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**One Planet Living and the legitimacy of sustainability
governance: From standardised information to regenerative
systems**

Gerhards, J.

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One Planet Living and the legitimacy of
sustainability governance: From standardised
information to regenerative systems

Jan Gerhards

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Abstract

The past two decades have witnessed an increased use of voluntary governance instruments providing guidance on sustainability strategy and/or monitoring, rewarding users with marketable public information such as certifications, ratings, and reports, to incentivise take-up. To support trustworthy information, these instruments are typically based on standardised assessment criteria. Such standardisation has been applied across increasingly complex varied contexts, such as companies, neighbourhoods, and cities. However, recent academic literature emphasises more context-sensitive and systems-based, or ‘regenerative’, approaches, giving cause for questioning the effectiveness of standardised approaches. This thesis uses the concept of ‘legitimacy’ to evaluate instruments, based on promoting effective programmes, achieving take-up and systemic effectiveness, and providing public information that is high quality rather than reflecting positively on business-as-usual practices. Existing research finds that standardised approaches have achieved take-up at the expense of programme effectiveness and informational quality. Although research calls for alternative approaches compatible with a systems-based or regenerative perspective, there remains a shortage of empirical investigations of established instruments based on this perspective. This research addresses this need by evaluating Bioregional’s One Planet Living framework, using a practice-embedded, mixed-methods methodology. The framework is found to promote effective, participatory, and generally transparent programmes. However, the flexible, bespoke approach can provide limitations in terms of structure, resource requirements, and the integration of measurement, which can affect take-up as well as programme processes and transparency. Overall, the research provides insights into the role that voluntary instruments can play in sustainability governance across complex and varied contexts. Despite their widespread usage and ability to scale, standardised approaches have major limitations in the important matter of supporting effective programmes. OPL’s regenerative approach can support programmes effectively but has limitations particularly in relation to take-up, partly reflecting the more bespoke model, and partly reflecting the more fundamental problem of mobilising ambitious action on a voluntary basis. The question of scaling such practices remains of urgent importance.

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Statement of authorship

I hereby declare that all the material contained in this thesis is my own work. All sources used in its preparation are suitably referenced.

1. Introduction

Recent decades have seen the rise of new forms of ‘governance’ alongside traditional government regulation, with networks of state and non-state actors applying an increasingly diverse range of instruments, or techniques, in the delivery of society’s policy objectives. Among these we can identify the family of governance instruments discussed in this thesis, which link guidance on sustainability strategy and/or monitoring to marketable or reputation-enhancing public information, such as certifications, ratings, or reports. These generally exhibit a trend of standardisation, being based around replicable verification criteria to support the impartial assessment of such public information. Standardised instruments have been critiqued within academic literature, and much recent literature instead promotes a systems-based or regenerative perspective, which can be used as a basis for questioning the effectiveness of standardised approaches. However, there is a shortage of empirical literature on established urban or corporate instruments aligned with a regenerative approach. This thesis performs an empirical evaluation of Bioregional’s One Planet Living framework to address this need.

This opening chapter begins with a brief discussion of the background context for sustainability. It then introduces topics and definitions that are important for the rest of this thesis. First, it defines and delineates the family of governance instruments that are analysed here, generally exhibiting a trend of standardisation. Second, it introduces a contrasting, systems-based or regenerative approach to sustainability, and translates this into a definition of how this may apply to regenerative sustainability instruments. Third, the concept of ‘legitimacy’ is proposed as a way of evaluating these differing approaches. The remaining sections then lay out the research questions and objectives, and introduce the focus of the empirical study: the One Planet Living framework as an alternative type of instrument more closely aligned with regenerative sustainability. The chapter concludes with an overview of the thesis structure.

1.1. The sustainability context

The concept of ‘sustainability’ has arisen in response to environmental concerns, and incorporates socioeconomic dimensions alongside these. It has been translated into an array of real-world practices. Below is a brief outline of these issues, theoretical concepts, and practical applications.

1.1.1. Sustainability challenges

Human activities have imposed severe environmental and ecological damage across a variety of domains, such as water pollution, biodiversity loss, habitat loss, deforestation, overfishing and climate change. In 2015, scientists reported that the world had likely already overshoot at least four of nine key planetary boundaries, which are defined as safe levels for key indicators of planetary health (Steffen *et al.*, 2015). Global challenges such as climate change are intertwined with local problems such as air pollution, and localised impacts such as extreme weather events.

Climate change and biodiversity loss have been particularly high-profile issues in recent years. According to recent reports from the UN, current levels of emissions need to decrease rapidly by 2030 to prevent dangerous global heating (Masson-Delmotte *et al.*, 2018; UNEP, 2018), and rates of emissions reduction need to triple. Where national zero carbon targets are set, they are often set for 2050, which may be more than a decade, or even two decades, too late to prevent dangerous global heating (Jackson, 2019). Recent trends in public discourse have shifted to recognising a state of emergency – as reflected, for example, by a letter declaring a climate emergency, signed by 11,000 scientists (Ripple *et al.*, 2019).

Recent reports on the state of global biodiversity have also struck an alarming note. According to the World Wildlife Foundation, there has been an average decrease in the population sizes of terrestrial species of 60% between 1970 and 2014, and the population sizes of freshwater species have declined by an average of 83% (Grooten and Almond, 2018). Similarly, a much-publicised article in the Proceedings of the National Academy of Sciences reports of a ‘sixth mass extinction’. Of the 177 mammals investigated in detail, more than 40% have experienced the kind of severe reductions in population size that mean they are threatened with extinction (having shrunk more than 80%) (Ceballos *et al.*, 2017).

Although socioeconomic issues vary greatly across contexts, illustrative statistics can still be provided to highlight general problems in these areas. Whilst there have been major reductions in poverty globally, in 2015, around half of people still lived below the \$5.50 per day poverty line, and about a quarter below the \$3.20 per day (World Bank, 2018). Meanwhile, income inequality has increased significantly in nearly all countries in recent decades (Alvaredo *et al.*, 2018). The gains of economic growth have, therefore, disproportionately benefited the better off despite continued high levels of poverty globally. Together with concerns about environmental shocks and technological changes, these facts raise deeper questions about the structure of economies and their ability to ensure socioeconomic sustainability and resilience.

The current state of deep systemic unsustainability is the starting point for this enquiry into sustainability governance, which has yet to address these issues successfully: their urgency has only increased.

1.1.2. The concept of ‘sustainability’ and its applications

Responding to such challenges, the concepts of ‘sustainability’ and ‘sustainable development’ rose to prominence in 1987, when the UN’s World Commission on Environment and Development’s published the report ‘Our Common Future’. This included the most widely quoted definition of sustainable development: “development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (Bruntland, 1987). The ‘Earth Summit’ in Rio de Janeiro in 1992 was influential in setting a wide variety of agendas for sustainability, across forestry, conservation, climate change, cities, and different levels of government. The UN Sustainable Development Goals were agreed upon in 2015, creating an overarching framework for global sustainability.

The ideas of sustainability and sustainable development are often described in terms of ‘three pillars’ – social, economic and environmental. This formulation attempts to reconcile tensions between often competing economic and environmental priorities, developing a vision whereby present economic and social needs are met, whilst at the same time preserving the ecological health of the planet for future generations (‘intergenerational equity’). This conception of sustainability places human welfare at its centre (anthropocentrism). The concept of sustainability has a wide variety of applications. Of special relevance to this thesis are sustainable *places* (e.g., buildings, neighbourhoods, cities, and local government areas), sustainable *organisations*, and sustainable *products* (e.g., fishing, forestry, and agricultural products). Whilst sustainable products themselves are not the focus of this thesis, it draws extensively on literature discussing these.

The sustainability of *places* is addressed by the field of ‘urban sustainability’, which has seen a large amount of interest over the past decades among researchers and practitioners alike. Due to rapid urbanisation, most recently in developing countries, global ecological issues have increasingly become urban ones. In 2007, the UN reported that over half of the global population were living in cities (Martine *et al.*, 2007). This turning point has been described as the start of the ‘urban age’. In an urban context, social sustainability may encompass strong social capital, good governance, minimal social exclusion, liveability, public space, and affordable housing. Economic sustainability depends on good physical capital and infrastructure, skilled and healthy human capital, and economic capital in the

form of finance and investment. It generally involves adapting to wider economic trends, such as the development of service, information, knowledge, and creative economies. Ecological or environmentally sustainable cities address topics such as green infrastructure, low-carbon buildings and energy supply, low-carbon transport, the circular economy, and sustainable materials, supply chains, products, water and food (Manzi *et al.*, 2010; Pearson *et al.*, 2014).

The sustainability of *organisations*, and particularly companies, is represented by the interrelated concepts of corporate sustainability, corporate social responsibility (CSR), environmental management, and environmental, social, and corporate governance (ESG). Whilst these have different emphases, they come under the umbrella of addressing social and/or environmental concerns. The ‘three pillars’ of sustainability have also been interpreted to be applicable to organisations. For example, corporate governance and corporate responsibility will consider issues such as worker representation and stakeholder engagement. Current conceptions of corporate sustainability are still regarded as weak (Landrum and Ohsowski, 2018), often limited to business case rationales, and focused on reporting and reputation. Sustainability, moreover, is of increasing concern to investors, in the mitigation of risk.

Sustainable *products* have become of increasing interest partly due to the growth of international trade, which has connected socially and environmentally conscious consumers to producers in other parts of the world. In the absence of certainty about robust social, economic, and environmental protections, both nationally and internationally, there has been a growth in ethical consumption practices. This can be seen, for example, in the international trade of eco-labelled agriculture, fishing and forestry products. Companies and organisations may include the purchase, production, or sale of sustainable products as part of their overall sustainability strategy.

1.2. The rise of standardised sustainability governance

This section provides some foundational definitions for the thesis. First, it defines the sustainability ‘instruments’ being analysed, and sets them within a governance context. Second, it explains how their emphasis on public information has led to a trend of *standardisation*, which has been applied across increasingly complex and varied contexts. Finally, it delineates more specifically the family focused on in this thesis: those applicable to basic, general units of organisation and urban space, which are deemed to face similar challenges in strategy and monitoring.

As noted above, the field of political science has in recent decades have seen much discussion of a shift from hierarchical ‘government’ to networked ‘governance’. Whilst the first relies more on traditional state authority for rule-making and service provision, the second involves a range of state and non-state actors in non-hierarchical, networked arrangements, often through the use of markets or quasi-markets, and blurring the boundaries between public and private sectors (John, 2001; Bevir, 2008). As part of this trend, there has been a rise in what have been called ‘new environmental policy instruments’, which tend to be voluntary and are often provided by non-state actors (Jordan *et al.*, 2005), where ‘instruments’ are simply those techniques available for achieving policy objectives (Howlett, 1991). Such relatively new forms of governance can be thought of as adding flexibility to a public and private ‘regulatory mix’ (Gunningham *et al.*, 1998; Grabosky, 2017). Although largely voluntary, these instruments can complement, be incorporated into, or superseded by other regulation or policy, in ways described in chapter 3.

Within this broader trend, there has been a proliferation of instruments that link guidance on strategy and/or monitoring to marketable or reputation-enhancing public information, such as certifications, ratings, and reports. These are known by names such as rating tools, certification schemes, standards, frameworks, and others, and largely arise from actors desiring to scale sustainability efforts, providing voluntary sustainability guidance, and then using public information as an incentive for adoption. The hope is that this will harness pressure from wider external audiences (e.g., customers, investors, planning officials or even regulators) to see improvements in sustainability, aligning the self-interest of organisations with the public interest. Hence, product certification schemes are described as ‘market-oriented’ (Cashore, 2002), based on a model that, in principle, harnesses pressure from customers to influence decision-making (whether or not this always occurs in practice). The general approach of using public information as part of governance has been called ‘governance-by-disclosure’ (Gupta, 2008), or ‘information strategies’ (Gunningham and Sinclair, 2017). Such instruments are accompanied by some form of external assessment or verification to provide trustworthiness, which acts as a compliance or enforcement mechanism. Product certification is a well-known and widely analysed example of such instruments, with analyses focusing on their non-state, voluntary and market-driven characteristics (Bernstein and Cashore, 2007), and also their legitimacy and effectiveness (Bäckstrand, 2006; Mena and Palazzo, 2012). This thesis focuses on a related, broader group of governance instruments with similar characteristics. The specific instruments and sectors considered are described further below and in chapter 3.

We therefore can decompose the basic features of such an instrument, illustrated by figure 1.1 below. First, the instrument provides sustainability *guidance* – a codified body of sustainability knowledge and expertise, usually in the form of documentation. Second, this is applied in any given context, resulting in a defined, documented output: some form of overarching planning for sustainability or monitoring of progress for the entity in question (a plan, strategy, design, target, or monitoring). Third, by comparing the guidance or requirements with the documented output, external assessors or auditors can provide some form of verification or formal recognition (e.g., a certification, rating, validated target or verified report).

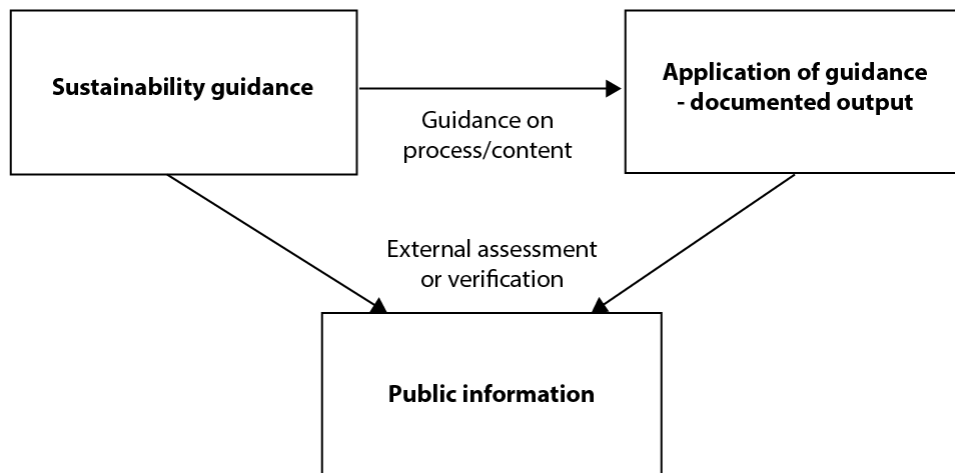


Figure 1.1. Features of sustainability governance instruments linked to public information.

Most of the instruments of this type exhibit the trend of standardisation (an exception being the empirical focus of this thesis, the One Planet Living framework). It is argued here that such standardisation arises from the reliance on public information in this model of governance. To ensure the trustworthiness of such information, instruments have been built around standardised criteria to support replicable, impartial verification across users (the values of objectivity and impartiality have been explicitly codified, for example, into ISO conformity assessment standards such as ISO 17011). Standardisation is therefore defined here as the use of replicable, concrete, verifiable criteria which attempt to minimise ambiguity and discretion, such as measurable targets, or verifiable actions or processes. Hence, this thesis defines standardisation in terms of its promotion of uniformity across contexts. This meaning can be found in other literature, which may also be combined with a definition based on the multi-stakeholder consensus process by which standards are developed (ISO/IEC, 2004; Elgert and Krueger, 2012; Joss and Rydin, 2018). The promotion of uniformity across contexts has had different variations, referring either to the fact that any common approach is being developed at all (Elgert and Krueger, 2012), or to

the extent to which one or a few instruments have achieved dominance within a sector or country (Joss *et al.*, 2015; Joss and Rydin, 2018). This thesis focuses on the use of replicable verification criteria, however, given their importance as a way of promoting uniformity.

McDermott (2012) provides insights into the drivers underpinning standardisation, in the example of product certification. Since external assessors are themselves typically paid, standardised criteria enable further layers of scrutiny and accountability, with third-party assessors themselves being audited. Such criteria are therefore developed to guard against perceived conflicts of interest. In some cases, ‘conformity assessment’ bodies can be audited by ‘accreditation’ bodies, who may themselves be conforming to ISO standards. For other instruments, standardised criteria may simply be open to public scrutiny, adding a level of transparency. Overall, the approach is underpinned by assumptions of self-interest, based on models of ‘rational’ self-interested actors that have become prevalent in discussions about accountability (Braithwaite, 2011). Following Giddens (1990), McDermott (2012) notes the view that globalisation has led to trust being increasingly disassembled from local social relations, and increasingly placed in abstract systems based on universal principles. Hence, the standardisation process can be linked to the scaling of sustainability across contexts, for example, to facilitate the use of many third-party assessors.

Product certification is a widely known and analysed type of such instrument, but over the last two decades, others have arisen for application across increasingly complex and varied contexts: basic units of urban space or organisation. Chapter 1 introduced the instruments focused on in this thesis, which take the general approach of linking guidance on strategy and/or monitoring to marketable or reputation-enhancing public information, such as certifications, ratings, and reports, combined with external assessment processes. Of the instruments taking such an approach, a focus is placed upon those for general urban or organisational sustainability – i.e., those instruments applicable to basic units of urban space, or organisations across a range of sectors, even though they may sometimes be accompanied by sector-specific guidance or have sectoral variations. Organisations include companies, charities or public agencies; units of space include buildings, neighbourhoods, districts, towns, cities, and occasionally regions (these rare instances may include some rural space in addition to urban space, but ‘urban’ is used as a shorthand that usually provides a complete description, to situate the research within ‘urban sustainability’). Hence this thesis focuses on the following:

Commonly employed, primarily voluntary sustainability governance instruments applicable to general urban and organisational sustainability. These instruments link guidance on strategy and/or monitoring to marketable or reputation-enhancing public information, such as certifications, ratings, and reports, combined with external assessment processes.

Although spatial and organisational entities differ, it is argued that they face the common challenges in strategy and/or monitoring for sustainability, facing similar challenges (highlighted in table 1.1. below), such as dealing with entrenched, cross-cutting sustainability challenges, and usually benefiting from engagement and collaboration among stakeholder groups. This commonality is illustrated by the fact that all the types of instruments considered in this thesis have been applied, in some form, to both organisational and urban entities. The variation and complexity of such applications pose a challenge to the trend of standardisation. (A note on urban spatial scales: although neighbourhood and city scales bring the challenge of complexity to the fore, some building level instruments are also considered as examples, due to their role as antecedents to instruments for larger scales). To accommodate variation and complexity, these instruments must find ways of incorporating flexibility whilst relying on standardised criteria, resulting in the limitations explored further in chapter 3, which reviews four types: rating tools and indices, target-setting initiatives, indicator guidelines, and process standards. The One Planet Living framework, the empirical focus, provides an alternative approach (this is a non-standardised example of what may be called a ‘goal-oriented strategy and monitoring framework’). Other instruments, such as *product* certification schemes that focus on more sector-specific ecological/ecosystem issues for agriculture, forestry and fisheries, fall outside the scope of this thesis. However, it should be noted for clarity that many instruments considered here make use of ‘certification’. Moreover, the theoretical framework in chapter 2 draws heavily on literature on product certification schemes, which have been extensively analysed using legitimacy.

1.3. The effectiveness and legitimacy of sustainability governance

Whilst standardised approaches have gained widespread acceptance, the emerging regenerative perspective on sustainability invites us to question their effectiveness. This section defines the regenerative perspective as it could apply to sustainability instruments. It then introduces the evaluative framework used in this thesis, based on the concept of ‘legitimacy’.

1.3.1. Regenerative sustainability and shifting paradigms

Recently there has been a growing interest in the regenerative sustainability paradigm or worldview (Du Plessis and Brandon, 2015; Conte, 2018; Gibbons, 2020). Gibbons (2020) distinguishes between three sustainability paradigms: conventional, contemporary, and regenerative. The first two focus, to a greater extent, on technical aspects or fragmented parts of a system, and it is within these paradigms that standardised instruments tend to fall. In contrast, the regenerative perspective aims for thriving whole living systems and emphasises the interdependence and interconnection of their different elements. It focuses upon the ‘inner sustainability’ of human beliefs and values as an important leverage point in driving sustainability. This regenerative approach aligns with the systems thinking which is already well established in sustainability assessment literature (Bell and Morse, 2008; Regeer *et al.*, 2009). Such perspectives have been used to critique sustainability instruments for the built environment (Monno and Conte, 2015; Boyle *et al.*, 2018; Conte, 2018; Gibbons, 2020). For example, Boyle *et al.* (2018) write:

the [Neighbourhood Sustainability Assessment] tools represent a technically based outlook of urban sustainability that prioritize measurable aspects that largely ignore strategies that pay wider recognition to the depth of issues related to sustainability.

Drawing on such recent literature, we can identify the challenges of addressing sustainability from a systems perspective, and propose how regenerative sustainability instruments would respond to these, as shown in table 1.1 below.

Table 1.1. Potential characteristics of regenerative instruments.

Characteristic of challenge	Response
Complex	Flexible, context-sensitive
Entrenched	Ambitious, restorative
Cross-cutting	Broad and holistic, considering interrelationships between system parts
Involving many, often fragmented actors	Fostering shared endeavour, collaboration and co-creation across groups, boundaries, and scales
Driven by values and beliefs	Fostering communication, engagement, learning and inclusion of non-experts
Continuously changing	Dynamic, adaptable

Such conceptual shifts give cause for questioning established practices. In a similar vein, regulatory theory has provided new models of regulation beyond traditional, state-led ‘command and control’ regulation. These include responsive regulation, which outlines flexible and discretionary accountability processes (Braithwaite, 2011), meta-regulation, based on industry taking greater responsibility for its regulation (Grabosky, 2017), and smart regulation, which takes a broad view of the mix of both public and private regulatory instruments which form an optimal regulatory blend (Gunningham and Sinclair, 2017). From one perspective, voluntary sustainability instruments are relatively flexible, as being voluntary they are less coercive than command-and-control regulation. However, by adopting a standardised approach they attempt to reduce the discretion of assessors, so in this respect are less flexible than discretionary approaches found in meta- or responsive regulation. Regulatory theory, therefore, provides a further cause for questioning standardised practices and highlights the relevance of investigating empirical examples of alternative approaches within the field of sustainability.

1.3.2. Legitimacy

The regenerative perspective gives cause for questioning the effectiveness of existing approaches. When evaluating sustainability instruments, however, we may wish to consider a broader range of concerns beyond effectiveness, such as transparency, stakeholder input and pragmatic considerations such as resource requirements. This thesis employs the concept of legitimacy as the basis for a broad evaluative framework. In doing so, it adapts a concept that is considered a central issue in political science, used to evaluate governance in all its forms. What makes a given institution a ‘legitimate’ response to matters of public interest? Steffek (2009) argues this question has gained further relevance due to a shift from hierarchical government to networked governance, but that the definition of legitimacy remains highly contested and elusive. Suchman (1995) provides the following general definition in an article on organisational management:

A generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions.

Within literature on legitimacy it is possible to identify two broad but interrelated stances Black (2008). From a normative perspective, we may ask whether they *should* be regarded as legitimate, based on various considerations of good governance and public interest, such as effectiveness or democratic fairness. From a sociological perspective, we may enquire whether institutions *are* widely regarded as legitimate. This could include normative or

moral considerations, but also others that lead to widespread acceptance, such as the pragmatic self-interest of audiences, or cognitive ‘taken-for-grantedness’. Although standardised forms of governance, in general, have gained a degree of acceptance, a normative perspective can be used as the basis for questioning this. Conversely, a normative approach may positively evaluate forms of governance that have not yet gained widespread acceptance.

The concept of legitimacy has already been applied extensively to a narrow subset of sustainability instruments: forestry product certification schemes, but only to a very limited extent to other instruments such as rating tools (Cash *et al.*, 2003; Holden, 2013). Such literature often (but not always) takes a broadly normative approach, asking whether they effectively produce desired outcomes (‘output legitimacy’), whether they are developed via fair and inclusive processes (‘input legitimacy’), and often whether such processes are transparent. This focus on standard-setting ties legitimacy to standardisation (McDermott, 2012). Given this narrow focus on a subset of standardised instruments within existing literature, in this thesis it has been necessary to adapt the concept. The approach used here does not prescribe specific characteristics of instruments and can be used to interpret, analyse, and compare the strengths and limitations of different approaches, both standardised and regenerative.

The approach lays out three important functions of sustainability instruments. It distinguishes between the ‘programme’ level and the ‘systemic’ level, considering both the local contexts and processes emphasised by regenerative perspectives and the systemic level scalability achieved by standardised instruments. The functions are as follows. First, a core function of sustainability instruments is to generate positive sustainability practices and outcomes when they are applied, at the level of individual programmes. We can also evaluate the processes used to achieve those outcomes, examining whether instruments support effective (collaborative and engaging) processes, and democratic stakeholder input processes. Second, a benefit of sustainability instruments is the ability to scale guidance across contexts, and potentially have impact and influence at a sectoral, national, or international level. We can therefore analyse both their overall systemic impact or influence, as well as examining the *processes* by which instruments are able to drive take-up and align with the concerns or interests of those adopting them. Finally, all instruments considered here provide some form of public information. We can therefore assess the quality of such public information and transparency, such as certifications, ratings, or reports, as well as any other supporting documentation or information associated with instruments. The derivation of this theoretical framework and its relationship to earlier literature is provided in the following chapter.

1.4. Research questions and objectives

This research project investigates the following research question: *what are the relative strengths and limitations of regenerative compared with standardised sustainability instruments?* It explores this for the three legitimacy functions: at the programme level, at the systemic level, and in relation to public information and transparency.

The research objectives are as follows. First, to contribute to literature on sustainability governance by:

- Creating a theoretical framework for interpreting and analysing the strengths and limitations of sustainability instruments, using the concept of legitimacy.
- Reviewing existing instruments and literature and synthesising and interpreting insights using the concept of legitimacy.
- Carrying out an empirical analysis of the OPL framework to generate insights and recommendations applicable to sustainability governance more generally.

Second, to contribute to practice by working with Bioregional and assisting with the ongoing development of documentation and tools. This work will be informed by the theoretical perspective and empirical analysis, and vice-versa.

1.5. The One Planet Living framework

The empirical focus of this research is the One Planet Living framework (OPL). OPL is a distinctive instrument, noteworthy for its combination of ambitious but flexible aims, and its discretionary assessment processes, in contrast to the general trend towards standardisation. It is underpinned by systems thinking and aligns with a regenerative perspective in the ways described below. Whilst some literature calls for alternative approaches (Boyle *et al.*, 2018; Conte, 2018; Gibbons, 2020), there is a shortage of empirical research on an established instrument for sectors such as neighbourhood, city, or corporate sustainability. OPL is therefore of considerable interest as an alternative type of sustainability instrument.

1.5.1. Overview

OPL was developed by the charity Bioregional, distilling the learning from BedZED, a landmark neighbourhood development completed in 2002. With its background in urban sustainability, the framework has been applied most frequently to the property sector, in the creation of new communities. However, OPL is now established across contexts,

countries, sectors, and scales, having been applied to local government areas, companies, eco-tourism and conservation resorts, schools, and events, across different continents. At the time of writing, Bioregional has worked with approximately 30 partners who have received One Planet Living status, a low number relative to other sustainability instruments, partly reflecting the bespoke partnership nature of Bioregional's relationships.

The overall aim of One Planet Living is expressed as *living happy and healthy lives within the limits of the planet, leaving space for wildlife and wilderness* (Bioregional, no date). Built around this overall vision are its ten flexible principles, which are explicitly non-prescriptive (Bioregional, 2018c) and provide a common language that can be adapted across contexts and sectors noted above. These cover areas from health and happiness, equity and economy, and culture and community, to the sustainable use of land, water, food, transport, materials, and energy, with 'zero carbon energy' being OPL's clearest performance guideline. The phrase 'One Planet Living' is based on the ecological footprint, which aggregates environmental impact and is sometimes expressed in terms of the number of 'planets' necessary to make a particular lifestyle sustainable (Ewing *et al.*, 2010). However, OPL covers a broad and open-ended array of social, economic, and environmental aims that go beyond any single index or accounting methodology. Achieving a sustainable ecological footprint would be unlikely in most countries (Ewing *et al.*, *ibid.*) and therefore in practice, the aim of 'One Planet Living' may be long-term, or only partially achieved. The ecological footprint illustrates the ambition of OPL and the fact that it is underpinned by a vision of 'strong' sustainability (Neumayer, 2003; Landrum and Ohsowski, 2018). It maintains a long-term vision of strong sustainability reaching into areas such as lifestyles and behaviour change, even when this vision may not be fully achievable within a programme's timeframes.

The OPL process consists of translating its principles into context-specific 'action plans', containing outcomes, actions, indicators, and targets. During the ongoing implementation of action plans, OPL users are expected to monitor and report on their progress, tracking the progress of actions and indicators. Action plans and reports are publicly available, which provides transparency. Bioregional also provides its partners with marks of excellence: it previously had an 'endorsement' programme, which has recently been replaced by its 'leadership recognition' scheme, and partners are generally ascribed with One Planet Living status. Unlike certification schemes, these are awarded on the basis of flexible, discretionary assessment, which entails assessing competence and commitment as much as the content of plans (Bioregional, 2018c).

In recent years, to scale up the use of the framework, OPL has expanded into the digital sphere, via the development of the OnePlanet platform (OnePlanet, no date) for developing programme plans, monitoring, and reporting. The use of the digital platform is not the focus of analysis in this thesis, due to it being in its early stages, and not falling within the definition of governance instruments analysed in this thesis. However, some further information is included in chapter 4, since it helpfully illustrates underlying thinking for the framework and its ongoing evolution. Its implications are reflected upon in the conclusion.

1.5.2. Alignment with regenerative sustainability

OPL's approach is aligned with the emerging regenerative paradigm, appearing to demonstrate the characteristics outlined in table 1.1; the extent of this alignment is explored in the empirical chapters. The overall aim of One Planet Living is based on a vision of sustainable and thriving living systems, with a positive relationship between human and ecological elements. This vision is laid out in more detail via its ambitious and restorative principles. Underpinning OPL is a distinctive worldview or paradigm which has recently been made explicit in guidance documentation, with OPL described as non-prescriptive and based on systems thinking (Bioregional, 2018c). Holism is an important aspect of such an approach, which emphasises the interconnections among various component parts. As later chapters illustrate, OPL's ten principles are intended to form a holistic, interrelated system, rather than focusing on isolated areas via prescriptive criteria, with this thinking recently embedded into the visual mapping tool on the digital platform. The principles also form a common language enabling collaboration across sectors and scales. OPL acknowledges the importance of 'inner sustainability', i.e. beliefs and values (Gibbons, 2020). This is evident from guidance documentation through its emphasis on 'hearts and minds', 'the need for heroism', buy-in, ambition and commitment (Bioregional, 2018c). Finally, Bioregional's award of 'leadership recognition' can be related to the use of systemic leverage points within the regenerative paradigm (Gibbons, 2020). For the highest level of leadership recognition, for example, OPL guidance states: "You are not just working within the system – you are seeking to change the system. This level of recognition is not awarded lightly" (Bioregional, 2018c).

1.5.3. Legitimacy and OPL

OPL appears to offer strengths at the *programme level*, being aligned with a regenerative perspective. However, there remains a question of in what ways, and to what extent these strengths of a more ambitious, collaborative, holistic and systems-based approach are

realised in practice, for example via the processes it fosters, and what any limitations of a more flexible or bespoke approach might be. Some critics, noted in chapter 4, have questioned the rigour or achievements of some OPL programmes (Cornick, 2016; Downey, 2016); research can explore whether OPL's ambitious aims are upheld in practice, in terms of outcomes achieved. At the *systemic level*, one way Bioregional seeks to effect change is through leadership and influence. However, OPL's take-up has been low relative to other instruments, which ultimately reduces its systemic impact. A topic of particular interest, therefore, is the perceived barriers to scaling the framework, such as any pragmatic drawbacks of a flexible and bespoke approach. OPL attempts to combine *public information and transparency* with a flexible approach, rather than being designed around standardised assessment criteria. Nevertheless, it is accompanied by a broad range of public information, including guidance, plans, reports, and forms of public recognition such as One Planet Living status and 'leadership recognition'. OPL provides an opportunity to explore the possible choices or trade-offs involved in trying to combine high-quality information with flexibility.

1.6. Structure of thesis

The purpose of this thesis is to evaluate a family of governance instruments applicable across complex, generic organisational and urban contexts. It takes a comparative perspective, evaluating the strengths and limitations of dominant standardised instruments, as well as an alternative regenerative approach. In order to perform this evaluation, Chapter 2 provides a theoretical evaluative framework based on the concept of legitimacy. This adapts existing approaches, particularly those applied to standardised product certification schemes, to apply to the broader group of governance instruments discussed in this thesis. Chapter 3 performs a review and evaluation of four dominant standardised types of instrument in order to establish whether there is a need for alternative approaches. This is based on an analysis of the effects of standardisation on the design of instruments, interwoven with a review of academic literature and evidence exploring the implications of standardisation.

The rest of the thesis then responds to the need for more empirical investigations of instruments aligned with a regenerative perspective. Chapter 4 introduces OPL, based on the more formalised, explicit, and documented aspects of OPL, and providing the background context for later chapters. Chapter 5 then explains the methodology used to open the 'black box' of OPL further, describing the practice-oriented, collaborative, mixed-methods approach and case studies used. Chapters 6 and 7 then present the empirical

findings on OPL. Chapter 6 provides a deeper, more comprehensive picture of perspectives on the framework in general, and its regenerative approach. Chapter 7 explores case studies, examining the extent to which strengths or limitations have been realised in practice. Chapter 8 concludes by summarising the argument of the thesis, and reflecting on the potential for scaling regenerative governance.

2. The legitimacy of sustainability governance

Existing literature performing a detailed analysis of the ‘legitimacy’ of sustainability instruments has focused primarily on product certification. This chapter, therefore, seeks to fill a gap in literature by developing a conceptual framework that is less tied to specific, standardised approaches and can be used to analyse a broad range of instruments and approaches. It begins by reviewing existing literature and discussing how this has been adapted, before going into further detail on each of the three proposed legitimacy functions.

2.1. Legitimacy: adapting existing approaches

Chapter 1 introduced the distinction between normative and sociological approaches, which, although interrelated, can be used to broadly categorise literature on legitimacy (Quack, 2009). This section explores existing interpretations and applications of legitimacy, explaining how they have been adapted for this thesis, and laying out an overview of the conceptual framework.

2.1.1. Normative approaches

Normative approaches ask whether institutions *should* be accepted as legitimate, based on notions of good governance and public interest. As noted, they commonly focus on effectiveness in producing outcomes (output legitimacy), the democratic fairness of processes (input legitimacy), and, often, public information and transparency, although the terminology used to describe these three may vary. This approach has been extensively applied to a narrow subset of sustainability instruments: certification schemes, typically for forest products, which represent an advanced example of non-state governance (Bäckstrand, 2006; Dingwerth, 2007; Steffek, 2009; Cadman, 2011; Johansson, 2012; Mena and Palazzo, 2012). Another prominent example is its application to local government (Scharpf, 1997, 1999).

Literature on certification schemes currently ties conceptions of legitimacy to standardisation (McDermott, 2012), referring to the development and implementation of standards. ‘Input’ legitimacy focuses on the standard-setting process, where the input of relevant groups of stakeholders is provided through some deliberative, consensus-oriented process (Bäckstrand, 2006; Dingwerth, 2007; Mena and Palazzo, 2012). Literature evaluates these processes through criteria such as inclusiveness, responsiveness, equality of resources, and consensus orientation (Beisheim and Dingwerth, 2008; Cadman, 2011).

Transparency is often included as a component of input legitimacy, referring to the transparency of standard-setting processes (Bäckstrand, 2006; Mena and Palazzo, 2012). Mena and Palazzo (2012) define output legitimacy in terms of three components: the proportion of relevant market or sector that has adopted a standard ('rule coverage'); whether standards are adequate in addressing the problem at hand, rather than having been diluted ('efficacy'); and whether standards are enforced ('enforcement'). The legitimacy approaches used to evaluate standards can therefore become quite criteria-based and prescriptive themselves. For example, Cadman (2011) examines four forest governance regimes as case studies (the FSC, some ISO standards, the PEFC and the UN Forum on Forests), applying a hierarchical framework of 'principles', 'criteria' and 'indicators'. This emphasis on standardisation in legitimacy literature has been critiqued by McDermott (2012), who writes:

The role of certifiers, and of trust and distrust, in shaping certification standards and outcomes has been understudied and undertheorized. Instead the literature on forest certification has emphasized the "legitimacy" of certification as a form of authoritative control. This has led to disproportionate emphasis on standard-setting processes as the locus of rule-making authority, and abstract arguments about legitimately balanced processes, that fail to consider how trust in certifiers may affect the very need for authoritative control in the first place. [...]

This echoes literature on urban sustainability, which has also criticised the trend towards standardisation, and its tendency to de-politicise and de-contextualise sustainability issues (Elgert and Krueger, 2012; Kitchin *et al.*, 2015). According to Elgert and Krueger (2012):

So, we must ask whose values and perspectives are reflected in the emergent homogenised, global view? We must be more critical about the political reasons for, and impacts of, modernising sustainable development. Ultimately, the development and use of indicators have become a technocratic practice that serves as a buffer between the "political" and the "rational" and thus de-politicises local sustainable development agendas, despite the inherently political nature of environmental problems.

Existing literature arguably places an under-emphasis on local contexts: on the individual programmes using sustainability instruments. Input legitimacy focuses on standard-setting rather than local stakeholder input into implementation. Transparency focuses on the standard-setting process, rather than the quality of information about programmes (such as certifications, ratings, or reports). A related distinction can be made for output legitimacy.

Mena and Palazzo (2012) include ‘rule coverage’ as a component of output legitimacy at the systemic level, together with the ‘efficacy’ and ‘enforcement’ at the level of individual programmes. Across all aspects of legitimacy, therefore, it becomes possible to place a greater emphasis on local contexts – on stakeholder input, outcomes, and information at the level of individual programmes.

The solution to these issues, adopted in this thesis, is to make a distinction between the programme level and the systemic level. This distinction becomes even more relevant when contrasting more regenerative perspectives, which emphasise local contexts, with standardised approaches, which have achieved scalability at a systemic level. Hence, output legitimacy becomes effectiveness in producing outcomes both at the programme level and the systemic level. Input legitimacy relates to stakeholder input at the level of individual programmes. Conceptions of public information are broadened to evaluate the quality of programme level information such as certifications, ratings, reports and so on. These adapted normative concepts form the foundation of the conceptual framework used here.

2.1.2. Sociological approaches

Sociological approaches consider whether approaches to governance *are* regarded as legitimate, focusing on how legitimacy is constructed among stakeholders within a governance system. Prominent examples can be found within organisational literature (Suchman, 1995). Audiences may have normative reasons for adhering to governance systems or rules, where they regard those as having moral worth. Yet there may also be many other reasons why they may adhere to such systems. Hence, sociological approaches are broader than normative approaches in the forms of legitimacy they consider. They also include pragmatic legitimacy, when adhering to governance systems is in the self-interest of audiences, and cognitive legitimacy, where governance has attained a degree of ‘taken-for-grantedness’, or basic comprehensibility. Additionally, some literature considers regulatory legitimacy, based on the fact that an institution aligns with regulations (Lister, 2003; Jepson, 2005).

Some literature has also explored product certification schemes from a sociological point of view. Cashore (2002) explores how normative, pragmatic and cognitive legitimacy are relevant to such schemes, whilst Bernstein and Cashore (2007) consider the stages through which certification schemes develop, and how they gain legitimacy. The latter ask whether non-state, voluntary governance can ever achieve ‘legitimacy’, intended in the sense of ‘political legitimacy’, whereby firms, social actors, and stakeholders are united into a community that accepts ‘shared rule as appropriate and justified’. They identify such

legitimacy as deriving from a blend of pragmatic and cognitive considerations, or a ‘logic of consequences’ and a ‘logic of appropriateness’, which can evolve over time. At the time of writing, they did not regard any instrument as having achieved full political legitimacy. Such literature illustrates the way that instruments can pass through different stages of development, with different factors affecting their legitimacy at any given stage.

Sociological approaches to legitimacy are adapted and incorporated into the theoretical framework used here. It is argued that this literature provides an important perspective in considering why instruments may be adopted, and how they may achieve systemic effectiveness. Hence, sociological perspectives can be used to support an approach that is normative overall: if instruments are to gain systemic effectiveness, they must also be able to drive take-up. For example, pragmatic concerns, such as cost and resource requirements will be important – instruments must not be excessively costly or burdensome. This approach does not focus on the views of all stakeholders within a governance system. Rather, the focus is on the perception of those *adopting* instruments. Perceived normative, pragmatic, cognitive or regulatory legitimacy could all potentially come into play, depending on the instrument in question. The approach used here does not attempt to analyse or produce a model of the stages or processes by which instruments achieve increasing take-up, as Bernstein and Cashore (2007) do, given the range of instruments considered and the focus of the evaluative approach on the structure/design of individual instruments.

2.1.3. Overview of conceptual framework

As described above, the conceptual framework presented here moves away from a focus on highly standardised instruments. It introduces a distinction between the programme level and systemic level, enabling a focus on both the systemic scalability of standardised instruments and the programme level contexts and processes emphasised by regenerative perspectives. The approach is normative, but it incorporates aspects of the sociological approach. These are adapted into three fundamental legitimacy functions, shown in table 2.1 on the following page. The rest of the chapter explores these in more detail.

Table 2.1. Legitimacy functions of sustainability governance instruments.

Legitimacy function	Processes	Outcomes
<i>Programme level</i>	<ul style="list-style-type: none"> • Stakeholder engagement and input • Collaboration in programme delivery 	<ul style="list-style-type: none"> • Extent of sustainability outcomes
<i>Systemic level</i>	<ul style="list-style-type: none"> • Pragmatic legitimacy • Role within regulatory policy • Perceived normative legitimacy • Cognitive legitimacy 	<ul style="list-style-type: none"> • Level of take-up, impact and/or influence
<i>Public information and transparency</i>	<ul style="list-style-type: none"> • Transparency of processes, e.g., instrument development, implementation, or assessment 	<ul style="list-style-type: none"> • Quality of information about sustainability practices/outcomes

For clarity, we can map existing approaches across to that presented in table 2.1. The typical components of normative analyses are adapted as follows. The process/outcome distinction of input/output legitimacy is applied across all functions. Output legitimacy is represented by sustainability outcomes at both the programme and systemic level, and the ability of processes to drive outcomes. Input legitimacy is also included in programme level processes, shifting the emphasis from instrument creation to instrument application, taking account of the importance of external stakeholders for complex programmes (a fourth row in the table could be added for more typical analyses of the ‘input legitimacy’ of instrument creation processes, for standardised instruments). Transparency is adapted to consider a wide range of possible forms of information – not just the transparency of standard-setting, for example, but the quality of a ‘certification’ in providing information about sustainability. The types of legitimacy identified within sociological analyses are nested under systemic level effectiveness: they are the drivers of take-up which ultimately foster direct systemic level outcomes. Perceived normative legitimacy, pragmatic legitimacy, and regulatory legitimacy are considered to be particularly relevant, but cognitive legitimacy is also discussed in parts of the thesis.

This conceptual framework provides an innovative contribution in the following ways. First, it is applicable to a broad range of instruments and approaches, not focusing on standardised characteristics, and placing a greater focus on contexts. Second, it incorporates aspects of both normative and sociological approaches. Third, as chapter 5 outlines, it does not rely on restrictive criteria or presume specific features such as standardisation. Hence, it enables a more interpretive approach, allowing for the synthesis of multiple perspectives in discussions of how to best address common underlying concerns.

2.2. Programme level

The ‘programme level’ considers the outcomes achieved by sustainability instruments when they are applied in any given context, as well as the processes through which those outcomes are achieved. This can include the influencing of external stakeholders, but it applies to those within the immediate systems and networks of any given instrument user. This aspect of legitimacy is arguably of importance to all strategy and/or monitoring instruments. Those considered in this thesis are usually intended to directly shape sustainability programmes. Only reporting instruments do not shape action directly, but they can still be evaluated according to the extent to which they feed back into sustainability strategies and result in improvements, if it is believed they should serve such a purpose.

2.2.1. Programme outputs and outcomes

We may hope that sustainability instruments drive improved ‘sustainability’ outputs and outcomes within the immediate networks of each user. What definition of ‘sustainability’ should be used? Sustainability is a highly contested issue, but it may still be necessary to make judgements about what constitutes sustainability in order to adopt a critical stance towards instruments, shifting the emphasis from analysis to evaluation. As Oosterveer *et al.* (2014) write, for example, “the article opens up the question of evaluating voluntary sustainability certification instruments beyond their own internal objectives”. Despite the varied ways instruments define the social, economic and environmental dimensions of sustainability, a shared basis for evaluating effectiveness is the growing consensus that major or transformative improvements are now required relative to an unsustainable business-as-usual, such as rapid decarbonisation among wealthier actors or the protection and restoration of deteriorating ecosystems (Ceballos *et al.*, 2017; Masson-Delmotte *et al.*, 2018; Jackson, 2019). This would align with the basic aims of a regenerative approach, which is based on a vision of healthy and mutually thriving human and ecological systems.

When analysing the quality of outcomes, we may particularly consider the *extent* of outcomes; whether instruments address the problem at hand or at least result in significant improvements. This raises the question when evaluating outcomes: sustainability relative to what? Above all, we may hope that instruments and their users achieve ‘truly’ sustainable practices or outcomes, based on what is considered *necessary* according to some measure of sustainability. For example, this could be based on ecological boundaries, ideas of safe concentrations of greenhouse gases in the atmosphere, natural resources that are harvested with a sustainable yield, or meeting human needs. We may also look at *improvement relative to some former state*. If sustainability according to the concept of

‘necessity’ has not been achieved, has there at least been significant improvement relative to a baseline – or a significant change in practices, efforts or resources being directed towards improving sustainability? *Additional* improvement is one meaning of ‘impact’. Or we may say that performance is significantly above average in *comparison to some other entity*, such as a benchmarked city or company, an average across a sector, an industry average, or some concept of typical or standard behaviours or practices. Comparisons to typical or ‘business as usual’ practices can also be used to gauge ‘impact’. Hence, extensive outcomes will be either adequate in addressing the problem at hand or significantly above average, or would have at least resulted in significant improvements.

A further consideration, which is necessary for achieving good outcomes, is that they are context-appropriate, in terms of both ends and means. Do the ends, goals, or outcomes aimed for align with priorities and issues which may be more local or regional in scope, such as water availability or socioeconomic priorities? Do the means pursued take account of local strengths, knowledge, constraints, and capacity? Do they allow for solutions that are appropriate to that context, and avoid implementing measures that are ineffective or inappropriate – i.e., do they avoid ‘perverse outcomes’ (Schweber, 2013; Greenwood *et al.*, 2017)? One way of gauging context-appropriateness is trying to identify whether any aspects of an instrument are considered *inappropriate*, *irrelevant*, or *ineffective* for a particular context or user. If these are not highlighted, then the instrument can at least be considered reasonably context-appropriate. Beyond this, holistic solutions which align with instrument users’ priorities and take good advantage of a context’s resources and characteristics are particularly context-appropriate.

When trying to gauge results empirically, we can focus broadly on (1) outputs, practices, and behaviours; or (2) outcomes or performance. Here, ‘outcomes’ are being used to describe the consequences of outputs, practices and behaviours (although sometimes ‘impacts’ is also used – GEF Evaluation Office, 2009; Johansson and Lidestav, 2011; Barkemeyer *et al.*, 2015). A more qualitative way of trying to gauge results is by inquiring whether there has been a significant general shift in practices, behaviours, or ways of working, and significant additional efforts. Stakeholders can be asked whether they regard measures adopted as successful, and having had the intended outcomes. Practices and behaviours may be easier to observe but they do not always guarantee favourable results. For example, there may be a ‘performance gap’ between the planned and actual performance of buildings (Dainty *et al.*, 2013; Gabe and Christensen, 2019), but some forms of assessment do not distinguish between the two (Schweber and Haroglu, 2014). Similarly, studies of product certification schemes may study whether ‘corrective action requests’ have been implemented (SCSKASC, 2012) rather than focusing on

environmental outcomes (Johansson and Lidestav, 2011). Here, the role of sustainability *indicators* comes into play, which may measure outcomes quantitatively. Indicators data may help make outcomes ‘knowable’ and comparable to a benchmark, but can also be limited and partial reflections of complex systems (Bell and Morse, 2008; Kitchin *et al.*, 2015). Research may use existing data or focus on obtaining new data.

2.2.2. Programme processes

As well as outcomes, we can consider important types of processes occurring at the programme level, which lead to those outcomes. Three types are considered here. First, those collaboration and engagement processes that are generally important to the complex topic of sustainability, and are emphasised by regenerative or systems-based approaches. Second, assessment and accountability processes, which are used with all the instruments discussed in this thesis. Third, stakeholder input processes, which is analysed here at the level of individual programmes.

2.3.2. Collaboration and engagement

Corporate, organisational, and urban sustainability programmes often involve a broad range of actors, cutting across boundaries, scales, teams, departments, or organisations, with disparate bodies of knowledge and areas of control or influence. Collaboration and engagement are therefore often of pivotal importance to developing and implementing strategies effectively, and particularly complex programmes are unlikely to be effective without them. The importance of collaboration and engagement is widely recognised, but they are particularly highlighted by systems-based and regenerative perspectives (Bell and Morse, 2008; Regeer *et al.*, 2009; Conte and Monno, 2012; Boyle *et al.*, 2018; Conte, 2018; Gibbons, 2020). However, it is not presumed here that specific processes necessarily lead to better outcomes. The topic of collaboration overlaps with engagement, with co-creation processes potentially leading to greater levels of learning and buy-in. Engagement processes have the potential to generate learning and help shift motivations and values, and can be facilitated (such as training or workshops) and unfacilitated (Holden *et al.*, 2014). Collaboration also overlaps with the topic of stakeholder input discussed below since both ‘core’ actors and wider stakeholders can be involved in participatory strategy creation. The distinction made here is that collaboration is carried out amongst core delivery teams and partners involved in programme delivery – those with control or influence – rather than merely interested stakeholders who may be affected by a programme.

2.3.3. *Assessment and accountability*

All instruments analysed in this thesis are used with some form of external assessment, although some may also sometimes be used without it (for example, indicator guidelines). External assessors check whether instruments are being used correctly, and if so, this entitles users to some type of formal public recognition. Such processes may be known as ‘assessment’, ‘compliance’, ‘enforcement’, ‘verification’, ‘audit’ or ‘accountability’, and may involve assessing plans, targets, practices, processes, or performance. Such checking may be intended to support effectiveness, or simply to verify whether reporting data is correct, to produce a verified report. Such processes can take varied forms: they may be one-off or ongoing; carried out by second or third parties; with or without the potential for sanction, and so on.

Standardised instruments have been developed to support objective and impartial assessment processes, which minimise the use of discretion. This enables assessment processes to be carried out in conformity with specified criteria, and often by third parties, attempting to reduce the likelihood of standards being compromised due to conflicts of interest, and enhancing the trustworthiness of public information associated with such instruments. Many assessment and accountability processes are therefore embedded with implicit assumptions about the role of motivations and expertise: that instruments should be standardised to protect against the self-interest of various actors, and that particularly important aspects of expertise can be codified. An alternative approach would be to trust assessors to use their discretion and still ensure positive outcomes – potentially enabling a more flexible and context-sensitive approach. McDermott (2012) contrasts the example of FSC certifiers with a small local ecoforestry organisation with its own sustainable forestry standards, which carried out its own more flexible and discretionary audits. Responsive regulation acknowledges different kinds of actors, such as ‘rational’, self-interested actors or ‘virtuous’ actors, as well as those in between, and recommends tailoring accountability processes to match these (Braithwaite, 2011). Meta-regulation is based on discussion and agreement between regulators and those they regulate, e.g., regulating self-regulation (Grabosky, 2017). This leaves space for discretion and mutual agreement, and works better when the goals and values of regulators and regulatees are aligned (Simon, 2017).

2.6. *Stakeholder input processes*

The conceptual framework here adapts the concept of stakeholder input, applying it to the programme level. The focus is on the input of *wider* stakeholders, that is, those which are not ‘core’ delivery teams and partners, covered by the concept of ‘collaboration’ above.

Wider stakeholders are outside these core teams but may still be affected or interested, and could include citizens, or land users or certain employees. Examples of stakeholder input processes may involve: direct participation or consultation (e.g., where rating tools for construction master plans require consultation), representation (e.g., if city rating tools give city authorities enough freedom to represent the interests of, and respond to the concerns of, their constituents), and protecting interests (e.g., including mechanisms to protect land rights).

Refocusing the concept of input legitimacy on local stakeholders raises the question of how instruments should be designed to accommodate, encourage, or ensure such input, and the relationship between standardisation and flexibility. Existing literature reviewed in the following chapter argues that substantive standardisation, such as performance requirements, indicators, or technical measures, may hinder the ability of local stakeholders to have a say. This may mean a trade-off between the freedom given to local stakeholders and the ability to ensure substantive outcomes. However, standardised *procedures*, such as consultation processes or participatory procedures, may help to ensure local stakeholders have a say.

Those wishing to perform a detailed evaluation of the quality of stakeholder input processes may gain inspiration from existing literature on certification schemes (Beisheim and Dingwerth, 2008; Cadman, 2011). Such literature considers a range of questions such as whose input and views are incorporated, and whether this includes disadvantaged groups; who holds more power in decision-making processes and who has the final say; how truly responsive decision-making processes are to the input of various stakeholders, rather than engagement being tokenistic; whether stakeholders have adequate ability and resources to present their views; and how consensus-oriented decision-making is and to what extent consensus is possible – or whether there are ‘winners’ and ‘losers’. Such detail is not used in this thesis.

Whilst collaboration, engagement and assessment are more directly related to promoting sustainability outcomes, the fairness of stakeholder input processes may be considered an end in itself. However, it can also help or hinder the sustainability agenda, particularly the environmental sustainability agenda. Participation may foster a sense of ownership and increase engagement and learning, improving wider sustainability behaviours. According to Holden (2011), “when pursued surrounding questions of the public interest, such as sustainable development, a social learning agenda is also a participation agenda”. On the other hand, there may be a trade-off between environmental sustainability and local interests, or between differing and competing local interests. A classic example of a trade-

off occurs, for example, where ‘NIMBYism’ prevents the building of a wind farms. If wider stakeholders are given a say in the core activities and objectives of a programme, self-interests may prevail over the interests of future generations, the protection of ecosystems, or collective interests, and can lead to a lack of coordination (Voogd and Woltjer, 1999). These issues have been framed in terms of the ‘dilemma of green democracy’ by Wong (2015). This may be overcome by filtering out certain considerations from local input, or by educating local populations on sustainability issues in a process of ‘co-transformation’.

2.3. Systemic level

This conceptual framework makes large-scale, systemic level processes and outcomes a more explicit component of legitimacy, and distinguishes these from local programme level considerations. This can also be found in some existing literature, for example in the notion of ‘rule coverage’ (Mena and Palazzo, 2012). It is also worth noting that sociological analyses of ‘political legitimacy’ define it in terms of widespread, large-scale acceptance across stakeholders within a governance system, although the approach taken here is a normative one ultimately based on outcomes rather than simply acceptance. This section first considers various ways of analysing the overall systemic outcomes, before exploring the factors affecting take-up processes.

2.3.1. Systemic outcomes

Systemic level effectiveness concerns the overall contribution that instruments and their users have made to achieving sustainability at a large scale, for example within a sector, country or internationally. Can such instruments be a ‘silver bullet’ (Van der Heijden, 2013), and lead to a transformative system change? Alternatively, can they at least be an important part of a truly effective regulatory mix (Gunningham and Sinclair, 2017)? This section considers both direct and indirect ways of analysing systemic outcomes.

There are various possible ways of analysing the direct results of instruments. Their direct, aggregated impact is a combination of the number of programmes, multiplied by the outcomes of those programmes. However, whilst such absolute numbers may seem large, but may be a small proportion of the overall sector. For example, whilst the total square footage which is LEED Certified may seem impressive, it is still a small proportion of all new build floor space in the US (Van der Heijden, 2017). Hence, we can also consider the proportion of any given sector or aspect of a system that is covered, in comparison to what could potentially be covered. We can also consider the extent to which a problem has been

successfully addressed within a given sector – whether the sector has achieved sustainability.

Indirect impacts are those beyond the immediate systems and networks of instrument adopters. These could be positive or negative. Positive impacts could be those deriving from leadership and influence within wider sectors, helping mainstream new practices or even influence legislation. There may also be unintended negative impacts. For example, costly certification schemes could exclude smaller or less wealthy actors. It has also been argued that voluntary instruments have the potential to contribute to a neoliberal deregulation agenda, through their emphasis on personal choice (Mason, 2008). The section below also highlights the potential for public information to ‘camouflage’ unsustainability (Moneva *et al.*, 2006).

2.3.2. Take-up processes

This thesis draws on sociological approaches to legitimacy to understand the factors that can motivate the take-up of sustainability instruments. It, therefore, focuses primarily on the perceptions of those adopting instruments. Sociological approaches encompass normative, pragmatic, regulatory and cognitive legitimacy. Their potential relevance to sustainability instruments is explored here.

Pragmatic and *regulatory* legitimacy can be grouped, since they both relate to benefits and drawbacks, or incentives, i.e., the extent to which instruments are aligned with the interests of users. With regards to sustainability instruments, this thesis introduces a distinction between benefits or drawbacks deriving from (1) public information; and (2) internal factors. First, there are those commercial or reputational benefits deriving from public information such as certifications, ratings, and reports. These are benefits since they generally reflect positively on instrument users; but they could potentially be drawbacks, for example where reporting is unflattering. Standardised instruments can also be incorporated into policy or regulation, hence there may be regulatory or policy incentives to publish reports or achieve certification, discussed in the following chapter. This is referred to here as regulatory legitimacy. Second, there are what may be called ‘internal’ benefits or drawbacks. These are particularly the drawbacks of adopting instruments in terms of financial costs, resource requirements and any other challenges of adopting instruments. However, there may also be benefits, such as access to knowledge and expertise, which can reduce the effort required in implementing sustainability, or generate learning. These two groupings of benefits/drawbacks are reflected in the following quote from Schepers (2010):

This sustainability outcome is dependent on the perception by the firms in the industry that the ecolabel will deliver a benefit commensurate to its cost, thereby giving the global governance organization a level of pragmatic legitimacy.

In practice, self-interest is likely to be a major consideration in decision-making when adopting instruments voluntary. Even for organisations motivated by pro-sustainability concerns, instruments must not be excessively burdensome or costly to adopt. Maximising benefits and minimising drawbacks may be essential to encouraging the take-up of instruments, and therefore to their systemic effectiveness.

Beyond self-interest, most actors will also be motivated, to an extent, by pro-sustainability concerns. They will adopt instruments because they believe they ought to be adopted in the public interest, and perceive them to have *normative* legitimacy (Hurd, 1999). This may be especially true of early adopters, or those using niche instruments. However, having some degree of normative legitimacy is likely to be necessary for most instruments, since the pragmatic benefits that they provide may rest, to an extent, on the perception they have some normative legitimacy. For example, Schepers (2010) writes:

However, this need for pragmatic legitimacy does not supersede the need for adequate moral legitimacy. Global governance schemes that lack adequate processes, procedures, and input will not gain the assent of the governed. Rather, one might expect such schemes to be accused of greenwash, hiding profit motives behind a thin veneer of environmental concern. Ecolabel governance schemes must both convince the world (or the relevant portion thereof) of their true concern for and ability to protect the environment and its peoples (moral legitimacy) and the industry participants of their ability to deliver premium prices on the goods certified by the scheme (pragmatic legitimacy). As the FSC case shows, this is not a small feat.

However, it is still possible for instruments to gain widespread use even if they are not regarded as having a high level of moral/normative legitimacy, as is the case with the industry-led PEFC forestry products label. Whilst literature on certification schemes focuses on input and output legitimacy, literature on organisational legitimacy considers a range of sources of normative legitimacy. Suchman (1995) considers not just outcomes or consequences, but also procedures, structures and leadership/personal charisma as factors that can contribute to the perceived legitimacy of organisations. Deephouse and Carter (2005) take a narrower view, distinguishing between reputation, based on relative evaluations between organisations, and legitimacy, the extent to which institutions fulfil

societal expectations. For this thesis, a broader approach is used. For example, if an organisation's leadership has a good reputation and this drives the adoption of instruments, this is considered an aspect of normative legitimacy. Also of interest are the observations of Suchman on procedures (1995: 579):

Although prevailing rational myths celebrate consequential effectiveness, they also often specify extensive webs of causality, identifying some methodologies as "science" and others as "quackery," regardless of isolated outcomes. Thus, in addition to producing socially valued consequences, organizations also can garner moral legitimacy by embracing socially accepted techniques and procedures.

Is it possible that standardised assessment procedures, based on notions of objectivity and impartiality, have achieved such normative legitimacy, whilst not generally having better results than other approaches? Have such processes become ends in themselves? Or, is it possible that standardisation – as a general approach – has attained a degree of *cognitive* legitimacy, or 'taken-for-grantedness'? Suchman (ibid.: 583) writes, regarding the cognitive legitimacy of organisations: "Unfortunately, this type of legitimation generally lies beyond the reach of all but the most fortunate managers". This is also arguably true for new kinds of sustainability governance instruments. Bernstein and Cashore (2007) also argue that, at the time their paper had been written, certification schemes had not achieved a stage of 'political' legitimacy relying on a high degree of cognitive legitimacy. Yet it may be that the general approach of standardisation has achieved some cognitive legitimacy.

2.4. Public information and transparency

Providing public information is an important function of the sustainability instruments considered here. They provide information about users' achievements, such as certifications, ratings, or reports. Complementing this is information about instruments themselves, which make them more transparent and open to scrutiny, such as guidance documentation, certification requirements, or information about the multi-stakeholder process through which instruments are developed. The argument proposed below bases the value of public information on its contribution to overall sustainability. Indeed, according to Mason (2008), "transparency in governance is always relational: it is invoked to support other, more primary, social purposes and values". However, evaluating governance in these terms requires a focus on the quality of public information itself. This legitimacy function enquires how far information fosters critical understanding for a relevant audience. At the

programme level, such information should avoid reflecting positively on unsustainable or business-as-usual practices.

Existing literature has often focused on the transparency of standard-setting processes. However, here it is argued that the quality of programme level information is particularly important. Certifications, ratings, reports are generally provided as an incentive for the adoption of instruments. As such, there is a tendency for them to reflect relatively positively on instrument users. If providers wish for their instruments to achieve widespread take-up, the risk is they reflect positively on business-as-usual practices, thereby becoming a form of 'greenwash'. This could then have detrimental effects at a systemic level, 'camouflaging' unsustainability (Moneva *et al.*, 2006). Given the state of systemic unsustainability, public information needs to reflect this situation realistically in order to truly inform external audiences.

High-quality information about instruments and their programmes has the potential to better enable external audiences to hold providers or adopters to account. Democratic sources of legitimacy are rooted in voting as a means of public accountability: policy-makers are accountable to an electorate. Scholars have also questioned whether there is an 'accountability deficit' in non-state governance such as sustainability instruments (Gulbrandsen, 2008). Public information arguably goes some way to filling this gap. This is reflected in definitions of transparency, which are often linked to accountability. Florini (2007) defines it as the "degree to which information is available to outsiders that enables them to have informed voice in decisions and/or to assess the decisions made by insiders". Cadman (2011) defines transparency and accountability in terms of "the extent to which the behaviour of participating organisations can be called to account both inside the institution and externally by the public at large". Positive learning and knowledge sharing, without a potentially punitive accountability aspect, are less commonly acknowledged benefits of public information but may also be important for promoting sustainability.

Public information acts as a driver for standardisation, with instruments built around replicable assessment criteria to support information that is deemed trustworthy. However, comparability and standardisation do not necessarily mean such information is transparent or high quality; they may simply have the appearance of legitimacy and be socially accepted. For example, certifications or ratings may be unambitious, certification criteria may not be made public, ratings may be an over-simplification, or indicators may be lacking in contextual information which enables people to differentiate between good or poor performance. Any benefits of public information must be weighed against possible drawbacks for other aspects of legitimacy, such as pragmatic resource requirements of

gathering data and paying auditors, or the detrimental effects of standardisation at the programme level. It may be that the situation arises whereby information that is supposed to signal effectiveness – such as a rating – becomes the driver for instruments to become ineffective and unsuitable for their contexts.

2.5. Conclusions

This chapter adapts the concept of legitimacy to apply to a broad range of instruments and approaches, both standardised and regenerative. In doing so, it draws on two existing bodies of literature on legitimacy. The concept has been extensively applied to a narrow subset of sustainability instruments, namely forest product certification schemes. Such literature usually takes a ‘normative’ approach, enquiring whether instruments *should* be regarded as legitimate. It considers whether they effectively produce desired outcomes (‘output legitimacy’), whether they are developed via fair and inclusive processes (‘input legitimacy’), and whether such processes are transparent. Hence, existing literature ties the concept of legitimacy to standardisation, by focusing on the development and implementation of standards. The alternative sociological approach, often found within organisational literature, analyses whether and why institutions *are* widely regarded as legitimate. The approach broadens considerations beyond perceived normative legitimacy to include the pragmatic self-interest of audiences, cognitive ‘taken-for-grantedness’, and alignment with regulations and policy.

Existing literature on certification schemes, by focusing on the processes by which standards are developed, tends to under-emphasise the outcomes, stakeholder input, or information at the level of specific programmes. To accommodate a broader range of approaches, this thesis makes a distinction between the ‘programme level’ and the ‘systemic level’, enabling a focus on both the local contexts and processes emphasised by regenerative perspectives, and the systemic level scalability achieved by standardised instruments. Additionally, it considers the quality of public information and transparency. These considerations form the basis of three fundamental legitimacy functions of sustainability instruments, which are as follows. First, to achieve positive outcomes at the programme level, via collaborative, engaging and participatory programmes. Second, to achieve positive outcomes at a systemic level (either directly through programmes or indirectly through influence), and drive take-up processes by aligning with the interests or concerns of instrument adopters (based on normative, pragmatic, regulatory, or cognitive concerns). Third, to provide high-quality information, and in particular to provide a realistic picture of sustainability rather than reflecting positively on business-as-usual practices.

Such an approach can be related back to existing literature. Output legitimacy is represented by sustainability outcomes at both the programme and systemic level, and the ability of processes such as collaboration and engagement to drive outcomes. For input legitimacy, the emphasis is shifted from stakeholder input during instrument creation, to input into individual programmes, taking account of the importance of external stakeholders for complex programmes. Transparency is adapted to consider a wide range of possible forms of information – not just the transparency of standard-setting, but the quality of all public information that all instruments provide, such as certifications, ratings, and reports. The components of sociological analyses of legitimacy are nested under systemic level effectiveness, as drivers for take-up. Across these three functions, mirroring the input/output legitimacy distinction, a distinction is made between process and outcome, with outcomes corresponding to output legitimacy, or information about this, and processes concerning how those outcomes are achieved.

This conceptual framework provides an innovative contribution in the following ways. First, it applies to a broad range of instruments and approaches, not focusing on standardised characteristics, and placing a greater focus on contexts. Second, it incorporates aspects of both normative and sociological approaches. Third, as chapter 5 outlines, it does not rely on restrictive criteria or presume specific features such as standardisation. Hence, it enables a more interpretive approach, allowing for the synthesis of multiple perspectives in discussions of how to best address common underlying concerns.

3. A review of standardised approaches

This thesis explores the relative merits of standardised and regenerative approaches to guiding and assessing sustainability across complex, varied organisational and urban contexts. Standardised approaches are prevalent within the world of practice and have received considerable research attention, and are evaluated in this chapter via a literature review. Regenerative principles can be found in academic literature, but there is a shortage of research on regenerative *instruments*, which is addressed in this thesis through an empirical investigation of OPL in later chapters. In this chapter, four types of standardised instruments are investigated. The review and analysis are organised according to the three legitimacy functions laid out in the previous chapter, which act as a lens to examine relevant literature that does not always directly refer to ‘legitimacy’.

As well as being a literature review, this chapter provides an analysis of the structure of differing types of standardised instrument. This explores how the reliance on standardised criteria affects the design and implementation of such instruments, interweaving this with academic research and empirical evidence. Such analysis lays the foundation for a similar exploration of the design of OPL in later chapters. Understanding the design of instruments is particularly important in understanding how such guidance fosters processes and outcomes at the programme level. An overview of the types of instruments and their constituent components is therefore first provided, before exploring implications across the three legitimacy functions.

3.1. Overview of instrument types, examples, and literature

Chapter 1 introduced the instruments focused on in this thesis, which take the general approach of linking guidance on strategy and/or monitoring to marketable or reputation-enhancing public information, such as certifications, ratings, and reports, combined with external assessment processes. Of the instruments taking such an approach, a focus is placed upon those for general organisational sustainability (companies and organisations more generally) or urban sustainability (from the building to city or region level).

This section now sets out five *types* of instruments within this overall family, applicable to basic, generic units of organisation and space. These are defined according to the differing ways they codify the topic of sustainability, and how they make use of various components in sustainability guidance (such as standardised criteria) and combine these into an overall approach. This lays the groundwork for a similar analysis of OPL in later chapters. Four of

the types were identified as being the most prevalent of the family in question, adopted within the professional field of sustainability, globally: rating tools and indices; target-setting initiatives; indicator guidelines and process standards. These types were identified as a result of extensive practice engagement together with a review of industry and academic literature, including global reviews such as Joss *et al.* (2015). All these types can be considered *standardised*, and take differing approaches to the problem of applying such standardisation across complex, varied contexts. A further type is also introduced: that adopted by OPL standard, that is the empirical focus for this thesis. OPL may be described as a ‘goal-oriented strategy and monitoring framework’. This is briefly discussed here to provide a comparative perspective and context for later chapters. This section also identifies *examples* for each type, and explains how literature was selected for this literature review.

Instrument types are defined here according to components, of the sustainability guidance they provide, and the way these are combined into an overall approach. Table 3.1 below provides an overview of these basic components.

Table 3.1. Components of sustainability guidance.

Element	Description	Example	Standardisable?
<i>Goals</i>	Desired outcomes defined in fluid or open-ended terms (also ‘objectives’, ‘principles’)	High levels of wellbeing, thriving biodiversity, zero carbon (loosely defined, not time-bound)	Non-standardisable
<i>Material actions</i>	Material sustainability interventions, pursued with the aim of producing desired material outputs	Implementation of social housing, planting trees	Standardisable
<i>Indicators</i>	Unidimensional, quantitative measures, usually measuring outputs and outcomes	% of renewable energy, calculated carbon emissions	Standardisable
<i>Targets</i>	Quantitative aims attached to indicators	100% renewable energy by 2025, zero carbon by 2025 (clearly defined calculation)	Standardisable
<i>Processes</i>	Steps involved in applying guidance that do not directly produce material outputs	Planning, consultation, monitoring, communication, engagement, training, leadership	Standardisable

Standardised instruments are defined by their primary reliance on standardisable criteria, i.e., those that are designed to be replicable, concrete, verifiable, and fairly unambiguous, in order to minimise the discretion of assessors and support objective and impartial assessment. *All* instruments provide some form of guidance on the *processes* by which they

should be applied. Rather, of particular interest is whether and how they guide the *substantive content* of any resulting, documented plans, strategies, designs, monitoring or targets – i.e. goals, material actions, indicators or targets. It is argued that *whether* and *in what form* instruments combine processes with these substantive aspects is a defining feature of each type of instrument, and how these are then combined into an overall assessment process.

A typical approach to strategy or programme management would involve first determining the outcomes or goals of strategy, and then defining the desired activities and outputs around these, followed by performance indicators and targets (Zall Kusek and Rist, 2004; Regeer *et al.*, 2009). This may be called goal-oriented strategy and monitoring. Indeed, the global UN Sustainable Development Goals are described as ‘goals’, being defined in somewhat fluid and open-ended terms. Yet very few of the sustainability instruments falling within the family discussed in this thesis take a primarily goal-oriented approach. Why is it uncommon? Of the components listed above, goals are least suitable for use as unambiguous verification criteria; they do not specify outcomes in easily measurable terms. Instead, instruments have been based primarily on some combination of indicators, targets, actions, and processes which can be more easily verified, and therefore reduce the discretion available to assessors.

The various types of instruments combine these components in different ways. What gives rise to this range of approaches? It is argued here that all approaches are dealing with the problem of providing flexibility across complex, varied contexts. At higher levels of complexity, it becomes increasingly difficult to ensure outcomes through the use of fixed, universal performance targets, for example. Joss and Rydin (2018) make a similar point:

...the challenge of ensuring robust assessment is not automatically met where frameworks prescribe fixed, technical indicators and detailed methodologies for assessment. The relatively rigorous assessment possible at, say, the building level is much more difficult to replicate at a city-wide level, given the complexity and diversity of non-technical issues at play; and data capture, monitoring and measurement may not be as systematic and accurate in practice as posited in principle.

Standardised instruments for larger-scale, complex entities, therefore, face the common challenge of how to incorporate sufficient flexibility. Literature points to two ways in which instruments may do this: they may do so by varying their *prescriptiveness* or *coerciveness* (Gunningham *et al.*, 1998). *Prescriptiveness* concerns how specifically instruments determine the type and extent of improvement. Targets (or material actions) offer the

opportunity of guiding material sustainability outputs and performance in a measurable and verifiable way. As noted, universal targets are generally too prescriptive and inflexible for entities that exhibit a wide range of performance, such as urban areas or companies. Their narrow, prescriptive focus can be still less appropriate when sustainability is multi-dimensional, covering many topics needing to be considered holistically. Goals, indicators, and processes provide less prescriptive alternatives to targets, although only goals codify sustainability *aims*. *Coerciveness*, in the context of voluntary instruments, concerns whether criteria are fixed requirements for formal recognition, and whether they are enforced via strict accountability processes. Instruments only become truly inflexible when they include coercive *requirements* for achieving formal recognition or verification (just because guidance *can* be replicated does not mean it *must* be). The central feature of standardisation is that replicable, verifiable criteria are combined with some element of coerciveness. However, instruments may also reduce their coerciveness, for example, via optional criteria, or accountability processes do not include the potential for sanction if targets are not met. In comparison to command-and-control regulation, all voluntary instruments can be considered non-coercive, since they are not required by law (Gunningham *et al.*, 1998). Prescriptiveness, combined with coerciveness, reduces the flexibility in decision-making available to those applying instruments, reducing the potential for actors to contribute their own local and ‘tacit’ knowledge and values when ‘decoding’ instruments into any given context (Polanyi, 1967; Awad and Ghaziri, 2007; Joss *et al.*, 2015).

As noted, all types of instruments discussed here provide some form of *process* guidance dealing with the stages by which instruments should be implemented, and any accompanying assessment processes. It is argued that a distinguishing and defining feature is whether and how they combine such processes with substantive guidance to feed into the content of plans, strategies, designs, monitoring, targets, and so on. Table 3.2 on the following page provides an overview of types of instruments (already mentioned above).

Table 3.2. Types of sustainability instruments for urban and organisational strategy and/or monitoring.

Type of instrument	Core guidance/criteria	Overall implementation and assessment process
<i>Goal-oriented strategy and monitoring frameworks</i>	<ul style="list-style-type: none"> • Non-standardised goals 	Translate goals into plan (with bespoke actions, indicators, targets), assess externally, report progress
<i>Rating tools and indices</i>	<ul style="list-style-type: none"> • Standardised, actions, processes, targets • Criteria mostly optional, aggregated into overall rating or index score using credits or points 	Implement, monitor, and verify criteria, and assign rating or index score
<i>Indicator guidelines</i>	<ul style="list-style-type: none"> • Standardised indicators • For single topics (carbon) or multiple topics 	Monitor, verify and report indicators data
<i>Target-setting initiatives</i>	<ul style="list-style-type: none"> • Standardised indicator (carbon) • Combined with target-setting methodologies (sometimes standardised) 	Monitor baseline, set target, monitor and report progress; sometimes with verified data & validated targets
<i>Process standards</i>	<ul style="list-style-type: none"> • Standardised processes 	Implement, monitor, and verify processes, award certification

Within the four dominant (standardised) types reviewed in this chapter, key representative examples have been identified. These were selected on the basis that they are particularly widespread, important sustainability instruments with a high level of take-up, together with the fact that they have attracted considerable research attention. Literature was found by searching the names of instruments, as well as a more organic exploration of related bodies of literature, and commonly cited or prominent academic literature was more likely to be included. Key examples are supported by evidence that is deemed strong enough to inform overall conclusions, after having considered a sufficiently wide range of papers, with stronger points usually supported by multiple papers. Other (non-key) examples are occasionally introduced to provide a more comprehensive view. Additionally, sometimes related, analogous literature is introduced, even if it does not research instruments with all the characteristics of the family defined here; for example, literature is drawn from the very large body of research on sustainability indicators. However, such literature is only intended to add further nuance and does not provide the main evidence for the argument. Although key examples are sometimes drawn from one of corporate or urban sustainability, it is argued that the insights arising from these examples are applicable across sectors. Each of the four *types* of instruments has been applied across both urban and organisational

contexts, and many of the challenges of strategy and monitoring (of the kind highlighted in table 1.1.) are comparable, such as dealing with entrenched, cross-cutting issues, and usually requiring collaboration and engagement. Where insights may be *more* sector-specific (for example, due to the particularly political nature of urban sustainability), this is highlighted.

In some cases (non-key) examples are provided that do not *always* strictly fall into the family of instruments analysed in this thesis. For example, some indicator guidelines and city target-setting initiatives are not always used with external assessment, and the latter may have various additional tools and guidance that do not fall under the rubric of standardisation as defined here. However, aspects of all instruments *sometimes* fall within the family. For example, both emissions indicators and city target-setting initiatives are based on concrete, measurable carbon inventories, and are often used with verified public reporting. The types of instruments and examples are now introduced in more detail, with table 3.3 below then providing an overview, and highlighting key examples which are further examined in the literature review in section 3.2.

3.1.1. Goal-oriented strategy and monitoring frameworks

As noted, ‘goal-oriented strategy and monitoring frameworks’ (a term being introduced in this thesis) adopt a more typical approach to strategy or programme management, which involves first determining the outcomes or goals of strategy, and then defining actions around these, followed by performance indicators and targets. Such instruments are non-standardised insofar as they are built around fluidly defined *goals* (‘principles’ ‘goals’ ‘objectives’, etc.). these are translated into strategies (containing bespoke actions, indicators, and targets), with progress then monitored and reported on.

One such instrument is the One Planet Living framework, which is the empirical focus of this research. Another notable example was also identified during the research: the EcoDistricts framework. This is not examined in this chapter, due to its niche status and relative lack of available literature. However, it is distinctive for the fact its *assessment* processes rely primarily on standardised *process* criteria. That is, whilst the substantive guidance of EcoDistricts is based on non-standardised goals and objectives, assessment focuses mainly on whether the appropriate steps have been followed in translating these into collaboration, strategy, monitoring, and reporting processes. In contrast, OPL’s assessment processes focus more explicitly on the *quality* of the *substantive* aspects of plans, taking a more unusual discretionary approach to assessment. Given EcoDistrict’s goal-oriented approach, however, it is arguably not primarily built around and solely

defined by its standardised, process-based assessment criteria; it is not a pure process standard. Hence, it is argued that it does not fall clearly within the definition of standardised instruments provided here.

3.1.2. Rating tools and indices

The discussion of prescriptiveness above noted the fact that universal targets are generally too inflexible for entities that exhibit a wide range of performance, such as urban areas or companies. The such universality becomes still more challenging to achieve when sustainability is multi-dimensional, covering many topics. In response to this complexity, rating tools and indices offer an appealing prospect. They distil complex topics into replicable lists of sustainability criteria such as targets, actions, or processes, translated into a common points or credits system. Such prescriptiveness is made viable by taking a less coercive approach, awarding differing amounts points or credits for varying levels of performance. These are aggregated into a simple, overall measure of sustainability: a descriptive rating (e.g., ‘good’) or a numerical index score (e.g. out of 100). Rating tools are used for buildings, neighbourhoods, cities, and companies, whilst indices are used for large cities and companies. It would hypothetically be possible to imagine a rating system constructed out of goals rather than standardised verification criteria, but no such approaches were identified in this review, and this would arguably be counter to the ethos of, and diminish the appeal of, a rating or index as a verifiable, ‘objective’ measure.

Rating tools are particularly common within urban sustainability, with both rating tools and indices being common within the corporate sector. Urban sustainability tools have drawn particular attention from researchers, since they are well established and popular, and attempt to standardise assessment across the particularly complex topic of urban sustainability. Regenerative and systems-based perspectives have also been used to critique urban sustainability rating tools. Hence, this thesis focuses on several urban sustainability rating tools as key examples, at the building, neighbourhood, and city level. Although neighbourhood and city scales bring the challenge of complexity to the fore, building level rating tools are also considered relevant and are included as key examples. Rating tools have evolved from the building level, and it remains their primary application. Rating tools across all scales attempt to combine multiple topics into an overall approach to strategy and monitoring, and literature reveals they face some similar challenges in doing so.

3.1.3. Indicator guidelines

Indicator guidelines focus on disclosure and reporting, and as such they do not prescribe specific levels of performance or incorporate sustainability aims, making them much more flexible than they would be with targets attached. They primarily rely on measurable, quantitative indicators. These can range from addressing single topics (such as carbon inventories/accounting) or hundreds of social, economic, environmental or governance topics. However, disclosure occurs on a topic-by-topic basis rather than being aggregated into an index or rating. Those indicator guidelines considered here adopt a defined methodology, and are often used together with external verification of public data.

This approach is particularly widespread in the corporate sector, where most large companies use the Global Reporting Initiative (GRI) framework, which has received extensive attention in research and is used as a key example here. This also includes some ‘indicators’ based on qualitative criteria (i.e. yes/no disclosures of whether processes or actions have been implemented), but the overall approach emphasises quantitative indicators and hence broadly aligns with the definition of ‘indicators’ used in this thesis, which is a quantitative one. For cities, the World Council on City Data indicators offers a city reporting and certification scheme using ISO 37120; this appears to have received less research attention, but extensive analogous literature on city indicators is available. Both cities and companies report their GHG emissions data using standardised methodologies, particularly the GHG Protocol, with data available on the Carbon Disclosure Project database (although corporate data is behind a paywall). Carbon indicators form the basis of target-setting initiatives, described below.

3.1.4. Target-setting initiatives

This thesis includes *target-setting initiatives* as a type of instrument, which can be positioned within the wider phenomenon of climate initiatives, which are simply collaborative efforts to address climate change. Over two hundred initiatives are listed on the Climate Initiatives Platform (Climate Initiatives Platform, no date). They take a very wide variety of forms, and only a minority can be described as target-setting initiatives that fall within the family of instruments considered here. The target-setting initiatives in question are based on methodologies for measuring carbon (a form of ‘indicator guideline’), such as the GHG Protocol for cities or companies. These are used to take a baseline, after which targets are set and progress is monitored and reported. Such initiatives offer the benefit of a performance-based approach that can be linked to international climate science. In contrast to rating tools, these focus primarily on a single issue, so they can attempt to align with an absolute measure of sustainability rather than having to balance

this against a range of aims and criteria in the first instance. The prescriptiveness and coerciveness of this relatively universal approach are reduced by allowing for a range of target-setting methodologies and the creation of context-specific plans to meet a target. Additionally, targets are long-term, and accountability is focused on disclosure and reporting, rather than sanctioning under-performance, reducing coerciveness further.

A key example is the popular corporate Science Based Targets initiative (SBTi), which can be considered particularly standardised in its use of clearly defined methodologies, and has been subject to academic attention. Similar approaches are popular for cities, although these tend to be somewhat less restrictive in target-setting methodologies, and may allow self-verification. However, all rely on standardised, measurement-based indicators of carbon emissions, and are often used with external verification. It is argued that the insights arising from the corporate SBTi are relevant to the city sector. A similar initiative was also identified for the building sector (Architecture 2030), but its methodology is somewhat different, being focused on single-issue building design. This is considered in brief as a secondary example, but larger-scale corporate and city target-setting initiatives were considered more relevant to the issue of particularly complex urban or organisational strategy and monitoring.

3.1.5. Process standards

Like indicator guidelines, process standards also do not incorporate sustainability aims such as targets, but they focus on verifiable processes rather than indicators data. Such processes include specifying objectives or targets, developing plans, specifying KPIs, engaging and training staff, implementing management and leadership processes, and communicating internally and externally. Hence, process standards provide a comprehensive approach, *except* for the fact they fail to codify the substantive aspects of sustainability. They are also applicable to a wide range of sectors.

Such approaches can be found for organisations and cities, but the focus here is upon ISO 14001, an environmental management system for organisations, which has achieved very high levels of take-up and has therefore received considerable attention within research.

3.1.6. Overview of examples

Table 3.3 on the following page provides an overview of sectors and examples of each type of instrument, with key examples highlighted in bold. The sectors are those applicable to units of organisation (organisation/company) or space (building/neighbourhood/city), for which examples were identified.

Table 3.3. Examples of standardised sustainability instruments (key examples in **bold**).

Type	Sector	Examples
<i>Rating tools and indices</i>	Buildings	BREEAM , LEED, CASBEE, DNGB
	Neighbourhoods	BREEAM-C , LEED-ND , Green Star Communities, DNGB-UD
	Cities	LEED for Cities and Communities (formerly STAR Communities) , CASBEE for Cities
	Companies	B Corp, Carbon Disclosure Project (CDP), Dow Jones Sustainability Index (DJSI)
<i>Target-setting initiatives</i>	Buildings	Architecture 2030
	Companies	Science Based Targets , RE 100
	Cities (often more flexible/self-verified)	Global Covenant of Mayors, C40 Cities Deadline 2020
<i>Indicator guidelines</i>	Companies	Global Reporting Initiative (GRI) , GHG Protocol
	Cities	ISO 37120/WCCD, GHG Protocol
<i>Process standards</i>	Organisations	ISO 14001 , EMAS
	Cities	ISO 37101

3.2. Programme level

Sustainability instruments adopt differing approaches to the common challenge of strategy and/or monitoring. Various types are defined above, according to the way they codify and guide the topic of ‘sustainability’. This has particularly important implications at the programme level, where guidance is applied in order to support sustainability processes and outcomes. This section reviews four standardised types of instruments, interweaving an analysis of the effects of relying on standardised criteria with insights and evidence from academic research.

3.2.1. Rating tools

Rating tools offers the most comprehensive approach to standardised instruments dealing with complex topics, and are of particular interest. They codify sustainability *aims* (not merely processes or indicators), provide technical guidance that combines multiple topics, and accompany this with summary information. Yet the extensive research on rating tools reveals that the approach has major inadequacies. A focus on rating and measurement does not always imply a strong integration with strategy or improvement in practice. A rating alone can be a weak motivator for developing more ambitious and high-quality strategies. Since such tools must reflect positively on tool users, they have been designed in such a

way as to make average or good ratings relatively easy to obtain. Where actors wish to pursue a better rating, they often do this by ‘chasing’ the easiest points or credits. Rating tools for buildings, neighbourhoods and cities have all been found to encourage the ‘chasing’ of easier to obtain points (Burnett, 2007; Garde, 2009; Elgert, 2018), often having little impact. Further issues include the fact that ‘weak’ sustainability is implied by the substitutability of different aspects of sustainability (Berardi, 2013), the inadequate coverage of socioeconomic aspects of sustainability at the neighbourhood level (Berardi, 2013; Sharifi and Murayama, 2013; Komeily and Srinivasan, 2015), and the gap between planned and actual performance at the building level (Dainty *et al.*, 2013; Gabe and Christensen, 2019). One potential benefit of standardisation highlighted for city rating tools is that comparability helps ‘cross-pollination’ and learning among top performers (Elgert, 2016).

At a deeper level, some academic research provides critiques of rating tools from a systems-based or regenerative perspective. Literature has focused on the field of urban sustainability, where rating tools have been viewed as overly prescriptive, market-led, expert-led, static, and too focused on specific technical areas while lacking an ambitious, holistic, context-sensitive, collaborative, long-term and dynamic approach (Conte and Monno, 2012; Monno and Conte, 2015; Boyle *et al.*, 2018; Conte, 2018; Gibbons, 2020). They have been critiqued for limiting local stakeholder input and de-politicising the topic of urban sustainability (Komeily and Srinivasan, 2015; Boyle *et al.*, 2018; Elgert, 2018). Figure 3.1 provides an example of how some of these ideas have developed throughout the research of Conte (2018).

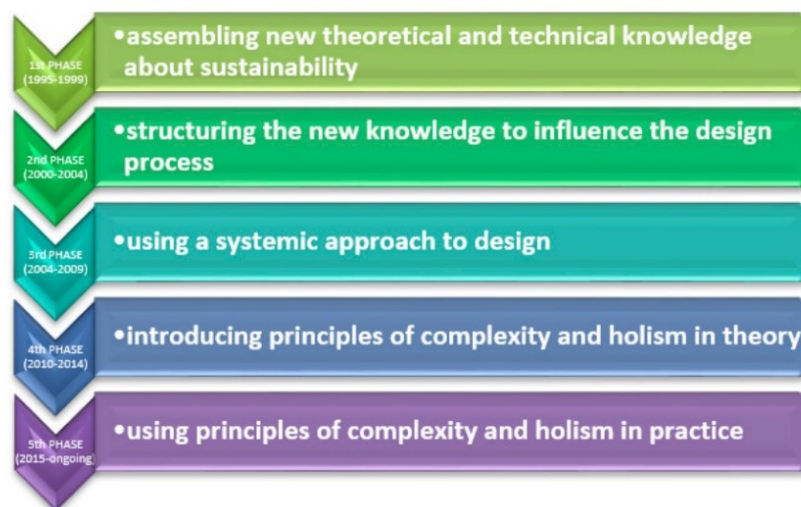


Figure 3.1. Advances in theory and practice of building design over the years. From Conte (2018).

The prescriptiveness of rating tools inevitably leads to them being less context-appropriate. The issue of ‘perverse outcomes’, whereby measures are adopted which do not produce their intended benefit, has been identified at the building and neighbourhood level. Schweber (2013) identifies “features which were seen to have been introduced solely in order to get another credit and not to have added value included: refrigerant leak detection, flood risk surveys and flood alleviation measures, reduction in available parking spaces, cyclist facilities, and additional drinking fountains”. In a review of the UK’s Zero Carbon Homes policy, Greenwood *et al.* (2017) also found several problems with the Code For Sustainable Homes, such as the requirement for water harvesting facilities that were not always appropriate to a particular project. Similar critiques have been made of LEED (USA Today, 2013).

3.2.2. Target-setting initiatives

Since such initiatives are relatively recent, there is a limited range of evidence on them, however, some general critiques are still possible. Researchers have pointed out that such initiatives do not address a range of sustainability concerns and planetary boundaries in their basic approach (Haffar and Searcy, 2018). Due to their focus on standardised *carbon* indicators, such instruments are necessarily focused on a specific topic. The single-topic approach is therefore not a fully broad and holistic one, from a regenerative perspective. Such holism is just as (if not more) important for city initiatives, and although attempts have been made by C40 Cities to consider the impacts of climate actions holistically (C40 Cities and Ramboll, 2017), such initiatives remain focused on an over-arching, primary aim. Turning back to the key example of the SBTi, the rigour and consistency that would be hoped of a standardised approach such as this are not always present in practice. For example, it permits annual emissions reductions of 2.5%, far less than what is appropriate to wealthy actors aiming for 1.5°C of global warming (Masson-Delmotte *et al.*, 2018; Jackson, 2019). Moreover, many actors do not set targets for scope 3 emissions covering corporate value chains, and reporting practices are variable and often of poor quality (Giesekam *et al.*, 2021). Even the Architecture 2030 scheme, at the building level, has been critiqued for focusing on the technical aspects of energy systems rather than engaging the users of these (Janda, 2011), reflecting a limitation when compared with a regenerative focus on ‘hearts and minds’.

3.2.3. Indicator guidelines

Indicator guidelines provide flexibility in that they enable users to set their own aims (or none at all). The hope may be that disclosure creates a public pressure to improve

performance, and that monitoring feeds back into decision-making, hence improving outcomes. Some authors, however, caution against a narrow, ‘instrumental’ rationality which views the use of indicators as targets as linear and predictable, particularly within the complex sphere of urban sustainability (Kitchin *et al.*, 2015). Instead, it is suggested they should be thought of as tools to ‘sensitise’ rather than ‘assess’ (Regeer *et al.*, 2009). Nevertheless, we may hope that reporting provides some contributions to programme outcomes. Literature on both corporate and urban indicators is considered here.

Evidence on corporate reporting suggests that it is unlikely to have a major impact on strategy or decision-making in many, or most, cases (Barkemeyer *et al.*, 2015; Maas *et al.*, 2016; Thijssens *et al.*, 2016). As literature reviewed below under the topic of transparency shows, corporate reporting tends to lack contextual information to evaluate sustainability performance, and recent critiques highlight its continued alignment with ‘weak’ rather than ‘strong’ sustainability (Landrum and Ohsowski, 2018). This suggests that a focus on disclosure and reporting alone is inadequate in improving programme level outcomes. Without a strong integration with strategy and sustainability aims, reporting often becomes an end in itself. This suggests the desirability of integrating indicators more clearly into an overall strategic approach.

As well as effectiveness, we can consider the extent to which corporate reporting captures the input of stakeholders such as customers, employees, communities, or NGOs. The GRI incorporates flexibility by including optional indicators, selected via a ‘materiality’ process, and stakeholder engagement is intended to be part of the process which is used to select relevant indicators. This can contribute to the legitimacy of an organisation (Devin and Lane, 2014). Literature suggests such processes tend not to live up to their ideals. For example, Trapp (2014) distinguishes between ‘informational’, ‘persuasive’, and ‘dialogue’ forms of engagement, and finds that engagement generally falls into the ‘persuasive’ category, to pick up on gaps, trends or issues, rather than as a form of dialogue. Manetti (2011) found that stakeholders are mostly not engaged in the development of GRI reports themselves.

Regarding urban sustainability indicators, whilst there is limited evidence specifically on the standardised WCCD/ISO 37120 certification scheme, there is analogous literature on urban benchmarking. Kitchin *et al.* (2015) describe an appeal of indicators as overcoming possible “clientelism, cronyism and localism” in policy-making, in favour of evidence-based policy, but, as noted, they caution against a simplistic, linear, and deterministic view of city indicators. Nevertheless, literature has also considered whether and in what ways indicators can better perform an ‘instrumental’ function. Strong levels of agreement and

buy-in among actors, stakeholder involvement in their development, and strong links to policy, can be important for indicators to be integrated into policy-making (Bell *et al.*, 2011; Moreno Pires and Fidélis, 2012, 2015). Only in limited cases, however, do indicators significantly impact on decision-making (PASTILLE, 2002; Gahin *et al.*, 2003; Bell *et al.*, 2011), again suggesting the desirability of integrating indicators more clearly into strategy. Despite the increasing popularity of city benchmarking, such trends have been critiqued due to de-contextualisation, de-politicisation and assuming similar policy needs across locales (Elgert and Krueger, 2012; Kitchin *et al.*, 2015; Elgert, 2018). Hence, this suggests that a high degree of standardisation may detract from both its contribution to local strategy, as well as its ability to capture stakeholder input. However, cooperative benchmarking has been found to provide benefits in terms of sharing guidelines, ideas and experience (Moreno Pires *et al.*, 2014).

3.2.4. Process standards

A focus on process has the potential to address a comprehensive range of important processes (e.g. strategy, management, monitoring, engagement, communication), whilst being less prescriptive than rating tools. It is also applicable across a wide range of sectors. Yet, in providing these benefits, these standards lose an emphasis on the important substantive aims of sustainability. Whilst a regenerative perspective requires a high level of ambition, a focus solely on process risks reinforcing business-as-usual. Indeed, substantial evidence suggests that environmental management systems have been found to have many purely ‘symbolic’ users for whom practices are not improved, and that such standards leave outcomes to be highly dependent on the motivations of instrument users (Hertin *et al.*, 2008; Castka and Prajogo, 2013; Potoski and Prakash, 2013; Ferrón Vílchez, 2017). Given the urgency of environmental crises and the widespread use of EMS together with unambitious practices, a focus solely on process may be regarded as inadequate from a regenerative perspective.

3.2.5. Summary discussion

The review above explored the implications of relying on standardised assessment criteria in the design of sustainability instruments. A regenerative approach highlights the need for incorporating a range of ambitious sustainability aims and integrating them into a holistic approach. None of the instruments above has met these conditions. This position is illustrated by an analysis of the components of instruments, focusing on prescriptive and isolated criteria, single topics, or focusing solely on process or disclosure. The limitations of such approaches are illustrated by considerable empirical research, especially on rating

tools, which represent the most comprehensive approach of the instruments discussed above, and therefore of particular interest as an approach to standardisation. Rating tools codify a range of targets but have been found to lack ambition and holism and be overly prescriptive. Target-setting initiatives, or indicator- and process-based approaches, whilst potentially useful supplements to strategy, lack integration with a broad range of sustainability aims. There remains, therefore, a need for other instruments which do not have the limitations of those discussed here.

Research across all instruments demonstrates that, due to their incorporation of flexibility and application across complex and varied contexts, outcomes are variable and highly dependent on the motivations of their users. This points to the continuing importance of values in driving sustainability outcomes, despite the attempt to standardise sustainability via ‘requirements’, and to guard against the self-interest of users and assessors. This gives cause for questioning assumptions of self-interest underpinning standardisation, and invites the question of how more explicitly values-driven, aspirational approaches may affect the design of instruments.

3.3. Systemic level

This section reviews evidence on both the overall take-up and systemic impacts of standardised instruments, and the factors affecting their take-up, particularly related to pragmatic and regulatory legitimacy.

3.3.1. Systemic outcomes and take-up

A notable success of standardised and replicable sustainability instruments has been their ability to scale. Various statistics are available which point to the scale of take-up, the extent of ‘rule coverage’ (Mena and Palazzo, 2012), and the possible system-wide impacts of sustainability instruments. Table 3.4 on the following page presents such information for the types of instruments considered here. These include the key examples listed in table 3.1, and a few other examples that have achieved significant take-up.

Table 3.4. Evidence on the take-up and systemic effectiveness of sustainability instruments.

Type	Examples	Statistics	
<i>Rating tools</i>	<i>Buildings</i>	LEED	90,000 projects. 2.2 million square feet certified every day (USGBC, no date a). Platinum LEED certification: less than 0.2% of all built space in the US over the last 20 years (Van der Heijden, 2017)
		BREEAM	568,000 certificates and over 2 million registered buildings (BRE, no date)
	<i>Neighbourhoods</i>	BREEAM Communities	Over 130 listed on website (BRE, no date)
	<i>Cities</i>	LEED for Cities and Communities (formerly STAR Communities)	Over 140 listed on website (USGBC, no date b)
<i>Target-setting initiatives</i>	<i>Companies</i>	Science-Based Targets	Over 880 companies (Science Based Targets, no date). In 2017, 23% of the largest 250 companies already linking to global 2°C target GHG targets (KPMG, 2017)
	<i>Cities</i>	C40 Cities	97 affiliated cities, 25% of global GDP; eight with Paris-compatible action plans (C40 Cities, no date)
		Global Covenant of Mayors	Over 9,000 cities, 800 million people (Global Covenant of Mayors, no date)
<i>Indicator guidelines</i>	<i>Companies</i>	GRI	In 2017, used by 75% of the largest 2050 companies (KPMG, 2017)
	<i>Cities</i>	WCCD	64 cities worldwide, on earlier version of data portal (World Council on City Data, no date)
		CDP GHG database	810 cities reporting (CDP, no date)
<i>Process standards</i>	<i>Organisations</i>	ISO 14001	Over 300,000 certifications in 171 countries (ISO, no date)

Some instruments have therefore achieved moderate to high levels of take-up. Climate initiatives and the GRI corporate reporting framework cover many, or most, of the largest cities and companies. In other sectors, such as commodities and property, the coverage is lower. However, merely achieving widespread usage and take-up does not mean that the highest levels of performance are achieved by many users. For example, the potential impact of climate initiatives with full rule coverage is high, but the impact of current pledges is low relative to the scale of change required (PBL *et al.*, 2018). To take an example from the property sector, Platinum LEED certification has been awarded to less than 0.2% of all built space in the US over the last 20 years (Van der Heijden, 2017).

Similarly, whilst the use of the GRI and ISO 14001 may be widespread, literature reviewed above suggests this often does not result in significant improvements. However, such instruments can also provide more indirect system-level benefits and influence. For example, rating tools can help mainstream sustainability practices (Greenwood *et al.*, 2017), which may also be incorporated into legislation at a later stage (SCSKASC, 2012). This suggests that ‘beyond-compliance’ efforts can help mainstream sustainability practices, potentially being an important stage of an ongoing transition toward sustainability.

3.3.2. Pragmatic and regulatory legitimacy

The decision to adopt an instrument is likely to be significantly affected by a weighing up of its benefits and drawbacks. A review of prior studies was carried out in order to identify a representative example and overview of the wide range of potential pragmatic or regulatory benefits and drawbacks. These are listed in table 3.5 below and on the following page, and derive from both public information and ‘internal’ factors.

Table 3.5. Evidence on the pragmatic and regulatory legitimacy of sustainability instruments.

<i>Rating tools (building)</i>	<i>Commercial benefits</i>	LEED found to add value at the building level.	(Fuerst and McAllister, 2011)
	<i>Regulatory drivers</i>	BREEAM use increased due by being a requirement in UK public procurement.	(Schweber, 2013)
	<i>Regulatory drivers</i>	The Code for Sustainable Homes was often included as requirement for planning permission in the UK.	(Greenwood <i>et al.</i> , 2017)
	<i>Knowledge transfer</i>	Urban rating tools and frameworks help codify complex knowledge into a replicable format or ‘tick-list’.	(Schweber, 2013; Joss <i>et al.</i> , 2015; Elgert, 2016)
<i>Rating tools (neighbourhoods)</i>	<i>(No) commercial benefits</i>	LEED-ND for neighbourhoods found not to add value.	(Freybote <i>et al.</i> , 2015)

Table 3.5. (Continued)

<i>Rating tools (cities)</i>	<i>Commercial benefits</i>	More sustainable cities may attract business investment.	(Elgert, 2018)
		Corporate rating agencies take sustainability into account, this may start happening for cities too.	(Elgert, 2018)
	<i>Reputational benefits</i>	Ratings, commitments, and good performance may improve the public image of cities, attracting ‘high quality’ residents and potentially providing political rewards.	(Elgert, 2018)
	<i>Knowledge transfer</i>	Urban sustainability tools help codify complex knowledge into a replicable format or ‘tick-list’.	(Schweber, 2013; Joss <i>et al.</i> , 2015; Elgert, 2016)
	<i>Resource requirements</i>	Data requirements identified as a major barrier to the take-up of STAR Communities, and the ambiguity of data requirements can be challenging.	(Elgert, 2016)
<i>Process standards (organisations)</i>	<i>Commercial benefits</i>	Environmental management systems can provide commercial benefits.	(Ferrón Vílchez, 2017)
	<i>Regulatory benefits</i>	ISO 14001 can also help reduce the need for coercive environmental inspections from government.	(He <i>et al.</i> , 2015)
<i>Indicator guidelines (companies)</i>	<i>Regulatory drivers</i>	EU’s non-financial reporting directive allows companies not reporting to be named.	(KPMG, 2017)
	<i>Access to capital</i>	Stock markets often require non-financial reporting to gain access.	(KPMG, 2017)
	<i>Commercial benefits</i>	CSR policies can provide commercial benefits.	(Johansson, 2014)

Instruments have been found to provide a range of benefits associated with their public information. Some commercial or reputational benefits may be difficult to gauge, but may still be an important driver, for example, corporate sustainability programmes help reduce the risk of being targeted by NGO campaigns (Johansson, 2014), ultimately protecting a company’s brand and reputation. Other benefits may not be the main driver for take-up, but they may be part of an overall perceived benefit that can boost the likelihood of an instrument being adopted. For example, cities may be motivated to pursue sustainability, but additional benefits can be appealing, such as improvements to perceptions of the city amongst citizens, or a public image that could help attract ‘high-quality’ residents (Elgert, 2018). The limited commercial benefits of some instruments may explain their limited take-up. For example, neighbourhood rating tools did not provide price premia and have low take-up.

Despite the instruments reviewed in this thesis being largely voluntary, sometimes regulation provides a reason for their take-up, with regulatory drivers providing access to additional contracts or markets. This illustrates one significant benefit of standardisation: that instruments using this approach can be incorporated into a wider policy mix. In the UK, the take-up of the BREEAM building rating tool was increased due to the fact it was regularly included as a requirement in public procurement. ISO 14001 can also help reduce the need for coercive environmental inspections from government. Sustainability reporting is required by many of the major stock exchanges, therefore being integrated with a large-scale private form of regulation/policy, and the EU has introduced regulations to publicly identify companies not reporting.

The review also highlights the fact that a wide range of potential ‘internal’ benefits and drawbacks should be considered for pragmatic legitimacy, beyond the direct financial cost of using an instrument. In terms of benefits, convenient access to knowledge can also be a benefit for complex issues such as urban sustainability. This means that professionals with less expertise can plan and assess for sustainability, giving them a sense of ‘being in control’, and of having ‘tick-list’ that can cover what they need to know (Schweber, 2013). The data requirements of the STAR city-scale framework were identified as the main challenge of implementing it. The ‘cutting edge’ has a ‘double edge’: data-driven sophistication can result in barriers to access (Elgert, 2016).

Beyond pragmatic or regulatory legitimacy, instruments will need to find ways of generating normative, cognitive, or pragmatic legitimacy, through the involvement of actors which can grant this. For example, the GRI rose to prominence as a result of the actions of two individuals who were members of a relatively small organisation. Brown *et al.* (2009) describe this as a case of ‘institutional entrepreneurship’. They illustrate how through a combination of leadership, charisma, the ability to coordinate and mobilise the resources and interest of many larger institutions, and the ability to communicate effectively and convey the GRI as a benefit for those institutions, the GRI was eventually able to become the preeminent instrument in its industry. The histories of some schemes reveal the involvement of prestigious organisations or individuals. For example, C40 Cities was formed through the involvement of Michael Bloomberg, Bill Clinton, the UN, the EU and a network of local governments and mayors. Such large-scale or high-profile backing is likely to be important in whether a scheme is regarded as prestigious or credible. Similarly, BREEAM in the UK was created by BRE, already a large ex-public organisation. The pathways to generative perceived legitimacy will vary across instruments, and the stages of their evolution. However, models of these pathways are beyond the scope of this thesis.

3.4. Public information and transparency

Does standardisation lead to better public information? The production of such information is a driving factor behind the use of standardised, replicable assessment and verification criteria, for example, to support certifications, ratings, and reports. Despite this emphasis on reliable information, literature casts doubt on the quality of much of it. Voluntary instruments must reflect positively on instrument users, and therefore to gain widespread adoption, end up reflecting positively on business-as-usual practices. Standardisation alone, therefore, does little to guarantee that information is high-quality. However, it can have benefits: the strongest argument for standardisation identified in this literature review, discussed below, is to support transparent, comparable public indicators data.

3.4.1. Summary information

Summary information includes certifications, ratings, and the fact of a target being externally validated. The evidence on programme effectiveness above calls into question the quality of such information in providing a reliable indicator of positive sustainability practices. For example, good or average ratings are awarded to unambitious or business-as-usual practices. A frequent lack of ex-post monitoring means ratings may not represent actual performance at the building or neighbourhood level (Gabe and Christensen, 2019). Ratings also aggregate a range of dimensions into a single piece of information, considering them substitutable, to the extent where we may question how informative they are across complex contexts. Environmental management system certification can perform a purely ‘symbolic’ function. Although the average observer may take it to mean an organisation has achieved some reasonable level of sustainability practices and performance; however, since it is focused on process this may not be the case. Given that the certification is not performance-based, it is not actively misleading, but we may question its value. Similarly, validated targets, supposedly aligned with an absolute standard, reflect a broad range of underlying performance.

3.4.2. Sustainability reporting

Public sustainability reporting provides detailed information on sustainability performance, and hence offers the opportunity to overcome the limitations of summary information described above. However, a significant amount of literature is critical of corporate reporting, in terms of its comparability, and its ability to provide a realistic reflection of sustainability performance. There is again a tension between the need for voluntary instruments to reflect positively on their users and the reality of most actors operating within an unsustainable system.

Comparability enables external parties to compare across actors, and highlight relatively good and poor performance. Hence, whilst flexible, context-sensitive indicators may integrate better with strategy, or may have greater local resonance, the quality of public information provides an argument for some standardisation. Arguments in favour of comparability and standardisation are more common within literature on corporate sustainability than urban sustainability, with the latter often being considered particularly political, or needing to be aligned with the priorities of the local community (Elgert and Krueger, 2012; Kitchin *et al.*, 2015). Comparability naturally favours only a few top-performing actors and could result in the shaming of poor performers, so resistance is likely to arise. The GRI has been critiqued on the basis that corporate influence the development of the standard has led to a less comparable approach, failing to empower civil society stakeholders (Dingwerth and Eichinger, 2010; Levy *et al.*, 2010). Cities may be more willing to allow their performance to be compared: the carbon Disclosure Project corporate emissions data is behind a paywall, whilst city data is open to scrutiny. The WCCD city benchmarking scheme also provides a ranking on its online visualisation platform, without numerical data. A related argument in favour of standardisation is that it prevents cherry-picking, where indicators are selected to reflect positively on those reporting. Evidence of cherry-picking and selective influence can be found both for corporate reporting (Guthrie and Farneti, 2008; Milne and Ball, 2008) and for local government reporting (Bell *et al.*, 2011; Kitchin *et al.*, 2015; Le Bourhis, 2015). Overall, we may consider the possibility of a middle ground between comparability and context-appropriateness. For example, for environmental issues, having fully comparable GHG emissions reporting data for cities and companies would already provide some of the information of most interest globally.

A related argument highlights the importance of criteria used to evaluate performance. This argument may be used together with an argument in favour of comparability (Levy *et al.*, 2010), since comparable assessment criteria can be used to evaluate comparable data. Gray (2006) found the GRI lacking, arguing that its “environmental data is well below anything that could sensibly be used to assess environmental sustainability”. He proposes an ‘ecologically- and eco-justice-informed’ (EEJ) approach, which starts from the presumption that current practices are unsustainable – both in terms of equity and carbon footprint – and ask how organisations can start to move towards true sustainability. He notes that such an approach would be unlikely (*ibid.*, 809): “it seems perfectly clear that an organisation in serious pursuit of sustainability will, in almost every likelihood, be significantly unpopular with most, if not all, conventional financial participants”. More recent critiques of corporate sustainability reporting continue to highlight its alignment with ‘weak’ rather than ‘strong’ sustainability (Landrum and Ohsowski, 2018). The current

trend towards linking corporate emissions targets to global targets, via the SBTi, is one way that practices may be moving closer to an EEJ approach, at least in environmental terms (KPMG, 2017), although problems with science-based targets are noted above.

3.5. Conclusions

This chapter reviewed standardised sustainability instruments, focusing on dominant types globally that provide guidance on aspects of strategy and/or monitoring across complex, varied organisational and urban contexts. Four types were identified (rating tools and indices; target-setting initiatives; indicator guidelines; and process standards), and key examples were provided for each, selected for their prominence and for the wealth of literature that has become available on them in recent years. As well as being a literature review, this chapter provides an analysis of the structure of differing types of standardised instrument. This explores how the reliance on standardised criteria affects the design and implementation of such instruments, interweaving this with academic research and empirical evidence. This lays the groundwork for a similar analysis of OPL's structure in later chapters; both are carried out under the 'programme level'.

If governance instruments are to address, or at least improve, sustainability issues, this is built up from their contribution at the *programme level*. The family of instruments considered in this thesis adopt a diverse range of approaches to the question of codifying 'sustainability', and their architecture has important implications for how they support sustainability programmes. They can be comprised of elements such as goals, material actions, processes, indicators, and targets. A typical approach to strategy would be built around a set of aspirational goals. However, standardised instruments focus on more easily verifiable criteria (i.e., verifiable actions, processes, indicators, or targets), whilst also incorporating sufficient flexibility to be applicable across complex, varied contexts. This chapter identified four types of instruments, each adopting a different approach to the problem of incorporating flexibility whilst relying primarily on limited standardised criteria, with literature reflecting critically on each approach. Rating tools offer the most comprehensive approach, laying out a broad range of substantive aims via performance-based technical guidance, combining optional criteria flexibly into an overall, variable rating. Given this comprehensiveness, they are of particular interest as an approach to standardisation. However, this widely studied type of instrument has been extensively critiqued for being overly prescriptive, lacking holism and encouraging unambitious practices. Target-setting initiatives, or indicator- and process-based approaches, whilst potentially useful supplements to strategy, lack integration with a broad range of

sustainability aims and often reinforce business-as-usual practices. A regenerative approach highlights the need for incorporating a range of ambitious sustainability aims and integrating them into a holistic approach, yet none of the instruments reviewed here meet this condition. Moreover, research across all instruments demonstrates that, due to their incorporation of flexibility, outcomes are variable and highly dependent on the motivations of their users. This points to the continuing importance of values in driving sustainability outcomes, despite the attempt to standardise sustainability, and guard against self-interest and conflicts of interest in assessment via the use of standardised requirements.

Whilst arguably inadequate at the programme level, standardised instruments have been successful in achieving moderate to widespread take-up in many sectors. Merely achieving take-up does not mean high levels of systemic impact, however, since many instruments are compatible with business-as-usual practices, and the highest levels of achievement may only be achieved by a small proportion of users. In analysing the factors driving take-up, this chapter reviewed evidence on pragmatic legitimacy, identifying a range of potential benefits, including reputational and commercial benefits, as well as internal benefits, such as convenient access to knowledge. One significant benefit of standardised approaches is that they can be incorporated into a public or private regulatory mix, increasing take-up. However, the instruments reviewed can entail significant costs of external assessment, or resource requirements of producing data, which can reinforce inequalities by excluding important but less wealthy actors at a systemic level.

The attempt to generate reliable public information, such as certifications, ratings, or reports, is a driving factor behind standardisation. Despite this, the evidence reviewed casts doubt on the quality of much of this information, since it often reflects positively on business-as-usual practices. Instruments have been made accessible to a wide range of users, including the unambitious, yet reflects positively on them in order to incentivise take-up. Detailed reporting offers an alternative to summary certifications or ratings, offering greater depth. Corporate reporting has received significant research attention, and has been critiqued for both a lack of comparability and a lack of evaluation criteria that reflect 'strong' sustainability. This is therefore one area where a degree of standardisation is regarded as particularly desirable for comparability and transparency, although contextual information is equally important to evaluate such information.

Overall, standardised approaches have demonstrated replicability and scalability, achieving moderate to high levels of take-up, and can be incorporated into a wider policy mix. When compared with a regenerative perspective, however, they are lacking in terms of promoting ambitious, holistic, collaborative, and participatory programmes. Furthermore, their public

information often reflects positively on business-as-usual practices, creating a risk that it reinforces the current systemic unsustainability, rather than promoting critical reflection. It is argued that this review establishes the need for alternative approaches, aligned with regenerative perspectives. It is to one such approach that this thesis now turns.

4. Introduction to OPL

The previous chapter explored the limitations of existing instruments and suggested the need for alternative approaches. However, there is a shortage of detailed empirical studies on established urban or corporate instruments more closely aligned with a systems-based or regenerative perspective. This research addresses this need by investigating the One Planet Living framework. This chapter introduces OPL, providing the necessary background context for later chapters. It focuses on more explicit, formalised, and documented aspects of the framework, such as the documentation available, the typical processes involved in its application, and the range of programmes that have implemented OPL, organised according to the three legitimacy functions laid out in chapter 2.

Each section includes some commentary and analysis, drawing material from an article by a Canadian journalist that brings together a summary of critiques of OPL, often comparing it unfavourably to more standardised certification schemes or rating tools (Cornick, 2016). These include comments by local stakeholders, as well as an academic researcher of certification schemes. Such critiques are often based on implicit assumptions of the preferability of standardised approaches, and provide a contrast to literature discussed in the previous chapter. This chapter also draws on an article on the One Planet Sutton, which highlights criticisms of the programme by a local opposition politician (Downey, 2016). These articles introduce discussion points and point to possible avenues for further research.

4.1. Programme level: OPL guidance and processes

This section begins by introducing OPL's vision, guidance, tools, underlying rationales, and the processes involved in its application, providing the groundwork for deeper empirical investigation in chapters 6 and 7.

4.1.1. OPL aims and guidance

As the introductory chapter stated, the overall aim of One Planet Living is expressed as *living happy and healthy lives within the limits of the planet, leaving space for wildlife and wilderness* (Bioregional, no date). Like regenerative sustainability, therefore, the concept of One Planet Living is based on thriving living systems, and the positive interaction between human and ecological elements of systems (Du Plessis and Brandon, 2015; Gibbons, 2020). The framework is underpinned by an overall vision of a sustainable world,

and its aims (its principles and goals) are fluidly built up around this vision. The ten principles are shown in table 4.1. These were distilled from the learning which came from Bioregional’s first eco-development, BedZED.

Table 4.1. The ten principles of OPL.

<i>Health and happiness</i>	Encouraging active, social, meaningful lives to promote good health and wellbeing
<i>Equity and local economy</i>	Creating safe, equitable places to live and work which support local prosperity and international fair trade
<i>Culture and community</i>	Nurturing local identity and heritage, empowering communities, and promoting a culture of sustainable living
<i>Land and nature</i>	Protecting and restoring land for the benefit of people and wildlife
<i>Sustainable water</i>	Using water efficiently, protecting local water resources and reducing flooding and drought
<i>Local and sustainable food</i>	Promoting sustainable humane farming and healthy diets high in local, seasonal organic food and vegetable protein
<i>Travel and transport</i>	Reducing the need to travel, encouraging walking, cycling and low carbon transport
<i>Materials and products</i>	Using materials from sustainable sources and promoting products which help people reduce consumption
<i>Zero waste</i>	Reducing consumption, reusing, and recycling to achieve zero waste and zero pollution
<i>Zero carbon energy</i>	Making buildings and manufacturing energy efficient and supplying all energy with renewables

These high-level aims are broad, open-ended, and largely qualitative (apart from the more quantitative but still fluid and open-ended goals of ‘zero carbon’ and ‘zero waste’). They are adaptable to different contexts, sectors, and scales. Rather than being isolated, the principles form an interrelated system – for example: waste can be used as compost to support food growing or to produce sustainable materials; cycling (transport) improves health and reduces carbon emissions; and green infrastructure can mitigate flood risk.

The ten principles of OPL have been further elaborated into guidance documentation, for companies, new communities, and local government/city programmes (Bioregional, 2011a, 2011c, 2011b, 2016a, 2017c, 2017b). There is also a recent ‘manual’ on ‘implementing One Planet Living’ (Bioregional, 2018c). Bioregional’s guidance documentation has become less prescriptive. The name has changed over time, previously referring to ‘targets’ (Bioregional, 2011a, 2011c), and now to ‘goals’ (Bioregional, 2016a, 2017b, 2017c). The first iterations of guidance included a small number of more prescriptive targets for waste and energy, along with qualitative guidance. The current second iteration of guidance

centres on qualitative and open-ended goals, with some suggestions of the sorts of actions, indicators and targets users might adopt to support these goals.

4.1.2. Formal elements of the OPL process

How is OPL – with its principles and guidance – translated into programmes? The application of OPL is based on an ongoing process – one which continues from strategy, planning, or design through to implementation, monitoring and reporting. Figure 4.1. provides an overview of such a process and the actors, elements, stages, and knowledge flows that can be involved.

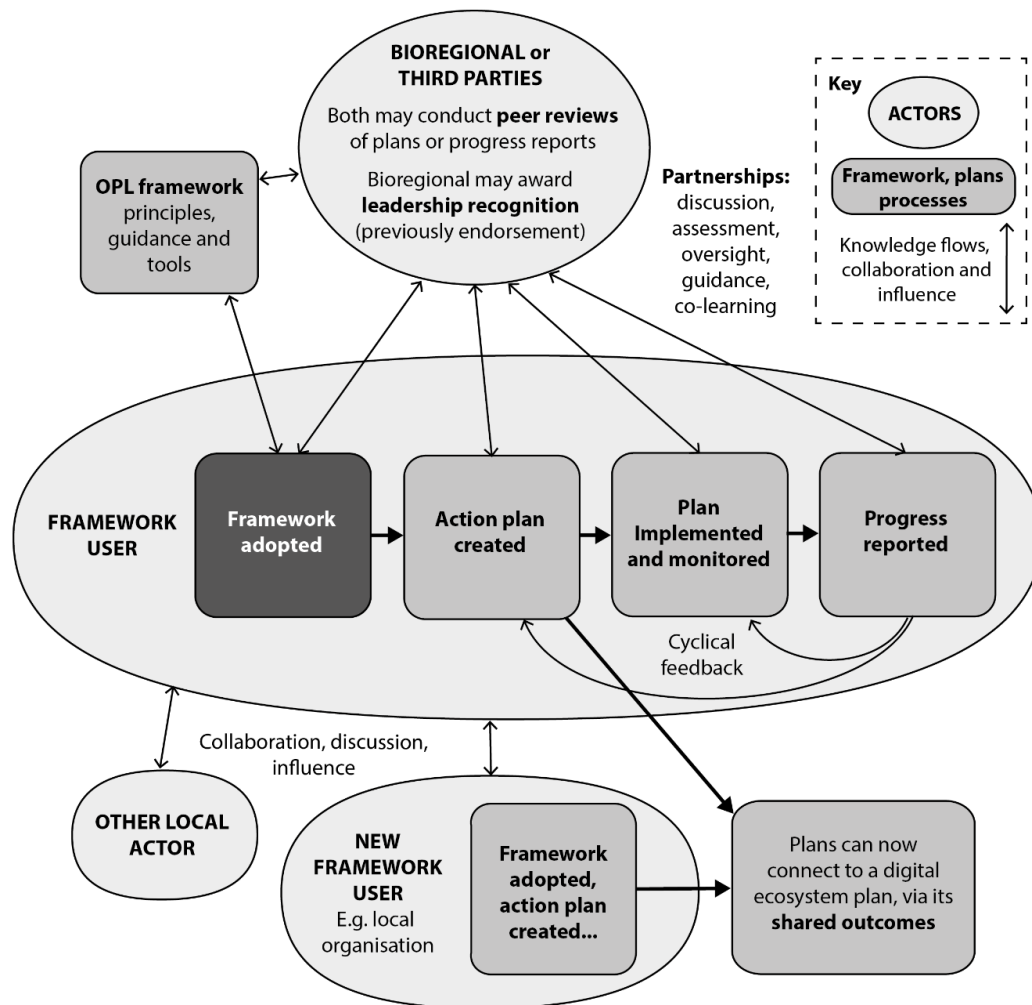


Figure 4.1. Overview of elements and stages of the OPL process.

OPL principles are a common element throughout the OPL process. They are used to create and structure plans and reviews, and to facilitate partnership working, discussion, collaboration, and influence. The OPL process is distinctive for its bespoke partnership process between Bioregional and OPL users, and such a partnership can involve discussion

and collaboration at each stage of the framework's application. To start with, a potential framework user, such as a local government, developer, or company, must encounter and decide to adopt the framework. Guidance states that there should be buy-in from a committed leadership within an organisation (Bioregional, 2018c). This then leads to the creation of an action plan, its implementation and monitoring, and progress reporting. Planning, implementation, and review can be thought of as iterative and cyclical, with action plans updated over time in light of new information. This enables a dynamic process of looped learning, and the adjustment of goals (Pahl-Wostl, 2009; Regeer *et al.*, 2009). These aspects are now described further.

OPL principles are translated into context-specific plans, with the help of guidance documentation. This can consist of locally appropriate desired outcomes for each principle, as well as actions, indicators, and targets. Due to its flexible, organic and evolving approach, there is no single process for the creation of action plans, but this stage will often involve a workshop where relevant stakeholders are brought together (Bioregional, 2018c), or a series of meetings. The principles of the framework provide the medium to facilitate discussion and capture local knowledge. OPL can also enable influence and collaboration between multiple groups of actors within a system or locality. For example, an action plan may include efforts to influence external stakeholders. Or one local organisation may influence another, resulting in clusters of users within an area, helped by the fact the framework is applicable across sectors. Now, on the digital platform, multiple OPL users can connect to shared outcomes within an ecosystem plan, as explained in more detail below.

All people or organisations can use OPL for free, without any external assessment, providing they publish their plans and monitor and publicly report on their progress. However, those entering partnerships with Bioregional are assessed by Bioregional on a discretionary basis. Such an assessment acts partly as a co-creation and feedback process to improve the quality of plans, but also entitles selected partners to special forms of recognition. If deemed to have sufficiently ambitious plans and to be able to deliver these, a partnership is entered and One Planet Living status is awarded. Such programmes were previously also described as 'endorsed' and are now sometimes awarded 'leadership recognition' (these terms are described further below, under the public information and transparency function). To open the use of the framework to more users, Bioregional has also established a 'peer review' system, conducted either by Bioregional or approved third-party assessors, providing feedback on the quality of plans (Bioregional, 2018c). This means that third parties can now perform OPL assessment, although these are not able to award leadership recognition or One Planet Living status. All forms of external assessment

involve assessing competence and commitment as much as the content of plans (Bioregional, 2018c); Bioregional partners with organisations whose goals are aligned with their own.

During the ongoing implementation of action plans, OPL users are expected to monitor and report on their progress. This is typically a mix of quantitative and qualitative monitoring, for example tracking both actions and indicators. This is intended to generate learning for OPL users, be used as the basis of Bioregional's ongoing oversight, and is also used for public reporting – generating industry learning and transparency. Indicators, therefore, perform an instrumental function (PASTILLE, 2002; Gahin *et al.*, 2003; Bell *et al.*, 2011). OPL integrates strategy and monitoring, unlike reporting guidelines, and integrates ex-post monitoring, unlike many rating tools for the construction sector (Whitfield, 2014; Boyle *et al.*, 2018). Such monitoring is used as the basis of oversight and accountability with Bioregional's partners, who use reviews to check the progress being made in the implementation of action plans. The example of Sutton below suggests that Bioregional's oversight of partners can be flexible and forgiving. This may be closer to approaches found in responsive regulation than standardised certification schemes (Braithwaite, 2011).

4.1.3. Recent conceptual guidance and systems thinking

The recent 'manual' developed for OPL has helped make some of its conceptual underpinnings explicit. It is worth reproducing some of these here to show that the analysis in this thesis is based on concepts that have broad support within Bioregional (Bioregional, 2018c).

- **Inspiring change through a hearts and minds approach:** “We have made our guidance and tools as engaging and simple as possible, focusing on emotional as well as intellectual engagement.”
- **Making it easy to do the right thing:** “One Planet Living aims to make it easy to live sustainably – so that it is easier to do the ‘right thing’ than to live unsustainably. For example, this might include designing communities where it is easier to walk and cycle than to drive for short journeys.”
- **Goals and Guidance – not prescriptive standards:** “The One Planet Goals contained within them are our best attempt at setting long-term goals for sustainability, consistent with the latest in scientific thinking [...] How you achieve them is up to you.”

- **Focus on actual performance:** “To achieve and communicate change it is important to monitor and report on progress in implementing it. We encourage you to publish regular (ideally annual) progress reports, both to demonstrate what you have achieved and what lessons you have learned, so you can help others make swifter progress – and they can help you too.”
- **Systems thinking:** “Our world is complex, interconnected and in a constant state of flux [...] Prescriptive standards are often not flexible enough to deal with this complex world, and too slow to respond to changes.”
- **Complementing other frameworks and certification systems:** “The One Planet Living framework is not intended to replace other sustainability frameworks and certification systems such as the UN Sustainable Development Goals, LEED, BREEAM, GRI, FSC, BCorps and organic standards. It provides a high-level framework that can be used to identify gaps and enhance other systems and help them to join up.”
- **The need for heroism:** “At Bioregional we believe that the rapid transformation that is required to achieve One Planet Living – and so live within our planetary boundaries – goes beyond what many people would call ‘realistic’ or achievable’.”

This conceptual guidance again illustrates the framework's alignment with a regenerative approach (Gibbons, 2020), through a holistic systems-based approach, an emphasis on 'hearts and minds', a focus on ecological planetary boundaries, and a vision that combines human and ecological thriving.

4.1.4. The digital platform: towards regenerative technology?

In recent years, OPL has expanded into the digital sphere, via the creation of the OnePlanet platform (OnePlanet, no date). The platform has been created to scale up the use of the framework, make it easier to plan, monitor and report, and help connect plans and organisations. OnePlanet is a spin-off company to the charity Bioregional. The latter continues to own the registered trademark of the One Planet Living framework, enters partnerships and provides OPL on an open license regardless of whether the digital platform is also used. Nevertheless, the software illustrates the emerging possibilities of digital tools, enabling new ways of working which are more connected, dynamic, scalable, and convenient, and less constrained, contrasting with a more standardised approach relying on static documentation. The platform also provides a clear representation of some of the thinking underlying OPL framework.

There are two key innovations that the platform makes in enabling a holistic, collaborative, systems-based and joined-up approach. First, interconnectedness has been embedded into the design of the digital platform, which stresses the links between actions, outcomes, and indicators, and allows for completely flexible interrelationships, as illustrated by figure 4.2 on the following page. Technology allows for the easier visual mapping of relationships between different elements of a strategy, not limited by formats such as pages or tables, focusing on indicators, credits, or points in isolation. This enables a more holistic approach where synergies and trade-offs can be accounted for more easily. It is enabled by graph databases rather than relational databases, allowing many-to-many relationships between entities.



Figure 4.2. The Mindmap view on the digital platform.

Second, the platform has opened new possibilities for collaboration between stakeholders. Stakeholders can come together to decide on shared outcomes or indicators for an ‘ecosystem’, which could be a city or a company, for example (a ‘shared outcome’ is circled in white in figure 4.2). These are put into an ecosystem plan. Stakeholders can then connect to this ecosystem plan and adopt the shared outcomes, which they can use in their own action plans. This approach allows for a networked process, enabling multiple groups of actors to coordinate to pursue collective goals. Before this, such collaboration around

shared outcomes or indicators was aspired to, but it was less explicit due to the lack of a convenient method for doing so.

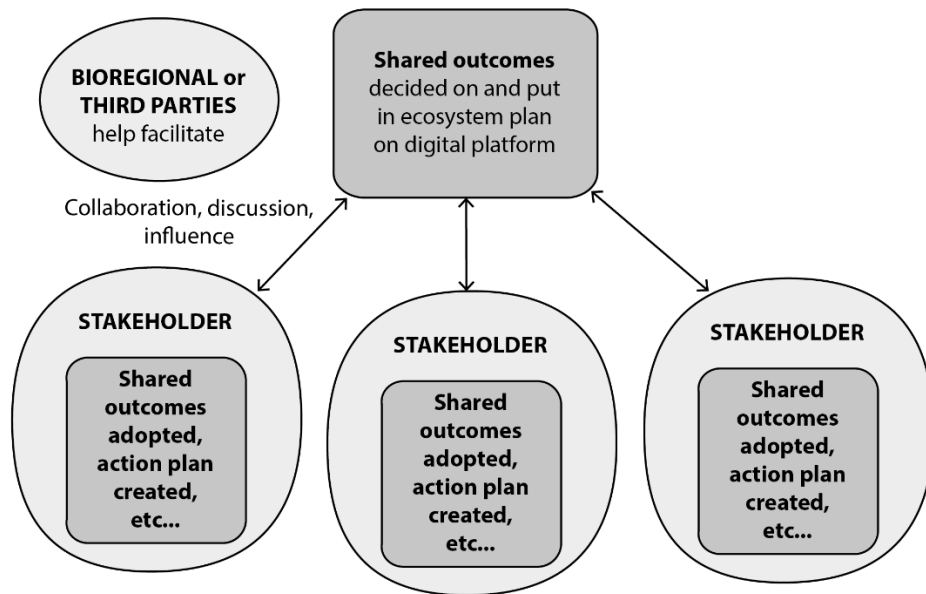


Figure 4.3. Collaboration around shared outcomes on the digital platform.

This means that there are now two kinds of plans associated with OPL. The original kind is the *action* plan, which includes the actions relevant to a particular programme or organisation (as well as outcomes and indicators). The other is the *ecosystem* plan, which contains shared outcomes (as well as indicators) which groups of stakeholders can aim for.

With digital approaches, therefore, the approach moves from documented knowledge to a *structure* for organising information, as well as a digital *process* and experience. Assumptions that can be left implicit, intuitive, or undefined within existing approaches – such as the structure of information in plans – must be made explicit. These structures can be made more standardised and constrained, or flexible and interconnected – depending on the underlying worldview, such as systems thinking. The hope is that such a tool will enable people to think differently about sustainability. The digital platform has the potential to improve effectiveness by enabling more collaborative and holistic approaches. Shared outcomes could support stakeholder input if generated via a participatory process.

Collaborating on the development of the platform formed part of the practice work for this research project, however, due to being in its early stages, the use of the digital platform has not formed the primary focus of the analysis and evaluation in this thesis. Moreover, the platform alone (as distinct from Bioregional’s OPL framework) does not fall within the family of governance instruments analysed here. Central contributions were made to the

conceptual architecture of the digital platform over the course of this research project. Recommendations and proposals made during the design process (after extensive discussion) went on to shape many of the core features described above. These recommendations included: making outcomes, actions, and indicators the key elements of plans; enabling free interrelationships between these different elements; emphasising the process of linking them during plan creation; and connecting plans in a collaborative manner via shared outcomes and shared indicators.

4.1.5. Commentary and analysis

Proponents of OPL highlight its level of ambition, as illustrated by this quote from a Bioregional North America staff member in relation to the Canadian Zibi development (Cornick, 2016):

Bioregional’s Greg Searle claims One Planet goes “a lot further” than LEED. Instead of only considering the sustainability of buildings on the site, developers try to influence the lifestyles of the people who live there — from curbing their eating habits to changing the way they commute to work. “It’s not something a lot of developers do because it is so demanding,” Searle said.

However, sometimes the outcomes achieved by OPL’s programmes have been questioned. This quote is drawn from an article on the One Planet Sutton local government programme (Downey, 2016):

Liberal Democrat councillors have come under fire from opposition Conservatives for “decreasing their targets” to become a greener borough but “telling everyone they are doing well”.

There remains a question, therefore, of the extent to which the ambitions of OPL are translated into sufficiently ambitious and plans, and to the extent to which those are implemented successfully. This is explored in later chapters.

A further quote from the Zibi article relates to the flexibility and context-appropriateness of OPL:

Westeinde said even though their developments typically follow LEED standards, it “didn’t make a lot of sense in this environment. [...] LEED is extremely prescriptive, whereas One Planet looks to the site,” said Westeinde. He pointed to water conservation as an example: “We sit in a water rich area

in a major river, so water conservation is less important for us than if we were building in Palm Desert.”

Whilst this points out the flexibility of OPL, it does not go into the regenerative perspective underlying this flexibility. OPL is generally understood to be flexible and context-appropriate, but beyond this, the strengths of its approach have not been explored in depth.

The article on the Zibi development arose due to the dissatisfaction of local stakeholders – it is being built on land considered sacred to the indigenous Algonquin communities of the region (Cornick, 2016). Despite ongoing engagement with First Nation communities, the development has generated criticism:

St-Denis and other First Nations people insist they weren't properly consulted before the City of Ottawa approved the rezoning of the former industrial site to allow for Windmill's project.

It is possible that had participatory procedures been highly responsive, the development may have occurred differently, or may not have been compatible with the framework. Literature on urban sustainability has been critical of the fact that more standardised approaches tend to de-politicise sustainability issues at the local level. Whilst neighbourhood rating tools may prescribe consultation processes, they have also been criticised for lacking enough flexibility to enable collaboration among stakeholders (Boyle *et al.*, 2018). OPL on the other hand, whilst flexible enough to enable collaboration, does not specify processes. This highlights a difference between *enabling* stakeholder participation at the local level, and *ensuring* it. It may be that OPL is good at enabling stakeholder input, but that its processes and assessment procedures do not give great weight to ensuring that it has occurred, or that it is responsive.

4.2. Systemic level: OPL take-up, influence, and scalability

Since 2002, OPL has been applied to community-scale and residential construction projects, local government areas, companies, eco-tourism resorts, schools, and events. Bioregional has worked with approximately 30 partners who have received One Planet Living status. This small number, in comparison to other schemes, partly reflects Bioregional's bespoke partnership model. It is hoped the digital platform will enable the further scaling of OPL. Beyond take-up by Bioregional's partners, the framework and the concept of 'One Planet Living' has been influential, having been taught in universities, inspired the name of a festival, adopted by a variety of companies as well as a primary

school, and influenced UK eco-towns policy, Welsh planning policy, and possibly Swiss national legislation (One Planet Council, no date; Hawkins, 2016). OPL was also used in Bioregional's work as consultants for the London 2012 Olympics. Both of Bioregional's co-founders, Sue Riddlestone and Pooran Desai, have been awarded OBEs. Bioregional was also involved in the discussions which led to the creation of the UN Sustainable Development Goals. Hence, a significant proportion of OPL's systemic impact is likely to be of more of an indirect nature, and often related to Bioregional's advocacy.

4.2.1. Overview of programmes and take-up

Since being developed, the flexible OPL framework has been applied across a diverse range of contexts, sectors, and countries:

- **New communities:** residential and mixed-use developments, including apartment blocks, large neighbourhoods, and a single home.
- **Local government and city programmes:** area-wide programmes generally led by local governments, but also including a citizen-led coalition. These can be divided into earlier endorsed programmes, and the five participants in the recent grant-funded One Planet Cities programme.
- **Other sectors:** two companies (a major home retailer and an engineering consultancy); two different kinds of eco-tourism resorts (an eco-resort in France, and a conservation project in Tanzania); and a school.

Table 4.2 provides an overview of the various programmes which have used, or continue to use the framework and have received One Planet Living status. Case studies are highlighted in grey. The One Planet Cities programme is discussed in general terms in this thesis but details of individual programmes are not explored.

Table 4.2. Overview of OPL programmes.

Sector		Programme	Location	Plan published
<i>New communities/residential</i>		BedZED (OPL precursor)*	London, UK	N/A
		One Brighton*	Brighton, UK	2006
		SOMO Village*	San Francisco Bay area, USA	2007
		Grow	Seattle, USA	2012
		Hollerich Village	Luxembourg	2013
		NW Bicester*	Near Oxford, UK	2013
		WestWyck EcoVillage	Melbourne, Australia	2013
		Zibi	Ottawa, Canada	2015
		White Gum Valley*	Near Fremantle and Perth, Australia	2015
		Evermore at White Gum Valley*	Near Fremantle and Perth, Australia	2018
		East Village at Knutsford*	Near Fremantle and Perth, Australia	2019
		Kings Farm Close*	Longcot, Oxfordshire, UK	2018
		Springfield Meadows*	Southmoor, Oxfordshire, UK	2020
		5x4 project (single home)	Melbourne, Australia	2015
<i>Local governments and cities</i>	<i>Earlier endorsed programmes</i>	London Borough of Sutton*	UK	2009
		Middlesbrough*	UK	2011
		Brighton and Hove*	UK	2013
		Fremantle*	Australia	2015
	<i>One Planet Cities* (2018-onwards)</i>	Oxfordshire	United Kingdom	2019
		Saanich	Canada	~
		Elsinore	Denmark	~
		Durban	South Africa	~
		Tarusa	Russia	~
<i>Other sectors</i>	<i>Companies</i>	B&Q*	UK	2006
		Cundall*	UK	2012
	<i>Eco-tourism</i>	Singita Grumeti*	Tanzania	2012
		Villages Nature*	France	2013
	<i>Schools</i>	Credo High School*	SOMO Village, USA	2017

* Indicates programmes used as case studies.

The range of programmes illustrates the flexibility of the framework and its cross-sector applicability. One feature of this cross-sector applicability is that it enables clusters of users to arise within localities. In many cases, OPL programmes have arisen alongside each other, clustered in geographical locations, because organisations influence other organisations to adopt the framework. Table 5.2 in the following chapter presents an overview of some of the main geographical clusters of OPL users, which have been focused on for case studies. For example, it highlights many examples where new communities and local government programmes have arisen alongside each other. There are particularly active cultures of sustainability in Oxfordshire, UK; SOMO in California; and Fremantle, near Perth in Australia.

4.2.2. Commentary and analysis

When compared with instruments which have widespread take-up, why has OPL been less successful in achieving scale? One quote on the Zibi article highlights a reason for this, from an employee of Bioregional North America (Cornick, 2016):

“It’s not something a lot of developers do because it is so demanding,” Searle said.

This argues that the level of ambition required of OPL is a key reason for its limited take-up, and highlights tension faced by voluntary instruments regarding pragmatic legitimacy: there may be a trade-off between the extent of local sustainability outcomes, and the pragmatic feasibility of an instrument and its ability to scale at a systemic level. Highly ambitious instruments must have a high level of perceived normative legitimacy and attract more intrinsically motivated users, or alternatively/additionally must provide pragmatic *benefits* which compensate for higher resource requirements. Factors affecting the take-up of OPL are explored further in empirical chapters.

4.3. Public information and transparency

OPL is distinctive for its use of discretionary summary information. These provide a mark of excellence, similar to a certification or rating, but do so without the use of standardised criteria. Bioregional’s second party, external assessment is associated with the following terminology:

- **Endorsement:** this was the previous scheme that Bioregional had, which awarded special status to ambitious and high-quality plans which were expected to produce good outcomes, entitling programmes to use a heart-shaped logo.

- **Leadership recognition:** Bioregional have recently developed a leadership recognition scheme, to formally recognise exemplary programmes. It is similar though not identical to endorsement. For example, programmes now submit themselves for consideration and are expected to provide evidence. It is however similar in levels of ambition expected.
- **One Planet Living status:** this is the name given to partners of Bioregional using the OPL framework, e.g. One Planet Community, One Planet City, One Planet Company. Previously, it was synonymous with endorsement. Its meaning now is possibly somewhat different – programmes can have One Planet Living status without having leadership recognition (e.g., recent participants in the One Planet Cities programme). So, One Planet Living status is no longer synonymous with the highest level of recognition.

The transparency of OPL is provided by the detailed plans and progress reports that Bioregional’s partners are expected to publish. Hence, whilst the scheme does not rely on transparent assessment criteria, its decisions are open to scrutiny on a case-by-case basis.

4.3.1. Commentary and analysis

OPL provides an example of attempts to balance flexibility with public information, and can be used to examine the extent to which these can be combined successfully. The article on Zibi takes a special interest in the public information associated with OPL, and much of the commentary is critical. This first quote states the opinions of a local critic of Zibi (Cornick, 2016):

Skerrett said he questions whether Zibi’s One Planet label can be objectively evaluated. Developers are given ten years to meet all One Planet principles. Some of Zibi’s goals are measurable like the zero carbon goal of meeting 100 per cent of its energy needs through renewable power by 2020. Other goals like increased perceived happiness and increased organic food consumption — assessed through surveys — don’t have hard targets and are more subjective.

This quote critiques the lack of ‘objective’ criteria used with OPL, suggesting a presumption that the more easily verifiable criteria (associated with standardised instruments) are more legitimate. The comments are not necessarily promoting standardisation, however, since they also relate to the measurability of aims specified in context-specific plans, which sometimes take the form of qualitative goals than quantitative targets.

A further quote critiques the lack of ‘independent’ auditor, and includes comments made by a prominent scholar of certification schemes:

Critics of the One Planet system worry about the lack of independent auditors. Auld said when an organization like Bioregional is both endorsing and assessing a project, there are incentives to not be impartial in their evaluation as they have an interest in the development succeeding.

Again, this quote highlights an unfavourable comparison with standardised certification schemes, which tend to use third-party assessors. To counter this point, Bioregional staff highlight the use of an independent expert panel in scrutinising the plans which achieve One Planet Living status, although the exact role of this panel is not explained.

A final quote on the quality of summary information concerns the fact that it is awarded before implementation:

Someone who is considering buying a home or renting a place in this development, if they don't really understand that distinction, they could feel tricked.

This aspect of OPL is not related to its lack of standardisation. It would be possible to award discretionary recognition in two stages, or award it after implementation, as is the case with certification schemes and rating tools.

The article also critiques the regularity or reliability of reporting practices:

Skerrett pointed to Grow Community, a One Planet Community located on Bainbridge Island off the coast of Seattle. In its first annual verification report, 12 targets weren't tracked and two weren't measured. But in a separate annual review, the developers only highlighted its successes. “It's an unclear system of realizing its goals,” Skerrett said. “If this is going to be one of the most sustainable communities in the world, we need some ability to evaluate it.”

Alongside their plans, OPL's users are encouraged to publish progress reports. In this regard, OPL is different to construction rating tools which do not promote ex-post monitoring or reporting – and more like city and corporate reporting guidance and indicator sets. Reports and reviews can also be compared against the ambitions stated in plans, to check whether good progress has been made. The criticisms of OPL reports seem to be mainly concerned with a lack of consistency with plans. Bioregional expect its partners to engage with the relatively technical area of indicators and monitoring, and yet provide only

limited guidance on this (some suggested indicators have been included in the most recent guidance documentation, based on early research outputs). This could potentially reduce the consistency, frequency, or efficiency of reporting.

4.4. Conclusions

This chapter provided some necessary background context to further empirical chapters. OPL is an evolving instrument, but a common body of practices and processes can be identified. In addition to the general overview, this chapter analysed examples of commentary on OPL, highlighting topics for further investigation. At the programme level, this chapter reviewed OPL's evolving guidance, its planning, implementation, and review processes, well as underlying concepts, and the new digital platform. Commentary noted OPL's context-sensitive nature, but suggested a limited understanding of OPL's regenerative processes or benefits, as well as highlighting a need to examine the outcomes achieved by programmes. At the systemic level, the chapter discussed OPL's wider influence, before reviewing the programmes using OPL across different sectors and countries. OPL's challenging and ambitious nature was provided as an explanation for its limited take-up, raising the question of what other explanations could be provided. This chapter also reviewed OPL's approach to public information and transparency, and noted critiques of its One Planet Living status and its reporting practices such as the consistency or regularity of reporting. Overall, much of the commentary quoted in this chapter was based on the presumption of the preferability or legitimacy of standardised approaches. To avoid such presumptions, a more open-ended, interpretive approach is needed, not implicitly favouring standardisation, but being open to differing approaches and their possible strengths or limitations, having sensitivity to their underlying rationales.

5. Practice-oriented methodology

OPL's distinctive approach is not heavily documented relative to other instruments; only recently has guidance documentation been published that provides an insight into some of the more systems-based and regenerative perspectives underpinning it (Bioregional, 2018c). There is therefore a need to further open the 'black box' of OPL, and its underlying perspectives and processes, and its varied implementation in practice. This research project provided a unique opportunity to generate insights via a collaborative, practice-oriented process. This chapter first outlines the methodology and methods used, before moving on to a discussion of methodological issues, grounding the research in existing literature.

5.1. Background to research project

The basic elements of the research project were pre-agreed between Bioregional and staff at the University of Westminster: the development of an 'impact assessment methodology' applicable across multiple scales and within complex, dynamic contexts (the original project description is provided in appendix 2). However, it remained necessary to establish what this meant both within the context of Bioregional's activities and requirements, and the development of a theoretical stance compatible with doctoral research. When visiting Bioregional and talking to staff, it became apparent that one of the major, relevant ongoing projects they wished to have assistance with was the codification of the One Planet Living framework: developing guidance documentation, indicator sets and a new digital platform. In light of this, some terms requiring interpretation were those of 'methodology' and 'impact'. The focus of the research was broadened to focus on the OPL framework itself as a sustainability assessment methodology, and engage in efforts to develop it further.

The final step was the identification of the key theoretical interests: standardisation, systems thinking and regenerative sustainability, and legitimacy. The issue of standardisation was already highlighted by Joss *et al.* (2015) in the final report of the research project that gave rise to this one. The research project description highlights the issue of complex, dynamic systems – the basic challenge to standardisation – and this was also emphasised by a Bioregional co-founder during early discussions, as well as the risks of perverse outcomes due to standardisation. The project description also invites the researcher to consider 'strengths' and 'weaknesses' of assessment across contexts. After reading academic literature, the concept of legitimacy was identified as the basis of a suitable evaluative framework.

5.2. Overview of methodology, methods, and case studies

Over the course of the project, the researcher was embedded within Bioregional to varying degrees, engaging in practice work and participant observation, and combining this with more traditional methods such as interviews and document analysis. This research, therefore, took a mixed-methods approach, using multiple sources of information to build up an overall picture. Table 5.1. provides an overview of the methodology. It distinguishes between various groups of methods, and between two areas of research focus: OPL may be understood both by considering the framework in general (documentation, processes and underlying perspectives and rationales), and with reference to specific case studies, exploring the varied ways in which the framework has been applied in practice.

Table 5.1. Overview of methodology, methods, and relationship to case studies.

	Focus of research		
	Framework in general (Chapter 6)	Case studies (Chapter 7)	
Methods <i>Enquiry and observation</i>	<i>Practice work and participant observation</i>	Framework enhancements – indicators, guidance, digital platform	Providing programme assistance: only in-depth case studies
	<i>Interviews and structured methods</i>	Interviews (Bioregional and OPL users) Presentation discussion (Bioregional)	Interviews (Bioregional and OPL users): in-depth and mid-depth case studies
	<i>Document analysis</i>	General guidance documentation	Analysis of action plans and reviews: all case studies (in-depth, mid-depth and limited-depth)

Both general and case-specific areas of focus have been investigated via two broad groups of methods: enquiry and observation, and document analysis. The collaboration with Bioregional afforded a high level of access to insider perspectives and partnerships, investigated via the ‘enquiry and observation’ group of methods, which can further be split into two. First, the project involved extensive, collaborative practice work and participant observation, and hence can be described as ‘practice-oriented’. Whilst practice work produced new, useful outputs, these were not the subject of evaluation; the value to the research is based on insights into the *existing* framework and programmes. Second, this was complemented by more structured forms of enquiry, particularly interviews. In terms of legitimacy, the enquiry and observation methods were particularly helpful in

understanding programme level and systemic processes. These methods were applied to a small set of case studies. OPL's extensive programme documentation (its action plans and reviews) provided an opportunity for document analysis, which was performed on a much broader set of case studies. This provided the breadth to complement the depth, make use of the wealth of available documentation, and particularly enabled an understanding of programme outcomes, and public information and transparency.

Table 5.1. highlights the relationship between case studies and methods used, with methods further down the table being applied to a larger number of case studies. The research made use of three levels of case studies with varying depth (Elger, 2010). Two in-depth case studies made use of all the main methods: practice work and participant observation, multiple case-specific interviews (mostly with OPL users), and document analysis. Two further mid-depth case studies combined document analysis with a single case-specific (OPL user) interview. Limited-depth case studies, representing the bulk of case studies, were investigated through an analysis of documentation – action plans and reviews. Such a broad, cross-sectional approach is necessary for comparison across a range of projects.

5.2.1. Overview of case studies

A broad range of case studies was selected, to reflect the contexts and sectors in which OPL has been applied. One in-depth case study was selected for each of the most prevalent sectors of OPL: NW Bicester is a large new community, and Sutton was Bioregional's longest-running local government partner. Both provided well-established, current examples of programmes with rich case histories, close partnerships, opportunities to provide assistance and gain access, and staff who were currently or recently engaged with the programmes. Whilst NW Bicester was a well-funded programme, Sutton provided an example of a UK local government programme that was less well resourced, therefore enabling comparison between the two. At a later stage, two further 'mid-depth' case studies were added, investigated through case-specific interviews and document analysis. These were SOMO Village in the US and White Gum Valley in Australia, current or recent new communities exhibiting distinctive collaboration and engagement practices, and providing further examples of an important sector for OPL. Finally, a broad range of additional limited-depth case studies was added, investigated only through document analysis. These were selected to reflect both the breadth of contexts of OPL, as well as the clusters of programmes that had arisen in the UK, USA and Australia, to better understand the relationships between them and therefore the more collaborative, systems-based character of OPL. Case studies and clusters are listed in table 5.2 below.

Table 5.2. Overview of case studies by location cluster or group, where applicable.

Cluster/group	Organisation or community	Sector/type	Description	Action plan(s)
<i>Sutton, London (UK)</i>	BedZED (OPL progenitor)	New community	Residential/mixed neighbourhood	N/A
	London Borough of Sutton**	Local gvt./city	Local government and district-wide programme	2009
<i>Brighton (UK)</i>	One Brighton	New community	Residential/mixed apartment blocks	2006
	City of Brighton and Hove	Local gvt./city	Local government and city-wide programme	2013
<i>Oxfordshire (UK)</i>	Elmsbrook, NW Bicester**	New community	Residential neighbourhood on larger site (eco-town)	2013
	Kings Farm Close	New community	Small rural residential development	2018
	Oxfordshire	Local gvt./city	Part of One Planet Cities programme (see below)	2019
	Springfield Meadows	New community	Small rural residential development	2019
<i>SOMO Village, California (USA)</i>	SOMO Village*	New community	Retrofit and further development of large non-residential site	2007, 2017
	Credo High School	School	High school	2017
<i>Fremantle, near Perth (Australia)</i>	City of Fremantle	Local gvt./city	Local government and city-wide programme	2015
	White Gum Valley (WGV)*	New community	Residential/mixed neighbourhood, sold in unbuilt plots	2015
	Evermore	New community	Apartment block at White Gum Valley	2017
	East Village at Knutsford	New community	Residential development on larger site	2019
<i>One Planet Cities programmes</i>	Various cities/areas worldwide	Local gvt./city	Digitally enabled, area-wide, multi-stakeholder programmes in five locations worldwide	2018-
<i>Other</i>	Middlesbrough (UK)	Local gvt./city	Local government and city-wide programme	2011
	B&Q (UK)	Company	Large home improvement chain	2006
	Cundall (UK)	Company	Engineering consultancy	2012
	Singita Grumeti (Tanzania)	Eco-tourism	Conservation tourism	2012
	Villages Nature (France)	Eco-tourism	New eco-resort	2013

** Indicates in-depth case studies which included interviews and participant observation.

* Indicates mid-depth case studies which included interviews.

5.3. Enquiry and observation

The ‘enquiry and observation’ phase sought to generate a close professional-level familiarity with OPL, and an understanding of the perspectives and experiences underlying both the framework in general and in-depth case studies. The methods can be grouped into: (1) practice work and participant observation; and (2) interviews and structured methods. This section provides further detail on each.

5.3.1. Practice work and participant observation

During the first year of research, there were weekly visits to Bioregional’s head office, and ongoing engagement and assistance over the following two years. This involved practice work, meetings, discussions, and general embeddedness in the day-to-day events and culture of the organisation. During this period, notes were taken during meetings or discussions rather than making audio recordings, to make the manner of data collection less obtrusive (Iacono *et al.*, 2009). As well as yielding general observations, this work resulted in two kinds of outputs: general framework enhancements, and assistance with specific programmes/case studies. Practice work provided many benefits, creating embeddedness, familiarity, and depth of engagement without which the research insights could not have arisen. The methodology can be described as ‘practice-oriented’ rather than ‘practice-based’. Whilst outputs were produced, it was the existing framework and programmes, rather than the framework enhancements, which were the focus of evaluation. This is addressed below in a detailed discussion of methodological issues. The practice phase was partly ‘exploratory’, in some ways resembling an exploratory case study (Streb, 2010). Earlier practice work undertaken helped identify a range of issues and further develop the theoretical framework. According to Whyte (1991):

social scientists most successful in establishing such interdisciplinary partnerships view themselves initially as participant observers, showing respect for the work of practitioners and technical specialists, and seeking to learn from them. As the social scientist gains an understanding of the organizational culture and work systems, he or she will find ways of contributing that are appreciated by the technical specialists.

General framework enhancements

Contributing to the further enhancement of OPL was one of the original aims of the project. The enhancements contributed can be divided into two. One body of work was largely related to the development of indicators. This came about as, early on, Bioregional

requested indicator sets for two sectors (new communities, and cities/local governments). Indicators for new communities were largely incorporated into Bioregional's goals and guidance for 'communities and destinations' (Bioregional, 2016a), and many of the local government indicators were also incorporated into the guidance for 'cities and regions' (Bioregional, 2017b). The city indicators were informed by the work on Sutton described below. At a later stage, this work evolved into four more developed and complete documents, solely authored by the researcher, which produced more identifiable practice outputs. These included (1) outcomes and indicators for new communities; (2) supporting survey questions for new communities; (3) outcomes, indicators and conceptual guidance for cities and local governments, and (4) actions for cities and local governments. These have since been published by Bioregional (Gerhards, 2019d, 2019a, 2019c, 2019b). This work was important in engaging with the substantive details of sustainability assessment which forms the basis of many sustainability instruments, and providing a solid grounding for thinking about OPL on a more abstract level in the way described below. Researching indicator sets and instruments also provided greater familiarity with sustainability's general professional landscape.

Building on this foundation of indicators work, the second aspect of general framework enhancements was contributing to the development of the OnePlanet digital platform, which involved attempting to codify, organise and make explicit the structure of plans and information, with advice being provided on both earlier and later iterations of the platform. In particular, it involved participation in an intensive week-long design sprint. During this time, the researcher, through extensive discussion, gained an understanding of the holistic, collaborative systems thinking underpinning OPL. After this, the researcher produced a mock-up for a possible approach to the platform. These proposals and recommendations became foundational aspects of the platform's conceptual architecture, which were taken by a graphic designer and made into a more visual format. This evolved into ongoing engagement and paid work with the start-up company, work which has since been completed. This ongoing engagement with the second phase of the platform was hugely informative in understanding two legitimacy functions. First, at the programme level, it provided an understanding of the underlying holistic and collaborative systems thinking underpinning the platform, and how this relates to the structure and details of OPL. At the systemic level, it provided an insight into the issues faced when trying to scale sustainability instruments. discussions about the digital platform helped provide an understanding of the perceived barriers to take-up for the framework, or ways in which this could be improved.

Case-specific work

Programme specific practice work was carried out on the two in-depth case studies: the Sutton local government programme, and the NW Bicester development. The work was requested by Bioregional. For Sutton, this involved three pieces of work: (1) performance benchmarking using public data; (2) researching how its targets had changed as part of the oversight and accountability process; and (3) recommending future performance targets, using benchmarks where possible. For NW Bicester, advice was provided on surveys and calculating carbon footprints, based on earlier indicators work.

In both cases, the case-specific work informed the development of general indicator sets and provided a necessary insight into performance assessment in practice. Participant observation also provided crucial insights into OPL processes, and the nature of Bioregional's partnerships. Particularly in the case of Sutton, it provided access to meetings, discussions, site visits, documentation, and a public event, yielding unfiltered insights which would have been difficult to obtain via other methods. By assisting with the oversight and accountability process, it provided an insight into the challenge of overseeing complex and long-running programmes in a flexible way, as well as the importance of a structured yet also context-sensitive approach to monitoring and the challenge of achieving this balance.

5.3.2. Interviews and structured methods

Structured methods complemented the more exploratory methods described above. With the theoretical framework already having progressed, and a good level of understanding having been reached, structured enquiry provided an opportunity for clarification, depth, and the more rigorous gathering of evidence, primarily through interviews.

Interviews

Table 5.3 on the following page provides the coding system used for the interviews carried out, and the number of interviews for each interviewee.

Table 5.3. List of interviews and coding system.

	Coding for participants	Number of interviews
<i>Interviews with bioregional staff Bioregional co-founders</i>	Co-founder 1	1
	Co-founder 2	3
<i>Interviews with bioregional staff (including one former staff member)</i>	Bioregional 1	2
	Bioregional 2	2
	Bioregional 3	1
	Bioregional 4	1
	Bioregional 5	1
<i>Local government interviews – Sutton</i>	Sutton 1	1
	Sutton 2	1
<i>Developer interviews</i>	NW Bicester developer	1
	WGV developer	1
	SOMO Village developer	1

As can be seen, 11 interviews were with Bioregional staff and associates, and 5 interviews were with OPL users. These included in-depth and mid-depth case studies, complementing participant observation of in-depth case studies. The decision for how many interviews to conduct was based on the concept of ‘saturation’: it was felt, based on extensive participant observation, that the interviews and discussions conducted had obtained a sufficiently wide range of perspectives, as well as accounting for the varying experiences of framework users. This research project has made use of a broad base of empirical research, including participant observation of challenging and long-running programmes, practice work and extensive document analysis of a wide range of case studies. This included many days spent in offices, many meetings, and hours of general discussions. It is argued that the methods used have provided a good level of saturation and have provided insights that reflect not just the aspirations of Bioregional staff, but the experiences of OPL users.

Interviews especially yielded insights about programme level effectiveness, stakeholder participation, and OPL take-up. The interviews and discussions were transcribed and coded using the legitimacy framework. To varying degrees, interviews discussed both general issues relating to the framework as well as specific programmes. Examples of the questions asked are provided in table 5.4. Different questions were provided to different stakeholders. For example, more abstract questions about ‘legitimacy’ were generally reserved for

experienced Bioregional staff and associates. Other questions relate to the experiences of instrument users.

Table 5.4. Examples of interview questions used.

<i>Cross-cutting questions</i>	<i>General questions</i>	What are any strengths of the OPL framework?
		Could you tell me about any possible limitations of the OPL framework?
		Do you think there are any ways in which the framework could be improved?
		What is your perspective on the comparability of initiatives, for example through common indicators?
		Could you describe the thinking behind the digital platform?
		How would you say the OPL framework compares or differs to other certification schemes?
		Do you think there is any scope for standardisation of the OPL framework?
<i>OPL users</i>	<i>OPL users</i>	How was your action plan developed?
		What was your opinion of the common international targets?
		What kind of community engagement have you carried out?
		Did you use the framework for this?
<i>Programme level</i>	<i>General questions</i>	What is your opinion of the role of targets in a plan, and in the endorsement or leadership recognition process?
		Do you think there are any 'red lines' for endorsement?
		Do you think there are any 'red lines' for leadership recognition?
		Have there been any projects which were considered for endorsement and not endorsed?
		If so, what were the reasons?
		What kind of data checking takes place in the annual review process?
<i>OPL users</i>	<i>OPL users</i>	Has the framework changed the way you work?
		Has the partnership with Bioregional been helpful?
		What is the opinion of your colleagues about the framework?
		How is responsibility for delivering the plan assigned within your organisation?
		Did Bioregional ever threaten to remove endorsement?
		Were other stakeholders involved or consulted when the action plan was developed?

Table 5.4. (Continued)

<i>Systemic level</i>	<i>General questions</i>	Why do people use the framework? What are the sources of legitimacy for the OPL framework? (If prompting needed, offer credibility as an approximate synonym). What is the role of trust in the OPL framework? How has the experience of using the OPL framework compared to your experience of using rating tools? Has endorsement helped people win planning permission?
	<i>OPL users</i>	How did you come to adopt the framework? Have any documents or tools which have been particularly helpful? Was there any way that Bioregional could have made monitoring easier? Has endorsement had any benefits for you? Are there any benefits or risks of publishing reviews publicly?
<i>Public information and transparency</i>	<i>General questions</i>	What is the meaning of ‘endorsement’? What is the meaning of ‘Leadership Recognition’? What role does transparency play in the OPL framework?

Other methods

There was also limited use of other methods. A presentation about the research was given, and the resulting discussion with a group of Bioregional’s staff was recorded, with valuable feedback provided on the theoretical framework, which resulted in it becoming more open-ended to account for the various voices within the organisation. A questionnaire was given to a Sutton staff member, asking about the likelihood that various actions would have occurred without the One Planet Living programme (assessing ‘additionality’). This can be regarded as part of the interview.

5.4. Document analysis

Although OPL itself is not heavily documented, aside from its non-prescriptive guidance documentation, its programmes are well documented relative to other instruments, since Bioregional’s partners are expected to publish plans and reviews. This provides an opportunity to explore the aspirations and achievements of a wide range of case studies (programme effectiveness), and at the same time to evaluate the quality of public information and transparency. Document analysis was therefore carried out for all case studies, for documents available before mid-2020.

The effectiveness of OPL programmes was explored by analysing certain practices and outcomes achieved by case studies. Due to the broad range of sustainability principles

within OPL, a focus was placed upon zero carbon energy for buildings and the related issue of sustainable materials. OPL's zero carbon guideline is an especially challenging aspect of the framework, both relative to other OPL principles and other sustainability instruments. It is also more easily comparable across programmes than other principles, and of central importance to sustainability discourse more generally. Collaboration and engagement activities were also examined through document analysis (supplementing interviews) since this is a distinctive feature of the OPL approach relevant to its more regenerative or systems-based approach. The links between collaboration processes, and outputs and outcomes achieved, were identified where possible. Examining whether good quality reports are published somewhat regularly provides an insight into the nature of Bioregional's accountability processes and the strength of its oversight and guidance, which rely on the production of such reports.

Plans and reviews were evaluated according to the transparency they provide, and the quality of information available, through considerations such as: whether plans or reports are available; whether they provide a good overview across OPL principles; whether reports are published regularly; whether planned activities and outcomes are monitored; the comparability of select indicators; and whether there could be scope for improving these areas. It was not presumed that particularly extensive or burdensome monitoring should be necessary to constitute good monitoring. Plans and reports can also be used to assess the meaningfulness or informativeness of One Planet Living status. This links to the issue of programme effectiveness. One Planet Living status is awarded before implementation, so if the achievements of programmes *broadly* correspond to their stated aims, and those achievements are significant, then One Planet Living status can be regarded as informative, even when considering the aspirational and flexible nature of OPL.

5.5. Discussion of methodological issues

This section aims to situate the unusual methodology adopted in this research within wider literature and existing methodologies and paradigms, drawing links to inform the present study. Two particularly relevant strands of existing research were identified: those related to practice (with a focus on 'practice-based' research), and literature related to the 'interpretive' paradigm, which is used to inform the legitimacy approach. Further issues arising from the practice-orientation of the research, related to researcher positionality, control and independence, are also discussed.

5.5.1. *Practice-oriented methodology*

Literature on practice-based research has explored the implications of linking research to action or design. As noted above, a key difference between this research and practice-based research is that the practice outputs were not the focus of evaluation; it can therefore be described as ‘practice-oriented’. This and other similarities or differences are compared below, and the implications discussed.

5.2.1. *Summary of characteristics of practice-based approaches*

Two established methodologies for practice-based research are action research (AR) and design-based research (DBR), also known as ‘design experiments’. AR has been categorised as ‘practical’, e.g. being used in an educational setting; or ‘emancipatory’, being used in explicitly political contexts such as radical psychiatry networks (Kagan *et al.*, 2008). DBR is also often used in educational contexts (Anderson and Shattuck, 2012), as well as in the design of information systems (Hevner *et al.*, 2010), and it has also been used in the development of policy (Stoker and John, 2009).

A basic difference, as the names imply, is that the focus of AR is action, and the focus of DBR is design. DBR helps develop theories about both *process* and *means* of solving a problem, or achieving a relevant goal, through the use of an ‘artefact’: e.g. a practice, policy, programme, method, construct or model (Cobb *et al.*, 2003; Stoker and John, 2009; Hevner *et al.*, 2010). Action research focuses on producing change in the world through action (Susman and Evered, 1978).

Both emphasise the production of knowledge that is *useful* or which *contributes to human flourishing*. For design research, this has been described as knowledge not merely being ‘interesting’ but also being a useful basis for action in some way (Goldkuhl, 2012). In action research, contributing to human flourishing can also have political or emancipatory connotations (Heron and Reason, 1997).

Both have an *interventionist methodology*, which involves acting on or engineering situations and evaluating the results of this action or intervention (Cobb *et al.*, 2003). In action research, this is known as the ‘principle of change through action’ (Davison *et al.*, 2004). Generating action through knowledge has also been called ‘methodological pragmatism’ (Goldkuhl, 2012).

Their methodology is *flexible* in various ways. They typically incorporate mixed methods and triangulation and are mostly non-replicable (Anderson and Shattuck, 2012). Barab and Squire (2004) identify the following features: both AR and DBR take place in a real-world

learning or social environment; the variables that determine outcomes are complex, multiple, interacting and often interdependent; not all variables are static or known in advance, and some emerge during the study; both approaches are highly flexible, with procedures evolving throughout the study; and both can result in the development of a practical design profile (Barab and Squire, 2004; Vasalou *et al.*, 2015).

Theory plays an important role in both: theories about the processes and ways in which changes occur. For design research, theory is ‘humble’ and ‘intermediate’ in scope, being relevant to both the design and the specific locality where it is being implemented, whilst still having broader relevance (Cobb *et al.*, 2003). In action research, the role is known as the ‘principle of theory’ (Davison *et al.*, 2004). The role that theory plays in this research project is explored further below.

Both occur through a *cyclical* or *iterative* process which can occur over several phases. In action research, this is known as the ‘cyclical process model’, consisting of stages of diagnosing, action planning, action taking, evaluating, and specifying learning (Davison *et al.*, 2004). Design research occurs iteratively, through design, testing, and evaluation; theories may be generated, tested, or refuted (Cobb *et al.*, 2003).

Action research cyclical process model	Design-based research in information systems	Design-based research in educational technology	Possible combined AR and DBR cycles
Diagnosis	Problem analysis	Problem analysis (researchers and practitioners)	Problem analysis
Action planning	Building (incl. demonstration)	Design / building	Design / planning
Action taking	Evaluation	Cycles of testing and refinement	Implementation
Evaluation		Reflection to produce ‘design principles’	Evaluation
Reflection / learning			Reflection / learning

Adapted from Susman and Evered (1978); Davison *et al.*, (2004)

Adapted from Goldkuhl, (2013)

Adapted from Reeves (2006; Herrington *et al.* (2007)

Figure 5.1. Comparisons of iterative or cyclical processes for AR and DBR.

Both emphasise the role of *reflection* in developing theories and understanding. In action research, this is known as the ‘principle of learning through reflection’ (Davison *et al.*, 2004). In design research, there is a ‘prospective’ side and a ‘reflective’ side to theorising (Cobb *et al.*, 2003).

According to Iivari and Venable (2009) there are three situations where there is no overlap between an AR endeavour and a DR endeavour: 1) an AR case without any technical design, 2) a DR case with pure technical problem solving and 3) a DR case without any local practice intervention.

5.2.2. Comparison to other practice-oriented methodologies

This research project shares several characteristics with practice-based approaches. It is hoped that has resulted in the production of useful knowledge; that the following outputs of the projects will be useful: (1) a theoretical framework that can be applied to a range of instruments; (2) lesson-learning from OPL and recommendations for further enhancements; and (3) practice-based research outputs. This focus on useful knowledge is not isolated to AR and DBR, but also a feature of other forms of applied research, as well as the constructivist paradigm of Lincoln and Guba (2000). The methodology in this project has also been a somewhat evolutionary and flexible mixed-methods approach, responding to circumstances and balancing the academic requirements of the project with the needs of Bioregional. Theory also plays an important role, although in a somewhat different way to much AR and DBR (differences are explored below).

A notable difference between this project and most AR or DBR projects is the role that action plays in *generating* knowledge. In this respect, it is closer to ‘applied research’, which aims to produce applicable knowledge that can contribute to action, but *after* the research has been completed (Ospina *et al.*, 2015). Some of the practice outputs have already been put to use by Bioregional and their partners, however, testing the outcomes of these research outputs has not been the focus of the research project. The focus of analysis and evaluation was the existing framework and its programmes understood through practice, discussion, participant observation, interviews, and document analysis. The knowledge generated was therefore generated through and linked to action, but not action carried out as part of this research project.

Related to this point, the strands of research occurred in *parallel*. Rather than first developing a theoretical framework, then evaluating the existing framework, then developing a new approach, implementing this and evaluating it, the approach was to become straight away embedded within the practice context, becoming involved in the

improvement of the framework. Out of this practice experience, a deeper understanding of the existing approach and perspectives of stakeholders were developed, alongside a theoretical framework for understanding these. Thus, the following three components to the research can be thought of as parallel rather than sequential:

- Analysis and evaluation of existing framework: the analysis of documentation and stakeholder perspectives through the lens of legitimacy, helping to understand, draw lessons from and evaluate the existing framework.
- Enhancements to the framework through practice: collaborative, exploratory practice work and efforts to ‘enhance’ framework. This includes the development of indicators sets, documentation and a digital tool.
- Theory: the development of an interpretive legitimacy framework compatible with a range of instruments, including OPL.

Ideal-typical AR or DBR projects take what may be described as a *sequential* approach. A hypothetical, iterative practice-based approach to comparing two designs is illustrated by figure 5.2.

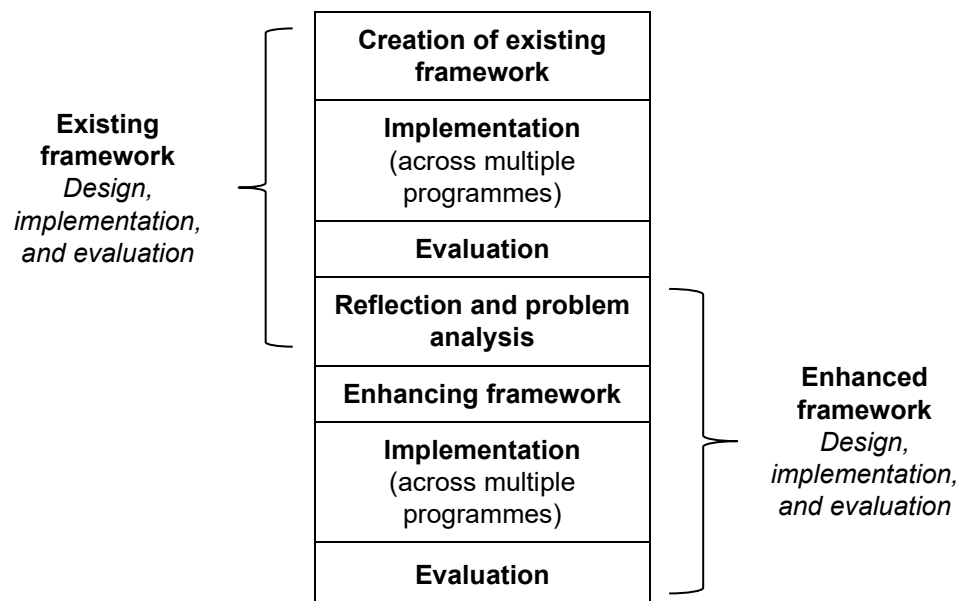


Figure 5.2. A hypothetical iterative approach to comparing multiple framework designs.

Whilst perhaps different to ideal-typical models of AR and DBR, Kagan *et al.* (2008) write of AR that a parallel rather than sequential approach is not that unusual: “Different models of action research involve, to greater or lesser degrees, the steps of planning, implementing, reflecting, evaluating and more planning, etc. But the linear (or even cyclical) model

implied here is an abstraction. Just as the Japanese agronomist Masanobu Fukuoka devised a system of ‘simultaneous crop succession’, so the action researcher will often be simultaneously planning, implementing, reflecting, evaluating and more besides.” Figure 5.3 illustrates the parallel approach taken in this project:

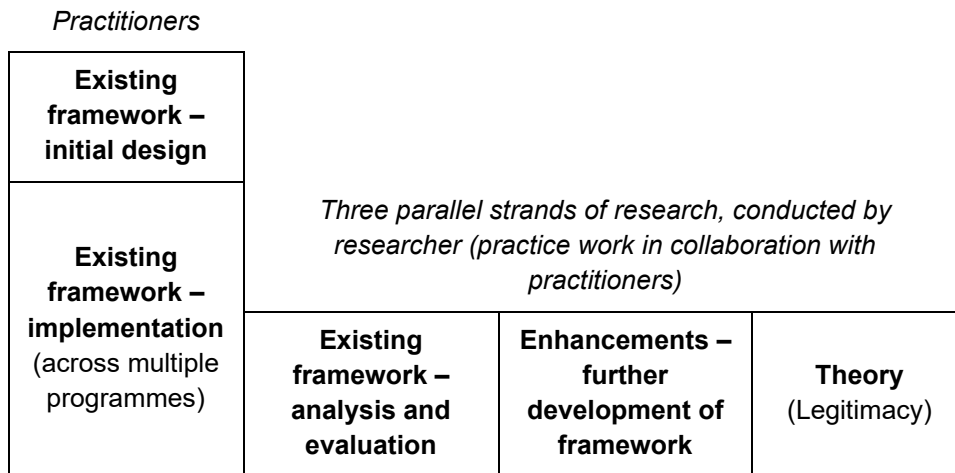


Figure 5.3. A ‘parallel’ approach to framework design and evaluation.

Why take a parallel approach focusing on the analysis and evaluation of the existing OPL framework and its programmes?

- The framework’s programmes are large-scale, highly complex, and occur over long timeframes. There was little ability to control them as part of this research project, and this research did not coincide with the start of an OPL project.
- The framework is well established and Bioregional’s staff and their partners have a wealth of experience and expertise. This means that there was a body of knowledge about existing applications of the framework that could be drawn on for analysis and evaluation. It also makes it more difficult for a novice researcher to arrive and make changes to the tool without being embedded within the organisation.
- The framework is not a typical design project: it can be thought of as meta-design and meta-evaluation. The framework itself is a *generalised* way of planning context-specific interventions. To be tested it needs to be applied across multiple contexts. Again, this makes it more appropriate to compare existing initiatives, for which multiple applications exist.
- Practice work provided a slightly different role in this project: it was not the focus of evaluation. However, it provided an essential opportunity to gain familiarity

with a complex subject area and to contribute to practice, as well as exploring the potential for further codification.

- The research had a strong theoretical and comparative component, which has co-evolved in parallel along with participant observation, interviews, and practice.

5.3.1. The role of theory: legitimacy as meta-evaluation

Theory is a central component of both AR and DBR methodologies (Cobb *et al.*, 2003; Davison *et al.*, 2004). What are the implications of this for the kinds of theory generated? Cobb *et al.* (2003), on the topic of DBR, describe such theory as ‘humble’, which must be useful in the locality in which it is being implemented (as well as drawing some transferable lessons generally). It may also need to be communicable and useful to both professional and academic audiences. Still, although ‘useful’ theory must be relevant to design or action, that does not mean it cannot also deal with issues of central theoretical importance. Indeed, according to Barab and Squire (2004) on design-based research: “the researcher [must] ... generate evidence-based claims about learning that address contemporary theoretical issues and further the theoretical knowledge of the field.” Nevertheless, the theory must not only be of academic interest but some practical use; this has implications for the kinds of topics that theory can address. According to Barab and Squire (*ibid.*, 6), “design-based research suggests a pragmatic philosophical underpinning, one in which the value of a theory lies in its ability to produce changes in the world.”

Using intervention to test theory places it ‘in harm’s way’; researchers must provide “credible evidence for local gains”, seeing how a theory performs and revising it (Barab and Squire 2004: 6). Davison *et al.* (2004) write that Canonical Action Research “theory commonly takes the following form: in situation S that has salient features F, G and H, the outcomes X, Y and Z are expected from actions A, B and C. Changes to theory typically take place in the reflection stage of the CAR process and lead the project into an additional process cycle (p. 74).” They state that for the principle of theory to be satisfied in CAR, theory must: (a) guide the project’s activities; (b) deal with issues relevant to the researcher’s peers, (c) be used to derive the causes of the observed problem; (d) guide the planned intervention; and (e) guide evaluation.

Regarding AR, Kagan *et al.* (2008) refer explicitly to the ‘theory of change’ in policy evaluation, identifying one of the steps involved in action research as being to “Develop or modify an existing theory of change and its impact, as well as a new understanding of processes of change.” Programme evaluation consists of an ex-ante, planning aspect and an ex-post, evaluation aspect. Plans are developed and assessed using ‘theories of change’,

using ‘logic models’ that hypothesise outcomes along a ‘results chain’, mapping out inputs, activities, outputs, outcomes and final outcomes or impacts. These models and theories can then be evaluated using a variety of quantitative or qualitative methods (GEF Evaluation Office, 2009; Gertler *et al.*, 2011). In discussing design-based research, Stoker and John (2009) explain that “Although they do not use the language of the recent policy evaluation literature, or refer to a ‘theory of change’ for assessing policy... in practice they test theories about how change takes place.”

Rather than being a typical design project, this research could be described as ‘meta-design’ and ‘meta-evaluation’. AR and DBR focus on designing a specific artefact, policy, programme, or initiative. This local design, or the theory learnt from the research may be, to an extent, transferable across other contexts, although local conditions vary somewhat. Designing a sustainability instrument, on the other hand, involves designing a generalised framework for planning and evaluating complex initiatives that necessarily vary across local contexts. This fact can be illustrated by comparing AR and DBR cycles, the policy cycle, and the multi-stage process that OPL uses. They are all processes for planning and evaluating local designs, programmes, policies, or initiatives.

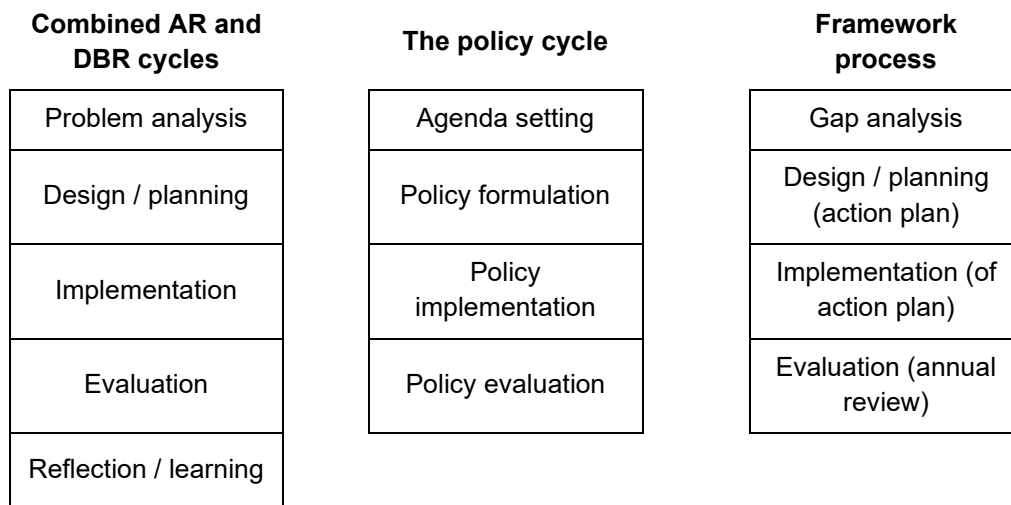


Figure 5.4. A comparison of practice-based research cycles, the policy cycle and the OPL framework process. The policy cycle is adapted from Barkenbus (1998).

So, rather than being like other design-based research projects, developing sustainability instruments would be analogous to developing a ‘framework’ for design-based research projects across multiple contexts, within a specific field, for example, education programmes or information systems. In this respect, it could be thought of as ‘meta-design’. Likewise, the evaluation undertaken in this research project can be thought of as ‘meta-evaluation’. AR, DBR, the policy cycle and the framework process all contain their own

monitoring of local outcomes: evaluating the success of local initiatives or projects in meeting their objectives. The evaluation approach applied to a governance instrument such as OPL, therefore, must evaluate its success in supporting local planning, monitoring and evaluation across multiple contexts, and linking this to public information. Legitimacy forms the basis of such ‘meta-evaluation’, and public information helps such an evaluation to be made. Indeed, the legitimacy of OPL depends on both local outcomes, and the ability of people to evaluate local outcomes via public information.

What are the implications for the methodology? The major implications are as follows: firstly, that to be evaluated (e.g., to evaluate comparability), any framework needs to be implemented across multiple contexts. Insofar as there is a design aspect to this research, new designs can be tested by developing them retrospectively to be compatible with existing programmes. New outputs need to ‘fit’, accommodate, or be sensitive to existing initiatives and contexts.

5.5.2. Positionality, control and independence

The collaborative, practice-oriented nature of the relationship raises various issues about the relationship between the researcher and the organisation and instrument being researched. There is a question of what ‘positionality’ the researcher adopts, which can be conceptualised along a continuum of insider to outsider. There are also questions about who has control over which aspects of research, and who is given a voice in the findings. Collaborative work may also give concerns over independence and bias.

Positionality

Researchers engaging in applied or practice-based research can take a variety of stances towards the research and other participants. Herr and Anderson (2005) term this ‘researcher positionality’, describing a range of positions from an insider researching their own practice, to an outsider who studies the practice of insiders without participating, shown in table 5.5 on the following page.

Table 5.5. Positionalities from insider to outsider. Adapted from Herr and Anderson (2005).

Insider	1. <i>An insider / researcher studying their own practice</i>	Researcher studying their own practice alone.
	2. <i>Insiders in collaboration with other insiders</i>	Researcher studying their own practice in collaboration with other insiders.
	3. <i>Insiders in collaboration with outsiders</i>	An insider invites an outsider to assist, with, collaborate with or participate in work and research (less common).
	4. <i>Insider/outsider teams working in reciprocal collaboration</i>	A full, equal partnership between researchers and practitioners (the 'ideal' of action research).
	5. <i>Outsiders in collaboration with insiders</i>	An outsider collaborates with, assists with, or participates in the practice of insiders.
Outsider	6. <i>An outsider working with insiders</i>	An outsider studies the practice of insiders without participating.

In the field of education, according to Anderson and Shattuck (2012), the educators are often also researchers and designers (but sometimes of questionable expertise) and are assisted by experienced researchers-designers. This can be described as the third positionality in the table above. In DBR a complementary collaborative partnership between qualified educators and researchers-designers is common – this is closer to the fourth positionality.

This project was conceived as a collaborative project, but its nature was somewhat loosely defined. This has provided the freedom, throughout the research, to move between different positionalities – something Ospina *et al.* (2015) observe regarding their own work. The positionality has shifted between the fourth, fifth and sixth positions. For interviews, for example, the sixth position was adopted. Much of the practice work occurred within the fifth positionality.

Control and voice

Two final useful concepts relevant to practice work are highlighted by Lincoln and Guba (2000) and Ospina *et al.* (2015). Both deal with the relationship between knowledge and power. The issue of 'control' addresses who has the final say over the research – who controls the process. The issue of 'voice' addresses who has input into the final product of research, whose 'voice' is represented; for example, allowing research participants to have a say in the research questions and objectives, or allowing them to speak for themselves. A

range of issues related to control and voice can be identified throughout the practice-based research cycle. Control or voice can relate to: theoretical research questions and objectives; the theoretical framework; the focus of practice work – what policies, designs, or forms of action are planned; the implementation of those plans or designs; the methodology/methods by which these are evaluated; the learning and reflections about actions or designs, and their write-up into academic or other documents.

Practice-based work is in its nature collaborative, and this raises issues of power and democracy from both sides. This research project involves collaboration between professional and academic organisations. The academic organisation is usually providing the research funding and has greater insights into the requirements of producing research for an academic audience, and the doctoral researcher must have ultimate control over their academic output. Meanwhile, the professional organisation(s) involved have ultimate control over the practice activities that the researcher engages in. This naturally means that the project must straddle two audiences, two sets of related practice and academic activities, necessarily having a greater degree of control and voice in the theory, but allowing the collaborating organisation to share control over the practice activities.

Whilst an academic may be independent in the way they ultimately write up their findings, practitioners have an interest in the way their work is presented to external audiences. The ‘voice’ that practitioners are given in the research is an important consideration. In allowing the academic researcher into their organisation, a degree of trust is given, and practitioners are providing privileged access to their ways of thinking and working. The use of an open-ended interpretive framework in this research project was a way to allow Bioregional’s stakeholders to have a voice in the final output. Understanding these perspectives and trying to represent them fairly takes time, observation, discussion, clarification, and a degree of good faith.

Independence and bias

The close relationship between the researcher and Bioregional could raise concerns of bias. However, the researcher in this project was not evaluating their own work, they were evaluating existing programmes. The positionality maintained was, despite a close working relationship, still that of an outsider, in relation to OPL and Bioregional’s partnerships. Funding was provided externally. Finally, it is argued, that a shared commitment to sustainability can motivate critique since both the researcher and Bioregional are concerned with how to achieve sustainability most effectively.

5.5.3. *The interpretive paradigm*

This research draws on the interpretive paradigm to inform its approach to ‘legitimacy’ for the purposes of evaluation. The legitimacy functions have been designed to enable a broad common ground compatible with the aims of research participants and practitioners, perspectives within existing academic research, and the norms of governance discourse, whilst comparing across varied instruments and approaches. Some existing research on the legitimacy of certification schemes has used more specific criteria that apply to a more limited range of instruments (Cadman, 2011; Mena and Palazzo, 2012). This research, however, did not presume the superiority of specific practices in achieving legitimacy, such as the development and enforcement of standardised criteria. Instead, it sought to be sensitive to, and understand and interpret the underlying intentions of research participants, to avoid imposing inconsistent meanings, and arrives at interpretations through a cyclical and dialectic process, through extensive and ongoing discussion. Recommendations for enhancements (made in chapter 6) are intended to align with the ethos of OPL, whilst addressing any limitations identified.

The overall approach is described as ‘interpretivist’ as it focuses on interpretation in a broad sense (Goldkuhl, 2012). Interpretivism places an emphasis on ‘interpreting’ context-specific meanings and perspectives rather than arriving at some objective, scientific, universal proof. To understand the social processes being studied, one must ‘interpret’ them; to construct a ‘reading’ of a particular situation (Schwandt, 1994). However, the anthropologist Clifford Geertz clarified that rather than trying to get some kind of empathic identification with the experiences, beliefs and intentions of research subjects, this is more akin to looking over their shoulder and trying to understand what “to figure out what the devil they think they are up to” (Geertz, 1983; Schwandt, 1994). The intentions and beliefs of the research participants, within their context, are still considered to be important.

Two further traditions are related to interpretivism in its broad sense; although some authors make distinctions between them, they are regarded as complementary for this thesis. As Schwandt (1994) describes, if the ‘foil’ of interpretivism is the positivist scientific paradigm based on discovering objective truths through research, then the ‘foil’ of constructivism or *constructionism* is objectivist epistemology – the idea that any such objective truth exists. Instead, constructivism emphasises that knowledge is constructed and ‘truth’ is relative within some system of such constructs. According to Schwandt (ibid.), constructionism is largely agnostic on issues of ontology – the nature of reality or being – emphasising that our capacity to conceive or reality is always mediated through our mental constructs.

Hermeneutics generally can be described as a set of theoretical perspectives associated with the interpretations of texts. *Interpretation* is therefore fundamental to hermeneutics. However, hermeneutics is not necessarily limited simply to written texts; its methods of ‘reading’ can be applied to interview texts, field notes, or even organisations (Butler, 1998). Butler (ibid.) outlines a methodology for the design of information systems that falls within the rubric of ‘hermeneutic phenomenology’, in the tradition of Gadamer and Heidegger. His approach to interpretation emphasises the importance of developing and constructing increasingly sophisticated and consistent interpretations and understandings through a dialectical process that situates an understanding firmly within its context. He describes a cyclical, dialectical process between the ‘whole’ and its ‘parts’, where the understanding of each informs the other. This is drawn on further below.

Validity criteria/authenticity principles

Positivist criteria for trustworthy knowledge include internal and external validity, reliability, and objectivity (Guba and Lincoln, 2001). But what constitutes valid, trustworthy, high quality or authentic knowledge for interpretive processes, if not ‘objective’ truth? The constructivist approach to ‘fourth generation evaluation’ outlined by Guba and Lincoln (2001) aims to elicit the opinions of a wide range of stakeholders, developing constructs that are as consistent as possible with a wide range of perspectives, trying to obtain consensus, and then identifying any unresolved issues and trying to reach further consensus on ‘incomplete constructs’. Through this cyclical process, increasingly sophisticated constructs are developed, whilst noting that “constructivist evaluations are never completed”. Guba and Lincoln (ibid.) highlight five ‘authenticity’ criteria: (1) *fairness*, the extent to which all competing perspectives have been taken into account; (2) *ontological authenticity*, the extent to which constructions have become more informed and sophisticated; (3) *educative authenticity*, the extent to which individuals have become more understanding of competing perspectives.

Madison (1988) provides principles for the hermeneutical, interpretive process adapted from Butler (1998: 292) (hermeneutics is discussed below). These are: (1) *coherence*, with interpretations that are unified and not contradictory; (2) *comprehensiveness*, taking a holistic perspective that does not omit relevant thoughts; (3) *penetration*, so that interpretations bring out “a guiding and underlying intention” to actions and statements; (4) *thoroughness*, attempting to deal with all questions posed; (5) *appropriateness*, dealing with questions that the text or phenomenon itself raises; (6) *contextuality*, so that thoughts must not be read without due regard to context; (7), *agreement*, so that interpretations should usually not say the ‘real’ meaning of something quite other than what is actually

said, and should usually be in agreement with traditional interpretations; (8) *suggestiveness*, so that a good understanding will suggest questions for further research; (9) *potential*, so that an interpretation, its development and implications “unfold themselves harmoniously”.

The interpretive paradigm for this research

The theoretical framework for this thesis is being described as *interpretive*, and simultaneously compatible with the pragmatic paradigm: focused on *useful* knowledge that is based on the *interpretation* of the views and experiences of practitioners – this is explained further below under ‘practice-oriented methodology’. In this respect, it combines two traditions, pragmatism and interpretivism, that are sometimes regarded as distinct (Goldkuhl, 2012), with interpretivism focusing on ‘interesting’ knowledge and pragmatism on ‘useful’ knowledge. However, this version of interpretivism does also not seem to correspond to the closely related ‘constructivist paradigm’ of Guba and Lincoln (Guba and Lincoln, 1994, 2001; Lincoln and Guba, 2000), which judges the constructs developed according to the extent to which action is stimulated and facilitated and to which individuals are empowered to take this action.

The research project can be positioned as a blend of interpretive, pragmatic and constructivist paradigms. Whilst some authors seek to draw distinctions between these (Schwandt, 2000), other authors argue that they can be blended and are largely commensurable (Lincoln and Guba, 2000). The paradigm is characterised by the following features:

- Constructivism’s ability to conduct applied research and generate useful knowledge without necessarily requiring testing and intervention during the research project (Guba and Lincoln, 2001).
- Interpretivism’s and constructivism emphasis on the importance of being sensitive to context, and showing regard for the views of research participants, avoiding interpretations that are inconsistent with their perspectives (Schwandt, 1994; Guba and Lincoln, 2001).
- Interpretivism and constructivism’s focus on interpretation and the creation of constructs, rather than aiming to achieve some objective truth.
- Interpretivism and constructivism’s emphasis on interpretive rigour and extended engagement, aiming to develop a deep and holistic interpretation of various stakeholder perspectives, which has achieved a level of rigour and sophistication

due to the length and depth of engagement during the research project (Guba and Lincoln, 2001).

- Social constructionism's emphasis on the importance of shared language, culture and discourses (Crotty, 1998); in this research project, reference is made to wider governance discourses in both academic and practice worlds, of perceived 'conventional' practices in management and standardisation, and the themes such as transparency and accountability which saturate the fields in which sustainability instruments operate.
- Hermeneutic's focus on a dialectic process, a dialogue between the 'parts' and the 'whole' of a text (or transcript, or observation), with each informing the other in a process where the overall theory and interpretation of the 'whole' is compatible with all of the details of what is being studied (Butler, 1998). This is discussed below.

The strands of research co-evolved to allow for a *dialectic, hermeneutic* methodology that allowed different aspects of the research to feed into each other, with each aspect deepening and reinforcing the other. This hermeneutic methodology is *dialectical*, involving ongoing 'dialogues' of various forms that help evolve the interpretations/constructions that are developed through the research. Dialogue here is meant in the sense of 'Socratic' dialogue, a back-and-forth exchange to greater understanding, with "the logical structure of openness" (Butler, 1998). This dialogue occurs in the following ways:

- Between researcher and participants: during conversations, presentations, meetings, and interviews.
- Between the 'parts' and the 'whole' of an instrument: between a detailed understanding of the framework's substantive constituent parts (such as documentation, digital tools, indicators, targets, data sources, planning, and review processes, and so on) and a holistic picture of the 'whole', interpreting using legitimacy concepts such as usefulness, effectiveness, and so on.
- Between the theory and observation: theory around legitimacy, flexibility and standardisation has been developed to be compatible with the instrument being studied; it has pointed to areas of inquiry, helping gain a deeper understanding of the existing framework and its initiatives, with development occurring in a co-evolutionary manner.
- Between the framework and its programmes: by working on developing the framework in a practice context, the researcher develops an understanding of the

existing framework and its initiatives, and how these experiences feed back into the development of the framework.

- Between legitimacy and sustainability instruments: conceptualising how instruments use different strategies to achieve legitimacy, and comparing these approaches.

Should the prejudgments of the researcher be ‘bracketed out’, or should they be embraced as the starting point for a dialectical process? In conservative hermeneutics, preconceptions are initially identified and bracketed out to better arrive at the original intended meaning of the author. Likewise, such ‘bracketing’ out of the experiences of the researcher is also carried out in transcendental phenomenology to help them gain a ‘fresh’ perspective of the topic being researched (Creswell, 2007). In philosophical hermeneutics, on the other hand, preconceptions are regarded as necessary for engaging with a text. They form the starting point for a dialectical process (Freeman, 2008). This does not preclude, however, some self-awareness regarding preconceptions. In this research project, comparisons and preconceptions of the kind identified in chapter 1 (e.g. Cornick, 2016) were an important starting point for further discussions – understanding Bioregional’s approach and why it differs from the more standardised or formalised approaches taken with other sustainability instruments.

5.6. Conclusions

This chapter outlined the methodology used to open the ‘black box’ of OPL, seeking to gain an understanding of both OPL in general, and its varied body of case studies. Over the course of the project, the researcher was embedded within Bioregional to varying degrees, engaging in practice work and participant observation. Practice work involved both general framework enhancements and assistance with specific OPL programmes, which became in-depth case studies. These were combined with more traditional methods of interviews and document analysis. Interviews were conducted with Bioregional staff and OPL users for a more limited set of case studies: the two in-depth case studies and two further case studies. This was complemented by document analysis, primarily of OPL action plans and reviews, applied to a much broader range of case studies. The research, therefore, took a mixed-methods approach, using multiple sources of information to build up an overall picture.

This methodology was also positioned within wider academic literature, being situated between two methodological stances: practice-oriented and interpretive. Although collaborative practice work was an important aspect of the methodology, the practice

outputs were not themselves the focus of evaluation, in contrast to *practice-based* research. Practice work was, however, invaluable in understanding and analysing Bioregional's existing approach and the wealth of knowledge, experience and case studies that were available. This research draws on the interpretive paradigm to inform its approach to 'legitimacy' for the purposes of evaluation. The legitimacy functions have been designed to enable a broad common ground compatible with the aims of research participants and practitioners, perspectives within existing academic research, and the norms of governance discourse, whilst comparing across varied instruments and approaches. Unlike some existing literature on legitimacy, this research does not presume the superiority of specific design characteristics, such as the development and enforcement of standardised criteria. Instead, it sought to be sensitive to, and understand and interpret the underlying intentions of research participants, to avoid imposing inconsistent meanings, and arrive at interpretations through a cyclical and dialectic process, including extensive discussion. Recommendations that are made (discussed in chapter 6) are intended to align with the ethos of OPL whilst making enhancements that address any limitations identified.

6. Perspectives on the strengths and limitations of OPL

Chapter 4 introduced the more explicit and formalised aspects of OPL, such as its action planning and review processes, and guidance documentation. Although it highlighted sections of recent OPL guidance documentation that discusses OPL's systems thinking and indicated an alignment with the regenerative paradigm, the ways in which OPL might achieve this remain relatively undocumented. This chapter, therefore, seeks to provide this deeper understanding of OPL. It explores the perspectives relevant to the framework *in general*, with the following chapter then exploring case studies. As such, this is the empirical chapter that provides a comprehensive picture of OPL, via novel headings and themes that are used to organise and interpret perspectives on strengths and limitations, and underlying intentions and rationales, that have built up through OPL's usage over almost two decades.

The chapter begins with a brief introduction to a cross-cutting theme (that of integrating measurement into a bespoke approach). The subsequent three sections are organised according to the legitimacy framework laid out in chapter 2. At the programme level, it explores the OPL approach in more depth, providing insights into how instruments can be aligned with holistic systems thinking and the regenerative paradigm, and the possible pitfalls of attempting to achieve this. In doing so, it also provides an analysis of the design and characteristics of OPL, mirroring the approach used to examine standardised instruments taken in chapter 3 in explaining how the design of instruments can affect their ability to support processes and outcomes. However, in this case, it is OPL's goal-oriented approach which is the focus of analysis. The chapter then considers factors affecting take-up at the systemic level, and the implications of OPL's flexible approach to public information and transparency, before providing a summary across the three legitimacy functions. It concludes with practitioner recommendations, which aim to align with OPL's ethos whilst mitigating any possible limitations highlighted by the research.

6.1. Cross-cutting theme: integrating measurement into a bespoke approach

This section considers a cross-cutting theme: the challenge of integrating measurement into a bespoke, flexible framework. OPL's goal-oriented nature is an overarching characteristic of the framework, in contrast with many standardised approaches. This comes with various benefits, but this can also create challenges or limitations:

You also need to recognise that one of the strengths of One Planet Living is that it is not prescriptive. [...] So it's a difficult one. One of its negatives is one of its pros as well. (Bioregional 2)

Whilst monitoring and reporting are regarded as an important aspect of the framework, guidance on these has remained a relatively under-emphasised aspect of the instrument, although recently some more detailed guidance including suggested indicators has been published. Nevertheless, OPL users are generally expected to track progress in measurable terms. There has been a desire from one Bioregional co-founder to resist a narrower and more indicator- or target-driven approach:

It couldn't have been created through a measurement-, target-based approach, or that way of thinking, or looking at the world. (Co-founder 2)

I've got no problem with people measuring stuff, I hate it when they force it on other people. (Co-founder 2)

Yet, others would like a more systematic approach:

We are potentially ignoring the benefits that can come from indicators and targets. And some kind of consistency would help. (Bioregional 3)

These issues are discussed at various points. At the programme level, these include sections on OPL's principles and goals, and its assessment and monitoring processes. At the systemic level these concern pragmatic issues with a bespoke approach. They also affect public information via reporting practices. The end of the chapter makes some recommendations for maintaining OPL's strengths whilst enhancing this aspect of the framework further. This builds on an existing trend: many of the issues discussed here are gradually being addressed to some extent.

6.2. Programme level: guidance and processes

OPL has been designed around a distinctive, regenerative vision. Chapter 4 highlighted guidance documentation that discusses systems thinking and a 'hearts and minds' approach, yet the details of such an approach remain relatively undocumented. This section therefore seeks to unpack them further. It begins with a discussion of the 'hearts and minds' ethos of OPL. It then explores how the 'framework' itself – OPL's principles and associated goals – have characteristics that are intended to support a regenerative, systems-based approach, contrasting with the use of standardised criteria. These characteristics, summarised further below, demonstrate strong alignment with the characteristics of regenerative instruments

proposed in table 1.1. To complement these flexible aims, OPL makes use of flexible and discretionary assessment, monitoring and accountability processes, which are further explored here. Finally, the section notes some challenges associated with unstructured processes in general. As with chapter 3, therefore, this section explores how the design of instruments affects programme level processes and outcomes. Throughout the section, OPL’s key characteristics are defined in more detail, and contrasted with approaches which can be found in some standardised instruments: these are not found among all standardised instruments, but taken together could represent an illustrative ‘ideal type’ that contrasts with OPL.

6.2.1. A 'hearts and minds' approach

Sustainability instruments codify knowledge into a replicable format, to help transfer and scale sustainability. Yet, sustainable transitions remain difficult. Is technical knowledge and documentation what is lacking in sustainability, or is the issue something else? Emphasising the technical risks under emphasising the social, psychological, or emotional aspects of sustainability; i.e., the role of *people* in driving sustainability outcomes:

I think One Planet Living is a bit more fun, and it’s always been – for me – very much about the process, and working with people [...] winning over people’s hearts and minds. (Co-founder 1)

No matter what system you’ve got, it stands and falls on the quality of people, and the quality of the relationships that are implementing it. (Bioregional 5)

This section seeks to unpack OPL’s emphasis on ‘hearts and minds’ (Bioregional, 2018c), aligned with the regenerative paradigm (Gibbons, 2020). It focuses on the themes listed in table 6.1.

Table 6.1. Elements of OPL’s ‘hearts and minds’ approach, from a comparative perspective.

	OPL approach	Comparison practices
<i>Motivations</i>	Emphasis on the importance of commitment, not just a desire for external recognition	Emphasis on requirements for external recognition, although some instruments include commitment, leadership
<i>Communication</i>	Emphasis on communication content suitable for a range of audiences	Emphasis on technical documentation – and sometimes communication processes (rather than content)
<i>Cultures of sustainability</i>	Organically evolving, embedded ‘cultures’ of sustainability	Formalised processes or ‘tick box’ approaches

Commitment to sustainability

Chapter 3 highlighted empirical research showing the importance of intrinsic motivations in producing good outcomes for voluntary instruments. Instruments applied across complex types of contexts all include elements of flexibility, leaving room for variable performance and making it much harder to ensure good outcomes through requirements. Motivations, therefore, become an increasingly important determinant of outcomes. The OPL approach is based on the idea that people need to be strongly committed, genuinely motivated and highly ambitious to sustainability to achieve good results. Intrinsic motivation can be considered a defining feature of the instrument, which is built up around a ‘hearts and minds’ approach (Bioregional, 2018c). This can be regarded as an implicit rejection of the idea that external recognition can be a driver of improved practices.

The most important thing to assess is the intention of a project, or city. Because if the intention is right, then you have the greatest probability of ending up at the goal you want. If the intention is not right, you can’t do it. (Co-founder 2)

Whereas developers who come to us, and say we want to work on OPL [...] generally they tend to be more informed, more ambitious, more up for, more committed to sustainability than others. I don’t think endorsement is what floats their boat. I think it’s the commitment to sustainability that they want to show. (Bioregional 1)

This emphasis on motivation and commitment is a defining feature of the framework which enables it to be flexible, because committed people and organisations can be trusted to make their own pro-sustainability decisions, together with guidance on what good practice consists of. A centring of commitment and intrinsic motivation runs as a theme throughout the framework’s design, by:

- Trusting users to create context-appropriate plans and implement them without strict requirements or criteria.
- Encouraging instrument users to become leaders through its Leadership Recognition scheme, aiming to inspire wider change through ambitious examples.
- Gauging commitment as part of its assessment processes, not just the content of plans.
- More trust-based accountability processes, which focuses on ongoing progress and commitment rather than performance requirements and data audits.
- OPL communication content aims to inspire motivation and commitment.

Of course, the reality is less simple than a simple matter of virtuous vs. self-interested actors determining outcomes: in large organisations, there will be a variety of teams and departments, with varying levels of motivation and commitment. Success can rely on effective collaboration and the ability of motivated staff to influence the rest of the organisation. Initial motivation must be sustained over time. Motivations and intentions alone are also not enough; organisations also need the capacity (enough expertise, experience, and resources) to deliver a programme. Sustainability must also align to some extent with the interests of organisations, and instruments should be practical to use. OPL provides public forms of recognition, but rather than providing a substitute for commitment, these can be thought of as rewarding commitment.

Communication about sustainability

How can we support motivated and knowledgeable communities of users? OPL's approach to the transfer of knowledge and values rests on the facilitation of communication, inspiration and understanding. This learning-based aspect of sustainability assessment has been called a 'conceptual' or 'symbolic' function in indicators literature (Gudmundsson and Sørensen, 2013). The perceived strengths of the framework in introducing people to the topic of sustainability easily, and potentially to motivate and inspire them, are illustrated by the following quotes:

I really love to tell them the story, show them the footprint data, talk about the big problems we face, but then say 'but hey, look – projects that we're working on, whether it's companies, products, or communities, are showing the jigsaw puzzle pieces of how we can actually achieve One Planet Living'. We just need to do everything we know we need to do everywhere [...] it worries people but then shows them it can be done and inspires them that they can do it. To me that feels a little bit different, [there's] a bit more communications content than many of these certification schemes, perhaps. (Co-founder 1)

The key strength I think is around how easy it is to understand [...] so it's very easy to start the conversation. (Bioregional 2)

I do lectures on it, and the people sitting in front of me are quite junior and inexperienced. People get it; people can see it's a good thing. That's the beauty of it. [...] You try talking about BREEAM to someone [...] suddenly you're into a whole lot of horrible detail. One Planet Living can be higher level than that – ten principles; sustainability of products, communities, developments, local authorities – it's much easier to grasp. (Bioregional 1)

The day in the life, that sort of exercise really does get people talking and interested and engaged, and that sort of thing's very successful. (Bioregional 1)

The other great thing about the framework is it's really digestible. So when you explain it to audiences who aren't technically minded or planning minded, i.e. resident audiences or community audiences, it's quite bitesize, it's easier language to get your head around than the planning requirements, I think. So it was a really useful tool to be able to communicate what it is we were achieving. [...] at the end of it you were able to get a really concise, clearly broken-down document with ten principles that made it something that anyone could relate to. (NW Bicester developer)

The quotes above point to the various strengths OPL can have in appealing to 'hearts and minds' and communicating sustainability to a range of audiences of varying levels of expertise. Analysing the quotes above as well as other interviews, the following key elements were identified:

- A simple 'story' which explains the problem/opportunity of sustainability in terms of ecological footprinting – how many planets we would need to maintain our current lifestyle.
- An appealing, *positive vision* and definition of sustainability (living happy and healthy lives within the limits of our planet, leaving space for wildlife).
- A simple and appealing name ('One Planet Living'), which aptly summarises this story.
- The ten principles, which provide an accessible mid-level of detail and a 'common language' across sectors, suitable for shaping strategies.
- Appealing visuals and branding: the 'flower' showing ten principles, and the planet heart logo for One Planet partners.
- A portfolio of practical examples across sectors of how people can help address sustainability, which are often appealing or distinctive (e.g., BedZED, Villages Nature).
- An exercise focusing on imagination, experience, and emotion – imagining a 'day in the life' of someone at a One Planet Community.

Based on the above, OPL can also be thought of as operating on three levels of detail. First, at the introductory level, OPL combines an explanation of the problem (using up too many

planets), a positive vision (happy and healthy lives within the planet's limits), and a portfolio of practical examples. It, therefore, uses techniques that are considered effective within environmental psychology (Steg *et al.*, 2012). Second, the ten principles of the framework provide a 'common language' for sustainability. These outline general, aspirational aims into a relatable format such as 'health and happiness' and 'zero carbon energy', and provide a medium for explanation, discussion, co-creation, and documentation. To support these there is a third more detailed level – of guidance and documentation. These three levels allow the framework to be accessed by a wide variety of audiences. However, not all framework users found the framework easy to communicate:

We've moved to externally – the branding and everything we use – to five principles. That was partly because we were requested it by our councillors because there was concern that maybe 10 was too many in terms of what was manageable in terms of communications. (Sutton 1)

The ten principles are strategic aims, with the level of granularity required to break sustainability into various topics that strategies can address. Hence, they provide a level of detail that some may not consider optimal for communicating to casual audiences.

Cultures of sustainability

Some Bioregional interviewees spoke of the importance of sustainability 'cultures', possibly in recognition of the fact that sustainability requires a deep transition, and arguably a cultural shift. Motivation, commitment, communication, and learning may mature into sustained changes in attitudes and practices, sometimes in somewhat intangible ways. This was contrasted with a more restrictive 'tick-box' approach:

They always say themselves – we don't want to be a tick-box organisation. And I agree with them. I think it's about the culture. (Bioregional 5)

I've always found it was about the culture. And if you could enculture people, and recognise the degree to which they've adopted the culture, that would be more successful. (Bioregional 5)

That's what I mean by 'embedded', it's when it embeds in culture. It becomes intuitive, it's not a logical process. (Co-founder 2)

How do we change the culture of our company so people are saving carbon, and not just setting targets to save carbon? Really getting them to understand. (Co-founder 2)

Forcing people to hit certain targets actually doesn't create better projects, citizens or learning systems. (Co-founder 2)

The hope may be that the framework – or sustainability more generally – can gain traction in contexts, in more organically evolving, context-appropriate and experimental ways. This contrasts with an approach based on formalised processes, management practices or prescriptive criteria; i.e., a 'tick-box' approach (Schweber, 2013), which implies people acting to fulfil requirements, rather than basing decisions on their own understanding and motivation. The hope is that these cultures hopefully result in an ongoing shift in ways of living and working. However, there is a question of how and whether such cultures arise, and how they may be encouraged. Structure may be important to ensuring effective implementation. Issues with a lack of structure are described at the end of this section.

6.2.2. OPL's flexible principles and goals

The ways in which instruments codify sustainability guidance has important implications for how they support sustainability programmes. Chapter 3 provided a detailed analysis of how a reliance on standardised criteria affects the design and implementation of standardised instruments. This section provides an in-depth analysis of OPL's goal-oriented approach. Insights and perspectives are drawn together to suggest characteristics and benefits associated OPL's flexible goal-oriented approach, as listed in the table 6.2 on the following page. These indicate compatibility with a regenerative perspective, supporting a holistic approach and collaborative, engaging and participatory processes. Such views are particularly emphasised by co-founders, but are echoed by numerous other staff, and OPL's characteristics demonstrate strong alignment with those of regenerative instruments proposed in table 1.1 in chapter 1. Potential pitfalls or limitations are also discussed, and the following chapter explores the extent to which these benefits have been realised in practice.

Table 6.2. Characteristics of OPL’s flexible principles and goals, from a comparative perspective.

	OPL aims	Comparison practices
<i>Ambitious</i>	Maintains an aspirational vision of thriving within ecological limits	Unambitious or ‘achievable’, e.g., variable, process-only, disclosure-only, or very long-term
<i>Shared</i>	A ‘common language’ applicable to all, with fluid boundaries, enabling influence, collaboration, clusters of users and nested systems	Specific to sector or type of application/entity
<i>Holistic</i>	Broad aspects of systems/strategy can freely interrelate, capturing synergies and trade-offs	Isolated focus on specific credits, targets etc.
<i>Communicable</i>	Relatable, accessible, or memorable language	Technical language
<i>Dynamic</i>	Allowing the details of plans to change over time	Fixed technical requirements over time

These characteristics are explored further below, except for communicability, which is covered by the theme of ‘hearts and minds’ above.

Flexible

OPL is based on open-ended, loosely defined and largely qualitative principles and goals. In contrast, other instruments which codify the substantive aims of sustainability tend to use more measurement-based, prescriptive criteria such as indicators or targets. The current OPL approach has evolved over time; its guidance documentation has become even less prescriptive. The name has changed over time, previously referring to ‘targets’ (Bioregional, 2011c, 2011a), and now to ‘goals’ (Bioregional, 2016a, 2017b, 2017c):

I think it’s a philosophical/ideological approach, that it’s not a good idea to be too prescriptive, because it can be shooting yourself in the foot a bit to be too prescriptive. So, I think we tried to get the balance right with the goals and guidance, it’s much more open. (Co-founder 1)

The current view for me is that I don’t think what we wrote was wrong, it’s just been clarified, and what we called targets of zero carbon and zero waste are really goals. We were slightly forced into the terminology of targets because everyone was talking about targets. (Co-founder 2)

Some of the documents that have been produced more recently, I’d say they’re a bit more helpful in the sense that they talk about what the goal is, and then

what sort of targets could be set. So, they're not so prescriptive in terms of 'you have to set this ambition' but you have to do something that achieves this goal. I'd say that's quite helpful. (Sutton 1)

What are the benefits of a flexible approach based on principles and goals? First, it is a prerequisite for other characteristics – ambitious, holistic, shared, communicable and dynamic – flexibility is an over-arching characteristic. For example, open-ended principles such as 'local and sustainable food', 'zero waste', 'zero carbon energy' set out a long-term, ambitious, aspirational vision of strong sustainability without needing to prescribe narrower 'achievable' and measurable actions or targets. Non-prescriptive aims are easier to interrelate holistically without focusing on isolated areas. Flexible principles with fluid boundaries and are shared across sectors. Qualitative principles and goals are non-technical and simple to understand and communicate.

Second, flexibility enables context-appropriateness. OPL is applied across sectors, countries, and scales. Its context-appropriateness is regarded as a key strength:

It's trying to turn round the whole certification process and put an emphasis on the project to identify what they should be doing, rather than outside experts telling them what they should be doing. (Bioregional 3)

It can be incorporated into any setting, any sector, and any scale. (Bioregional 2)

We all have different opportunities and different constraints within each principle, depending on where geographically you are, or culturally you are. (SOMO Village developer)

If context-appropriateness is the strength of a flexible and non-prescriptive approach, then the opposite of this is 'perverse outcomes' – the potential, unintended negative consequences of more prescriptive approaches (Schweber, 2013; Greenwood *et al.*, 2017). Bioregional staff also mentioned the risk of perverse outcomes from more standardised approaches:

As you set targets, you'll always have perverse outcomes from those [...] A classic example is you force people to put in cycle parking spaces which never get used. You force people to do water recycling in an area where water recycling consumes more carbon and it's not a water-scarce area. (Co-founder 1)

Targets and indicators – there’s a danger they drive perverse outcomes, so we always need to be careful that they don’t do that. (Bioregional 3)

Third, flexibility provides some psychological benefits:

People want something a bit more creative, unique, bespoke, enjoyable, and One Planet Living resonates with them quite quickly. (Bioregional 1)

It’s simple to understand, it enables distributed decision-making, so you can create rules of thumb. (Co-founder 2)

I thought One Planet Living has a great potential on the European scale because it allows everybody to feel like they’ve achieved something. (Bioregional 5)

The quotes suggest that such general, open-ended aims can be useful from a psychological perspective in several ways: they serve as rules of thumb which can be easier to understand than more technically worded criteria; they afford users freedom, creativity and ownership in interpretations and solutions; and they enable users to emphasise their strengths.

Ambitious

OPL principles and goals are aspirational, based on ‘big, bold’ but flexible and open-ended aims, and based on notions of wellbeing and what is deemed ecologically necessary, with aims relating to zero carbon, zero waste, diets, behaviours, and materials, for example.

It was always about what the science tells us is necessary – what the moral imperative is – so we’re always aiming for actual, true sustainability. Whereas I think some things are incremental. So, you’re always starting with that goal of One Planet Living and making a plan to get there, whereas other things don’t make that clear. (Co-founder 1)

Ambitious aims are not limited too much by what is considered ‘realistic’ or likely. Setting aims based on what is achievable or realistic may result in focusing on unambitious but likely outcomes when what is actually achievable is uncertain. The following statements were made in relation to targets, but could also apply, but the attitude could apply to principles and goals as well:

I want people to open themselves up to what could be achieved, and what needs to be achieved, and not be too constrained by the grim reality of where we are.

Which means that you are going to get big bold targets that are often not going to be hit. (Bioregional 3)

I think not being scared to make a target seem wildly over-ambitious can be important. (Bioregional 3)

I would say it might be better for us to change our attitudes, because I think it leads to mediocrity. Because then you really get the people rising to the top, who are the ones who set relatively mediocre targets. (Co-founder 2)

How do OPL's flexible aims help enable an ambitious approach? First, the open-ended, aspirational nature of OPL aims enable actors to adopt them without committing to highly specific outcomes. They can therefore keep aiming for 'true' sustainability, although this may create some tensions when translating these into quantitative, time-bound targets (discussed below).

Second, principles and goals are not limited to what can easily be measured using indicators. Emphasising what is measurable may privilege low-impact areas above more ambitious, higher impact areas:

I think that you've probably got a slight quantum uncertainty in there; the more specific and ambitious you make your target, the less you can accurately track it. (Bioregional 3)

Examples of outcomes that are difficult to track are those relating to diets or behaviours. OPL sets aims to influence diets and behaviours but often does not measure outcomes related to these. Similarly, areas such as happiness, equity or community may also be difficult to measure quantitatively.

OPL's aspirational approach can come into difficulties when users are expected to translate their principles and goals into targets, however. Principles and goals are open-ended regarding timeframes. Translating these into quantitative targets makes them more specific. But for complex, challenging, or long-term, issues, outcomes may be highly uncertain and fall within a wide range of possible outcomes of varying likelihood. For highly challenging issues, there may be a divergence between what is ecologically necessary, and what is likely. Ambitious targets may help drive the achievement of unlikely outcomes. Yet, some OPL users may be reluctant to translate aspirational, open-ended goals into what they perceive as 'SMART' management targets or fixed commitments. Possible reluctance to translate aspirational aims into what are perceived as fixed commitments.

Some people want the targets to be big and bold, some people want them to be narrow and SMART. (Bioregional 3)

We were getting asked to sign up to targets without properly having delivery plans in place. I'm sure it's changed now. (Sutton 2)

This issue has particularly arisen for the complex and challenging issue of local government programmes, with previous guidance documentation being more prescriptive than the current documentation (Bioregional, 2011c). Indeed, Sutton's programme has been criticised by rival politicians for changing and missing targets (Downey, 2016). In terms of programme effectiveness, an ideal approach would be linking aspirational targets or goals to programme activities and outputs as much as possible, and explaining how these are related, or if not, acknowledging that gap and exploring how it could be closed.

A further issue is whether specific targets are necessary. to show "how far" users should go in achieving them. For many problems such as climate change, biodiversity loss and waste it is arguably not necessary to add timeframes or provide exact benchmarks, due to the urgency of eliminating harmful practices as soon as possible:

We have to get rid of all carbon from our society basically, more or less. [...] In fact, it's very easy to measure 'zero'; you don't even have to measure zero – you just don't use it; you don't emit it. (Co-founder 2)

If they ask 'tell me what targets I have to hit', I know they are not a good partner. When they talk about 'what's the best way of achieving One Planet Living', then I think they are the right partner. (Co-founder 2)

However, there may also be topics for which benchmarks or targets could be helpful. For example, water scarcity may vary across locations and conservation. Moreover, ambitious timeframes for issues such as decarbonisation may add a sense of urgency to help drive change, although this may also have drawbacks (described below).

Holistic

Sustainability is a complex, interconnected and cross-cutting issue. A holistic approach accounts for the interrelationships between different parts of a system. It can also be described as a joined-up approach, and some degree of holism is arguably essential to creating effective strategies. Holism is central to systemic and regenerative conceptions of sustainability and marks a departure from standardised approaches which focus on isolated areas.

To support a holistic approach the OPL has a broad range of aims. It does not focus solely on one issue, such as climate change, above issues of ecosystems or equity for example. OPL considers the impacts of products and materials, buildings, food, transportation and more, all this whilst striving to meet our social and economic aims. Neighbourhood rating tools have sometimes been criticised for a weak coverage of socioeconomic issues, for example (Berardi, 2013; Komeily and Srinivasan, 2015), and corporate reporting for its approach to equity (Moneva *et al.*, 2006). Generally, interviewees considered OPL to have a broad approach:

It's probably the most holistic view of sustainability of any framework in that it looks at everything. Other frameworks traditionally might focus on more technical solutions or the harder science, whereas this also mixes that with the more qualitative well-being side of things. (Bioregional 2)

It gives you a really good overview of most of the aspects of sustainability that you need to cover so it forces whoever is using the framework [...] to make sure that we're doing things in a much more holistic way. (Sutton 2)

I think there were a few noticeable gaps. Climate change adaptation, although we tried to squeeze it into water, doesn't really fit there. (Sutton 2)

Holism is enabled by flexible (not isolated and prescriptive) aims. Holism is a hugely important and arguably often overlooked issue among sustainability instruments. Existing approaches described in chapter 3 are often based on indicators, targets, credits or points, tend to encourage issues to be thought about in isolation, isolating specific areas of improvement. There are also exceptions, such as the attempt made by C40 Cities to consider the impacts of climate actions holistically (C40 Cities and Ramboll, 2017).

One form of holism is considering *synergies and trade-offs across broad aims*, maximising positive outcomes and minimising negative ones, therefore improving overall outcomes. Bioregional has long been attempting to make sustainability appealing. One important question for them is how to achieve it whilst also providing some benefits to people and communities. Cycling can provide benefits for climate, health, wellbeing, and air quality. Healthy food can also be more sustainable and growing it can build community. Trees can provide amenity value, cooling, and carbon sequestration. Another challenge is achieving it without being excessively detrimental to society; there will be significant trade-offs too. For example, green space could be used for housing; or money spent on sustainability.

Another form of holism is considering *interactions between actions, people, and the environment*:

I think the problem is the way people use indicators and targets – they don't realise a target or an indicator might require the outcome of ultimately hundreds of actions and complex interactions. (Co-founder 2)

Regarding the interactions of multiple actions and their environments, this has been recognised, for example, in Bioregional's ongoing efforts to create cultural shifts alongside implementing infrastructure or technical. For example, simply adding cycle paths is often not enough to encourage cycling; there may also need to be a cultural shift to ensure that more people feel safe and comfortable cycling (Aldred and Jungnickel, 2014). Similarly, cultural shifts may be required to change diets and travel habits, or even to get people in an organisation taking sustainability aims seriously in the first instance. Examples of efforts to create such shifts are explored in the following chapter.

However, OPL's holistic approach has not always been made fully explicit. Guidance, tools, and processes can affect whether a holistic approach is taken. With formats such as documents or spreadsheets, it may be difficult to conceptualise or map interrelationships between elements of a plan; the digital platform now encourages holism. Some processes may encourage collaboration and partnership working across socioeconomic and environmental dimensions, teams, and departments, but others may take a more siloed or isolated approach. The following example relates to the city of Brighton:

The approach we took there was rather than to write it, it was to facilitate its writing, so working with the council we got people within the city who had specific skills and expertise in each of the principles to write the plan themselves, and then we coordinated it, brought it all together, and turned it into a plan. (Bioregional 1)

In the example above, principles were planned for individually rather than collaboratively. A more holistic approach could have, for example, had health, transport and food and planning experts working more collaboratively. Guidance could encourage more collaborative processes.

Shared

OPL's flexible principles have fluid boundaries which can be shared by and cut across actors, scales and geographical areas forming a 'common language', and enabling coordination within/across systems at different levels. More prescriptive approaches

require the definition of some boundary, such as an organisation or area. OPL's fluid approach has the potential to better spread influence and impact, enable effective coordination, coordination and partnership working, and create clusters of users which help strengthen and reinforce sustainability practices.

First, most organisations have considerable potential in leveraging their *influence* over their wider networks, such as throughout a new community, a city, or a supply chain. With shared aims, users are encouraged to maximise their impact and spread their influence beyond areas of direct control:

Get rid of carbon in any part of your system, in your supply chain, and your customers. And that, as a goal-orientated algorithm, is far more powerful. (Co-founder 2)

They may simply be external stakeholders which framework users attempt to influence, even if they are not using the framework themselves. e.g., influencing customers, residents, or suppliers – even if they are not all using the framework.

Second, *partnership working* between many organisations may be necessary when implementing a programme. OPL encourages partnership working. For example, OPL can be used throughout the phases of the creation of a new community, by developers, contractors, management companies or tenants.

Third, *clusters* of users can naturally arise within an area when multiple organisations start to use the framework alongside each other. This can support collaboration or simply contribute to a shared culture of sustainability. This is made possible by the fact OPL is applicable across sectors and scales. Sometimes these clusters form nested systems: for example, such as a community within a city, both using the framework. Examples are explored in the following chapter.

We then realised that it would be cross-cutting; that it could be used by different sectors so they could work together. It just happened naturally. For example [...] Sutton and B&Q worked together on some insulation projects, because they were talking the same language of sustainability and it brought them together. (Co-founder 1).

There may also be a more deliberate form of clustering, where organisations can collaborate or coordinate around shared outcomes. For example, at the city scale, stakeholders can agree on shared outcomes and then develop their own action plans, as has been the case with the recent One Planet Cities programme.

Shared aims also raise two challenges. First, a cross-sector approach makes it more difficult to calibrate guidance for many separate sectors, scales, and contexts. The framework has been applied to a broad range of programmes and countries, but these have been relatively few, making it less worthwhile to invest in sector-specific guidance. Second, when shared aims are translated into targets, they may not be primarily within the control or influence of a single actor, creating ambiguous responsibility. This poses a challenge to conventional management thinking about indicators and targets. In the past, local government action plans have not been clear on the nature of local government responsibility for area-wide targets.

I'm sure this is what's happened now, but it would have been more useful to have maybe more flexible targets that were more relevant to the council that we knew we could deliver. (Sutton 2)

Why does this matter? Again, users may fear the *pragmatic* consequences of being held responsible for areas outside their control. Moreover, ambiguous responsibility can also reduce the quality of *public information* and understanding as to who targets relate to. These issues can be addressed by distinguishing between 'owned' vs. 'shared' indicators and targets. 'Owned' indicators and targets are primarily within the control or influence of a single organisation; those which are 'shared' are applicable across actors, for example, across a local area. This could help point more clearly to those areas for which collaboration is required; it could also improve public understanding.

Dynamic

One co-founder also emphasised the ability of a 'goal-oriented' approach to account for changing information over time:

I think the strengths are that the goal won't change, so it enables you to create strategies which can constantly change, to orientate you towards your goal. (Co-founder 2)

Indeed, the following example. Again, one issue is that OPL's goals are nevertheless translated into targets, with time-frames attached. As chapter 4 illustrated, the changing of targets can attract criticism.

6.2.3. Assessment, reporting and oversight

External assessment and verification processes can help support both effective programmes and high-quality public information. More standardised instruments are underpinned by the

values of objectivity and impartiality, as codified, for example, by the international standards body ISO in its ‘conformity assessment’ processes (e.g., see ISO 17011). Such instruments often make use of replicable and measurement-based criteria, third-party assessors, in-person data checking.

In contrast, OPL takes a more flexible approach, compatible with its more flexible and context-sensitive aims described above. Assessment is discretionary rather than being driven by measurable criteria, and monitoring and reporting are generally flexible and bespoke. These processes can help support flexible public information (e.g., One Planet Living status, and public reports), as well as effectiveness, through the development of ambitious, context-appropriate plans, and supported collaboration and learning processes. OPL processes resemble alternative models of assessment and accountability described by regulatory theory – meta-regulation and responsive regulation (Braithwaite, 2011; Grabosky, 2017; Simon, 2017). Table 6.3 below compares the OPL approach with standardised practices.

Table 6.3. OPL assessment, accountability, monitoring and reporting practices, from a comparative perspective.

	OPL approach	Comparison practices
<i>Assessment</i>	Assessment is discretionary and flexible	Emphasis on objectivity, impartiality, and measurable criteria (e.g., see ISO 17011)
<i>Oversight and accountability</i>	Flexible, forgiving, discretionary, focusing on commitment and progress rather than requirements	In person-auditing, and sometimes the potential for sanction if requirements are not met (e.g., ongoing certification)
<i>Monitoring and reporting</i>	All OPL users expected to carry out some form of monitoring and reporting	Varied: may be public reporting, internal monitoring, or neither
<i>Relationships</i>	Flexible partnerships based on oversight, consultancy, and guidance	Based on documented criteria, often using third-party assessors or auditors

Discretionary assessment

OPL assessment processes are intended to gauge the quality of plans and the likelihood that they will be implemented well. They may also be used to award One Planet Living status, leadership recognition, or (previously) endorsement. Assessment focuses on the content of plans, but also the people and organisations implementing them, since a discretionary approach opens the possibility of focusing on more intangible areas. Regarding content, assessment processes encourage ambition and enable flexibility.

Enabling flexibility. Interviewees and documentation emphasise the role of *opinion* in assessment (Bioregional, 2018c). Embracing discretion and opinion in this way must be at the heart of a more flexible and context-appropriate assessment process:

At its simplest, endorsement means Bioregional thinks it's quite a good project. Endorsement meant that Bioregional believed, because it was Bioregional's opinion, that [...] we believed that, based on what we knew about you, if you implemented your plan, which you ought to have the capacity to do, you would begin to start operating within the limits of the planet. (Bioregional 3)

What I've always said with peer review, is it's an opinion. It's not necessarily right, it's not necessarily wrong, it's just an opinion by another person. (Co-founder 2)

This means that in any given context, people are given freedom and responsibility for their own decision-making. There is a rejection of a more coercive approach which uses 'requirements'; although this was emphasised by some Bioregional interviewees more than others:

The only thing really that I would like is that it is 'goals and guidance' rather than 'requirements and targets'. (Co-founder 2)

I would say we should challenge that culture of that requirement, that for things to have validity they must be unambiguous. The world is ambiguous. (Co-founder 2)

Second, the *experience* of assessors can help ensure the quality of assessments. As well as technical competence and expertise, assessors also need to have values that support the ambitious aims of OPL.

A lot of Bioregional's legitimacy, One Planet Living's legitimacy, comes down to Bioregional's track record of having delivered projects, and comes down Sue and Pooran. We need to be honest and accepting about that. How many organisations have two founders who've both been awarded OBEs for services to the environment? (Bioregional 3)

A peer review is an opinion rather than it being right or wrong, and it's an opinion by someone who has experience and has some legitimacy from having done this practically and worked on projects. (Co-founder 2)

However, being applied across sectors has meant Bioregional staff have sometimes been experimental in their approach, transferring the framework to new sectors. This means that they have not always had direct experience in the sectors in which they have worked. In these cases, the OPL is creatively transferred across sectors.

Encouraging ambition. Several factors can provide structure to this discretionary assessment. The political philosopher Dworkin (1977) highlighted this relationship between structure and discretion:

Discretion, like the hole in a doughnut, does not exist except as an area left open by a surrounding belt of restriction. It is therefore a relative concept. It always makes sense to ask, "Discretion under which standards?" or "Discretion as to which authority?"

First, there are the ten principles of OPL, such as zero carbon energy, which are informed by an awareness of the planet's limits (Bioregional staff variously refer to the ecological footprint, planetary boundaries, and IPCC reports). These provide a flexible set of guidelines. However, as the final quote shows, some principles are more flexible than others.

I would say that there must be an intention to achieve zero carbon, and that is a red line. They may not know how to achieve it, so that's not a red line. (Co-founder 1)

There is no hard red line. There is a fuzzy red line. (Bioregional 3)

Zero carbon is our only absolute target, and developers say look, we don't want to go into zero carbon, then what do we do, just walk away? And conversely, there are others which are just so open-ended that you just say design your own strategy for that. Then it's not prescriptive at all and they can pretty much do anything – is that endorseable? (Bioregional 1)

Second, assessment can also take a *comparative approach*, assessing relative ambition in comparison to standard practice. This is the idea behind OPL's leadership recognition programme. Framework users are encouraged to go further:

To be a planetary leader, you need to demonstrate that you are exceeding what your peers are doing across all ten Principles. (Bioregional 3)

Third, discretionary assessment opens up the possibility of focusing not just on plans, practices, and processes, but also on *commitment* and *capacity*. Hence, it can focus on less

tangible areas – the *people* and *organisations* hoping to deliver the plans. Assessment gauges motivations and intentions, but also the capacity to deliver programmes. This has been formalised in the recent ‘peer review’ system:

I’ve broken that into three questions. One is how ambitious are they, in the outcomes they are trying to achieve; two is how effective is their action plan in meeting those outcomes that they want to achieve; and three is how likely we think they are to be able to deliver their action plan... From a competence level, but also from a commitment level. (Bioregional 3)

‘Readiness’ criteria include assessing the commitment of the staff and leadership, resources dedicated to the plan, and the existing track record (Bioregional, 2018c). These aspects of capacity help to determine whether plans are achievable as well as ambitious. This may have been influenced by experiences with some partners over the years who struggled with resources, something explored in the following chapter.

Flexible accountability

What is the nature of Bioregional’s oversight and accountability relationships? These relationships are mainly based on *progress reports* or *reviews*, which track the progress of implementing action plans. Relationships may also involve other ad-hoc consultancy services and guidance, are flexible and discretionary, and can vary on a case-by-case basis. They allow for some revision in what actions are expected, how progress is monitored or sometimes what targets are set, in light of changing information. This is an ongoing dynamic approach, of the kind called for by Boyle *et al.* (2018). The oversight and review process also has a guidance aspect.

What is the nature of Bioregional’s ‘accountability’ and the potential for sanction? The oversight process is carried out by Bioregional rather than third parties. Where close partnerships do exist, Bioregional staff have described their role as a ‘critical friend’ or even the ‘sustainability police’. However, Bioregional’s overall approach to accountability is very flexible:

You can’t encourage people to be ambitious if you’re then going to slap them down the minute they’ve failed to achieve that. (Bioregional 3)

[Rather than] drag them through the mud, saying they said they were going to do One Planet Living and they didn’t do it, it’s much more coaching and encouragement, and tools and help. (Co-founder 1)

I think showing no progress [...] you can't just state all these aspirations and then just leave them by the wayside. I think it's probably to do with progress. (Bioregional 2)

I think [...] we would probably get in touch with them when they do their annual review, and if not a lot's happened, we'd probably talk to them during the review process to try and ascertain, well nothing's happened – why is that? And we can always say, well in that case do you want to not do it anymore? (Co-founder 1)

Such an approach fits with Bioregional's general ethos for several reasons. First, OPL emphasises 'hearts and minds' – a shared sense of commitment and values – so a strict or threatening approach to accountability is counter to this ethos. Second, Bioregional encourages framework users to be ambitious in the face of uncertainty, in the understanding that ambitions may not be achieved. Third, framework users cannot be assigned full 'responsibility' where they often only have influence, rather than control, over shared aims and outcomes.

A final issue is that of data verification. Having a relationship based on trust makes it less important that data is verified:

Do we check data? No. We are not checking that what they have written is true, because to do that would just be far too time-consuming. [...] We might come across something that seems surprising and highlight that. (Bioregional 3)

However, it may be that Bioregional could still form links with an internal sustainability champion who performs the role of auditing data. An interviewee for a local government programme said that they did need to challenge their colleagues on data provided, so some degree of checking is necessary:

If we had an external environmental management system that we had accreditation for, like we have previously, then that data would actually be checked, and an auditor would be sitting down with me and looking at all the data, going "where did you get this from?", and speaking to some of the project managers. That doesn't happen, but I do sort of undertake that role myself. So I speak to them and check that they've done that, and I will find anomalies, especially where there's been a turnover in staff. (Sutton 1)

This suggests the need, at least, for a trusted internal champion who will check data and work together with Bioregional. This form of collaborative reporting – with Bioregional helping verify their partners’ self-reporting against an agreed set of indicators. This is likely to provide good transparency at the lowest cost.

Benefits of monitoring and reporting

What are the reasons monitoring and reporting are carried out; what are the benefits which justify the efforts of doing so? Here are some examples of the main benefits cited by interviewees:

If you’re working with companies, and organisations, doing a report annually, on your performance, is not that abnormal. If you’re working with a developer, doing a report on what happened after you got planning permission is rare. So I think it’s really important that is made more open and transparent, and I think it provides an opportunity for learning for One Planet Living, for Bioregional, for the people running that specific project, and for the industry as a whole. (Bioregional 3)

It helped us sometimes to prioritise where we should be spending our time, what we should be looking at, you know when there was poor performance. So it helped not only with the good, but also the bad. (Sutton, 2)

I think transparency is key if you’re trying to get new people to use it, and you can say, ‘look at these action plans that have received this level of recognition, we’ve got nothing to hide here, these are the ones that we think are good’. (Bioregional 2)

The quotes point to the following ways in which monitoring and reporting can be helpful:

- Helping framework users check whether outcomes have been achieved and learning about areas for improvement (user-level effectiveness).
- The basis for oversight and co-learning with Bioregional (user-level effectiveness).
- General transparency and learning for an industry (transparency and system-level effectiveness).

The first two, in particular, suggest an ‘instrumental’ function of indicators, supporting decision-making (e.g. Bell *et al.*, 2011). As well as these benefits, a case study in the following chapter (Sutton) also revealed that reporting could be beneficial in creating a public accountability mechanism to help keep sustainability as a priority within an

organisation, providing the sustainability team with a ‘lever’ throughout the wider organisation and supporting effectiveness.

It is important for monitoring to be *efficient*, i.e., not to become excessively resource-intensive (Elgert, 2016), as that can reduce pragmatic legitimacy as well as effectiveness, by diverting resources from other efforts:

I think sometimes trying to report on things gets a bit over-complicated, and you lose sight of what’s really important. It’s not all about trying to measure and report, it’s about actually taking some initiatives that will be working towards achieving it [...] I think sometimes if all the manpower or womanpower is tied up in reporting, then obviously you’re not going to achieve the targets because nobody’s actually working on implementing it.
(Co-founder 1)

The above suggests the importance of monitoring taking place, but this being relatively efficient to implement, as well as non-coercive. OPL recognises a variety of approaches to monitoring, both qualitative and quantitative. This can be images, qualitative descriptions, and the tracking of actions, as well as indicators data.

Issues with a bespoke approach

OPL’s flexible aims and guidance do not prescribe replicable, detailed criteria defining the content of plans. Current OPL guidance is the most detailed yet, including some suggested indicators, but still takes a light-touch approach rather than providing detailed and carefully calibrated monitoring guidance and benchmarks. OPL users and Bioregional staff have generally created context-specific plans on a more ‘bespoke’ basis. If the replicability of technical knowledge is an important benefit of sustainability instruments (Schweber, 2013; Elgert, 2016), a more bespoke, case-by-case approach may neglect this central benefit. This can affect assessment and monitoring processes:

The fact that it is so high-level means that often it can be quite difficult to get down to that monitoring the progress side of things unless you have a very engaged person. (Bioregional 2)

I think there needs to be an agreed set of standard KPIs which you can attach targets to if you want [...] Because at the moment it’s just too undefined, you know, you can set your own targets in a way, and that becomes quite a challenge to police, and to compare against other developments. (Bioregional 1)

I would like people to be using the same indicators so that if you had enough of them you could compare more between them. Similarly, with strategies or actions, it would be useful if you could rank how successful they've been, or how frequently they're being used [...] some kind of consistency would help. (Bioregional 3)

I do think we need to come up with a few indicators that do compare, so that people can see, are we actually getting towards sustainability or not? (Co-founder 1)

The quotes relate to both monitoring and assessment. Good monitoring systems could be easier to establish with greater guidance on indicators and data gathering. Action plans have usually not included detailed monitoring plans. As the following chapter shows, bespoke, detailed monitoring plans can be resource-intensive or challenging to establish, which can also detract from the resources dedicated to implementation. External assessment and oversight may be easier with greater comparability. Bioregional staff expressed a desire to compare and learn across projects. Bespoke indicators and monitoring make such comparability difficult.

6.2.4. Issues with unstructured processes

OPL is flexible not just in terms of substantive *content*, but also in its relatively informal and organic *processes*. Flexible processes were highlighted as an issue by several interviewees:

There is what you do once you've done an action plan. I think we need to be much tighter about what process is. And actually, I think the process of developing an action plan can be, and needs to be, defined quite a bit more. (Bioregional 2)

It would be really helpful if people were clearer at the beginning about how we work [...] So maybe something like a code of conduct. What we expect, and what they can expect from us. (Bioregional 1)

Really what you need to do is have some sort of segway from the intense OPL process through to the occupation and the lived reality of it. (Bioregional 5)

Processes can lie somewhere on a spectrum between two poles: (a) organic, evolving, and somewhat ad-hoc 'cultures' of sustainability, underpinned by intrinsic motivation and understanding; and (b) more structured or formalised processes and management based on

codified systems and expectations. Until now, the approach taken by Bioregional and OPL users has been closer to the former than the latter. In more recent years, Bioregional, have been involved in the creation of some more structured processes, such as their ‘One Planet Action’ programme for local governments. Nevertheless, the general approach has largely been evolving, organic and somewhat ad-hoc. As well as the quotes above, case studies in the following chapter show that this can lead – for example – to a lack of oversight.

If done in a flexible and supportive manner, more structured processes could potentially help support, rather than crowd out, cultures of sustainability (Osterloh and Weibel, 2009). More structured processes could cover the following areas in more detail, for example: (1) action planning, workshops, and stakeholder engagement during the planning phase; (2) internal training, communication, management and internal collaboration practices across teams and departments for organisations using OPL; (3) partnerships and engagement with external stakeholders such as contractors, suppliers, tenants, or residents; and (4) partnership working, progress reviews and oversight with Bioregional. Why could this matter for legitimacy? More structured processes could potentially help support more effective implementation, cultures of sustainability, and continued momentum and framework use, without relying as much on prescriptive or context-inappropriate criteria. It may therefore support both user-level effectiveness and system-level effectiveness (through continued use).

6.3. Systemic level

Chapter 4 noted various systemic influences of OPL, in terms of policy, industry leadership and global reach. Yet, in terms of take-up, its impact is still low. This section explores possible reasons for this. It begins by noting the strong perceived normative legitimacy of OPL, which helps attract motivated users, before discussing the main challenges it faces, related to pragmatic legitimacy. It also discusses an issue most closely related to cognitive legitimacy, although it is not suggested that this has greatly affected levels of take-up.

Beyond these legitimacy issues, it is worth noting that two co-founders, as well as another Bioregional interviewee, highlighted a lack of institutional or financial weight as a key reason Bioregional were unable to promote or market OPL on a large scale:

We’re a bit small, as an organisation. We’ve not got big backing to really boost One Planet Living as a charity. We haven’t been able to bring in investment, which was one reason why we thought we should set up oneplanet.com, to

bring in some backing and make it more widely available, and make it bigger and go further. (Co-founder 1)

I think what would be great is if WWF were to be re-interested again. You would just get the kind of exposure – what it needs is exposure. (Bioregional 5)

This highlights the importance of basic awareness in promoting sustainability instruments; regardless of the merits of any given approach, it will not achieve take-up without such awareness.

6.3.1. Perceived normative legitimacy

OPL, and its portfolio of programmes, have contributed to strong perceived legitimacy, which, as the following chapter illustrates, helps to attract motivated users. This point was made by several interviewees, both Bioregional staff and framework users:

People still see it as really good, if not best, practice, it's still held up as that, it's kept its integrity I think. And the marketing, the branding, Bioregional behind it, I think that works really well, people respect it. (Bioregional 1)

The quote also highlights how such perceived normative legitimacy can then contribute to reputational benefits, contributing to pragmatic legitimacy, again illustrated by the following chapter.

6.3.2. Pragmatic legitimacy

Although the use of the framework may provide some pragmatic benefits, such as brand and reputation, its main drawbacks are also based on pragmatic concerns, and related to its ambitious and bespoke approach.

Issues with a bespoke approach

A bespoke approach gives rise to two interrelated issues. One is that it lends itself to costlier services. The other is that a bespoke approach to planning and monitoring is challenging for some users. Regarding the first issue, Bioregional's partnerships are typically also advisory or consulting relationships, where they provide some guidance and support in the development of action plans and ongoing oversight, or other ad-hoc services. This can be resource-intensive (moreover, for a single organisation such as Bioregional, such bespoke services can only be supplied to a limited number of users).

What we found with the old system was you needed a lot of one-to-one, so it was a very bespoke relationship in each case, so that is very expensive, so you can't scale up. What we wanted to do is just people start on the journey, so with the tools we've managed to separate out the use of the One Planet Living principles from any sort of assessment process. (Co-founder 2)

The co-founder quoted hopes that the digital platform will remedy this challenge. The second point is that the detailed and more technical aspects of plans and monitoring are created on a more bespoke basis, in comparison with other instruments which rely more on replicable documentation.

We say that it's good that it's not prescriptive, but actually, I find it a challenge that it's not prescriptive and that you have to develop a bespoke plan for each development. [...] it just means they have to do it, and often they don't feel qualified or knowledgeable enough to do it. (Bioregional 1)

An earlier quote also highlighted that OPL users struggled to implement monitoring systems. One possible solution to mitigating drawbacks is an adaptable template approach, providing guidance on the structure and content of plans and monitoring, such as outcomes and indicators. This can be done in a non-coercive way, and still encouraging users to adapt appropriately to any given context.

Resource requirements for ambitious aims

OPL has always been open for all to use – but high levels of ambition have been required to enter partnerships with Bioregional (for endorsement, leadership recognition or One Planet Living status). This can be challenging and resource-intensive, and, therefore, a barrier to take-up. One Bioregional interviewee highlighted this as an issue:

It really needs buy-in and push from the very top, and complete commitment to One Planet Living over and above anything else, even if it might cost a little bit more, even if it's challenging, even if it means construction schedules have to be changed, you know, all of this, and it's very rare that that happens. (Bioregional 1)

There may therefore be a trade-off between tying the use of the framework to more ambitious and motivated users, and gaining widespread take-up. This may point to a challenge for voluntary instruments as a form of governance, which is that many actors may not be willing to pursue highly ambitious aims when faced with competing financial

priorities. More recently the ‘peer review’ process, and the digital platform, have opened new avenues for engagement without becoming recognised partners of Bioregional.

Incentives for using OPL

One Bioregional staff member identified an issue being that potential OPL users cannot see a clear benefit to using the framework – they lack a motivating factor or clear incentive.

I think there can be a lot of ‘so what’? How does this differ to what I’m already doing? Why should I do this, when I already have my own plan? What’s the point in me doing it your way? (Bioregional 2)

This may be an issue of pragmatic or perceived legitimacy. Organisations may not clearly see the benefits of OPL or its merits in comparison to other approaches. More explicit communication of its benefits, of the kind described in this chapter, or more convenient codification may be beneficial.

Reputational risks

Taking a highly ambitious or aspirational approach can result in reputational risks:

You can shoot yourself in the foot if the publicity is negative. (Sutton 2)

This issue has particularly arisen for local government programmes, with previous guidance documentation being more prescriptive than the current documentation (Bioregional, 2011c). Indeed, Sutton’s programme has been criticised by rival politicians for changing and missing targets (Downey, 2016). Both Sutton interviewees noted this as a topic of concern for the programme, which has since ended, although they did not say this was a deciding factor. To help resolve these issues, accountability could be related more to *actions* rather than quantitative targets, and the shared or aspirational nature of area-wide targets could be more clearly communicated.

6.3.3. Cognitive legitimacy

A final tension arising from OPL’s less measurement-based approach relates to its use of the ecological footprint, which is used in communication but is not usually measured. Whilst it may be helpful, some audiences or users find the disconnect between messaging and monitoring to be an issue:

In terms of weaknesses, I guess sometimes people just want more certainty: “yes but how do I know if I’ve achieved One Planet Living?” And they really are bothered about that. (Co-founder 1)

Don’t use an ecological footprint as your message if you can’t then measure it [...] Because you’ve got no proof that what you’ve done actually fits the brief of what you set out to do. (Sutton 2)

It is still based on science, so we’ve broken it down into this and there is still a sort of scientific reason behind it. And I think it has a good story behind it, of where it came from. (Bioregional 2)

I would say it’s an analogy. For me, ecological footprinting is not science. [...] It’s just a way of accounting. I never use ecological footprint as a target. But it’s useful to have a story which says your life might consume 3 [planets] because then you’ve got a sufficiently simple story that people can understand. (Co-founder 2)

It appears, therefore, that this can cause some issues with cognitive legitimacy where OPL is expected to adopt a more mainstream and measurement-based approach than it does, given its use of the ecological footprint in communication. Having said the above, Bioregional has also undertaken efforts to calculate ecological footprints for some programmes (Hodge and Haltrecht, 2009; Bioregional, 2019a).

6.4. Public information and transparency

Many instruments rely on replicable assessment criteria, such as indicators or certification requirements, to support public information such as certifications, ratings or reports. OPL does provide public information, but without standardised and replicable criteria; it has not been designed around providing comparable public information. Does it successfully manage to balance good public information and transparency with flexibility?

OPL summary information (endorsement, leadership recognition, One Planet Living status) is flexible and discretionary. For example, endorsement was described as an indicator of a ‘good’ programme. This does not necessarily make it less informative than standardised approaches, since as chapter 3 showed, certifications and ratings can be compatible with a business-as-usual approach. Can OPL summary information be regarded as a meaningful indicator of good outcomes? Since OPL assessment occurs before implementation, this depends on how well such processes gauge likely outcomes. This chapter identified OPL

accountability as being particularly flexible and forgiving, relying on the demonstration of ‘progress’ rather than any specific level of achievement. This suggests it may be possible for programmes to maintain their recognition whilst performing less well than hoped. Whether this has occurred is explored in the following chapter.

Regarding the detailed transparency provided by reports, OPL users are encouraged to monitor progress and publish reports. This model has the potential to combine transparency with flexibility, and to generate learning for instrument users, Bioregional and external audiences. This chapter highlighted possible issues with a flexible and bespoke approach. In particular, bespoke monitoring may be less likely to occur, and therefore reports may not be published. Interviews suggest that a bespoke approach can also lack comparability.

6.5. Summary

This section summarises the material in previous sections on the three legitimacy functions.

6.5.1. Programme level

This chapter has explored OPL guidance and processes, with many of its core underlying rationales and features relating to how it operates at the programme level. OPL is underpinned by its engaging ‘hearts and minds’ ethos, described here as a focus on commitment, communication and cultures of sustainability. Bioregional hope to support motivated communities of users with a good understanding of sustainability issues, building into organically evolving ‘cultures’ of sustainability. The communicability of the framework is an important mechanism for this. These considerations are particularly important for a wide-ranging definition of sustainability which attempts to reach into all aspects of lifestyles, behaviours, and practices – necessitating the involvement or influence of many different stakeholders. Motivated and ambitious communities of users are more likely to drive strong outcomes, and can also be trusted to a greater extent to make their own decisions, enabling context-appropriateness. This broadly reflects the point highlighted by literature in chapter 3 – those motivations are an important determinant of sustainability outcomes, especially where instruments incorporate flexibility.

The core of the OPL ‘framework’ is its flexible principles and goals, which are open-ended, fluid, adaptable and non-prescriptive. This goal-oriented rather than target-driven or measurement-based approach has become more explicit over time. Interviewees identified a range of characteristics, benefits, and, sometimes, challenges, in supporting more effective and participatory outcomes and processes. Such flexible aims are also: (1) *ambitious*, maintaining an aspirational vision of thriving within ecological limits, rather

than an 'achievable' one; (2) *shared*, forming a 'common language' applicable to all, with fluid boundaries, enabling influence, collaboration, clusters of users and nested systems, rather than being sector- or user-specific; (3) *holistic*, enabling broad aspects of systems and strategies to freely interrelate, capturing synergies and trade-offs, instead of an isolated focus on specific targets, credits, etc.; (4) *communicable*, using language which is relatable, accessible or memorable rather than technical; (5) *dynamic*, accommodating change over time, rather than being fixed. Challenges include translating the holistic, aspirational, or shared aims into useful actions and targets for any given programme, and the problem of bespoke indicators clarity or comparability in the use of indicators.

To accommodate OPL's flexibility, its assessment, accountability, and monitoring processes are flexible, bespoke, and discretionary. This provides an alternative to approaches centred on 'objective', measurement-based, replicable criteria. OPL assessment processes encourage ambition but also take a discretionary case-by-case approach which enables context-appropriateness, and focus on more intangible areas such as commitment. Accountability is flexible and forgiving, and combined with guidance, encouraging users to continue making progress rather than sanctioning them. Monitoring and reporting can enable oversight and learning. However, one issue identified with this approach is that a lack of comparability may make assessment more challenging. Improved guidance on monitoring could improve the likelihood of establishing efficient and effective monitoring systems.

Some interviewees regarded OPL's processes as being somewhat lacking in structure, and that a more structured approach could improve implementation, partnership working or embedding the framework within organisations. More replicable guidance could support this, anchoring processes to the application of this guidance.

6.5.2. Systemic level

OPL programmes are limited in number (around 30 One Planet partnerships to date), limiting their impact on a large scale. One issue with was noted was Bioregional's limited ability to promote the framework, due to its size, not necessarily reflecting an issue with the framework itself. This chapter also noted a possible loss of cognitive legitimacy, where the 'ecological footprint' is used to introduce and communicate OPL but is then not measured.

Other issues are primarily related to OPL's pragmatic legitimacy, which can be described in terms of two 'problems'. One is the problem of a *flexible and bespoke approach*. Flexible instruments can lack convenience where they require the creation of bespoke plans and

monitoring. Users may not have the confidence or expertise to develop more technical aspects of plans, and bespoke consultancy services are costly and there is a limit to the capacity of an organisation like Bioregional to supply them. Overall, a bespoke approach offers less of an easily scalable and replicable model. Can a flexible approach be scalable? It is possible that more easily replicable guidance could help scale the framework further; indeed, the hope is that the digital platform will create a more accessible, structured and user-friendly way of using OPL, with more convenient access to knowledge.

Another ‘problem’ is related to *ambition*. Again, this issue does not necessarily reflect a limitation of OPL itself: the framework provides insights about the potential trade-offs and challenges of highly ambitious voluntary governance more generally. OPL is likely to incur significant costs and Bioregional expects highly ambitious and committed partners, limiting the range of partners it can work with. Rather than take-up, OPL’s approach to achieving system change is via *leadership*, by pushing for an uncompromising vision of sustainability which other actors can emulate. To open themselves up to a wider range of potential users, instruments can allow for variable performance, as has been the case with the recent OPL ‘peer review’ process described in chapter 4.

6.5.3. Public information and transparency

This chapter explored the implications of OPL’s assessment and reporting processes for public information and transparency. One Planet Living status is regarded as a mark of a ‘good’ programme, but it is awarded on a discretionary basis before implementation, so there is a risk that its meaning becomes diluted. Monitoring and reporting are expected of OPL users, and OPL, therefore, has the potential to provide a good level of transparency. However, bespoke monitoring and reporting can be less likely to occur.

6.6. Practitioner recommendations

Based on the above analysis, this section includes recommendations for resolving what may be described as conceptual tensions in the framework, arising from efforts to incorporate more conventional measurement methods into the framework (Gibbons, 2020). On the one hand, OPL’s core strengths derive from its flexible, goal-oriented nature, enabling a regenerative, systems-based, and communicable approach. On the other hand, OPL users are expected to develop plans and reports, with indicators, targets, monitoring. Without replicable guidance, these technical aspects of sustainability require significant effort to develop on a bespoke case-by-case basis. Moreover, monitoring strategies that are developed can result in less efficient approaches to monitoring or data capture, and may

need to be adapted at a later stage. The interpretive approach adopted has attempted to synthesise multiple perspectives, enabling the strengths of OPL to be maintained, emphasised, and made explicit, whilst identifying possible areas for enhancement, to be carried out in ways that would not detract from OPL's strengths.

A philosophy of regenerative aims. One reason there has been resistance to a more replicable approach in the past is the fear that the benefits of OPL's regenerative, systems-based approach, focusing on goals rather than prescriptive criteria, could be lost. Hence, it is also necessary to accompany guidance on more prescriptive aspects of plans with an explanation of the underlying regenerative approach, explaining the relationship between indicators and targets and other aspects of a plan, such as actions, principles, and goals. This could be justified by explaining the benefits of an approach centred on principles and goals: that these are flexible, ambitious, shared, holistic and communicable. Indicators and targets can play a supporting role, ensuring that the framework remains non-prescriptive, and that isolated targets do not take priority over a holistic view at any stage.

Integrating monitoring and measurement. Monitoring is one of the more technical aspects of creating and implementing a plan, and more specific guidelines could help ensure monitoring is efficient and easy to establish, avoiding the need for later changes, as well as supporting a degree of comparability together with context-appropriateness. Enhancements could include:

- **Core recommended indicators:** a small set (e.g., 5-10) of carefully calibrated, appropriate, and recommended (not required) indicators for any given sector (comparable across sectors if possible), together with data sources, covering areas such as energy, water, waste, and transport.
- **Context-relevant indicators:** detailed guidance on selecting a small number (e.g., 10-20) of context-relevant or regenerative indicators which foster engagement and learning (Gibbons *et al.*, 2020), or which align with existing data sources, with suggestions.
- **Guidance on qualitative monitoring:** guidance on when to use, data collection and relevant tools; e.g., for action tracking, surveys, images, or online discussion groups.
- **OPL with limited/no indicators:** explore a basic level of framework use with limited or no indicators, focusing on qualitative monitoring such as action tracking, making it easier and less technical to plan and implement for any kind of user, removing possible barriers for smaller organisations.

Practice outputs of this research project could help in the production of indicator sets. The need for more convenient guidance was identified at an early stage in the research project. Initially, indicators were requested and included in general guidance documentation (Bioregional, 2016a, 2017b). This work was further developed into detailed guidance for new communities and local government programmes (Gerhards, 2019d, 2019c, 2019b, 2019a). This could be used as the basis for further consultation, calibration and refinement of indicator sets.

Clarifying the supporting role of targets. Once more flexible aims have led to a coherent and holistic plan, targets can be used to focus efforts, track progress, and add ambitious timeframes more quantitatively, whilst taking care to avoid a narrow and reductive approach (Kitchin *et al.*, 2015). However, their use could benefit from some clarifications:

- **Actions as an accountability mechanism:** if accountability is needed, this could primarily be provided by actions or output indicators, which are more predictable and controllable than outcome indicators or targets.
- **Guidance on targets:** providing guidance on when targets are or are not suitable or necessary. E.g., they can be helpful for setting decarbonisation timeframes for longer-term programmes, or driving ambition in more controllable or quantifiable *outputs*.
- **Explicitly aspirational targets:** making explicit the approach of aiming high in the face of uncertainty, and acknowledging that targets may not always be achieved and that they may be adapted, rather than regarding them as fixed commitments or accountability mechanisms.
- **Shared aspirations:** using 'shared indicators' to set aspirations/targets for areas of collective responsibility, e.g., area-wide targets for cities; communicating that these are not 'owned' by any organisation.

Other enhancements. There are also other possibilities for improving the structure and convenience of the framework. OPL could move more towards an adaptable template approach to the creation of plans for any given sector, adding convenience and pragmatic legitimacy and making OPL easier to scale. Several interviewees also expressed the desirability of greater structure to OPL *processes*. The most successful practices from existing programmes could be transferred into other contexts. Without being restrictive, these could add structure and momentum to processes without negating the benefits of a flexible goal-oriented approach. An adaptable template approach could also be used to anchor more structured processes of planning, monitoring, and reporting. Bioregional has

recently launched a new multi-stage service for local governments, for example (Bioregional, no date b).

- **Adaptable templates/content:** providing adaptable templates or guidance, e.g., lists of goals/outcomes, actions and indicators for inspiration and more convenient plan creation.
- **Structured processes, with guidance:** providing more structured guidance for processes such as plan creation, monitoring, partnership working, collaboration, communication, training, stakeholder engagement, and organisational embedding or management. These could be supplemented with engagement materials.

6.7. Conclusions

This chapter provided an in-depth exploration of perspectives on the strengths and limitations of the OPL approach, including a deeper understanding of its intended characteristics and the reasons for these. OPL's key characteristics were defined in more detail and compared with contrasting approaches found in some standardised instruments. Its central strengths derive from the fact it is not defined in prescriptive and measurement-based terms, with its flexible principles and goals supporting a systems-based and regenerative approach at the programme level. Yet, translating its principles and goals into bespoke, context-specific details can pose various challenges related to structure, resource requirements, monitoring and reporting.

At the *programme level*, this chapter explored how OPL's guidance and processes have the potential to support more effective, participatory, and regenerative approaches. It is the view of Bioregional's co-founders, echoed by other staff, that OPL's flexible, goal-oriented approach provides numerous benefits in contrast to a more standardised, prescriptive, or measurement-based approach. The principles (and, potentially, the strategies they give rise to) are ambitious and aspirational, flexible and context-appropriate, holistic and joined-up, and dynamic. They also form a shared, communicable 'common language' that enables engagement and collaboration processes. These characteristics are complemented by the 'hearts and minds' ethos of OPL, emphasising the need for commitment, effective communication and the creation of cultures of sustainability. Hence, the rationale underpinning the framework aligns closely with more systems-based and regenerative perspectives. The chapter also explored the rationales behind OPL's flexible assessment, monitoring and accountability processes, which emphasise discretion and shared values rather than objectivity and impartiality. Various drawbacks were noted: the bespoke

approach can result in reduced comparability in assessment, and OPL's processes can lack structure and therefore make progression through its stages more challenging.

At the *systemic level*, OPL has influenced policy and industry, has a broad global reach, and is well regarded. However, it has relatively low take-up. Interviewees noted the limited capacity for a smaller organisation to promote the framework, not necessarily reflecting a limitation of the framework itself. However, other reasons identified were primarily those of pragmatic legitimacy, which can be described in terms of two 'problems'. One is the problem of a *flexible and bespoke* approach, with the creation of bespoke plans being perceived as more daunting or challenging, and based on bespoke partnerships which can be resource-intensive. The other is the problem of an *ambitious* approach, which can require unusual levels of commitment and be resource-intensive, reflecting the difficulty of mainstreaming ambitious voluntary governance more generally.

OPL attempts to combine *public information and transparency* with flexibility, providing both summary information and detailed reporting. One Planet Living status is regarded as a mark of a 'good' programme, but it is awarded on a discretionary basis before implementation, so there is a risk that its meaning becomes diluted. Monitoring and reporting are expected of OPL users, and OPL, therefore, has the potential to provide a good level of transparency. However, bespoke monitoring and reporting can be less likely to occur. The quality or availability of public information is explored in the following chapter.

7. Case studies: OPL in practice

With the previous chapter having provided a generalised view of OPL, this chapter turns to the rich and varied body of case studies available, to explore its implementation in practice. The chapter is again organised according to three legitimacy functions. At the programme level, the chapter includes separate sections on processes and outcomes. Processes include regenerative engagement and collaboration processes, and flexible assessment, monitoring and accountability processes. An evaluation of outcomes places a particular focus on the OPL principle of zero carbon energy. At the systemic level, this chapter explores those factors potentially affecting OPL's use and take-up, focusing on normative legitimacy and pragmatic benefits or drawbacks. The quality of public information and transparency for case studies is then explored.

7.1. Overview of sectors and case studies

This chapter draws on a broad range of case studies which were introduced in chapters 4 and 5. These are broken down into three groupings throughout the chapter: new community construction projects; local government and city programmes; and an 'other sectors' grouping which includes two corporate programmes, two eco-tourism resorts and a school.

The case studies are organised according to sectors throughout the chapter, but have also been selected to explore clusters (sometimes incorporating multiple sectors) that have arisen within geographic area. For example, new communities and local government programmes have often arisen alongside each other. Such clusters generally arise organic influence, creating mutually reinforcing dynamics, and contributing to a general culture of sustainability. Table 5.2 in chapter 5 outlined the geographical clusters in detail. These are:

- **Sutton, UK:** a local government/city programme; a new community; a Bioregional office.
- **Brighton, UK:** a local government/city programme; a new community.
- **Oxfordshire, UK:** three new communities; a Bioregional office; an area-wide multi-stakeholder programme.
- **Fremantle and Perth area, Australia:** a local government/city programme; three new communities.
- **SOMO Village, California, USA:** a new community; a school.

7.1.1. New communities

OPL has been most extensively applied to the creation of new residential and mixed communities, at various scales from apartment blocks up to large urban extensions: new communities are the main sector for OPL. The lessons from BedZED, written about extensively (Chance, 2009; Desai, 2009; Hodge and Haltrecht, 2009), have since been applied to the other programmes and case studies examined here, both within the UK and beyond, particularly in the US and Australia. The approach implements the ten principles across design, construction, and management/operation, with a focus on management being unusually for sustainability instruments within the sector. The projects tend to implement substantial measures across the ten OPL principles, such as community spaces, on-site food-growing, the innovative use of materials, on-site car clubs, and renewable and low carbon energy sources. Such programmes do not face the additional challenge of coordinating a wider area that local governments face, as described further below.

List of case studies of new communities

Of all the case studies listed below, ‘in-depth’ case studies with developer interviews were: NW Bicester, SOMO Village, and WGV. The others were primarily investigated via document analysis, discussion, and participant observation.

BedZED, UK: 100 apartments plus office space, a college and community space. Completed in 2002. Located in the London Borough of Sutton, UK. Developed by non-profit housing association Peabody in partnership with Bill Dunster architects and Bioregional, who played a leading role. Not a One Planet Community but the inspiration behind OPL.

One Brighton, UK: Complex of 172 apartments plus offices, community space and a café. Located in Brighton, UK. Developed as a partnership between Crest Nicholson and Bioregional Quintain. The latter was a joint venture between Bioregional and Quintain. Action plan published in 2006.

Elmsbrook, NW Bicester, UK: 393 home, first exemplar phase of a new 6000 home eco-town (NW Bicester), which is an extension of Bicester. Located in Bicester, Oxfordshire, UK. Developed by non-profit housing association A2Dominion. Action plan published in 2013.

Kings Farm Close, UK: Rural 15 home development. Located in the village of Longcot, Oxfordshire, UK. Built by Greencore Construction. Action plan published in 2018.

Springfield Meadows, UK: 25 homes in the Oxfordshire village of Southmoor, including 16 custom self-build plots and 9 affordable homes. Being built by Greencore Construction. Action plan published in 2019.

SOMO Village, USA: A refurbished business park with 1477 planned homes. Plans include a farmer's market, cafes, shops, art, concert venues, restaurants and a hotel and office and commercial space. The business park is operational, construction of homes is planned. Located near San Francisco and Santa Rosa, California, USA. Built by SOMO Living, an investment company. Action plans published in 2007 and 2017.

White Gum Valley, Australia: Land divided into parcels and sold to different owners, builders, and developers. 80 homes with a mix of building types. Located near Fremantle and Perth, Australia. Land developed by DevelopmentWA (previously LandCorp), a public agency. Buildings developed by plot owners and other developers. Action plan published in 2015.

Evermore at White Gum Valley, Australia: Block of 24 apartments at the White Gum Valley development with its own action plan. Located near Fremantle and Perth, Australia. Land developed by DevelopmentWA, buildings by Yolk Property Group. Action plan published in 2018; recognised as a 'global leader'.

East Village at Knutsford, Australia: A further project by the same agency as WGV, consisting of 36 townhouses and ~70 apartments. Recognised as a 'Global Leader' under Bioregional's new leadership recognition scheme. Located near Fremantle and Perth, Australia. Land developed by DevelopmentWA, buildings by OP Properties. Action plan published in 2019; recognised as a 'global leader'.

7.1.2. Local government and city programmes

Whilst most extensively applied to new communities, OPL has also been applied across larger scales and existing areas. City-scale and local government programmes present major opportunities. Due to their scale, and the potential influence of governing bodies, potential impacts are also large. With most of the global population residing in cities, the current period has been hailed as the 'urban age'. City governance has been positioned as an alternative to dysfunctional national politics, and a way of solving society's pressing issues (Barber, 2013). Along with opportunities, such area-wide programmes also present many challenges. They are large and complex, posing a challenge to standardisation. Ownership and control are fragmented across large areas. Local governments themselves

involve coordination across many teams and departments. This brings the role of OPL in facilitating communication, collaboration, and participation around shared aims to the fore.

Almost all programmes have been led in partnership with local governments, except for Durban's recent citizen-led programme. Local government-led programmes apply to both the organisation's operations and areas of control, as well as their wider geographical areas. These areas may be towns, cities, districts or counties (not just 'cities', therefore). Sutton has been the longest-running partnership with Bioregional, starting in 2009, and forms the focus of an in-depth case study. After Sutton, two other local authorities followed suit. Plans for all three were ambitious and optimistic. They included ambitions for zero carbon council-owned buildings, as well as to support the wider community on a trajectory towards zero carbon, mentioning a combination of renewables and energy efficiency. They also included aims for new builds within the area to be zero carbon in the near future.

Yet, aside from the inherent difficulty of coordinating and influencing community-wide change, UK local governments had had a particularly challenging decade. Between 2011/12 and 2015/16, English local authorities cut spending by 27% in real terms (Hastings *et al.*, 2015). UK OPL local government programmes were therefore initiated during a very challenging time, during a period of drastic budget cuts. Back-office roles were cut and services were often reduced to a minimum of statutory services such as social care. A former Bioregional employee commented:

I think you've got to separate that off as the 'endorsed non-performers'. They're non-performers for a particular reason. Because of local authority cuts. (Bioregional 5)

I just wonder why Bioregional is working with local authorities in that way at all. I just think it's the hardest thing... It's much more suited to the built environment stuff. (Bioregional 5)

In Sutton, the staff allocated to the sustainability team was drastically reduced, for example:

When I first started our team was, I don't know, 25? And then when I left, we were down to three. (Sutton 2)

After the UK's local government programmes has come the City of Fremantle's more recent programme in Western Australia, which started in 2014. This has maintained momentum and held its ambitious aspirations, for example in relation to zero carbon. It has an elected mayor, Dr Brad Pettitt (2009-), who was previously the Dean of the School of Sustainability at Murdoch University. Most recent has been the One Planet Cities

programme, spread across five localities. The programme is grant-funded, and the aims adopted locally have been more variable and flexible than for earlier local government programmes. A collaborative, multi-stakeholder process has been used, and the programme is making use of the digital platform for collaboration and action planning.

List of local government and city case studies

London Borough of Sutton: Outer London borough (of 32) in which BedZED and Bioregional's head office is situated; population 200,000. Action plans published in 2009 and 2013. Endorsed partner of Bioregional between 2009-18.

Middlesbrough: A coastal town on the north-east of England, with a population of around 140,000. Action plans published: 2011, 2015(-25), 2017(-25). Initially endorsed, but the partnership was not sustained.

Brighton and Hove: A city on the UK's south coast, with a population of about 290,000. Action plans published: 2013(-15), 2015(-17). Endorsed partner of Bioregional between 2013-15.

Fremantle: a city near Perth in Western Australia with a population of around 35,000. Action plan: 2014/15(-19/20). Endorsement partnership 2014/15-present.

One Planet Cities programme: five multi-stakeholder, area-wide programmes in Oxfordshire (United Kingdom), Saanich (Canada), Elsinore (Denmark), Durban (South Africa), and Tarusa (Russia). Mostly led by local governments in partnership with NGOs, although Durban is a citizen-led coalition. These have not received the new 'leadership recognition'. Partnerships have occurred between 2018-present.

7.1.3. Other sectors

As well as 'urban sustainability', OPL has been applied to a lesser degree in other sectors, becoming established as a cross-sector framework. Two large companies in the UK have used OPL for their corporate programmes, including the longest-running of any OPL programme: B&Q. There are two OPL partners within the eco-tourism sector, and recently a school has also become a One Planet partner. These programmes are particularly of interest in the way they demonstrate the communicability of OPL and its role in creating organisational cultures of sustainability.

List of case studies in other sectors

B&Q: A major home improvements retailer in the UK, with approximately 350 large stores. In 2018 its revenue was approximately £3.5 billion. They have a ‘One Planet Home’ product range. Action plans published in 2006 and 2012.

Cundall: An engineering and sustainability consultancy specialising in the built environment, headquartered in the UK. Its revenue was approximately £60 million in 2017-18. It also applies OPL to its own consultancy work with clients. Action plans published in 2012 and 2018.

Singita Grumeti: A conservation and eco-tourism company operating in Tanzania, Zimbabwe, South Africa, and Rwanda, with twelve lodges. The One Planet work covers aspects of its operations in South Africa and Zimbabwe. Action plan published in 2012.

Villages Nature: A large eco-resort near Paris, developed by Center Parcs and Euro Disney. Action plan published in 2013.

Credo High School: A public Waldorf school at SOMO Village which uses OPL as part of its education programme. Action plan published in 2017.

7.2. Programme level

The previous chapter discussed the ways in which a more flexible, goal-oriented approach has the potential to support more effective and participatory practices at the programme level. To what extent have these benefits been demonstrated by case studies? This section first explores processes before turning to outcomes. Evidence is taken from interviews, participant observation and document analysis, and themes are compared across sectors.

7.2.1. Programme processes

Two groups of processes are investigated here. First, engagement, collaboration and participation processes are analysed; these can be considered especially important in promoting a more regenerative, systems-based approach. In the case of OPL, these have often been less formalised and explicit, emerging organically around the development of action plans and progress reviews. Second, OPL’s flexible, discretionary and bespoke assessment and monitoring processes are discussed. These two themes follow those highlighted by the theoretical framework and previous chapter.

Engagement and collaboration

OPL is based on an overall vision, broken down into ten principles. The previous chapter highlighted how such communicable, shared, fluid principles can act as an aspirational ‘common language’ with the potential to foster holistic engagement and collaboration processes across actors, boundaries, sectors, and scales. Hence, OPL’s formulation of aims – its desired *outcomes* – helps to facilitate regenerative *processes*. Such engagement and creation of shared cultures aligns with OPL’s ‘hearts and minds’ ethos. These processes have often emerged organically, in a variety of ways, described below. Appendix B provides details of such processes for all case studies.

Organisational engagement. Those within an organisation are likely to be the key actors delivering sustainability programmes. A ‘hearts and minds’ approach places an emphasis on the creation of organisational cultures of sustainability, ideally resulting in sustained changes in practices and behaviours. This is especially important for the delivery of ongoing sustainability programmes, but may still be important for specific projects. A culture of sustainability can mean a more general awareness of a sustainability programme and its areas of activity, or a more detailed understanding of the ten principles, which then become embedded as ways of thinking and working. Case studies revealed that organisational cultures have developed in different ways and to different extents:

The team that is now at SOMO Village is smaller and is all very well connected to the One Planet principles and the programmes. So, it really touches across all the different work that we have [...] it’s pretty embroiled in everything we do. (SOMO Village developer)

I think it’s probably more the research aspect, which I suppose is hard to differentiate completely [...] I think [it] has fundamentally changed the way that the business kind of sees these government sites now. (WGV developer)

No, I would say it’s not had an impact on the way we work. (NW Bicester developer)

It’s a buy-in mechanism, it’s a way to get support [...] it was in the Lib Dem’s manifesto that they were committing to One Planet Sutton. [...] The fact that they said ‘we’re committed to One Planet Sutton’ then meant they were committed to the OPS strategy and all that that entails, so we had a bit more of a lever to push them on, over the course of the years. (Sutton 2)

The embedding of OPL within the day-to-day practices of organisations appears to have varied, therefore. Several developers have implemented multiple OPL projects, suggesting a degree of embedding. At Sutton, OPL was implemented via a management process with various teams and departments taking responsibility for different principles, but a former Bioregional staff member questioned whether the enthusiasm of the sustainability team had translated into a strong, wider organisational culture. Whilst many programmes used some element of training and ‘facilitated’ processes (Holden *et al.*, 2014), some programmes established regular, ongoing training or education programmes, such as Cundall, B&Q and Credo High School. OPL has been incorporated into B&Q staff training, and organisation has also published a staff sustainability newspaper, the *One Planet Times*. At Cundall, OPL has been incorporated into the Cundall Diploma, a company-wide sustainability training programme (5910 hours of training reported in 2016-17), and numerous participants identified OPL as a beneficial, enjoyable a highlight (Cundall, 2017a). OPL has thereby become embedded as a way of working, and staff routinely applied OPL to their client’s projects. At Credo High School, OPL is embedded into the curriculum, demonstrating its suitability as an educational tool for non-experts, and its potential role in inspiring ‘hearts and minds’. It may be beneficial to apply such facilitated processes across a wider range of OPL programmes.

Collaboration and participation across stakeholders. OPL’s shared, fluid, communicable principles enable discussion, collaboration and participation across groups of stakeholders. Collaboration, here, is intended as either developing or implementing plans collectively, implying some degree of closeness to the details of a sustainability programme. Such collaboration can help address coordination issues faced across large sustainability programmes of different types. New communities using OPL are unusual to the extent to which they apply sustainability considerations across all stages of a project’s life cycle. Planning and design processes often involve workshops, meetings, discussions and proposals involving developers, planning authorities, architects and citizens. After this, OPL continues to be used a common language of partnership working throughout construction and operation, being embedded into guidelines for contractors, tenants, plot developers, or management companies. For One Brighton, over 1300 design, development and construction staff were given an induction into OPL, and a ‘Sustainability Integrator’ was used to manage relationships. At NW Bicester, there has been a close working relationship between the local authority, developer and Bioregional throughout implementation, and the latter has an office in the same building as the local authority.

Local government programmes involve the coordination of stakeholders across a wider jurisdiction. Given Bioregional’s desire for impact, area-wide engagement and

collaboration have always been important aspects of such programmes. For example, a co-founder says:

Local authorities need to partner with other stakeholders, like businesses or others that are operating in the area, to achieve their goals. The local authority is never going to be able to achieve One Planet Living for the city on its own. So, it's about how it uses its soft power. (Co-founder 1)

Hence, cities and local government areas represent both a challenge and an opportunity. Their large scale represents a large potential impact, but coordination can be difficult to achieve. Early UK programmes involved the collaborative development of strategies through meetings and workshops. Their action plans included 'city' and 'community' sections, but such a shared approach to the actions within a strategy leaves their ownership somewhat ambiguous. The recent One Planet Cities programme has addressed this issue: shared, area-wide outcomes were identified collaboratively, which were adopted into multiple action plans for different organisations. This therefore results in a shared, overarching vision, translated into separate, organisational strategies. This more explicitly formalises the roles that different organisations can play, and provides them with greater ownership over individual activities.

External engagement and influence. OPL's shared aims and fluid boundaries are applicable to all actors, everywhere. They therefore encourage OPL users to spread their influence beyond the boundaries of their own organisation, to external organisations or citizens, in the hope that this will result in further activity and impact. There can be a somewhat blurred distinction between 'influence' and 'collaboration', depending on how the boundaries of overlapping programmes are defined, but such 'influence' typically takes a less detailed form, not requiring stakeholders to engage with all OPL principles or the details of a strategy. Citizens have been encouraged to change their food eating, food growing, transport or energy consumption habits, through the provision of workshops or classes, as well as food growing spaces and bikes or electric vehicles. At SOMO Village engagement efforts are likely to have contributed to a general culture of sustainability, with the site hosting many sustainability-related businesses and activities, especially related to food and plants (e.g., wellness tea company, a seed nursery, farmer's market), as well as an active concert venue. OPL programmes often engage suppliers when trying to procure more sustainable products and services. As noted above, OPL local government programmes represent a particularly major area-wide coordination challenge. Engagement and influence efforts addressing this have included, for example, the formation of food and Fairtrade partnerships; teaching students at schools about topics like food, energy or bikes; and

community tree-planting in Fremantle (18,000 trees were planted in 2018, two-thirds by volunteers). However, early programmes demonstrate the challenges of achieving wider change – for example, retrofit programmes were typically limited in nature, as discussed below. Whilst Sutton and Brighton mentioned OPL in planning guidelines, at Sutton, for example, there was limited internal teamwork between the planning department and the sustainability department, and hence limited engagement of developers.

Nested systems of OPL users. A noteworthy feature of OPL is its ability to create nested systems of users across multiple scales, embodying a more systems-based approach. This ability arises from its universal, cross-sector approach, not specific to sectors or scales. The WGV development provides an example of this. OPL was used to shape the overall land development and then engage plot buyers via training and incentives, leading a number of them to contract green building companies and adopt OPL-inspired practices. Evermore Apartments on-site has itself become a One Planet Community, described as a ‘family’ by the developer. WGV itself is located within Fremantle, itself a One Planet City, creating a nested system at three levels. Similarly, SOMO contains a One Planet School (Credo High School). Four OPL local government areas also contain OPL developments (Sutton, Brighton, Oxfordshire, Fremantle).

Holism. Holism is another purported benefit of a goal-oriented approach, whereby flexible aims can support joined-up strategies which align with systems thinking and capture synergies and trade-offs. There is evidence of holistically promoting actions with multiple benefits (like food growing at many new communities), and trying to influence sustainability cultures alongside infrastructure (Aldred and Jungnickel, 2014). NW Bicester provides an example of a holistic approach to behaviour change, including free bikes which can be borrowed, bike workshops in a nearby town, an electric vehicle leasing partner, public transport connections, and the use of a transport coordinator. As well as specific topics within action plans, we can also consider whether processes of teamwork or collaboration have been holistic. For local government programmes, approaches have sometimes become somewhat siloed. Brighton’s plan was developed through separate meetings for each principle, rather than through a more integrated approach across the ten principles. Embedding OPL within complex organisational structures can also be challenging. The approach taken at Sutton was assigning responsibility for individual targets to specific managers and teams, which risks losing the benefits of a collaborative, holistic and joined-up approach where the principles are applied holistically throughout the organisation. For example, the One Planet Sutton board, responsible for overseeing the programme, did not include representatives from the planning department or health teams, or the energy manager. During one period, boilers had been replaced by the energy manager

without discussions with the One Planet Sutton board. OPL was also not heavily integrated into the overarching Sutton Plan (London Borough of Sutton, 2018b) or its spatial plan, Sutton's Local Plan (London Borough of Sutton, 2018a). Table 7.1 below provides an overview of examples of engagement and collaboration demonstrated by OPL case studies. The specific case studies listed are not exhaustive.

Table 7.1. Examples of engagement and collaboration using OPL as a 'common language'.

Process	Sector	Examples
<i>Organisational engagement</i>	<i>New communities</i>	OPL embedded in organisational culture (SOMO); OPL applied multiple times by some developers (Greencore Construction, DevelopmentWA)
	<i>Local governments</i>	Management system created for OPL (Sutton).
	<i>Other sectors</i>	OPL used in staff training (SOMO, Cundall, B&Q), publication of a One Planet-themed staff sustainability newspaper (B&Q), OPL used in education curriculum (Credo High School).
<i>Collaboration and participation across stakeholders</i>	<i>New communities</i>	Consultation in design process (NW Bicester); collaboration between developer, local authority and Bioregional over planning process (NW Bicester), collaborative project delivery, e.g. between developer, Bioregional, designers and architects, contractors or management companies (most/all One Planet Communities); engagement of plot owners (WGV, East Village at Knutsford).
	<i>Local gvt./city</i>	Participatory strategy development, through meetings and workshops (Brighton, Sutton), participatory development of shared outcomes and individual strategies to achieve those shared outcomes (One Planet Cities programme)
<i>External engagement and influence</i>	<i>New communities</i>	Engagement of citizens via measures such as workshops, food growing spaces, bike borrowing, car clubs, transport coordinator (BedZED, NW Bicester); tenant guidelines (SOMO).
	<i>Local gvt./city</i>	Engagement of citizens, e.g. via workshops and food growing spaces (Sutton, Brighton, Fremantle, Middlesbrough) or tree-planting (Fremantle); local partnerships for food or Fairtrade (Sutton, Brighton); supplier engagement (Sutton, Brighton, Fremantle); OPL in planning documents (Sutton, Brighton).
	<i>Other sectors</i>	OPL routinely applied to client projects (Cundall), OPL used in customer engagement (B&Q, Singita); supplier engagement/procurement (B&Q, Villages Nature).
<i>Nested systems of users</i>	<i>Cross-sector</i>	OPL used by local authority (Fremantle) containing a developer (WGV) and plot owner/developer (Evermore Apartments); OPL used by developer (SOMO) and school on-site (Credo High School); local authorities contain developments (Sutton, Brighton, Oxfordshire, Fremantle).

Assessment, monitoring and accountability

Assessment and monitoring are important functions of all instruments considered in this thesis. This section considers OPL's distinctive, flexible, discretionary approach, which carries out such practices on a more bespoke, case-by-case basis. OPL processes involve several interrelated components: the assessment of action plans, progress monitoring (and reporting), and Bioregional's oversight and accountability processes. These perform two important functions. First, they can contribute to more effective programmes. Second, they support the provision of public information – assessing One Planet Living status and resulting in public reports, which are discussed further below under public information and transparency. This section explores the contribution of such processes to programme effectiveness.

Assessment of action plans. OPL plans are intended to drive ambitious, context-appropriate practices. Bioregional assess plans to provide feedback on their quality, and suggest areas for improvement, with the promise of One Planet Living status providing an additional incentive to push practices further. Have assessment processes provided high-quality feedback on the development of ambitious as well as realistic strategies? Assessment processes have been rigorous for some sectors, especially new communities. New communities are generally easier to assess on the basis of plans and designs, even though outcomes may still be somewhat uncertain. To take the example of zero carbon energy, developers must have a credible plan for addressing the principle, and some potential partners were not endorsed because they were not willing to pursue this. Being realistic about expectations must be balanced with OPL's more aspirational nature. For example, for White Gum Valley, the process of setting ambitious aims resulted in outcomes beyond what was initially considered viable:

I have to say, there was still a fair bit of fear and trepidation when we went into it. (WGV developer)

It hasn't been the easiest, but I guess we were lucky in some respects in that we had a bit of help. The project attracted a number of research projects to it, mainly through Curtin university, so that helped in terms of having to deliver on [...] zero carbon, which we never thought we would get close to, but we've actually got a lot closer to it than we ever thought. (WGV developer)

Hence, some degree of aspiration in the face of uncertainty can be important in driving ambitious outcomes. OPL's application to other sectors requires some creativity and interpretation, and arguably often introduces still greater uncertainty. Local government

programmes are large-scale, complex, and long-term, and therefore more difficult to assess. Indeed, they have performed less well than hoped, suggesting that in some cases assessment processes may have been less reliable than for new communities. The first quote relates to Brighton, the second to Sutton, and the third is a general comment by a co-founder:

There wasn't really much thought that went into resourcing. So, we had this really ambitious plan, but then with all the cuts that the council had to implement, there wasn't really the resources to deliver it. (Bioregional 1)

I'm sure this is what's happened now, but it would have been more useful to have more flexible targets that were more relevant to the council that we knew we could actually deliver. (Sutton 2)

Sustainability is more intractable than I thought – it goes deeper than I thought. (Co-founder 2)

The quotes suggest assessments were somewhat over-optimistic, not paying detailed attention to resourcing or specific plans for achieving aims. These experiences may have contributed to a recent emphasis on 'readiness' (Bioregional, 2018c), and Bioregional's shifting emphasis from 'targets' to 'goals' (Bioregional, 2011c, 2017b) in order to avoid being prescriptive. Long-term programmes in other sectors involve less coordination across diverse and fragmented actors and ownership, and have had fewer funding difficulties. This has meant that, despite uncertainty about long-term aims, progress has been made, for example in procuring renewable energy.

Monitoring and reporting. Monitoring has the potential to provide useful feedback to generate learning, and is used to generate reports. OPL users have mostly published at least one review or report. Interviews revealed varying perspectives on the benefits of monitoring for effectiveness:

Our monitoring has definitely helped us learn [...] It's very much based on PPS 1 monitoring, rather than One Planet monitoring. It's helping us learn hugely. (NW Bicester developer)

It probably should be more used in decision-making, but whether it is or not, it's more of a relief just to get it out, I think. (WGV developer)

It helped us sometimes to prioritise where we should be spending our time, what we should be looking at, when there was poor performance. (Sutton, 2)

Having that kind of evidence base, that credibility of being able to go, ‘look, this is our report’ to partners that want to work with us. (Sutton, 2)

It kept in the forefront of the powers that be knowing that they were going to be monitored and that this was going to be made publicly available every year. (Sutton, 2)

Interviewees for both NW Bicester and Sutton found monitoring to provide helpful feedback for learning, suggesting indicators perform an ‘instrumental’ function through their integration into strategy. However, WGV’s developers were unsure about the use in decision-making. A Sutton interviewee also regarded public reporting as providing helpful leverage over the wider organisation, as well as over external partners. Sutton’s early, resource-intensive approach to monitoring also highlighted how such practices have the potential to divert resources from implementation; Sutton eventually moved from around 70 to 30 indicators. This highlights the importance of an efficient approach to monitoring. Both the regularity and efficiency of monitoring appear to have been affected by OPL’s bespoke approach, and could likely be enhanced by more structured guidance. For new communities, regular multi-year reporting has usually not been established. For local government programmes there were various issues that are discussed further below under ‘public information and transparency’, as part of a discussion of public reporting. For example, Sutton took four years to establish regular monitoring, and the links between indicators and areas of programme activity could still have been stronger (as they are with Fremantle).

Oversight. Bioregional’s oversight involves checking the progress of partners and providing feedback on possible areas of improvement. Such feedback is typically based on the monitoring and reporting process, where Bioregional staff track the progress of various actions or indicators, and their feedback may be published in the form of a Bioregional report. The following quotes shed light on such relationships:

That’s where I feel my role has been quite good, because we would actually sit down and go, right, what are you going to do for that? Are you actually going to aspire to do that – if not, why not? That doesn’t necessarily mean they can’t be a One Planet Community if they can’t, because it might be that there are no veg box schemes at all in Oxfordshire, and it was just inappropriate to consider that, but they’re looking at something else – it could be a local farmer’s market. (Bioregional 2)

I think the issue is why even on the built projects does endorsement just kind of goes into the long grass a little bit, rather than being sustained over a long period. (Bioregional 5)

For NW Bicester, oversight has been close but flexible throughout implementation. A Bioregional staff member described their role as the ‘sustainability police’. However, one Bioregional interviewee quoted above felt that the relationships were not always sustained over a longer period. Turning to local government programmes, these have had less rigorous oversight due to a combination of their complexity and the limited funding available. Although their complexity merits close oversight, this cannot always be funded. The first quote relates to Sutton, the second to Brighton:

You just can’t run a programme on that, you can go to meetings certainly, but that’s about it. So, that is a problem in the OPL [...] endorsement, the sort of overview and control of that. (Bioregional 5)

They’re not paying us any money, we still speak of it as a One Planet City, but we don’t police that, although we probably should do. (Bioregional 1)

More clearly defined and structured monitoring could in some cases have contributed to more consistent and efficient oversight. Participant observation also revealed that knowledge management could be an issue for complex, long-running programmes such as Sutton, with staff changes and limited resourcing meaning knowledge could be lost. All these issues suggest that carrying out monitoring and reporting against an agreed long-term strategy is important in forming the basis of an oversight relationship. Longer-running programmes in other sectors have been able to fund Bioregional’s oversight and review process, often publishing detailed annual reports, maintaining an ongoing partnership with Bioregional. Oversight in these instances has typically been stronger than for most local government programmes, and longer-lived than for new communities.

Accountability/sanction. Bioregional’s oversight process naturally gives rise to the question of whether they may sanction partners as part of an accountability relationship. Would they ever threaten to remove One Planet Living status, for example, in order to encourage better performance? None of the new communities explored has raised the possibility of relationships being terminated. They have made good progress in meeting their aims, and relationships naturally end as projects near completion. However, UK local government programmes better illustrate the forgiving nature of Bioregional’s accountability process. Sutton had no clear plan for achieving zero carbon in the near/medium term but the possibility of One Planet Living status being removed was not

raised. The focus is therefore on progress and commitment rather than any specific level of performance. Given that partners are at the very least expected to be committed and to some extent self-motivated, the ethos is one of providing encouragement, rather than using negative incentives or threats. A co-founder argued that if partners do not demonstrate commitment or motivation, then there may be a mutual discussion about whether the relationship should continue. When partnerships lapse, as in the case Middlesbrough and Brighton, this can occur gradually and without public statements – to enable them to continue using the framework to some extent if they wish.

7.2.2. Programme outcomes

The OPL principle of ‘zero carbon energy’ is the aim that heat and electricity should be derived from renewable sources and used efficiently. This particularly ambitious aim is primarily focused on buildings, reflecting OPL’s background in the built environment, and it was described as a ‘fuzzy red line’ by a Bioregional interviewee. It is a defining feature of OPL, and the framework’s inspiration is the ‘Beddington Zero Energy Development’ (BedZED). This section explores the extent to which programmes have achieved this aim, primarily via document analysis. In most areas and sectors, it is unusual for energy supplies to be ‘zero carbon’, and therefore achieving this is a good indicator of significantly above average achievements (some benchmarks for new communities are provided below). The principle has the benefit of being fairly comparable across programmes, with information generally being available in plans and reviews. The principle is also, arguably, the most ambitious, and least flexible, of the OPL principles. However, to be context-appropriate, it does incorporate elements of flexibility – sometimes permitting ‘net’ zero carbon solutions, varying timeframes, and off-site energy sources. It therefore provides an opportunity to explore the relationship between ambition, flexibility and context-appropriateness. Appendix B provides details for zero carbon energy across case studies.

Whilst this section focuses primarily on the principle of ‘zero carbon energy’ to investigate outcomes, it is worth first noting some broader points about the outputs and outcomes achieved by case studies. These include low-impact and reused materials, on-site car clubs, extensive habitats and tree-planting, community spaces, food-growing spaces, affordable housing in line with or above local benchmarks, as well as low-carbon and renewable energy sources. The sheer breadth of OPL programmes has illustrated its flexibility and adaptability to contexts, with no evidence of inappropriate solutions being used, except the early experiments with biomass noted below (although this specific energy source was not required by OPL).

New One Planet Communities are typically expected to be zero carbon from the start of operation, with a goal that energy sources are renewable (Bioregional, 2016a). BedZED sought to provide 100% of energy from on-site renewables, but its biomass CHP had implementation problems. These experiences have allowed a broad, pragmatic interpretation of 'zero carbon', using appropriate solutions at appropriate scales (Chance, 2009; Desai, 2009). Bioregional's next development, One Brighton, included the use of off-site renewable electricity, but still had problems with a biomass boiler (both communities now have functioning biomass boilers). Other communities in the UK have also been permitted broad interpretations of zero carbon, allowing the use of gas (therefore being 'net zero' or very low carbon). More recently, and particularly abroad, One Planet Communities have used or are on track to using a model of relying primarily on on-site solar PV – including SOMO Village in California, communities in the Fremantle area, and the recent Springfield Meadows in the UK. These have been helped by their climates, roof space, and advances in technology. As noted in the discussion of assessment processes above, OPL's ambitious aims have been important in driving these outcomes under conditions of uncertainty. For WGV, One Planet Living status helped the project receive publicity and attract interest from researchers, which led to securing a million Australian dollar grant for a solar energy project, then leading on to a similar model being used at East Village at Knutsford. Similar, ambitious aims led to BedZED's journey to being zero carbon, only fully achieving this in 2017. Such efforts have also had wider impacts: SOMO Village's large-scale solar led to its sustainability manager founding Sonoma Clean Power.

Overall, therefore, new OPL communities have eventually all achieved the ambitious aim of being 'zero carbon' or close to this. This is highly ambitious in comparison to the levels set by other instruments; most comparably, building-level rating tools. For example, although definitions differ, a zero carbon requirement could be found in the UK code for sustainable homes level 6, for zero carbon homes. In 2011, only 0.1% of certified buildings achieved this (Lane, 2011). At the time of writing, 3.7% of new build LEED accredited buildings have achieved a platinum rating (USGBC, no date b). Its current scoring system offers maximum credits if only 10% of energy is provided by on-site renewables (USGBC, 2014). Beyond energy supply, new communities have also undertaken other measures important for sustainable, low-carbon buildings, often going far beyond standard practice in efficiency and sustainable materials. Recently these have included carbon neutral building materials (hempcrete with a timber frame, at Kings Farm Close and Springfield Meadows). Reports have calculated embodied emissions in comparison to benchmarks. For One Brighton, embodied emissions were 24% lower than UK benchmarks (Bioregional, 2014b). NW Bicester is reported as having 29% lower embodied emissions than UK

benchmarks (Bioregional, 2015a). Greencore Construction's materials (at Kings Farm Close and Springfield Meadows) are described as carbon neutral.

When applied to local governments, the principle of 'zero carbon energy' is interpreted somewhat differently, based on several challenges such programmes face. First, they largely involve retrofitting existing buildings rather than building new infrastructure. Local governments have therefore been encouraged to make their own operations renewable as soon as possible, rather than straight away (e.g., by 2025). However, local government-controlled buildings and operations account for a low proportion of area-wide emissions. For example, Brighton and Hove City Council are responsible for around 2.5% of their jurisdiction's emissions (Brighton & Hove City Council, no date). Hence, local governments are also encouraged to support the wider area on a trajectory to zero carbon, a challenge involving trying to facilitate change across a typically large area with fragmented ownership and control. How have such programmes fared? Early UK local governments can be considered under-performers. They set targets, or 'aspirations', for achieving zero carbon operations by 2025, but such aims have since been left behind, and no major renewables programmes were undertaken at this level. They did not coordinate major area-wide renewables or efficiency programmes (although the grid has been decarbonising rapidly, resulting in major reductions in emissions). Policy factors have made it more challenging for UK local governments to play a major role: the failure of a flagship energy efficiency scheme (the Green Deal), funding cuts and the loss of the ability to impose planning requirements. Somewhat by contrast, Fremantle's operations have been carbon 'neutral' since 2009, via offsetting, and it continues to make steady progress towards achieving renewable energy and transport. A large commercial solar PV farm has been approved in the wider area, and solar installations continue at a steady pace.

The narrative of struggling UK programmes may overlook their successes and achievements. A questionnaire was provided to a Sutton staff member to attempt to gauge the 'additionality' of its programme. 122 actions and outcomes were collated. These were all the actions and outcomes listed as achieved in Bioregional's 2009-12 review, and all the key annual achievements reported between 2013 and 2016 in Sutton's annual progress reviews. These were then given to the former sustainability manager at Sutton, who had been with the programme since its inception in 2009 until 2017. The manager was asked whether the actions and outcomes listed as achieved would have happened regardless of OPL. They responded that 32% would probably not have, 44% probably would have, and 24% were too difficult to gauge. These findings suggest that the programme achieved a substantial amount beyond the pre-existing practices and other statutory requirements; it

was not simply a re-brand of existing activities. This provides an insight into why removing One Planet Living status for such an initiative would be a difficult decision, as it would run counter to Bioregional's charitable mission of maximising the impact of their partners.

Other sectors involve a mixture of recent developments and long-term programmes, which are often better funded and face less coordination challenges than local governments. These illustrate both the challenges of achieving zero carbon, and the value of ambitious, long-term aspirations in driving the notable achievements. Some partially or largely rely on on-site renewables (Singita and Credo High School, which relies on SOMO Village's energy supply). B&Q has procured renewable electricity for over 300 large sites, but neither B&Q nor Cundall have procured renewable heat. Villages Nature has achieved this, however, having all its heat provided by on-site geothermal energy, which heats a lagoon.

Overall, OPL programmes have achieved a diverse range of outputs and outcomes, across a range of contexts, and often uncommon within their respective industries. Case studies placed a special focus on zero carbon energy and sustainable buildings. OPL's ambitious and sometimes long-term aspirations have helped drive some of the most apparent achievements of OPL programmes. Zero carbon energy is the least flexible aspect of OPL as a performance guideline, yet flexibility of interpretation remains important to using appropriate solutions at appropriate scales. The ambitious aim has driven significantly above-average practices and outcomes; this point was illustrated by comparisons with rating tools and benchmarks in Bioregional's own publications. Sutton's programme also demonstrated significant additionality. A summary of zero carbon energy-related measures and performance is provided by table 7.2 on the following page.

Table 7.2. OPL programmes categorised according to zero carbon energy/building performance and measures.

Sector	Grouping	Description of performance and measures
<i>New communities</i>	<i>Communities using biomass</i>	BedZED had a biomass CHP and now uses a biomass boiler; One Brighton uses a biomass boiler. Both boilers now functioning. Largely combined with renewable tariff electricity.
	<i>Communities using natural gas (low or 'net' zero carbon)</i>	NW Bicester uses a gas CHP combined with large solar arrays ('net' zero carbon); Kings Farm Close uses efficient buildings, solar PV and gas boilers (low carbon).
	<i>Communities largely relying upon on-site solar PV</i>	A mostly- or all-electric model, being powered largely by on-site solar (East Village at Knutsford, White Gum Valley, SOMO Village, Springfield Meadows). Mostly based outside the UK.
	<i>Sustainable, low carbon building measures (all communities)</i>	Sustainable materials, such as reused materials, blast slag concrete, hempcrete, wood, often with significantly lower calculated embodied energy than benchmarks (e.g. One Brighton, NW Bicester, WGV, Kings Farm Close, Springfield Meadows); efficiency efforts such as the BEPIT programme for closing the performance gap (NW Bicester), or using Passivhaus principles or standards (BedZED, Kings Farm Close, Springfield Meadows).
<i>Local gvt./city</i>	<i>Early UK local government programmes (limited progress)</i>	Sutton, Middlesbrough, Brighton: no plan or aim for achieving net or zero carbon for local government operations in the near/mid-term. No major local government renewables installations. No major area-wide renewables or retrofit programmes. Measures adopted include upgrading social housing and installing LED street lights.
	<i>Fremantle, Australia (greater progress)</i>	Working towards aim of net zero carbon for local government operations. Approval of large commercial solar PV farm providing renewable electricity to 10% of the area; a quarter of homes have solar energy and this is increasing at a rate of a few percent each year.
<i>Other sectors</i>	<i>Programmes working towards largely on-site solar</i>	Credo High School uses primarily on-site solar PV (being part of SOMO Village); around half of Singita Grumeti's lodges now rely on on-site solar sources.
	<i>UK companies (challenges with heating)</i>	As of 2017 a contract for 100% renewable electricity had been agreed for all B&Q stores; heating is mostly natural gas; Cundall has purchased renewable energy for its Hong Kong offices, but has limited control over UK operations. Cundall's client projects are often leading in low-carbon building.
	<i>Geothermal heat and renewable electricity</i>	Villages Nature has all its heat powered by geothermal energy, including a heated lagoon. It aims to use 100% renewable electricity.

7.3. Systemic level

OPL has had a significant influence on industry, policy and thought. This systemic impact is reflected by many of the case studies considered in this chapter, which are considered to be award-winning, industry-leading projects (e.g., BedZED, One Brighton, NW Bicester, SOMO Village, White Gum Valley, Villages Nature). However, OPL has had low take-up relative to other instruments, affecting its systemic effectiveness in terms of the number of sustainability programmes it has been applied to. Case studies provided insights into why this may be, by looking at the factors contributing to OPL's take-up and use. Although they are examples of programmes that *have* adopted OPL, they may still shed light on why other organisations may choose not to. The previous chapter identified OPL as having strong perceived normative legitimacy, but pragmatic drawbacks in terms of two problems: the level of ambition required, and the resource requirements of a flexible and bespoke approach. This chapter explores both normative and pragmatic issues further, including but not limited to the considerations in the previous chapter. Often, normative and pragmatic matters interrelate closely; this is especially true of OPL. Pragmatic, reputational benefits may derive from a framework perceived to have strong normative legitimacy. Organisations may benefit pragmatically from their genuine commitment to sustainability issues (something OPL users are always expected to possess), and commitment is also necessary to overcome pragmatic challenges and mobilise significant resources. Nevertheless, an analytical distinction between normative and pragmatic legitimacy can be made, and whilst OPL users are expected to be committed and motivated, the decision to use the framework, or continue to use it, will be affected by pragmatic concerns.

Bioregional staff and OPL users generally perceived OPL's normative legitimacy to be strong. Given the framework's niche status, emphasis on committed users, and significant resource requirements, it is to be expected that users are drawn to OPL due to its perceived normative legitimacy. One way of illustrating this is by looking at the way that organisations and communities using OPL are aligned with normative concerns. For example, sustainability is central to the business models of green builders and eco-tourism; and the public or not-for-profit nature of housing associations, local governments, or public agencies aligns them with the public interest and policy issues. Interviews and participant observation generally highlighted the importance of pro-sustainability leadership in adopting OPL. Cultural factors can also play an enabling role:

We are probably in a different geographical area than most. We're in a very entrepreneurial, very cutting-edge region in Northern California, where there are a lot of early adopters. (SOMO Village developer)

The community was quite vocal in their desire that it was going to be sustainable, so we kind of new that from the beginning. I think White Gum Valley is known as one of the greener suburbs of Perth. (WGV developer)

One case study provides a more complex view of why actors may decide not to use the OPL framework, and its relationship to normative legitimacy. Brighton's OPL programme lost momentum when the Green Party lost its political majority to Labour, which had campaigned against the Greens' OPL programme. Whilst Labour may be considered less intrinsically aligned with sustainability issues, a further explanation for the loss of momentum, according to a Bioregional interviewee, is that the reputation of the framework was damaged among planning officials when a developer used OPL's environmental sustainability credentials to argue against the need for social housing, contrary to the ethos of OPL (and independently of Bioregional). Flexibility in interpretation can therefore create risks to OPL's perceived normative legitimacy if it is applied in such a manner.

Pragmatic considerations are analysed here in terms of pragmatic benefits and drawbacks, as well as wider conditions that have or have not enabled OPL users to pursue highly ambitious sustainability programmes, thereby affecting pragmatic feasibility. In terms of benefits, the use of OPL can provide reputational, communication, and branding benefits. A bioregional interviewee suggested that smaller projects such as Kings Farm Close may benefit from the One Planet brand, whereas larger projects such as Villages Nature benefit more from simply communicating sustainability via their action plans and reports. In either case, benefits ultimately are likely to largely derive from the pursuit and communication of ambitious OPL programmes, resulting in 'leading' projects, and indeed many OPL case studies have won awards. The following quote illustrates how both OPL's ambition and communicability can give rise to pragmatic benefits that sit alongside more intrinsic, pro-sustainability motivations:

Singita, in Africa, were definitely not the most sustainable operation in luxury tourism linked to conservation, their community development and their environmental sustainability was poor, and they worked with us because they wanted to leapfrog those who were doing better than them. They liked One Planet Living because it's easy to understand, easy to communicate; and it resonates with their broad sustainability goals and vision. So that's one reason people approach. (Bioregional 3)

In terms of drawbacks, the previous chapter identified two significant pragmatic challenges for OPL: the problem of ambition, and the problem of a flexible and bespoke approach. On the second point, interviewees for WGV and Sutton found monitoring resource-intensive

and thought that clearer guidance on monitoring and reporting, or some form of tool or template, would have been helpful. Although data collection and processing would involve committing resources regardless of the approach taken, this indicates that monitoring could benefit from clearer or more structured, efficient, and easily replicable guidance, rather than a bespoke approach. The WGV interviewee also suggested that a lack of clarity or certainty may be off-putting for some other developers, although it is unclear whether this is a pragmatic drawback or more of an issue with cognitive legitimacy and what is taken for granted within the construction industry, which is used to standardised rating tools.

The ‘problem’ of ambition is illustrated by the fact that *wider* enabling factors and constraints have a significant impact on the pragmatic feasibility of OPL. It is indeed the case that ambitious and successful programmes have benefited from wider enabling conditions, such as grant funding or subsidies (e.g., for BedZED and WGV) or supportive planning policies (e.g., NW Bicester), and that less successful ones have been affected by funding cuts, as in the case of UK local government programmes. OPL partnerships require funding, and for local governments, such partnerships either lapsed or became minimal:

Con wise it costs us money. Our resources are getting smaller and smaller each year. The targets that were set were really ambitious, and we aren’t necessarily going to achieve them all. (Sutton 1)

I don’t think most local authorities can be leaders, to be honest. (Co-founder 2)

Recent city and local government programmes have, to an extent, decoupled the use of the framework from any specific performance (and therefore resource) expectations. One Planet Cities programme participants have also not received endorsement or leadership recognition, indicating a different status to previous programmes. The targets being set by these programmes are more variable than for earlier programmes. Moreover, a ‘peer review’ can be obtained regardless of whether One Planet Living status is awarded. Tables 7.3 and 7.4 on the following pages provide an overview of factors affecting take-up for OPL case studies, in terms of normative and pragmatic legitimacy.

Table 7.3. Alignment with normative legitimacy found in OPL case studies.

Factors identified	Sector	Examples/insights
<i>Organisational alignment</i>	<i>New communities</i>	Green builders or developers (Greencore Construction, York Property Group, Bioregional Quintain); housing associations (Peabody, A2Dominion).
	<i>Local gvt./city</i>	All are public agencies with sustainability obligations.
	<i>Other sectors</i>	Sustainability and engineering consultancy (Cundall); alternative school (Credo High School); eco-tourism projects (Villages Nature, Singita).
<i>Leadership alignment</i>	<i>New communities</i>	Interviewees highlighted committed, pro-sustainability leadership/management as crucial to framework adoption (WGV, SOMO Village, NW Bicester).
	<i>Local gvt./city</i>	Brighton was led by Green Party, then lost control to Labour, which campaigned against OPL. Fremantle's mayor is a sustainability expert.
<i>Community alignment</i>	<i>New communities</i>	Local culture or community is particularly supportive of sustainability (SOMO Village, WGV).

Table 7.4. Factors affecting pragmatic legitimacy found in OPL case studies.

Legitimacy issue	Factors identified	Sector	Examples/insights
<i>Pragmatic drivers and benefits</i>	<i>Benefits of demonstrating sustainability</i>	<i>New communities</i>	Most communities have won awards; possibility OPL could sometimes help gain planning permission (Bioregional interviewee); One Brighton performed above benchmarks financially; One Planet recognition regarded as valuable for smaller organisations (Kings Farm Close); plans and reports helpful for communication with the local community (NW Bicester).
		<i>Local gvt./city</i>	‘Badge’ of OPL as generally beneficial (Sutton); plans and reports helpful for communication with suppliers and partners (Sutton).
		<i>Other sectors</i>	B&Q overcame a history of being targeted by environmental NGOs; plans/reports helpful for communication to stakeholders/investors (Villages Nature); OPL easy to communicate (Singita).
<i>Pragmatic benefits and drawbacks</i>	<i>Scale of ambition required</i>	<i>New communities</i>	Few developers have the ambition and commitment required to pursue OPL (Bioregional interviewee); some interested developers did not want to pursue zero carbon.
		<i>New communities</i>	Bespoke planning and/or monitoring was resource-intensive (NW Bicester, WGV); clearer guidance on establishing good monitoring systems would have been helpful (WGV).
	<i>Resource requirements and inconvenience</i>	<i>Local gvt./city</i>	OPL partnerships cost money (Sutton), monitoring was resource-intensive (Sutton); clearer guidance on establishing good monitoring systems would have been helpful (Sutton).
		<i>New communities</i>	Unfamiliarity or a lack of prescriptiveness and clarity could be a deterrent for some developers (WGV interviewee), this could also be a cognitive issue.
		<i>Local gvt./city</i>	Sutton’s performance was publicly criticised by rival politicians on the basis of reports they published (Downey, 2016).
<i>Wider factors affecting pragmatic feasibility</i>	<i>Enabling factors</i>	<i>New communities</i>	Land sold at a reduced rate (BedZED), grant funding for solar PV (WGV), good solar resources (California and Australia), eco-towns planning policy requirements align with OPL (NW Bicester).
		<i>Local gvt./city</i>	Grant funding for One Planet Cities programme.
	<i>Constraints</i>	<i>Local gvt./city</i>	UK local government budget cuts.

7.4. Public information and transparency

Can instruments balance good public information and transparency with flexibility? OPL is associated with two primary forms of public information: its summary awards (such as One Planet Living status) and its detailed transparency (its plans and reports). OPL's One Planet Living status provides a discretionary form of summary information. It is based on a prediction of whether or not a programme is expected to achieve good outcomes, assessing the content of plans, and the commitment and capacity of those delivering them (Bioregional, 2018c). Since One Planet Living status is awarded before implementation, and accountability is flexible and forgiving, there is a risk that partners can perform less well than hoped but still retained their status. The mark has generally been indicative of significantly above-average achievements, particularly for new communities. However, some programmes have underperformed relative to expectations, namely local government programmes, and the meaning of One Planet Living status is less clear. Such programmes also show that it is possible for long-running programmes to wane in engagement but for their status to remain ambiguous for some time.

OPL provides transparency via flexible monitoring and reporting, on a case-by-case basis. Although monitoring and reporting are an important aspect of OPL, guidance on these areas has been relatively under-developed in comparison to more standardised instruments, leading critics to point to a lack of consistency between plans and reports (Cornick, 2016; Downey, 2016). Yet, unlike many tools, OPL makes its users' plans and reports public, and includes an ex-post monitoring component not included in many rating tools. Such reporting does therefore have the potential to offer a good level of transparency as well as generating learning.

Even though it's a pain, I do think it's one of the strengths of the One Planet Framework, actually. Keeping you honest, ensuring that you're delivering on what you said you were going to do. Or not. (WGV developer)

Bespoke reporting systems are less likely to result in regular reporting and have resulted in some limitations. Of new communities, Only White Gum Valley has established regular annual reporting. Only a few projects have published detailed post-occupancy reports (BedZED and One Brighton), although the benefits of such in-depth monitoring must be balanced against resource requirements. Local government reporting practices have also been varied in frequency and quality. Local governments could in future learn from Fremantle's example of establishing informative reporting systems using an efficient number of indicators, and providing a good level of integration between strategic aims and monitoring practices. Issues with other examples include: self-reporting not being

established (Brighton); reporting only highlighting actions without an overall assessment of progress (Middlesbrough); or indicators being too numerous or often not integrated with areas of programme activity (Sutton's early efforts). In other sectors, regular reporting has been established. Reporting for these has been more regular and less challenging than for local governments, likely due to better funding, the fact that corporate reporting is a common practice, and possibly also the fact that companies do not have the additional challenge of area-wide reporting beyond their organisational boundaries. Overall, partners would likely benefit from clearer guidance and support in establishing self-reporting systems. This may also assist with increasing comparability, which could likely be achieved without detracting from context-appropriateness. Appendix B includes the example of parking ratios listed in plans and reviews, one of the more common metrics which Bioregional uses. The data suggests that in many cases practitioners are naturally using similar metrics, even though these have not been codified or recommended across projects. Six of eight plans used the metric of parking ratios. This example suggests that KPIs could be recommended, and more of an adaptable template approach could encourage both more comparability and convenience.

Overall, OPL has combined flexibility with relatively informative public information. This is true for both its summary information (such as One Planet Living status) and its detailed plans and reports. However, in both cases, there have been some limitations, related to the meaningfulness of One Planet Living status (for local governments), and the quality and regularity of bespoke reporting practices.

7.5. Conclusions

The previous chapter identified strengths of OPL in terms of promoting a more communicable, systems-based, regenerative approach, and challenges or limitations as particularly deriving from a flexible and bespoke approach. This chapter explored strengths or limitations in practice, across varied sectors and programmes, providing further details and insights.

This chapter first considered OPL processes and outcomes at the *programme level*. A notable strength is how OPL's shared, fluid, communicable aims have supported a more systems-based, collaborative, and engaging approach, confirming the aspirations of the previous chapter. This has manifested in training, partnerships, collaborative and participatory strategy creation, the spreading of influence, and the creation of local clusters and cultures. However, OPL's aspirations towards holistic strategy and implementation could be made more explicit, as in some cases (notably local government programmes),

these could become siloed. Flexible and discretionary assessment, monitoring and accountability processes have varied across programmes, demonstrating both strengths and limitations. They have often supported an effective, context-appropriate form of partnership that provides an alternative to assessment processes based on standardised criteria. Challenges or limitations have mainly arisen for early, complex, and under-resourced UK local government programmes, such as over-optimistic assessment and limited oversight. In general, monitoring practices could benefit from clearer guidance to create a more structured, regular, and efficient basis for oversight. Regarding outcomes, this chapter noted a wide range of outputs and outcomes which were achieved. The chapter placed a special focus on zero carbon energy, which has driven significant achievements in relation to renewables, buildings, and broad and ambitious programmes generally. Again, it is mainly UK local government programmes that underperformed relative to ambitious expectations.

Case studies provided insights into OPL's potential for scale and impact at the *systemic level*, by exploring the factors contributing to its take-up and use, and its benefits or drawbacks to users. In terms of driving factors and benefits, OPL's perceived normative legitimacy has attracted motivated organisations and communities whose values are aligned with the framework. This pursuit of ambitious sustainability programmes, and communication about them, can then generate pragmatic reputational benefits. In terms of drawbacks, these were particularly related to the resource requirements of ambitious programmes, partnership relationships, and monitoring. Wider enabling factors and constraints (such as additional funding, or funding cuts) can have a significant impact on pragmatic feasibility, illustrating the dependence of ambitious voluntary governance on wider factors.

The chapter found OPL to have been generally successful in combining a flexible approach with good *public information and transparency*, however it identified some scope for some improvements. Summary information has generally been indicative of ambitious programmes, significantly above-average performance, or improvements. However, since it is awarded before implementation, programmes can underperform relative to expectations (particularly early UK local government programmes). OPL's detailed information provides a good baseline level of transparency. However, improvements could be made to the regularity and quality of reporting, through clearer guidance.

8. Conclusions

This thesis has provided important critical insights which invite us to question dominant standardised approaches to sustainability governance, and consider an alternative approach aligned with the emerging regenerative perspective on sustainability. These insights are presented below via a summary of the argument and findings. The chapter then turns to a remaining issue: that of scaling such regenerative practices further. Avenues for future research are then briefly discussed, together with a reflection on the limitations of the present study.

8.1. Summary of argument and findings

Chapter 1 provided background context and introduced important definitions and themes for the thesis. It situated the research within a much-discussed shift from hierarchical government to networked ‘governance’, involving a range of state and non-state actors in the delivery of society’s policy objectives. This has given rise to a plethora of new instruments, or techniques, for achieving such objectives. As part of this trend, within the field of sustainability, a group of largely voluntary instruments can be identified. These provide guidance on sustainability strategy and/or monitoring and link this to marketable or reputation-enhancing public information, such as certifications, ratings, or reports, combined with external assessment and verification processes. Most such instruments exhibit a trend of standardisation, which is defined here as a reliance on concrete criteria which attempt to minimise ambiguity and discretion, and are intended to support more impartial and objective assessment process. This approach has been applied across increasingly complex and varied organisational or urban contexts, such as companies, neighbourhoods, or cities, raising the question of whether standardisation is the most effective approach.

Indeed, recent academic literature often emphasises more context-sensitive, systems-based, or ‘regenerative’ approaches, which highlight the complex, localised and interconnected nature of sustainability issues, and the importance of beliefs and values in driving sustainability. Such literature critiques some standardised approaches for relying on over-prescriptive and limited conceptions of sustainability. Based on this literature, chapter 1 laid out the characteristics of instruments aligned with a systems-based or regenerative perspective, proposing that they would promote a more holistic, ambitious, and dynamic view of sustainability, to be achieved through engagement, collaboration, and participation.

However, there is a shortage of detailed, empirical evaluations of established urban or corporate instruments aligned with this perspective. This research project investigated Bioregional's One Planet Living framework in response to this need.

Inquiry was guided by the following research question: *what are the relative strengths and limitations of regenerative compared with standardised sustainability instruments?* The concept of 'legitimacy' is used as the basis for performing such a relative evaluation: this was laid out in the theoretical framework in chapter 2. Standardised approaches were evaluated in chapter 3 via a review of instruments and relevant literature and evidence. The remaining chapters focused on OPL and its empirical investigation. Chapter 4 introduced OPL, reviewing its more formalised, explicit, and documented aspects. Chapter 5 outlined the methodology used to open its 'black box' further. Chapters 6 and 7 presented findings.

8.1.1. The legitimacy of sustainability governance

Whilst standardised approaches to sustainability have gained widespread acceptance, the emerging regenerative perspective on sustainability invites us to question their effectiveness. When evaluating sustainability instruments, however, we may wish to consider a broader range of concerns beyond effectiveness, such as transparency, stakeholder input and pragmatic considerations such as resource requirements. The concept of legitimacy was used in this thesis as the basis for the broad evaluative/theoretical framework presented in chapter 2. Legitimacy is a central concept of political science, used to analyse and evaluate governance in all its forms. In its most general sense, it reflects whether an entity is a desirable, proper, or appropriate response to matters of public interest, and the question is arguably even more pertinent given considering a shift from hierarchical government to networked governance.

Chapter 2 adapted the concept of legitimacy to apply to a broad range of instruments and approaches, both standardised and regenerative. In doing so, it drew on two existing bodies of literature on legitimacy. The concept has been extensively applied to a narrow subset of sustainability instruments, namely forest product certification schemes. Such literature usually takes a 'normative' approach, enquiring whether instruments *should* be regarded as legitimate. It considers whether they effectively produce desired outcomes ('output legitimacy'), whether they are developed via fair and inclusive processes ('input legitimacy'), and whether such processes are transparent. Hence, existing literature ties the concept of legitimacy to standardisation, by focusing on the development and implementation of standards. The alternative sociological approach, often found within organisational literature, analyses whether and why institutions *are* widely regarded as

legitimate. The approach broadens considerations beyond perceived normative legitimacy to include the pragmatic self-interest of audiences, cognitive ‘taken-for-grantedness’, and alignment with regulations and policy.

Existing literature on certification schemes, by focusing on the processes by which standards are developed, tends to under-emphasise the outcomes, stakeholder input, or information at the level of specific programmes. To accommodate a broader range of approaches, this thesis makes a distinction between the ‘programme level’ and the ‘systemic level’, enabling a focus on both the local contexts and processes emphasised by regenerative perspectives, and the systemic level scalability achieved by standardised instruments. Additionally, it considers the quality of public information and transparency. These considerations form the basis of three fundamental legitimacy functions of sustainability instruments, which are as follows. First, to achieve positive outcomes at the programme level, via collaborative, engaging and participatory programmes. Second, to achieve positive outcomes at a systemic level (either directly through programmes or indirectly through influence), and drive take-up processes by aligning with the interests or concerns of instrument adopters (based on normative, pragmatic, regulatory, or cognitive concerns). Third, to provide high-quality information, and in particular to provide a realistic picture of sustainability rather than reflecting positively on business-as-usual practices.

Such an approach can be related back to existing literature. Output legitimacy is represented by sustainability outcomes at both the programme and systemic level, and the ability of processes such as collaboration and engagement to drive outcomes. For input legitimacy, the emphasis is shifted from stakeholder input during instrument creation, to input into individual programmes, taking account of the importance of external stakeholders for complex programmes. Transparency is adapted to consider a wide range of possible forms of information – not just the transparency of standard-setting, but the quality of all public information that all instruments provide, such as certifications, ratings, and reports. The components of sociological analyses of legitimacy are nested under systemic level effectiveness, as drivers for take-up. Across these three functions, mirroring the input/output legitimacy distinction, a distinction is made between process and outcome, with outcomes corresponding to output legitimacy, or information about this, and processes concerning how those outcomes are achieved.

The conceptual framework provides an innovative contribution in the following ways. First, it applies to a broad range of instruments and approaches, not focusing on standardised characteristics, and placing a greater focus on contexts. Second, it incorporates aspects of both normative and sociological approaches. Third, as chapter 5 outlines, it does

not rely on restrictive criteria or presume specific features such as standardisation. Hence, it enables a more interpretive approach, allowing for the synthesis of multiple perspectives in discussions of how to best address common underlying concerns.

8.1.2. A review of standardised approaches

Chapter 3 reviewed standardised sustainability instruments, focusing on dominant types globally that provide guidance on aspects of strategy and/or monitoring across complex, varied organisational and urban contexts. Four types were identified (rating tools and indices; target-setting initiatives; indicator guidelines; and process standards), and key examples were provided for each, selected for their prominence and for the wealth of literature that has become available on them in recent years. As well as being a literature review, the chapter provides an analysis of the structure of differing types of standardised instrument. This explores how the reliance on standardised criteria affects the design and implementation of such instruments, interweaving this with academic research and empirical evidence. This lays the groundwork for a similar analysis of OPL's structure in later chapters; both are carried out under the 'programme level'.

If governance instruments are to address, or at least improve, sustainability issues, this is built up from their contribution at the *programme level*. The instruments considered in this thesis adopt a diverse range of approaches to the question of codifying 'sustainability', and their architecture has important implications for how they support sustainability programmes. They can be comprised of elements such as goals, material actions, processes, indicators, and targets. A typical approach to strategy would be built around a set of aspirational goals. However, standardised instruments focus on more easily verifiable criteria (i.e., verifiable actions, processes, indicators, or targets), whilst also incorporating sufficient flexibility to be applicable across complex, varied contexts. The chapter identified four types of instruments, each adopting a different approach to the problem of incorporating flexibility whilst relying primarily on limited standardised criteria, with literature reflecting critically on each approach. Rating tools offer the most comprehensive approach, laying out a broad range of substantive aims via performance-based technical guidance, combining optional criteria flexibly into an overall, variable rating. Given this comprehensiveness, they are of particular interest as an approach to standardisation. However, this widely studied type of instrument has been extensively critiqued for being overly prescriptive, lacking holism and encouraging unambitious practices. Target-setting initiatives, or indicator- and process-based approaches, whilst potentially useful supplements to strategy, lack integration with a broad range of sustainability aims and often reinforce business-as-usual practices. A regenerative approach highlights the need for

incorporating a range of ambitious sustainability aims and integrating them into a holistic approach, yet none of the instruments reviewed here meet this condition. Moreover, research across all instruments demonstrates that, due to their incorporation of flexibility, outcomes are variable and highly dependent on the motivations of their users. This points to the continuing importance of values in driving sustainability outcomes, despite the attempt to standardise sustainability, and guard against self-interest and conflicts of interest in assessment via the use of standardised requirements.

Whilst arguably inadequate at the programme level, standardised instruments have been successful in achieving moderate to widespread take-up in many sectors. Merely achieving take-up does not mean high levels of systemic impact, however, since many instruments are compatible with business-as-usual practices, and the highest levels of achievement may only be achieved by a small proportion of users. In analysing the factors driving take-up, the chapter reviewed evidence on pragmatic legitimacy, identifying a range of potential benefits, including reputational and commercial benefits, as well as internal benefits, such as convenient access to knowledge. One significant benefit of standardised approaches is that they can be incorporated into a public or private regulatory mix, increasing take-up. However, the instruments reviewed can entail significant costs of external assessment, or resource requirements of producing data, which can reinforce inequalities by excluding important but less wealthy actors at a systemic level.

The attempt to generate reliable public information, such as certifications, ratings, or reports, is a driving factor behind standardisation. Despite this, the evidence reviewed casts doubt on the quality of much of this information, since it often reflects positively on business-as-usual practices. Instruments have been made accessible to a wide range of users, including the unambitious, yet reflects positively on them in order to incentivise take-up. Detailed reporting offers an alternative to summary certifications or ratings, offering greater depth. Corporate reporting has received significant research attention, and has been critiqued for both a lack of comparability and a lack of evaluation criteria that reflect 'strong' sustainability. This is therefore one area where a degree of standardisation is regarded as particularly desirable for comparability and transparency, although contextual information is equally important to evaluate such information.

Overall, standardised approaches have demonstrated replicability and scalability, achieving moderate to high levels of take-up, and can be incorporated into a wider policy mix. When compared with a regenerative perspective, however, they are lacking in terms of promoting ambitious, holistic, collaborative, and participatory programmes. Furthermore, their public information often reflects positively on business-as-usual practices, creating a risk that it

reinforces the current systemic unsustainability, rather than promoting critical reflection. It is argued that this review establishes the need for alternative approaches, aligned with regenerative perspectives. One such approach is the focus of the rest of the thesis.

8.1.3. Methodology

Chapter 5 outlined the methodology used to open the ‘black box’ of OPL, seeking to gain an understanding of both OPL in general, and the varied body of cases where the tool has been deployed. Over the course of the project, the researcher was embedded within Bioregional to varying degrees, engaging in practice work and participant observation. Practice work involved both general framework enhancements and assistance with specific OPL programmes, which became in-depth case studies. These were combined with more traditional methods of interviews and document analysis. Interviews were conducted with Bioregional staff and OPL users for a more limited set of case studies: the two in-depth case studies and two further case studies. This was complemented by document analysis, primarily of OPL action plans and reviews, applied to a much broader range of case studies. The research, therefore, took a mixed-methods approach, using multiple sources of information to build up an overall picture.

The methodology can be positioned within wider academic literature, being situated between two methodological stances: practice-oriented and interpretive. Although collaborative practice work was an important aspect of the methodology, the practice outputs were not themselves the focus of evaluation, in contrast to *practice-based* research. Practice work was, however, invaluable in understanding and analysing Bioregional’s existing approach and the wealth of knowledge, experience and case studies that were available. This research drew on the interpretive paradigm to inform its approach to ‘legitimacy’ for the purposes of evaluation. The legitimacy functions were designed to enable a broad common ground compatible with the aims of research participants and practitioners, perspectives within existing academic research, and the norms of governance discourse, whilst comparing across varied instruments and approaches. Unlike some existing literature on legitimacy, this research did not presume the superiority of specific design characteristics, such as the development and enforcement of standardised criteria. Instead, it sought to be sensitive to, and understand and interpret the underlying intentions of research participants, to avoid imposing inconsistent meanings, and arrive at interpretations through a cyclical and dialectic process, including extensive discussion. Recommendations for enhancements (provided in chapter 6 and discussed under ‘scaling regenerative approaches’, below) are intended to align with the ethos of OPL, whilst addressing limitations identified.

8.1.4. Findings on OPL

Chapter 4 introduced the more explicit and formalised aspects of OPL, such as its action planning and review processes, and guidance documentation. Although it highlighted sections of recent OPL guidance documentation that discusses OPL's systems thinking and indicated an alignment with the regenerative paradigm, the specific ways in which OPL promotes such an approach remain relatively undocumented. Chapter 6, therefore, provided a deeper, more comprehensive view of perspectives on the framework in general, and its regenerative approach. Chapter 7 then turned to the rich and varied body of case studies available, to explore its implementation in practice. Material from both chapters is combined below.

At the *programme level*, OPL was found to have the potential to support an effective and participatory approach. Chapter 6 provided insights into how instruments can be aligned with holistic systems thinking and the regenerative paradigm, and the possible pitfalls of attempting to achieve this. It did this by analysing how the characteristics of OPL affect its ability to support programme processes and outcomes, following the approach used to examine standardised instruments in chapter 3. OPL is built around its ten, flexible principles, which are translated into context-specific plans, with progress monitored and reported on. It is the view of Bioregional's co-founders, echoed by other staff, that OPL's flexible, goal-oriented approach provides numerous benefits in contrast to a more standardised, prescriptive, or measurement-based approach. The principles (and, potentially, the strategies they give rise to) are ambitious and aspirational, flexible and context-appropriate, holistic and joined-up, and dynamic. They also form a shared, communicable 'common language' that enables engagement and collaboration processes. These characteristics are complemented by the 'hearts and minds' ethos of OPL, emphasising the need for commitment, effective communication and the creation of cultures of sustainability. Hence, the rationale underpinning the framework aligns closely with the characteristics of regenerative instruments proposed in chapter 1. In practice, a key strength of OPL has indeed been that it has acted as a 'common language', useful in training, partnerships, collaborative and participatory strategy creation, the spreading of influence, and the creation of local cultures and clusters or nested systems of users. However, OPL's aspirations towards holistic strategy and implementation could be made more explicit, as in some cases (notably local government programmes), these processes became siloed across the ten principles.

OPL's goal-oriented approach is complemented by its flexible assessment, monitoring and accountability processes, which emphasise discretion and shared values rather than

objectivity and impartiality, bearing some resemblance to the responsive regulation and meta-regulation found within regulatory theory. In practice, such processes have varied across programmes, demonstrating both strengths and limitations. They have often supported an effective, context-appropriate form of partnership that provides an alternative to assessment processes based on standardised criteria. Challenges or limitations have mainly arisen for early, complex, and under-resourced UK local government programmes, including over-optimistic assessment and limited oversight. In general, OPL's processes can lack structure and therefore make progression through its stages more challenging. Monitoring practices could benefit from clearer guidance to create a more structured, regular, and efficient basis for oversight. This could also bring the benefit of increased comparability, where appropriate.

Chapter 7 identified a wide range of outputs and outcomes achieved by OPL programmes across the framework's ten principles. Case studies placed a special focus on the principle of 'zero carbon energy', which has driven significant achievements in relation to renewables, buildings, and broad and ambitious programmes generally. Again, it is mainly UK local government programmes that underperformed relative to ambitious expectations.

At the *systemic level*, OPL has influenced policy and industry, achieved a broad global reach, and is generally well regarded. Several factors drive OPL's take-up. OPL's perceived normative legitimacy has attracted motivated organisations and communities whose values are aligned with OPL. The pursuit of ambitious sustainability programmes, and communication about them, can then generate pragmatic reputational benefits. Despite these drivers and benefits, however, OPL has had relatively low take-up, ultimately detracting from its direct systemic impacts. The drawbacks and barriers identified are primarily those of pragmatic legitimacy, which can be described in terms of two 'problems'. One is the problem of a *flexible and bespoke* approach, with the creation of bespoke plans being perceived as more challenging, and bespoke partnerships being resource-intensive. The other is the problem of an *ambitious* approach, which can require unusual levels of commitment and be resource-intensive, reflecting the difficulty of mainstreaming ambitious voluntary governance more generally. Wider enabling factors and constraints (such as additional funding, or funding cuts) can have a significant impact on pragmatic feasibility, illustrating the dependence of ambitious voluntary governance on wider factors. Beyond these two pragmatic problems, interviewees also noted the limited capacity for a smaller organisation to promote the framework, again not necessarily reflecting a limitation of the framework itself.

OPL attempts to combine *public information and transparency* with flexibility, and has generally been successful in this, although some scope for improvements was identified. One Planet Living status is regarded as a mark of a 'good' programme, but it is awarded on a discretionary basis before implementation, so there is a risk that its meaning becomes diluted. This summary information has generally been indicative of ambitious programmes, significantly above-average performance, or improvements. However, since it is awarded before implementation, programmes can underperform relative to expectations (particularly early UK local government programmes). OPL public plans and reports provide an overview of key activities and monitoring for each of the ten principles, providing a good level of transparency on a flexible, case-by-case basis. However, bespoke monitoring and reporting can be less likely to occur. Improvements could be made to the regularity and quality of reporting through clearer guidance.

Overall, OPL's key strengths to lie in enabling effective, participatory programmes, particularly via the engagement and collaboration of actors around a communicable 'common language', combining this with generally good public information. To date, the context-specific, bespoke approach has led to challenges related to resource requirements, structure, and the integration of measurement; areas which could be enhanced without detracting from OPL's regenerative benefits. Yet these factors alone do not explain modest take-up to date: it is also due to the difficulty of mobilising ambitious voluntary action and the limited capacity of a small organisation to promote the framework. This issue of scaling regenerative practices is considered further below.

8.1.5. Summary and contribution to knowledge

The research has provided insights into the role that voluntary instruments can play in sustainability governance across complex and varied contexts. Despite their widespread usage and ability to scale, standardised approaches have major limitations in the important matter of supporting effective programmes. OPL's regenerative approach can support programmes effectively but has limitations particularly in relation to take-up, partly reflecting the more bespoke model, and partly reflecting the more fundamental problem of mobilising ambitious action on a voluntary basis, nevertheless. The question of further scaling such practices therefore remains of urgent importance.

These findings are based on a detailed, original analysis of how the design of different types of sustainability instruments affects their strengths and limitations, including an original empirical analysis of a sustainability instrument aligned with the regenerative perspective.

Evaluation is carried out using a novel theoretical framework that adapts the concept of legitimacy to apply to a broad range of instruments.

8.2. Scaling regenerative approaches

A regenerative approach such as OPL provides benefits at the programme level, but an ambitious, flexible, and bespoke approach can be difficult to scale. The question of how this may be achieved is of relevance to both Bioregional and any others with an interest in scaling more effective voluntary sustainability governance. OPL has been on a continuing path of evolution since its inception, and in recent years has undergone significant developments in documentation, assessment processes, and supporting digital tools, with the desire for scale being a major driving factor in these developments. Indeed, the practice component of this research has mostly been focused on these efforts. In addition to drawing on OPL's ongoing development, this section also discusses recommendations arising out of this research. It is hoped that these recommendations align with the underlying ethos of OPL whilst addressing limitations identified during research.

OPL's core strengths derive from its flexible principles and goals. However, OPL users are expected to adapt these into plans and reports, containing monitoring, indicators, and targets. Without replicable guidance, these technical aspects of sustainability require significant effort to develop on a bespoke case-by-case basis, and can reduce the likelihood of monitoring and reporting or result in less efficient approaches that may need to be adapted at a later stage. This can affect both the scalability of OPL and programme monitoring and transparency. It would be possible to provide a base template for plans and reports, for any given sector, which can be adapted easily and conveniently. One reason there has been resistance to a more replicable approach in the past is the fear that the benefits of OPL's regenerative, systems-based approach, focusing on principles and goals rather than prescriptive criteria, could be lost. Hence, it would be beneficial to provide more thorough explanations of how indicators and targets relate to other aspects of a plan and fit into good monitoring practice. Flexible principles and goals enable the creation of aspirational, holistic, and context-appropriate strategies, and form a communicable, shared 'common language' that enables collaborative and engaging processes such as the creation of cultures, partnerships, and nested systems. Indicators and targets can play a supporting role and be combined with qualitative forms of monitoring, and care can be taken to ensure that the framework remains non-prescriptive and that isolated targets do not take priority over a holistic view at any stage. An adaptable template approach could also help provide structure to OPL's planning, monitoring, and reporting processes, addressing an issue

highlighted by some interviewees. The need for enhanced guidance was identified at an early stage in the research project. Initially, indicators were requested by Bioregional and included in general guidance documentation (Bioregional, 2016a, 2017b). This work was further developed into detailed guidance for new communities and local government programmes (Gerhards, 2019d, 2019c, 2019b, 2019a). This could be used as the basis for further consultation, calibration, and refinement of indicator sets. More detailed recommendations are provided in chapter 6.

The instruments considered in this thesis accompany guidance with external assessment processes. One benefit of standardisation is that assessment processes also become more easily replicable, and therefore scalable, for example using third party assessors. Bioregional's flexible and discretionary assessment processes, by contrast, rely on trusted expertise within Bioregional. Such close partnerships would not be scalable across thousands of users. Bioregional has created a 'peer review' system in response to this issue, whereby trained third parties can provide their opinion of an action plan (Bioregional, 2018c). The peer review is then tied to the experience and reputation of a named assessor. This still does not address the issue of scaling Bioregional's One Planet Living status or leadership recognition, which are marks of excellence awarded only by Bioregional. Even if such summary information cannot be scaled, however, OPL users are expected to publish plans and reports. Hence, the overall model of transparent planning and monitoring, coupled with external peer reviews, would still be scalable.

Digital technology has the potential to transform the landscape of sustainability instruments. If designed successfully, digital tools could provide benefits across all areas of legitimacy, by improving planning and monitoring of individual programmes, making such processes cheaper and easier to scale, and providing more structured and transparent online planning and reporting. The new OnePlanet platform, described in chapter 4, illustrates some potential benefits of digitisation. It embodies the systems thinking underpinning OPL, enabling collaboration and holistic planning for sustainability programmes in ways that would be difficult to deliver in other formats, such as spreadsheets. The development of this conceptual architecture involved much discussion during a collaborative design process, which involved the process of making *explicit* the processes and information structures that usually remain *implicit*, for example when creating a plan in document form. Much of the resulting conceptual architecture is based on recommendations made as part of this research project, forming a practice contribution. As well as codifying such systems thinking, further potential innovations can also be imagined. One would be to offer tailored, filtered, dynamic recommendations on all aspects of planning and monitoring, thereby enhancing programme quality and reducing the

resources required to develop plans, improving pragmatic legitimacy. Another could be to provide online communities with social network features to foster more effective engagement and knowledge-sharing. Yet developing such tools and functionality is costly, complex, and carries a risk of being unsuccessful. The example of the platform also raises the question of the relationship between digital applications and any sustainability instruments they are linked to. For example, OnePlanet is a separate organisation from Bioregional (which owns the trademark of OPL, and makes the framework available on an open license), and if Bioregional were to further develop OPL guidance, it is not clear how or to what extent this may become embedded into the digital tool. This issue is amplified by the fact that digital tools can offer a more dynamic, evolving, and tailored body of knowledge than static documentation. This would particularly pose a challenge to standardised instruments.

Regardless of the enhancements made to sustainability instruments or digital tools, they are not ‘silver bullets’. OPL’s holistic and systems-based approach offers the potential to support complex programmes effectively. However, case studies have also shown that financial, cultural and policy conditions are often decisive in achieving high levels of sustainability. OPL can provide a mobilising vision and umbrella to draw together a range of practices into a holistic strategy, and fulfilling a function that prescriptive or coercive regulations cannot. However, given the urgency of pressing sustainability issues, voluntary instruments must be accompanied by other shifts or interventions to deliver ambitious and regenerative practices and achieve the rates of progress that are required.

If achieving a highly ambitious vision of sustainability remains out of reach in many cases, we may at least hope that the information provided by sustainability instruments starts to better reflect the systemic state of unsustainability. The difficulty in achieving this, with voluntary instruments, is that their information usually needs to reflect positively on adopters to incentivise take-up. Yet some standardised approaches are now being incorporated into policy and regulation via public reporting requirements. Via the influence of regulators or policy-makers, therefore, reporting practices could be further shaped to ensure they foster greater critical understanding.

8.3. Limitations and future research

Future research taking a practice-oriented approach could seek to further promote ways of scaling regenerative practices, for example through further digitisation or codification. Such research could be fully practice-based, whereby the output itself is evaluated as part of the research process, and the learning generated from this is included in the academic

contribution to knowledge. If this is the case, the experience of the present research suggests the desirability of defining a need or gap more clearly from the outset, feeding into a detailed collaboration agreement. Such support and buy-in are especially important to success where researchers have less experience than staff within an organisation, since they have less authority to ensure that a suitable and substantial doctoral level practice output will eventually be agreed upon, or to coordinate practice projects in a way that is compatible with academic practice-based research. If no defined output is agreed upon, engaging in practice work can result in significant additional effort which, although potentially yielding useful insights, can be also time-intensive to incorporate alongside a more traditional methodology. The identification of a gap or potential enhancement could form an initial stage of a research project, with a clear understanding of how practice work will then feed into the academic contribution to knowledge. One option is to make methodology a greater aspect of this contribution, providing new approaches to sustainability instrument design and meta-evaluation across programmes and contexts.

Although the present research took a ‘comparative’ perspective, it only examined one instrument empirically. Future research may wish to research two or three instruments in this manner. The theoretical evaluative framework could provide a useful starting point to be employed further in other settings. Given its distinctive nature, OPL could fruitfully be the subject of further research and comparison with other practices. One approach could be to apply two instruments to the same programme during its planning stages, with the same groups of actors, to gain a more thorough comparison of the two approaches. Alternatively, instruments could be applied to two separate programmes so they can be implemented throughout, with outcomes evaluated comparatively. However, this second approach raises challenges in coordinating research with the timeframes of multiple large, complex programmes. The digital platform could also be a focus of research, to explore the relative merits of digital tools alongside more traditional approaches.

Appendices

A. Initial project description

ONE PLANET LIVING — MEASURING THE IMPACTS OF THE ONE PLANET LIVING FRAMEWORK

Doctoral research project

While the principles of urban sustainability are by now well established, there often remain substantial gaps in the translation of these principles into policy and practice. The ONE PLANET LIVING FRAMEWORK developed by Bioregional is one of a growing number of urban sustainability frameworks seeking to fill these gaps. Given the relative novelty of these frameworks, there is now a need for more detailed impact analyses to determine outcomes and to evaluate effectiveness. There is also a growing recognition that current impact assessment approaches are limited because they are not consistent with the basic observation that human settlements are complex dynamic systems.

This doctoral research project responds to these needs by:

- Analysing the strengths and limitations of measurement within multidimensional dynamic systems.
- Developing a methodology for impact assessment which is scientifically robust and practical, relating to urban sustainability frameworks and addressing the interaction of social behaviours, technical processes and built structures shaped by multi-level governance.
- Applying this empirically to the analysis of the ONE PLANET LIVING FRAMEWORK.

The research is particularly relevant since the ONE PLANET LIVING FRAMEWORK (1) combines ‘hard’ indicators (relating to ecological footprint analysis) with ‘soft’ indicators (relating to social sustainability, well-being and even ‘happiness’); (2) works across various urban scales; and (3) relates to different organisational entities from local government, to real estate developers, large retailers and SMEs for example. Hence, the question of how to measure impact is an important concern, to be able to substantiate outcomes and demonstrate effectiveness for sustainable urban development.

Collaboration

This doctoral project forms part of a collaborative venture between Bioregional, an award-winning social enterprise active in the UK and internationally, and the University of Westminster. The collaboration aims to enhance ‘research-into-practice’ concerning sustainable urban development. The successful applicant will implement the project in close coordination with, and under the joint supervision of, the two organisations. In addition to developing relevant research skills at the University of Westminster, the applicant will benefit from professional skills development at Bioregional, including working with team members, clients, and partners on relevant projects. Given the long timeframes for built environment projects, it is envisaged that this will include a retrospective review of projects which have used the One Planet Living approach such as BedZED, as well as current projects such as Bicester eco-town or Brighton’s One Planet City and international projects for example in Tanzania, France, China, or Canada. The doctoral work will inform the collection of data on a planned digital platform. The outputs of this doctoral project are designed to inform and benefit Bioregional’s ongoing work, as well as to demonstrate original contribution to knowledge required for the award of PhD.

B. Case study document analysis details

This appendix provides details on the document analysis carried out for all case studies, based on documents available before mid-2020.

Action plans and reviews

Table B.1. Action plans and reviews for new communities.

Project	Action plan		Corresponding reviews		
	Date	References	Review type	Reviews	References
<i>BedZED</i>	N/A	N/A	Post-occupancy evaluation	2009	(Hodge and Haltrecht, 2009)
<i>One Brighton</i>	2006	(Bioregional Quintain Ltd, 2006)	Bioregional 'impact' report	2014	(Bioregional, 2014b)
<i>Elmsbrook, NW Bicester</i>	2013	(A2Dominion and Bioregional, 2013)	Bioregional progress review	2015	(Bioregional, 2015a)
<i>Kings Farm Close</i>	2018	(Oxford Advanced Living and Bioregional, 2018)	None published yet	N/A	N/A
<i>Springfield Meadows</i>	2019	(Bioregional and ssassy, 2019)	None published yet	N/A	N/A
<i>SOMO Village</i>	2007	(Sonoma Mountain Village, 2007)	None published yet	N/A	N/A
	2017	(SOMO Village / Bioregional, 2017)	None published yet	N/A	N/A
<i>White Gum Valley</i>	2015	(LandCorp and Bioregional, 2015)	Developer review	2016, 2017, 2018	(LandCorp, 2016, 2017, 2018)
<i>Evermore, at White Gum Valley</i>	2017	(Cook, 2017)	Developer review	2018	(Yolk Property Group, 2018)
<i>East Village at Knutsford</i>	2020	(DevelopmentWA, 2020)	None published yet	N/A	N/A

Table B.2. Action plans and reviews for local governments.

Local gvt.	Action plan		Corresponding reviews		
	Date	References	Review type	Reviews	References
<i>Sutton</i>	2009	(London Borough of Sutton, 2009)	Bioregional review	2009-12	(Bioregional, 2013b)
	2013	(London Borough of Sutton, 2013)	Self-published annual reports	2013-14, 2014-15, 2015-16, 2016-17	(London Borough of Sutton, 2014, 2015, 2016, 2017)
			Bioregional reviews published	2013-14, 2014-15, 2015-16	(Bioregional, 2014e, 2016c)
<i>Middlesbrough</i>	2011	(Middlesbrough Council, 2011)	No reviews published	2013-14	(Middlesbrough Council, 2014)
	2015-25	(Middlesbrough Council, 2016b)	Self-published reports	2015-16, 2016-17	(Middlesbrough Council, 2016a, 2017)
<i>Brighton and Hove</i>	2013-15	(Brighton and Hove City Council and Bioregional, 2013)	Bioregional review	2013-14	(Bioregional, 2014a)
	2015-17	(Brighton and Hove City Council and Bioregional, 2015)	No reviews published	N/A	N/A
<i>Fremantle</i>	2015-20	(City of Fremantle, 2014)	Self-published annual reports	2014-15, 2015-16, 2016-17, 2017-18, 2018-19	(City of Fremantle, 2015, 2016, 2017, 2018, 2019)
			Bioregional review	2018	(Bioregional, 2018b)

Table B.3. Action plans and reviews for other sectors.

	Action plan		Corresponding reviews		
	Date	References	Review type	Reviews	References
<i>B&Q</i>	2006	None found	Bioregional reviews	2008, 2009, 2010	(Bioregional, 2008, 2009, 2010)
	2012	(B&Q and Bioregional, 2012)	Bioregional reviews	2012-13, 2013-14, 2014-15, 2015-16, 2016-17	(Bioregional, 2013a, 2014c, 2015b, 2016b, 2017a)
<i>Cundall</i>	2012	(Cundall, 2012)	Self-published annual reports	2012-13, 2013-15, 2015-16, 2016-17	(Cundall, 2013, 2015, 2016, 2017b)
	2018	(Cundall, 2018)	No reviews published yet	N/A	N/A
<i>Villages Nature</i>	2013	(Villages Nature, 2013)	Bioregional review	2013-14, 2014-15, 2017-2018	(Bioregional, 2014f, 2015d, 2018a)
<i>Singita Grumeti</i>	2012	(Singita and Bioregional, 2013)	Bioregional review	2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, 2018-19	(Bioregional, 2014d, 2015c, 2018d, 2019b)
<i>Cundall High School</i>	2017	(Credo High School, 2017)			

Zero carbon energy ambitions and achievements

Table B.4. Zero carbon energy ambitions and achievements for new communities.

Country/region	Community	Ambitions	Achievements	100% renewable?
United Kingdom Moderately cold winters and higher heating demand. Less sunny climate.	<i>BedZED</i>	Heat and electricity from a biomass CHP.	Biomass CHP had problems. Natural gas boiler used until 2017, then replaced by a biomass boiler. Electricity from a renewable tariff supplemented by limited on-site solar PV	As of 2017.
	<i>One Brighton</i>	Biomass boiler. Electricity from a renewable tariff supplemented by on-site solar PV.	Natural gas back-up boiler used considerably. Biomass boiler now operational. Electricity as planned.	As of recently.
	<i>Elmsbrook, NW Bicester</i>	Natural gas CHP plus large on-site solar PV array, with excess electricity exported to grid. Aspiration for district heat connection to an energy-from-waste plant.	As planned an on track to 'net' zero carbon. Connection to energy-from-waste plant not yet confirmed.	No.
	<i>Kings Farm Close</i>	Natural gas boilers (but very low heat demand). Electricity from a renewable tariff with option of on-site solar PV.	No review conducted yet.	No.
	<i>Springfield Meadows</i>	Electric air source heat pumps. On-site solar PV supplemented by a renewable tariff.	No review conducted yet.	Yes (planned).
California, USA Warm climate. Good solar resources.	<i>SOMO Village</i>	Mostly electric heating/cooling. Electricity mostly from on-site solar PV supplemented by a renewable tariff and possibly biomass/biogas for heating.	Largely as planned (very large solar PV array), although gas boilers still used.	Mostly.

Table B.4. (Continued)

Country/region	Community	Ambitions	Achievements	100% renewable?
<i>Fremantle area near Perth, Australia</i>	<i>White Gum Valley</i>	Electric heating/cooling. Electricity mostly from on-site solar PV.	As planned.	95% in 2018.
Warm climate. Good solar resources.	<i>Evermore, at WGV</i>	Electric heating/cooling. 50% of electricity from on-site solar PV supplemented by a renewable tariff.	75% electricity from on-site solar PV (target exceeded).	Yes.
	<i>East Village at Knutsford</i>	Electric heating/cooling. Electricity mostly on-site solar PV supplemented by a renewable tariff.	No review conducted yet.	Yes (planned).

Table B.5. Zero carbon energy ambitions and achievements for local governments.

	Ambitions	Achievements
<i>London Borough of Sutton</i> (2013 plan)	70%-100% reduction in emissions due to local government buildings by 2025 from a 2011 baseline; 50% reduction by 2017.	A 2016-17 report showed total CO2 emissions from council buildings had reduced by 30.8% since 2010-11. 2017 target therefore not met despite significant grid decarbonisation. Social housing retrofits and solar PV installations. Street light upgrades.
<i>Middlesbrough</i> (2011 plan)	'Carbon neutral' local government buildings by 2025. 90% reduction in council emissions by 2025, from a 2009 baseline.	No overall emissions data provided in recent OPL reports. No major renewables or retrofit programmes reported. Some efficiency retrofits. Street light upgrades.
<i>Brighton and Hove</i> (2013 plan)	Zero carbon local government buildings by 2025.	Only one OPL review published, without emissions data. However, a recent (non-OPL) report shows reductions of 45% in 2018-19, from a 2008-9 baseline. Social housing retrofits and some solar PV installations. Street light upgrades.
<i>Fremantle, near Perth, Australia</i> (2015 plan)	Zero carbon local government buildings by 2025, run on 100% renewable energy.	Local government targets likely on-track due to large (6 MW) approved commercial solar farm which could supply power. Fleet upgrades to hybrid electric vehicles. Street light upgrades. Offices moved to a more efficient building.
<i>One Planet Cities programmes</i> (2018 onwards)	Most cities do not have public area-wide plans. Oxfordshire has a plan but does not have local government-specific aims. Area-wide aims are provided in table below.	No reviews yet published.

Table B.6. Zero carbon energy ambitions and achievements for wider local government areas.

	Ambitions	Achievements
<i>London Borough of Sutton</i> (2013 plan)	Reductions in per capita emissions from a 2007 baseline: 20% by 2017; 40% by 2025 (with an aspiration to be zero carbon); 70% by 2050 (with an aspiration to be zero carbon). Zero carbon new developments from 2016.	No major renewables or area-wide retrofit programmes reported. Significant grid decarbonisation, so 2017 target met. District heat network attached to an energy-from-waste plant, which is supplying new developments in the borough.
<i>Middlesbrough</i> (2011 plan)	Aim to support the wider community to achieve zero carbon. No date set.	No overall emissions data provided and no major renewables programmes reported. Some community engagement on energy efficiency and fuel poverty.
<i>Brighton and Hove</i> (2013 plan)	Aim to support the wider community to achieve zero carbon. No date set. Zero carbon homes in operation from 2018.	No major renewables programmes reported. Some knowledge-sharing reported in 2014. Ongoing (non-OPL) Fuel Poverty strategy incorporating advice, efficiency measures and financial support through a variety of programmes.
<i>Fremantle, near Perth, Australia</i> (2015 plan)	‘Goal’ to support the wider community to achieve zero carbon by 2025.	There are annual incremental increases in solar PV uptake of 1-2% and around a quarter of homes now have solar PV installed. A large (6 MW) commercial solar farm is planned which could power about 10% of homes.
<i>One Planet Cities programmes</i> (2018 onwards)	Most cities do not have public area-wide plans. Oxfordshire’s area-wide aims include: net zero carbon by 2050, around half renewable heat and electricity by 2030, and all organisations to have energy efficiency programmes. All suitable school, local government, and commercial buildings to have solar PV.	

Table B.7. Zero carbon energy ambitions and achievements for other sectors.

	Ambitions	Achievements
<i>B&Q</i>	2012 plan: zero carbon electricity and 90% reduction in emissions due to heat by 2023. Zero carbon new stores by 2012. 2017 review: Planned installation of biomass heat systems to 3 distribution centres and 10 stores.	100% renewable electricity contract agreed as of 2017. 41% reduction in emissions due to buildings and transport since between 2006-17 (although unclear what proportion is due to grid emissions factors). Small proportion of sites installed with PV arrays and biomass heating (4 stores had PV in 2017). No solution to low-carbon heat yet.
<i>Cundall</i>	Procure electricity from renewable energy sources: 50% by 2015, 100% by 2025. Offices to be zero carbon by 2025.	50% reduced emissions per person and 39% reduced energy intensity between 2012-17. 8% of energy from renewable sources in 2017; renewables a 'priority' going forwards. Numerous client projects have top sustainability ratings or have won awards.
<i>Singita Grumeti</i>	30% reduction in energy use, and 100% renewable electricity.	Renewable energy measures have reduced building carbon emissions by 60% between 2014 and 2019. Half of lodges rely on solar powered energy. Energy efficiency measures also being implemented.
<i>Villages Nature</i>	100% of heat demand met by onsite renewable energy from start. Net zero carbon by 2020.	100% heat supplied by geothermal energy, including heating for lagoon. 25% lower embodied energy than industry average and high levels of energy efficiency. Aim for renewable electricity by 2020, but currently unclear how it will be sourced.
<i>Credo High School, at SOMO Village</i>	100% of energy consumed is supplied by non-polluting renewable energy generated onsite.	Renewable energy provided by the same sources as SOMO Village in general – primarily via on-site solar PV and supplemented by 42% renewable energy purchased off-site (from 2017 SOMO Action Plan).

Engagement and collaboration activities

Table B.8. Engagement and collaboration activities for new communities.

<i>BedZED, UK</i>	<ul style="list-style-type: none"> • Residents: communal resident activities, food-growing spaces; car club; 50% affordable housing (25% social rent, 25% shared ownership).
<i>One Brighton, Brighton, UK</i>	<ul style="list-style-type: none"> • Design, development, and construction staff: ‘Sustainability Integrator’ used to coordinate relationships; induction of over 1,300 design, development, and construction staff in One Planet Living. • Management: green caretaker; management guidelines; energy service company. • Residents: rooftop mini-allotments; communal areas; composting; car club; no private parking (except car club and disabled spaces); 30% affordable housing.
<i>Elmsbrook, NW Bicester, UK</i>	<ul style="list-style-type: none"> • Contractors: sustainable contractor procurement; apprenticeships and training. • Management: sustainable management guidelines; energy company management of energy services. • Residents: digital tablet display in homes, resident induction, Green Charter, transport coordinator; OPL workshop; bike borrowing; bike repair workshops; electric car club; EV charging points; resident participation in management; 30% affordable housing. • Research: BEPIT programme to close energy performance gap. • Other partnerships: wider community stakeholders; local training providers; social enterprises (e.g., for bike repair workshops).
<i>Kings Farm Close, UK (Aspirations)</i>	<ul style="list-style-type: none"> • Residents: OPL welcome event, community waste group, communal food growing space; 40% affordable housing (6 units). • Management: plan to have management company agree to uphold OPAP; possible community energy services company.
<i>SOMO Village, USA</i>	<ul style="list-style-type: none"> • Contractors: detailed sustainability guidelines for design, construction and retrofit. • Staff and management: OPL staff training; management guidelines. • Residents: festivals and events; numerous on-site food growing spaces; proposed Sustainable Living Centre; proposed energy efficiency education programme; EV charging spaces; pathway to SMART train station; target of 25% affordable housing. • Tenant organisations: OPL guidelines and training; possible preferential leases for sustainable businesses; a business incubator hosted for some time; a farmer’s market and several sustainable businesses already on site; One Planet School on site (Credo High School). • Other partnerships: participation in a successful bid for a 45-mile SMART train system linking the community to transport hubs.

Table B.8 (Continued.)

<p><i>White Gum Valley, Australia</i></p>	<ul style="list-style-type: none"> • Plot owners, developers, contractors: land prepared and sold on; sustainability promoted via design briefings, guidelines, and incentive packages. • Residents: residents guide and sustainability information; resident engagement research project; food growing space; approx. 20% affordable homes (15 units, 12 in an artists' coop); events for cooperative housing residents. • Research: several research projects on-site, for energy, monitoring and surveys. Solar research project with Curtin University.
<p><i>Evermore, at White Gum Valley, Australia</i></p>	<ul style="list-style-type: none"> • Contractors: design and construction guidelines. • Management: ('strata') management plan to incorporate all sustainability aspects. • Residents: information packs; communal food growing planters; community gardening committee; communal bikes, racks, and repair station; EV charging; private Facebook page.
<p><i>East Village at Knutsford, Australia (Aspirations)</i></p>	<ul style="list-style-type: none"> • Plot developer: OP Properties engaged to develop plot using OPL framework. • Residents: community spaces; food growing space. • Research: energy research partnership with Curtin University.

Table B.9. Engagement and collaboration activities for local government programmes.

<i>London Borough of Sutton</i>	<ul style="list-style-type: none"> • Residents: community farm and allotments; training on workshops on e.g., energy, bikes and food growing; recycling communications; Sutton Nature Conservation Volunteers. • Local organisations and partnerships: Fairtrade borough status, led by a community group; partnership with EcoLocal charity. • Schools: engagement on energy and transport; Eco Schools programme. • Suppliers/procurement: healthy and sustainable food in schools; improved recycling contracts; sustainable procurement guidance. • Developers/planning: OPL targets mentioned in local plan.
<i>Middlesbrough</i>	<ul style="list-style-type: none"> • Staff: eLearning tool; energy awareness clinics for property managers. • Residents: eLearning tool; training and workshops on food, water, horticulture, cooking, energy efficiency, cycling; recycling prizes; community allotments. • Schools: sustainable transport and bike training. • Local organisations and partnerships: Fairtrade town status; partnership with Middlesbrough Environment City charity; Middlesbrough Food Partnership; Middlesbrough Affordable Warmth Partnership;
<i>Brighton and Hove</i>	<ul style="list-style-type: none"> • Staff: wellbeing training. • Residents: food waste events/training; mapping food growing spaces; food growing spaces in most schools; bike repair, storage and hire facilities; communal and garden composting; award-winning promotion of sustainable transport and travel planning. • Schools: food growing spaces in schools; sustainable food procurement; sustainable transport. • Suppliers/procurement: some supplier engagement. • Local organisations and partnerships: food waste programme; good food procurement group; Fairtrade city status; programme coordination with Brighton & Hove Strategic Partnership; materials reuse storage and engagement programme. • Developers/planning: OPL mentioned 25 times in local plan; OPL-influenced supplementary planning documents.
<i>Fremantle, near Perth, Australia</i>	<ul style="list-style-type: none"> • Staff engagement and training: training; health and wellbeing programme; monthly OPL events. • Residents: festivals, sustainability resources and workshops, a promoting a sustainability app, incentive programme (Biodiversity), community tree planning (18,000 trees planted in 2018, two-thirds by volunteers), public engagement website. • Schools: low carbon schools programme; support for school sustainability charity. • Suppliers/procurement: 10% sustainability component for larger suppliers; sustainable events policy. • Developers/planning: a programme to encourage smaller housebuilders; Green Star level 4 required for new developments. • Partnerships and local organisations: Fair Trade City status; matched funding to support local charities.

Table B.10. Engagement and collaboration activities for other sectors.

<i>B&Q</i>	<ul style="list-style-type: none"> • Staff training: compulsory One Planet Home training modules for new store staff, including providing advice on greener product choices for customers. • Customer engagement and products: One Planet Home product range. • Procurement: a supplier engagement programme; providing webinars on corporate responsibility. • Industry networks: participation in industry sustainability network.
<i>Cundall</i>	<ul style="list-style-type: none"> • Staff training: Created the Cundall Diploma, an in-house sustainability training programme. 5910 hours of training reported in 2016/17. • Customer engagement and services: Staff use OPL in their consulting work with partners across a range of engineering projects. • Industry networks: promotion of sustainability via industry networks and events.
<i>Singita Grumeti</i>	<ul style="list-style-type: none"> • Local communities: recruitment, training, and engagement in anti-poaching activities; education of school children through the Environmental Education centre. • Guests: provision of conservation information.
<i>Villages Nature</i>	<ul style="list-style-type: none"> • Staff and management: ‘green charter’ established; training for staff and partners ongoing, with monthly performance reporting. • Procurement: sustainability incorporated into procurement standards and tender requirements.
<i>Credo High School, at SOMO Village</i>	<ul style="list-style-type: none"> • Staff and student engagement: One Planet Leadership Team with several staff and students for each principle; OPL embedded into curriculum; students produce OPL portfolios; farming on-site and in curriculum; OPL used in student recruitment; many OPL school activities, clubs, and events. • Parents: OPL workshops and activities for parents; efforts to change practices at home.

Other

Table B.11. Parking ratios in new communities, as planned and reported.

	In action plan	Reported
<i>BedZED</i>	N/A	0.52 spaces per dwelling, which must be paid for
<i>One Brighton</i>	0 spaces per dwelling (car club/ disabled parking only)	0 spaces per dwelling (car club/ disabled parking only)
<i>NW Bicester</i>	1.5 spaces per dwelling	First review did not report on this
<i>Kings Farm Close</i>	2 spaces per dwelling (due to planning requirements)	No review conducted yet
<i>Springfield Meadows</i>	Not specified	No review conducted yet
<i>SOMO Village</i>	Planning requirements are 2 spaces per family or 1 space per bedroom in multifamily units (but aim to reduce due to shared parking)	No review conducted yet
<i>White Gum Valley</i>	Less than 1 on 'multi-tenant lots'	Approx. 1.2 space per dwelling average, less than 1.5 per unit
<i>Evermore, at WGV</i>	Less than one space per dwelling	0.92 spaces per dwelling
<i>East Village at Knutsford</i>	Not specified	No review conducted yet

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