zo ja, welke?
 - d) Verschilden deze problemen nog in de loop van deze pilot? Waren in het begin andere dingen moeilijk dan toen het al een tijdje liep?

- e) Uit mijn literatuuronderzoek blijkt dat deze problemen vaak voorkomen bij veranderingen voor duurzaamheid: [LIJSTJE]. is dit in het geval van deze pilot ook zo of juist niet? LIKERT
 - f) [indien toepasbaar bij mislukte pilot] Wat is volgens u een doorslaggevende factor geweest voor het mislukken van deze pilot?
- 5) Wat hebben u en anderen die bij deze pilot betrokken zijn, gedaan om hem zo succesvol mogelijk te laten verlopen?
- a) *Indien niet genoemd*: en hoe zijn de eerder genoemde moeilijkheden geprobeerd te verhelpen?
 - b) Uit mijn literatuuronderzoek blijkt dat deze strategieën vaak worden gebruikt: [LIJSTJE]. is dit in het geval van deze pilot ook zo of juist niet? Likert aanbieden
 - c) Zijn deze inspanningen veranderd naarmate het project vorderde?
 - i) Heeft u bijvoorbeeld tijdens het voorbereiden anders gehandeld dan toen de pilot net begonnen was, of bijna ten einde liep? [Vraag om voorbeelden]
 - d) [indien toepasbaar bij succesvolle pilot] Wat is volgens u de doorslaggevende factor geweest in het succes van deze pilot?
- 6) Hoe heeft u ervoor gezorgd dat de verandering blijvend werd? OF: heeft u er al over nagedacht hoe u de verandering blijvend gaat maken?

Extra vragen (afhankelijk van tijd)

- 7) Wat moet er volgens u gebeuren om het programma circulaire economie tot een succes te laten worden?
- a) Als u [minister/SG/categoriemanager] was, wat zou u dan doen?
- 8) Heeft u het gevoel dat duurzaamheid belangrijk is binnen uw organisatie?
- a) Zo ja, op wat voor manier uit zich dit?
 - b) Zo nee, waarom niet?
 - c) Wat voor cijfer zou u het geven op schaal van 1 tot 10 9 (1 helemaal niet belangrijk, 10 heel erg belangrijk)
- 9) Zijn er mensen die ik nog zou moeten spreken?

Drivers, barriers and strategies as named in the conceptual model

1. Drivers of change

Leiderschap, bedrijfscultuur, kostenbesparing, intrinsieke motivatie, financiële crisis, wetgevingen e.d., (wereld)economie), stakeholders tevredenstellen

2. Barriers to change

Misverstanden, onvoldoende communicatie, beperkte langetermijnplannen, geen steun van hogerop, veranderingsmoeheid, weerstand tegen het idee zelf, angst voor verminderde werkzekerheid, angst voor extra werkdruk, gebrek aan vertrouwen, onzekerheid over de toekomst, gebrek aan kennis, groeps cultuur, slecht leiderschap

3. Strategies to effect change

Leiderschap, opleidingen e.d., communicatie en discussies, emotionele steun, onderhandelingen, politieke steun, het delen van macht/bevoegdheden (empowerment)