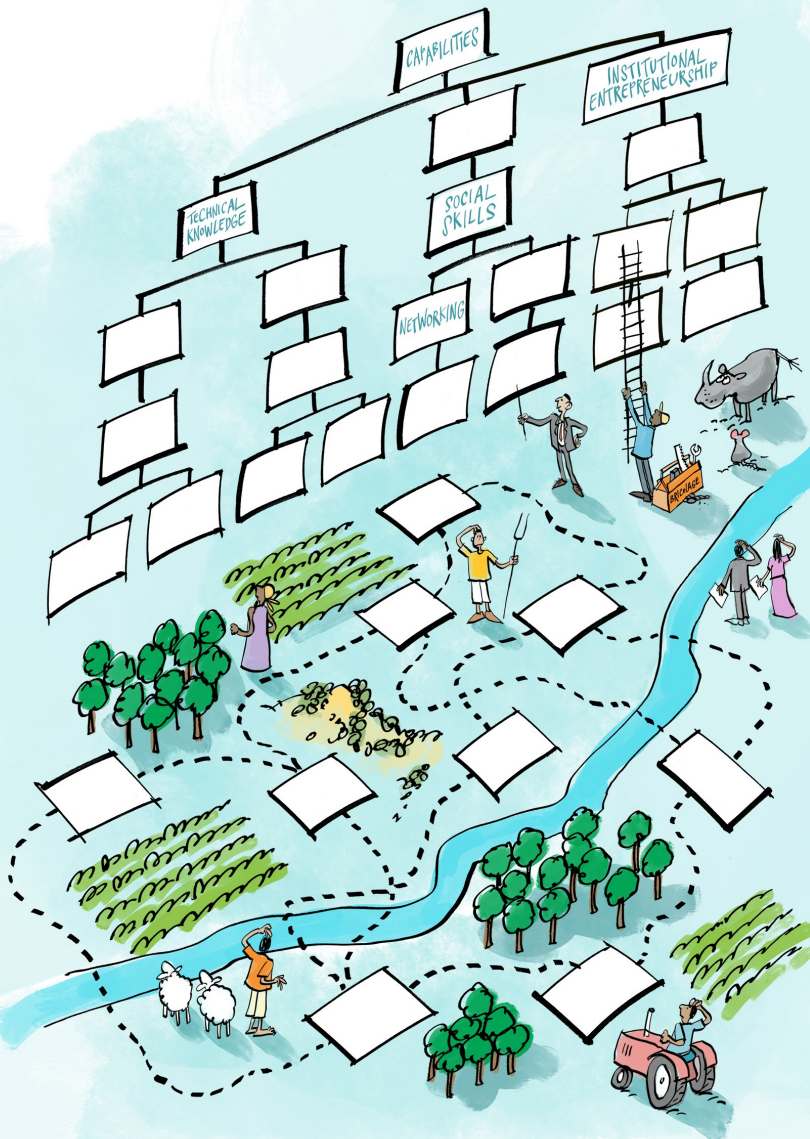# Landscape governance
From analysing challenges to capacitating stakeholders

Cora van Oosten

Propositions

1. An interactive mode of governance facilitates the development of place-based, multi-level and multi-stakeholder arrangements within landscapes.
   (this thesis)

2. An important challenge of landscape governance is that despite its potential it easily remains in the shadow of hierarchy.
   (this thesis)

3. Capacity development – as often proposed by practitioners – is ineffective if not embedded in wider networks of policy and practice.

4. If businesses would apply true cost accounting (TCA) in their production models, then landscape restoration would no longer have to depend on public finance.

5. Combating COVID-19 with a vaccine is an example of a *'whack-a-mole'* intervention that fights the symptoms, not the deeper causes of the problem.

6. As wolves do not recognise nor respect jurisdictional boundaries, it is ineffective for jurisdictions to separately design regulations on how to deal with wolves.

7. Scientific research is like yin yoga - you stretch and stretch until you can't possibly go further, but when you get back into your original pose, you realise that you have grown.

Propositions belonging to the thesis, entitled: 'Landscape Governance – from analysing challenges to capacitating stakeholders'.

Cora van Oosten

Wageningen, 20 April 2021

Landscape governance

From analysing challenges to capacitating stakeholders

Cora van Oosten

Landscape governance

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Cora van Oosten

Thesis

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Acknowledgements

It is with pleasure that I present my thesis right at the beginning of the UN Decade of Ecosystem Restoration. The proclamation of the Decade 2021–2030 as UN Decade of Ecosystem Restoration illustrates the political momentum for restoration, meaning that global and national restoration policies and programmes will soon follow. It is therefore good timing to reflect on the governance mechanisms which are needed to make this ambitious global initiative a success.

It was more or less ten years ago, during my first years at Wageningen Centre for Development Innovation (WCDI), that I decided to focus on landscapes, restoration, and governance. As a human geographer, these topics suited my background, and fit in my hitherto experience and interest. I started to build a narrative which I first presented at a conference of the International Society of Tropical Foresters at Yale University, United States, in 2012. This event motivated me to write a first scientific article on the relation between landscape restoration and landscape governance, which was published in 2013. Encouraged by WCDI and partners I started to build a project portfolio on landscapes, restoration, governance and capacity development, while implementing small research activities along the line. In this way, I gradually developed an action-learning process which helped me shape my conceptual insights and strengthen the scientific basis of my work. My annual landscape governance course in Indonesia, implemented together with colleagues from CIFOR-ICRAF became my anchor point to annually consolidate new insights and share these with a larger group of scholars and course participants from across the globe. The accumulation of insights, articles and shared reflections became the body of this dissertation, which in its totality covers a period of almost a decade.

Over the years, I had the pleasure to work with many landscape professionals and practitioners who shaped my views and opinions. I learned a lot from my colleagues and peers from the International Union for Conservation of Nature (IUCN) and the Global Partnership on Forest and Landscape Restoration (GPFLR) who introduced me to the concept of Forest and Landscape Restoration (FLR) and gave me the opportunity to take part in their work. My colleagues from Wageningen Forest and Nature Conservation Policy Group (FNP) helped me in scholarly reflections and stimulated me to turn my findings into a dissertation. My colleagues from the Global Landscapes Forum (GLF) provided the platforms and spaces to share my findings and engage in debates which further shaped my ideas. Intensive collaboration with United Nations Environmental Programme (UNEP), Food and Agricultural Organisation of the United Nations (FAO), the Netherlands Ministry

Contents

POLITICAL SCIENCE

ECONOMY

SOCIOLOGY

ECOLOGY

SCIENTISTS

STAKEHOLDERS

LANDSCAPE

Chapter 1: Introduction

1.1. Introducing this thesis

This thesis is about landscape governance, which is an up-and-coming topic in both the scientific world and the world of practice. My working definition of landscape governance is 'a place-based, multi-level and multi-stakeholder process of negotiation and decision making for sustainable land use, in which it is attempted to balance the production, protection, and consumption needs and aspirations of the actors involved' (cf. Termorshuizen and Opdam, 2009; Holmes, 2012; Sayer et al., 2013; van Oosten et al., 2014; Reed et al., 2015; van der Sluis, 2017). This definition has two normative dimensions, the first of which is that of sustainable landscapes, in which sustainable is defined as the optimal balance between production, consumption and protection (Holmes, 2012; van der Sluis, 2017). The second is the achievement of sustainability through a place-based multi-level and multi-stakeholder process leading to legitimate spatial decisions. Legitimacy is defined here as acceptable to the stakeholders involved and publicly endorsed by some sort of governance body (Bexell, 2014).

Landscape governance bears some resemblance with environmental governance, yet it is more spatially focused. It has links to spatial planning, but is not necessarily constrained by political or administrative boundaries, thus generally falls outside the scope of the formal spatial planning structures of states. Landscape governance has its origins in older work on landscape approaches which have gained momentum in previous decades because of their premise to reconcile conservation and development objectives within landscapes (see section 1.2.1.). They form the basis of the currently popular trend of forest and landscape restoration which is increasingly seen as a solution to global problems of food insecurity, environmental degradation, biodiversity loss and climate change. Research has shown, however, that too often, centrally planned and technocratically implemented landscape restoration fails to combine ecological objectives with local livelihood needs (Sayer et al., 2016; Scarlet, 2016; Boedhihartono et al., 2018; Reinecke et al., 2018; Mansourian, 2018, 2019). As a response, the concept of landscape governance emerged: its points of departure are both the specific spatial conditions of a landscape and the needs and aspirations of those living in or depending on a particular landscape.

In its idealtypical form, landscape governance is participatory in nature and is shaped by place-based multi-stakeholder dialogue, leading to negotiated spatial decision making in which environmental, economic and social objectives are optimally balanced (Reed et al., 2015; Scarlett, 2016; Mansourian et al., 2016; Holl, 2017; Boedhihartono et al., 2018). In theory, landscape governance has the potential to provide opportunities for landscape actors to engage in policy processes steered from higher levels, and to tailor landscape restoration to the specific socio-spatial conditions of their place. Yet in practice, little is known about landscape governance – how it unfolds within different socio-spatial contexts, what are its challenges and how these challenges are tackled by landscape actors. This brings me to the aim of my thesis, which is to help fill the multiple knowledge gaps on landscape governance by systematically analysing its manifestations in terms of actor constellations and institutions, the challenges it encounters, the strategies employed to overcome these challenges and the capabilities this requires.

In this first chapter I take the reader through different bodies of scientific literature on landscape approaches, landscape restoration and landscape governance. This literature overview is followed by the problem statement, the research questions, the conceptual framework, the methodological approach and the scientific and societal relevance of this thesis. The subsequent chapters focus on specific landscapes in Indonesia, Rwanda and the Peruvian–Brazilian–Bolivian borderland; all the aforementioned countries are known for their efforts in landscape restoration and their commitments to international restoration targets. The chapters describe different landscapes where restoration is shaped in practice through multifaceted processes of landscape governance. Each of these landscapes represent a diversity of modes of landscape governance, as manifested in different actor constellations, institutions, policies and practices. I will focus in particular on the challenges encountered, the strategies employed to overcome them and the capabilities required to do so. Through this, I hope to contribute not only to improving the scientific understanding of landscape governance, but also to enhance its practical application in the world of landscape restoration. Insights gained will support practitioners and policy makers to systematically identify and address the challenges encountered, and will support landscape actors to plan and implement meaningful landscape restoration projects and programmes.

1.2. An overview of literature on landscape governance, its origins and evolution

One of the first scholars who introduced the term landscape governance was Christoph Görg, who argued that the so far existing governance literature had fallen short in thematising the role of place, space and scale in governance. In his ground-breaking article of 2007 he highlights the importance of the interconnectedness between socially constructed spaces and 'natural' conditions of place, which forms the basis of collaboration between actors within a landscape (Görg, 2007). He argues that interpreting governance as a multi-scalar and global-local process helps our understanding of how politics and authority can shift among administrative and spatial levels (Görg, 2007; Arts et al., 2017). The '*spatialisation*' of governance, he argues, offers new opportunities for place-based multi-stakeholder collaboration, opening doors to more complex forms of organisation and rule-making which are typical for a location, which has implications for decentralisation and devolution of power (Görg, 2007; Ostrom, 2008; Buizer et al., 2015; Arts et al., 2017; Schmidt, 2018). Despite the value of Görg's article, his ideas did not receive much attention in subsequent landscape governance work.

Whereas landscape governance as a concept is relatively new, it stems from the much larger body of landscape literature and is captured in what is generally referred to as '*landscape approach*' – or, more accurately, '*landscape approaches*': a range of more or less spatially oriented approaches aimed at multifunctional land use, each highlighting a particular dimension of a landscape (van Noordwijk et al., 2003; Colfer, 2011; Sayer et al., 2013; Reed, 2015; Mansourian, 2018; Boedhihartono et al., 2018). I consider landscape approaches as part of the much wider defined place-based or area-based approaches – sometimes referred to as territorial approaches – which do not address one particular sector but rather a geographic area. Such spatially oriented approaches have gained momentum over the past decades in their premise to offer a broader perspective on the relations between nature and society at large. Landscape approaches in particular call for a more integrated form of conservation, natural resources management and spatial planning, in an attempt to reconcile conservation and development objectives within landscapes (Sayer et al., 2013; Arts et al., 2017). They address the often conflicting policy priorities manifested in a particular area and promote the integration of environmental ambitions into spatial planning (Cameron et al., 2004; Runhaar and Driessen, 2009).

Landscape literature is divided over various disciplines, each of which highlights different dimensions of a landscape. Although these different dimensions are often discussed separately in the literature (Freeman et al., 2015), I believe they are highly complementary

if not inseparable, and are equally relevant for understanding the concept of landscape governance. Therefore, following Arts et al., (2017), I present four major dimensions of landscapes, each representing different yet complementary interpretations of the term landscape and all essential to the scientific underpinning of my thesis.

1.2.1. Socio-cultural dimension: landscapes as unique places

Probably the first scholar describing landscapes explicitly as a unique and inseparable relationship between people and nature was the German geographer Alexander Von Humboldt (1769-1859). In his famous work *Kosmos* he tried to connect the hitherto strictly separated natural and social sciences into a single integrated spatial view on landscapes (Von Humboldt, 1845; Walls, 2009; Wulf, 2015). This idea of natural-social integration was further developed by the French geographer Paul Vidal de la Blache (1845-1918) who captures this in his concept of *'genre de vie'*, referring to the belief that the lifestyle of a particular area reflects not only the ecological identity, but also the economic, social, ideological and psychological identities imprinted on the landscape (Vidal de la Blache, 1922; Arts et al., 2018). The word landscape itself is derived from the old Germanic word *landscipe* or *landscaef*, which implies an anthropocentric view on land as an area, region or territory where people belong to, as *scipe* or *scaef* which refers to the act of shaping an area or land (James, 1934; Troll, 1971; Olwig, 1996). More recently, Antrop emphasises the importance of this spatial 'integratedness' because of the continuous interaction between spatial structure and functioning, including aspects of the biophysical, anthropogenic and tangible and intangible values herein (Antrop, 2000; Naveh, 2000; van der Sluis, 2017). The result of this interaction is a unique geographical space having its own identity and meaning, which is perceived by its inhabitants and expressed in their 'sense of place' (Williams et al., 1998; Massey, 2005; Davenport et al., 2005; Taylor, 2008). Within this approach there is a strong recognition of the richness of cultural and biocultural heritage, which is translated into a deep respect for indigenous culture and identity. An example is the Japanese concept of *Satoyama*, which means the harmonious relationship between people and nature as expressed in mosaics of multipurpose land use (Takeuchi et al., 2008). Although the above mentioned geographers, sociologists and anthropologists consider landscapes as meaningful locations (Agnew, 2001; Soini, 2012; Wulf, 2015), they do not necessarily consider landscapes as isolated places of socio-territorial belonging which could give rise to exclusionary politics (Harvey, 1993; Arts et al., 2017). Rather, they see landscapes as spaces which constantly change due to external influences such as mobile capital, new technologies and globalisation (Bell and York, 2010).

1.2.2. Ecological dimension: landscapes as providers of ecosystem services

Traditionally, ecologists focused on natural processes in relatively untouched landscapes (such as flows of water, nutrients, energy) and on the protection of individual species and tended to ignore 'people' and 'society' (Opdam, 1991; Sayer, 2009; Boedhihartono, 2017). They used to define a landscape as being part of a larger 'ecoregion' determined by biological characteristics and just large enough to achieve ecological conservation goals (Worboys et al., 2010). In this view, the major role of landscape features (forests, rivers) is to provide connectivity between core biodiversity areas, allowing for species mobility over larger ecological networks (Opdam, 1991; Worboys et al., 2010). Over time, however, there has been growing recognition of the presence of humans and their role within landscapes (Turner et al., 1994; Armitage et al., 2009). Departing from a so-called 'island approach' that focuses on single species or habitat protection (Cartwright, 2019), it was acknowledged that a major determining factor for environmental landscape conditions is people's land use; this has led to attention shifting from landscapes as ecosystems with their natural functions to landscapes as providers of ecosystem services. Ecosystem services form a conceptual link between form and function of landscapes and the biocultural, social and economic values within (Metzger et al., 2005; Folke, 2006; Liu et al., 2014; Arts et al., 2017). Landscape services are specific sets of ecosystem services which are more anthropocentric – that is, those goods and services that are provided by a landscape to satisfy human needs (Termorshuizen et al., 2009). They can be spatially identified, quantified and expressed in monetary or non-monetary terms by using instruments such as valuation and scenario modelling (Opdam et al., 2008; Termorshuizen et al., 2009; De Fries et al., 2010; Opdam et al., 2015; van der Sluis, 2017). Whereas the North American school of landscape ecology is still largely focused on bio-ecological processes (Wu and Hobbs, 2002), European landscape ecology has a stronger focus on the interrelationships between ecology, spatial planning and decision making (Wu and Naveh, 2001; Beunen et al., 2011; Freeman et al., 2015; Schmidt et al., 2019), and is sometimes referred to as 'place governance' (Schmidt et al., 2019).

1.2.3. Productive dimension: landscapes as providers of livelihoods and commodities

The productive dimension of landscapes is highlighted by international development scholars, economic geographers and economists, who consider landscape or area-based approaches as crucial for integrated natural resources management and rural economic development. Landscapes are made up of patchworks or mosaics of heterogeneous land use that harbour a wider set of productive functions and services ranging from livelihood provision to larger development goals (van Noordwijk et al., 1997). Whereas initially the focus was on local communities and their direct livelihood needs, the focus gradually

extended towards a range of actors 'beyond the local' (Dressler et al., 2010; Agrawal, 2001), acknowledging that local production and local economic development are within wider production systems, markets and value chains (Wiersum et al., 2013). The '*commodification*' of landscapes refers to landscapes where market values prevail over ecological, social and cultural values, which is reflected in *'commodity-scapes'* which are often dominated by monocultures of commercial crops, leading to social problems, displacement of indigenous and other communities, loss of biodiversity or agrobiodiversity and environmental degradation (Haugerud et al., 2000; Sheil et al., 2009; Brandao et al., 2015). It was during the Rio Earth Summit in 1992 that the sustainability of these commodity-scapes was criticised, as it was recognised that there are limits to economic growth models and it is important to develop more sustainable production models (Arts et al., 2017). As a response, a small group of private sector actors (primary producers, manufacturers and retailers) began to become aware that their unsustainable business models threaten the continuity of resource supply, which made them look beyond their supply chains (Reed et al., 2015; Brasser et al., 2015). They consider the concept of landscape to add value because of its premise of sustainable sourcing by providing multiple benefits to the areas of origins, thus allowing for win-win solutions (ibid). They therefore consider landscape approaches as a valuable addition to their sustainability strategies, to be supported by certification schemes and voluntary sustainability standards for more environmentally and socially responsible private sector investments within landscapes (Pirard et al., 2014; Reed et al., 2015; Langston et al., 2019, see also chapter four).

1.2.4. Political dimension: landscapes as arenas for political contestation

Political scientists, political geographers and governance scholars tend to look at landscapes from a broader political perspective, considering landscapes as being socially shaped, delimited and governed by people (Arts et al., 2009, 2017). They look at landscapes as combinations of functions which are valued by people and are subject to designing, planning and policy making (ibid.). They emphasise that landscape functions are valued differently by stakeholders, raising new challenges regarding differing interests, power issues and diverging discourses between actors, sectors and spatial levels (Arts and Buizer, 2009; Buizer et al., 2016). However promising agreements negotiated at the landscape level may seem, research indicates that difficult trade-offs at the landscape level may jeopardise the outcomes at other levels, impacting the interests of some more than of others, generally leaving unanswered the question as to who wins and who loses (McShane et al., 2012; Arts et al., 2017).

The more critical view described above aligns with the outcome of the Rio Earth Summit (1992) and its Agenda 21, which states that *'environmental issues are best handled with the participation of all concerned citizens, at the relevant level'* (UNCED, 1992, Principle 10).

It urges for cross-sectoral and multi-stakeholder collaboration in spatial planning and decision making. But it is not clear what would be the most 'relevant' level for such collaborative spatial planning and decision making, and the concept of landscapes is largely overlooked (Wu et al., 2007; de Fries et al., 2010). This shortcoming has been addressed by political scientists who argue that spatial decisions are political processes cutting across places, spaces and scales (Swyngedouw, 2009; Görg, 2007). The concept of landscape, so they claim, helps our understanding of the multi-scalar networks or *'politics of scale'* through which spatial decisions are made (Görg, 2007). This understanding of landscape helps to reconsider the role of jurisdictional boundaries and their shortcomings in steering landscape processes that exceed jurisdictions (Hajer, 2007). More fuzzily defined boundaries based on social and ecological units or landscapes could yield more suitable arenas for stakeholder interaction and for the integration of sectoral policies (Varole et al., 2013; Hajer, 2007; Crona and Parker, 2012; Freeman et al., 2015; Ingold et al., 2019). But others warn that such reconfiguration could provide new breeding grounds for political dispute. The literature on politics of place (relationships within place), politics of position (relationships between places) and politics of scale (relationships between hierarchies of spatial decision making) argue that such reconfiguration may lead to exclusionary development, as this tends to enforce power asymmetries rather than to change them (Blaikie, 1985; Yung et al., 2003; Lebel et al., 2005; Görg, 2007; Clay, 2016).

1.2.5. Landscape governance – building on the multiple dimensions of landscape

The overview of the four dimensions reveals a wide heterogeneity of landscape approaches, ranging from sociological sense of place to ecological functions and services, productive landscapes in development economics and politics of scale in political sciences (Arts et al., 2017). All these elements are relevant to landscape governance in their own way. The strong place-based or spatial focus allows for building upon the place-based identity and environmental behaviour of inhabitants taking responsibility over the place they consider to be theirs (Menzo et al., 2006; Beunen et al., 2011; Schmidt et al., 2019). But a sole focus on the local could lead to views narrowing into a so-called *local trap*. This danger can be avoided by adding the political dimension of landscape as being a phenomenon that can have multiple levels and be considered at many scales, through the productive practice of its inhabitants and the multi-scalar networks they are part of (Görg, 2007; Pirard et al., 2014; Reed et al., 2015; Arts et al., 2017). Landscape governance could therefore be perceived as an interdisciplinary concept, covering all aspects of the complex reality of landscapes (Sayer et al., 2013, 2016, 2020; Reed et al., 2015, 2018). Such an interdisciplinary approach may, however, also contain the danger of being over-integrative: attempting to combine incompatible epistemologies, ignoring topics such as differences in norms, values and power inequalities (Arts et al., 2017) and otherwise tensions between

production, consumption and protection. Given the potential of multifunctionality to solve spatial conflicts therefore does not mean ignoring the existence of competing claims and inevitable trade-offs (van der Sluis, 2017; Reed et al., 2018). Taking account of these different disciplinary entry points makes landscape governance a real *boundary concept,* representing a discursive space for reflection, dialogue and debate from different disciplinary perspectives and professional views (Opdam et al., 2015; Westerink et al., 2017; Arts et al., 2017).

1.3. Landscape governance offering a new perspective on restoration

Acknowledging the importance of all four landscape dimensions led to a broad recognition that landscapes provide the ideal spatial level for the analysis of issues like deforestation, environmental degradation and restoration. At the turn of the century a group of scholars from various disciplines introduced the term forest and landscape restoration (abbreviated FLR[1]) as *'a planned process that aims to regain ecological integrity **and** enhance human wellbeing in deforested or degraded landscapes'* (Lamb et al., 2005, 20012; Reinecke et al., 2018; Mansourian et al., 2019). In doing so, they challenged the hitherto classical nature conservation approach that tended to be solely concerned with the ecological dimension of landscapes only (Sayer et al., 2013; Arts et al., 2017). They challenged the large-scale ecological restoration programmes dominating the 20th century, which were often designed to restore ecological connectiveness within landscapes through the design of ecological infrastructure, corridors and the like (Wiersum, 2003). The resulting *'grand design'* reforestation programmes such as green belts, greenways and green walls did not, however, address the underlying drivers of degradation of landscapes, which often relate to the development objectives of its host societies or the power of market forces, and therefore the results were disappointing (Sayer et al., 2008; Scarlet, 2016; Holl, 2017; Boedhihartono et al., 2018). Instead, these scholars pleaded for a more integrated form of conservation, arguing that highlighting the socio-cultural and productive dimension of landscapes through natural resources management and spatial planning would lead to more integrated and multifunctional land use. They considered the term landscape appropriate, as it is less abstract than 'environment' or 'ecosystem', and thereby helps both academics and non-academics to relate to the places they know, where they live and work, or which they love,

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[1] Initially promoted as *forest and* landscape restoration (FLR), and later broadened to landscape restoration, which also takes into account seascapes, river basins, arid lands, rangelands, and other non-forest ecosystems (Lamb et al., 2005, 2012; Reinecke et al., 2018; Mansourian et al., 2019).

while building on the abovementioned dimensions of a landscape (Soini, 2012; Wulf, 2015). Such a multidimensional approach would be more fit for valuing the agency of landscape inhabitants who have always shaped their living environments through their environmental behaviour and have adapted their productive practices in response to environmental change (Menzo et al., 2006; Cocks and Wiersum, 2012; van Oosten, 2012).

The political dimension became more prominent after the concept of FLR was adopted as a priority issue in international conventions and agreements such as the Convention on Biological Diversity[2] and the UN Framework Convention on Climate Change[3]. The *Bonn Challenge,* initiated by the Global Partnership on Forest Landscape Restoration[4] in 2011, became a major vehicle by which countries, governments and private companies could pledge their contributions to restoring the world's degraded landscapes (Pistorius et al., 2014, 2017; Reinecke et al., 2018; Mansourian, 2016). This eventually led to the decade of 2021-2030 being declared *UN Decade of Ecosystem Restoration*, promoting landscape approaches as a major vehicle to '*fight the climate crisis and enhance food security, water supply and biodiversity*[5]. In this way, landscape restoration attracted global interest and triggered public as well as private actions. In 2014, in the *New York Declaration on Forests*, private companies pledged to eradicate deforestation from all commodity chains (Fishman, 2014). This resulted in the 'zero-deforestation' movement, with its commitment to '*at least halve the rate of loss of natural forests globally by 2020 and strive to end natural forest loss by 2030'* (New York Declaration on Forests, 2014). As a result of this commitment, landscapes became objects of investment, attracting private funding to bring restoration efforts 'at scale' (Reinecke et al., 2017; Pistorius et al., 2017; Nijbroek et al., 2020). Private sector support became even more prominent when the 2020 World Economic Forum announced the initiative to plant One Trillion Trees around the globe within the decade, to combat climate change (World Economic Forum, 2020).

The private sector engagement described above triggered new critiques of the so-called 'restoration movement'. Critical scholars argue that this optimist approach may have a blind spot for the political consequences of achieving different policy goals at the same time. They contend that despite this high-level political buy-in, there is a need for a much stronger political dimension, to ensure longevity of restoration (Reinecke et al., 2017; Holl, 2017). Instead of being over-optimistic about the potential for global restoration targets to

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[2] CBD Strategic Plan, Aichi Target no. 15, which called for the restoration of 15% of degraded ecosystems by 2020.

[3] The REDD+ goal and the IPCC COP 16 decision on reversing forest and carbon loss and enhancing forest carbon stocks.

[4] The Bonn Challenge, September 2011, initiated by the Global Partnership on Forest and Landscape Restoration.

[5] United Nations General Assembly adopted resolution A/RES/73/284, which declares 2021- 2030 the UN Decade on Ecosystem Restoration, 1 March 2019.

trickle down to local implementation, they emphasise the complex political ecology of restoration, raising important questions as to what, where and how to restore, and – especially – for whom to restore (van Oosten, 2013; Chazdon et al., 2016).

1.4. Landscape governance as a response to landscape restoration policies and practices

The evolution of the global restoration discourse as sketched in the previous section led to a small yet growing body of literature on the g*overnance* of landscape restoration. Unlike the earlier work of Görg, this new literature is more instrumental in nature and focuses on the way in which restoration decisions are being taken, and on the costs and benefits that these decisions entail (Freeman et al., 2015; Chazdon et al., 2016; Mansourian, 2017; Reinecke and Blum, 2019; Langston et al., 2019; Nijbroek et al., 2020). It follows the reasoning that governance failure has been an important cause of landscape degradation; hence, governance should be at the core of restoration itself (Mansourian et al., 2019).

The article '*The Ten Principles of a Landscape Approach to Reconciling Agriculture, Conservation and Other Competing Land Uses*'[6] (Sayer et al., 2013) broke new ground. Although not explicitly focused on landscape governance, the authors define landscape approaches to be '*a long-term collaborative process bringing together diverse stakeholders aiming to achieve a balance between multiple and sometimes conflicting objectives in a landscape or seascape*' (Sayer et al., 2016). The Ten Principles are intended to guide the process of decision making in landscape contexts to better reconcile and integrate conservation and development efforts (Sayer et al., 2013, 2016; Langston et al., 2019). They emphasise the importance of stakeholder engagement, negotiated choices and spatial decisions based on rights and responsibilities regarding sustainable land use (Sayer et al.,

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[6] The Ten Principles for a Landscape Approach can be summarised as follows: 1. The dynamic nature of landscapes forms the basis for continual learning and adaptive Management; 2. Intervention strategies are built on common concerns and shared negotiation; 3. Landscape processes are shaped by influences from multiple scales; 4. Landscapes are multifunctional by nature, which requires choices and trade-offs; 5. Multiple stakeholders frame objectives differently, hence all stakeholders need to be engaged; 6. Trust among stakeholders is crucial to build up a negotiated and transparent change logic; 7. Clarification of rights and responsibilities, especially regarding land and resource use, is a necessity; 8. Monitoring of progress has to be done in a participatory and user-friendly manner; 9. System-wide resilience is to be achieved through recognising threats and vulnerabilities, and the capacity to resist and respond; 10. The complexity of landscape processes requires strong capabilities of all stakeholders involved (Sayer et al., 2013; see also Arts et al., 2017).

2013). Several scholars have built upon these Ten Principles, considering landscape governance as a new organising principle for landscape restoration, highlighting the importance of inclusive, democratic and transparent implementation (Colfer, 2011; Kozar et al., 2014; Kusters et al., 2015; Reed et al., 2015; Brancalion et al., 2016; Ros-Tonen et al., 2018). They consider collaborative platforms and partnerships as key in assembling multiple stakeholders to design programmes, while participation, negotiation and conflict mediation are the main criteria for 'good' landscape governance (van Noordwijk et al., 2003; Colfer, 2011; Kozar et al., 2014; Pistorius et al., 2014; Kusters et al., 2015; Foli et al., 2017; Ros-Tonen et al., 2018). More critical scholars from outside FLR circles have, however, criticised this view as believing too strongly in win-win solutions and falling short in a deeper analysis of formal decision making authority, power inequalities, and issues of democracy, justice and social engineering (Arts et al., 2017).

1.5. Landscape governance: the challenges, the strategies and the capabilities

1.5.1. Landscape governance: the challenges encountered

Although several scholars mention a variety of challenges hampering landscape governance, there has been no systematic overview of what these challenges are, and what are their deeper causes. Many scholars mention the challenge of finding a sustainable balance between production, protection and consumption, which according to some is hard, if not a '*mission impossible*' (Holmes, 2012; van der Sluis, 2017; Reinecke and Blum, 2017). They consider it hard because the increasing pressure on natural resources has led to competing and conflicting land use because of the different spatial interests, stakes and power positions stakeholders may have (Lebel, et al., 2005; Giller et al., 2008; Kusters et al., 2015). Political choices, it is argued, are steered by interest groups operating at spatial levels beyond the landscape, such as national policy makers, international conservation organisations or multinational corporations, and the outcomes may exacerbate inequalities between and within stakeholder groups (Arts et al., 2017). Policies are developed within sectoral strongholds or 'silos', turning landscapes into arenas of policy conflicts which are manifested in clashes between food security, nature conservation or economic growth (Persson, 2004; Giller et al., 2008). These different challenges have deeper causes such as the lack of institutionalisation of multi-stakeholder arrangements, something which Sayer in later publications acknowledges as a shortcoming of landscape approaches, and not sufficiently highlighted in the Ten Principles (Sayer et al., 2016).

1.5.2. Landscape governance: the strategies employed

Whereas the literature on landscape governance challenges is scarce, there is even less literature on how stakeholders cope with these challenges. Nevertheless, I assume that landscape actors have the ability to develop and employ strategies to overcome these challenges in a way which is satisfactory to them. Spatial planning is often considered an appropriate instrument used by governments to overcome challenges. Yet in practice, spatial planning raises additional challenges, such as inevitable trade-offs – for instance, between local people's livelihood needs and global market demands (Lebel et al., 2005; Görg, 2007; Pirard et al., 2014; Arts et al., 2017; Schmidt et al., 2019). Technical innovation and multifunctionally are often proposed as strategies for 'enlarging the pie', herewith reducing the need for trade-offs (van Noordwijk et al., 1997). This, however, requires strong stakeholder collaboration, which can be effective only if stakeholders are capable of understanding each other's needs and interests and of building bridges between asymmetries of knowledge, perspective and power (Giller et al., 2008; Wals, 2009; Wulf, 2015). Such 'social learning' can succeed only if supported by more fundamental institutional and behavioural change (Cash et al., 2006; Lemos and Agrawal, 2006; Giller et al., 2008;).

1.5.3. Landscape governance: the capabilities required

The almost total lack of literature on the capabilities which stakeholders require in order to overcome the landscape governance challenges they face is perplexing, as several authors mention the act of capacity development as a potential way to enhance landscape governance in practice (Mansourian, 2017; Foli et al., 2017; Ros-Tonen et al., 2018). Number ten of Sayer's Ten Principles, for example, suggests that '*People require the ability to participate effectively and to accept various roles and responsibilities. Such participation presupposes certain skills and abilities (...) as well as competent and effective representation and institutions that are able to engage with all the issues raised by the process*' (Sayer et al., 2013, p. 8352). This message is echoed by many, but it is hard to find literature which is more specific on what these landscape governance capabilities are and how they can be developed. There is a literature on capabilities in general and governance capabilities in particular (Sen, 1999; Nelissen, 2002; Arts et al., 2006; Lemos and Agrawal, 2006; Baser and Morgan, 2008; Keijzer et al., 2011; Termeer et al., 2015), but none of it explicitly addresses the spatial dimension of governing landscapes, leaving a knowledge gap to be filled.

1.6. Problem statement and research questions

Despite the growing popularity of landscape governance, there is no clarity within literature as to what it is, and how it unfolds within different socio-spatial contexts. There is literature on some of its aspects, but this literature is fragmented over various schools of thought. This is why, before I focus on its challenges and how these are addressed, an overview is provided on how landscape governance is manifested, which actors are involved and how these actors relate, otherwise called its *modes of governance*. The subsequent research questions address the previously described knowledge gaps by providing a systematic overview of the challenges that hamper landscape governance, the strategies employed and capabilities needed to overcome these challenges. This brings me to the aim of my thesis which is *to systematically analyse the manifestations of landscape governance in various modes, the challenges encountered, the strategies employed by landscape actors to overcome these challenges and their capabilities to do so*. It brings together the scant literature on landscape governance, combining it with literature from environmental governance (and within this body of literature, particularly the literature on environmental policy integration), spatial planning, institutional and institutional innovation literature and international development studies. By so doing, I aim to arrive at a more coherent understanding of what landscape governance really is and how it can contribute to more sustainable forms of land use and restoration. Although landscape governance is equally important in the Global North, this thesis will predominantly focus on the Global South, which is central in the global debate on landscape restoration, climate change and the achievement of the globally relevant Sustainable Development Goals. This general problem statement leads me to four specific research questions, which I will answer in the subsequent chapters:

1. How is landscape governance manifested in various modes?

2. What are the major challenges that hamper landscape governance, and what are the deeper causes of these?

3. How do landscape actors deal with these challenges, and what explains their strategies chosen and outcomes achieved?

4. Which capabilities do landscape actors have or need to have in order to employ the strategies to overcome substantive and process challenges?

Before addressing these questions I should mention that I deliberately opted for a processual approach in which my focus is not the outcomes of landscape governance, that is

the level of sustainability and legitimacy per se, but rather the process through which sustainability and legitimacy are to be achieved.

1.7. Conceptual framework

In order to achieve a comprehensive understanding of the way in which I employ literature and empirical data, I sketch a conceptual framework which visualises the key concepts which are central in this thesis. Many of these concepts are not directly derived from landscape governance literature, which, because of its newness, is still relatively small. I borrow concepts from multiple stands of literature, which I combine and mould into something new. I borrow from environmental governance, environmental policy integration, spatial planning, institutional and institutional innovation literature, and international development studies.

To answer the first research question on how landscape governance is manifested in various modes of governance I first of all build upon Görg, who highlights the importance of the interconnectedness between socially constructed spaces and 'natural' conditions of place, which forms the basis for multi-actor collaboration within a landscape (Görg, 2007). 'S*patialisation*' of governance, he says, offers new opportunities for place-based multi-stakeholder collaboration, allowing for new public–private actor constellations and institutional arrangements which are typical for a location (Görg, 2007).

I further build upon environmental governance, which has a larger history of studying the global shift from government to governance and describes the roles and responsibilities of governments, private sector and civil society, and the changing relations between these (Lemos and Agrawal, 2006). Environmental governance scholars refer to these relations between political actors as modes of governance, which are defined by the relational constellations of actors involved, the instruments they use, and the environmental issues at stake (Kooiman, 2003; van Tatenhove and Leroy, 2003; Treib et al., 2007). According to environmental governance scholars, these relations are subject to societal change and continuously shift along with the more generally observed trends in society and its governance (Driessen et al., 2012; Arnouts et al., 2012). Changing relations between actors may offer both opportunities and new challenges for the way in which landscapes are governed (Görg, 2007; Buizer et al., 2015; Buizer et al., 2016; Arts et al., 2017).

Regarding the second research question: there is no systematic overview of the challenges hampering landscape governance. Landscape governance scholars mention the challenge of the asynchrony between formal governance structures of states, which rarely tally with the

socio-ecological boundaries of landscapes (Sayer et al., 2013, 2014, 2016; Brancalion et al., 2016; Mansourian, 2016, 2019; Chazdon, 2017). They also mention the existence of sectoral policies which are designed and implemented through so-called sectoral strongholds or 'silos', which are manifested in clashes between food security, nature conservation or economic growth (Giller et al., 2008; van Oosten et al., 2018). But landscape governance scholars do not go deeper into the institutional challenges underlying these challenges. Here again, environmental governance literature can be of help. Kooiman, for example, suggests distinguishing between 'substance' (in our case, the landscape) and process (in our case, the process through which spatial decisions are taken) (free after Kooiman, 2003, 2008). Following this line of thought, substantive challenges relate to the sustainability of a landscape, including its functions and the goods and services that it provides (Beunen et al., 2011; Schmidt et al., 2019). Process challenges relate to the process of environmental decision making, which is often top-down and non-democratic, and rarely matches the scale at which environmental problems are experienced. Whereas formal decision making follows a jurisdictional scale, environmental problems often follow a spatial scale, leading to boundary mismatches (Beunen et al., 2011; Reed et al., 2015; Schmidt et al., 2019). Zooming into the underlying institutional causes, I use more institutionally oriented literature which is explicit about the challenges of multi-sector and multi-scalar character of environmental problems and suggests that informal multi-stakeholder collaboration and cross-scale networking can provide solutions to environmental problems, yet these solutions can also lead to new challenges regarding the formal decision making processes of states (Lemos and Agrawal, 2006; Mees et al., 2013; Chavez-Tafur et al., 2014). Less formal modes of multi-stakeholder decision making such as networks, platforms and partnerships may be more relevant for arriving at suitable spatial arrangements, but may raise new issues of legitimacy (Hajer, 2003; Arts et al., 2006; Lemos and Agrawal, 2006; Runhaar et al., 2009; Huitema et al., 2010).

Regarding the third research question of how landscape actors deal with the challenges, and what explains their strategies chosen and outcomes achieved, the landscape governance literature remains silent. Once again, I borrow from environmental governance, complemented with spatial planning, institutional and institutional innovation literature and international development studies. Following Mintzberg, I define strategies as 'consciously intended courses of action' which are purposefully developed to overcome certain (institutional) challenges encountered (Mintzberg, 1987). Regarding substantive challenges: spatial planning is recognised as a formal strategy to overcome competing and conflicting land use within territories. This spatial planning however requires strong stakeholder collaboration, embedded in a wider process of social learning such as described below. Environmental policy integration is often considered a strategy through which more coherence between sectorally oriented policies can be achieved, in both the vertical sense (coherence between levels of policy making) and the horizontal sense (coherence between

sectoral policies at the same policy level). Environmental policy integration literature studies how policy incoherence is manifested within a specific context and what are the strategies of coordination, harmonisation and, finally, integration of different environmental policies (Underdal, 1980; Lafferty and Hovden, 2003; Persson et al., 2018). But in general, environmental policy integration literature is not spatially specific.

Strategies employed to tackle process challenges have been addressed in institutional and innovation studies literature. According to Murray, innovative public–private governance arrangements are often described as arrangements which go beyond the classical realms of governance (Murray et al., 2010). These realms may entail place-based networks, collaborations and partnerships incubating local experimentation which could influence policies designed in higher political hierarchies (Murray et al., 2010; Buizer et al., 2015; van Doren, 2018). If achieved informally, such arrangements are labelled as products of 'institutional bricolage', a concept developed by Cleaver which describes how such creatively crafted arrangements are rooted in local practice and can tackle process challenges better than formal institutions can (Cleaver, 2007). If done in a more strategic manner, these arrangements are labelled as products of 'institutional entrepreneurship', which refers to more organised actions of entrepreneurial actors, the so-called institutional entrepreneurs (DiMaggio, 1988).

Regarding the fourth research question on the capabilities landscape actors have or need to have to overcome challenges, I rely on literature on governance and international development studies, which is more explicit on capabilities and their development. It uses the term 'capabilities' to refer to the collective abilities of individuals, groups or organisations to do something either within or outside their own system (Keijzer et al., 2011). The development of capabilities is generally considered the best road to development, as it allows people, organisations and societies to create the future they want (UNDP, 2007). Well known is the work of Nobel laureate Amartya Sen, in which capabilities are attributed not just to individuals, but rather to the deeper development objectives of the society of which individuals are a part (Sen, 1999). Based on this *'capability approach'* Baser and Morgan describe capabilities as the collective abilities of a system (landscape) to carry out a particular function or process (Baser and Morgan, 2008). Their 'Five Capabilities Framework' may apply to landscape governance, as it refers to the collective abilities to (1) commit and engage; 2) to carry out functions and tasks; 3) to relate and attract resources and support; 4) to adapt and self-renew; and 5) to balance coherence and diversity. All five capabilities focus on *interrelationships* between individuals or groups of people and the systems in which they operate, which in our case could be the landscape. Following this thinking, landscape governance capabilities may thus relate to the collective abilities of landscape actors to enlarge their access to and control over natural resources and be able to collectively shape the kind of landscape they need and want.

Termeer introduced the concept of *'governance capabilities'* and *'policy capacity'* as the capacity of stakeholders and policy makers to deal with the complexity of multi-actor governance systems (Lemos and Agrawal, 2006; Termeer et al., 2015). Regrettably, she does not explicitly address the spatial dimension of these governance capabilities. Nelissen, Arts and Wejs do address this spatial dimension by highlighting the role of trans-sectoral or transboundary governance arrangements (Nelissen, 2002; Arts et al., 2006; Wejs, 2014). But again, there is no clarity on how this would translate into landscape governance, and there is no empirical evidence as on how such process would unfold.

Representing all the concepts used in one visual brings me to my conceptual framework, which I present in Figure 1.1. The basis of the framework is the landscape, with its four dimensions: socio-cultural, ecological, productive and political. All four dimensions are complementary and interdependent, and all contribute to understanding landscape governance, its substance and its process, the latter including the actors and the institutions that they build. The ultimate outcome of landscape governance in substantive terms is the achievement of a sustainable landscape. The ultimate outcome of landscape governance in process terms is the achievement of sustainable landscapes through legitimate spatial decisions taken. Here, I highlight spatial decisions as being explicitly relevant to landscape governance, while acknowledging that there may be non-spatial decisions affecting the achievement of sustainable landscapes. Once again, I emphasise that within the research I do not explicitly focus on these outcomes but on the process through which these outcomes are achieved.

Figure 1.1: Conceptual framework
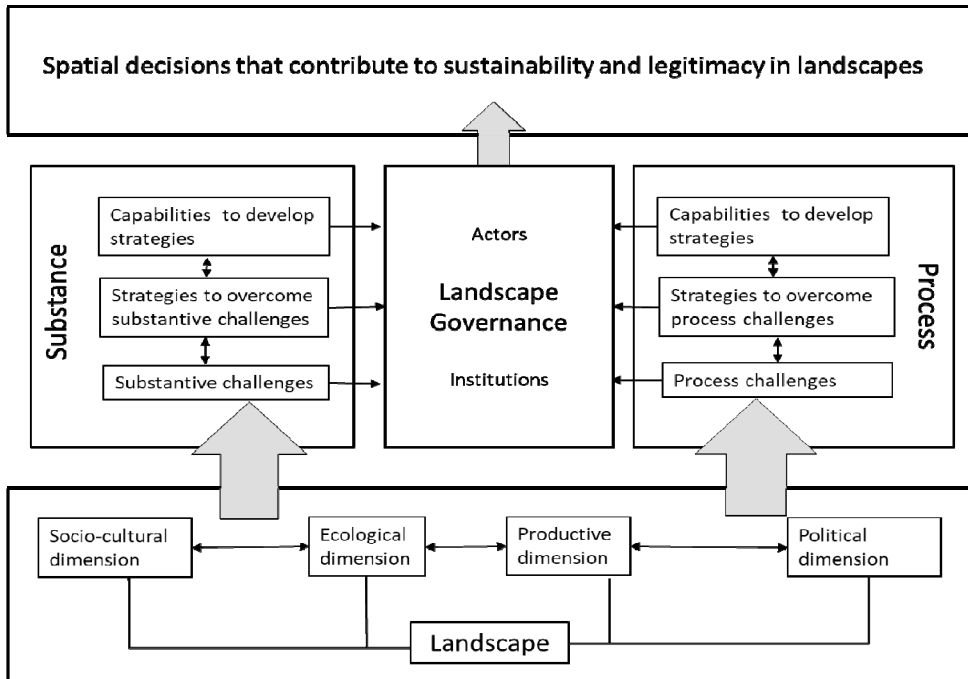
1.8. Methodological approach

As the topic of this thesis is still relatively new and unexplored, I opted for an open and unstructured exploratory research design which would allow me to flexibly explore the complex nature of landscape governance together with multiple research partners (free after Kumar, 2011). Given the exploratory character of the research, the questions of *what*, *where* and *why* were more relevant than questions of *how many* and *how much*. The pragmatic research paradigm I followed allows a researcher to use the methodological approach that works best in relation to the research topic at stake (Tashakkori and Teddlie, 2008). Pragmatism is built on the belief that reality is dynamic not static, and that actions cannot be separated from the situations and contexts in which they occur (Baser and Morgan, 2014; Kaushik and Walsh, 2019). Pragmatism focuses on the research questions in the first place and adapts the methods to that what works best for responding to each of these questions (Tashakkori and Teddlie, 2008; Kaushik and Walsh, 2019). This makes pragmatism a suitable approach when using multiple or mixed methods, in my case, within multiple case studies.

Multiple case study design and data collection

A multiple case study design makes it possible to explore, describe and explain the contours of landscape governance in various spatial contexts (Yin, 2003). Each case is built upon the set of selected qualitative methods considered most suitable and applicable to that case. Collecting qualitative data provides a deeper insight into the process of governance within its spatial context, which helps to elucidate the multiple variables that matter, herewith advancing the landscape governance debate. A flexible approach allows for progressive insight, inquiry and discovery. However, it will complicate the comparison of multiple cases, and the outcomes cannot be quantitively analysed (Yin, 2003; Mohd, 2008). Yet the aim of my research was to arrive at conceptual generalisations, not necessarily to a generalisation of phenomena to larger populations, which seemed less relevant at this stage (Yin, 2003). Instead, a detailed examination of relevant examples within their spatial context seemed more relevant for exploring a relatively new scientific domain in which context-independent theory does not (yet) exist (Flyvbjerg, 2006). Multiple exploratory case studies are therefore more suitable for yielding new insights and theoretical arguments which allow for theory building, which justifies the flexibility and modifications in my approach (Yin, 2003). I will come back to this deliberate choice and its consequences in chapter seven, where I will reflect on the methodology used.

Selection of case studies

The case studies were not predefined but sequentially chosen as the research progressed. The cases do not represent 'best practices' but real cases, with all their strengths and weaknesses related to landscape governance. Progressive insight into the topic led to the choice of complementary cases, each of which raised new questions for which relevant cases had to be added. Following the typology of selection strategies for cases, an 'information-oriented selection' of cases was applied, built on my own professional project portfolio (see also Flyvbjerg, 2006, p. 230). All selected landscapes harbour some sort of stakeholder collaboration, each of which reflects different public–private–civic modes of governance. I deliberately chose cases located on different continents, to illustrate the importance of socio-spatial and political context. All cases belong to the so-called 'Global South', where pressures on land are mounting and a growing percentage of the population depends on a shrinking natural resource base (Bavinck et al., 2014). In all the cases, it seems hard to balance production, consumption and protection, which illustrates the potential challenges related to competing claims and conflicts which may exist, and the role of making political choices and difficult trade-offs.

The case studies were purposely chosen from countries which I know relatively well, and where I could rely on a solid partner network to collaborate with and had easy access to research populations. As well as the practical and logistical reasons for this approach there

was an important reason: that valuable information can best be derived through collaboration with local partners in all stages of the process, including data collection, analysis, validation and publication of the result. This modus operandi has certainly influenced the objectivity of my study, and therefore contains the danger of having a bias towards confirmation or verification of prior assumptions. However, I refer to Flyvbjerg, who argues that subjectivism is inherent to all methods of inquiry, including quantitative methods, and can be corrected through the richness of the narratives, the depth of the findings and the feedback obtained from research subjects themselves (Flyvbjerg, 2006; see also Mohd, 2008).

Nevertheless, I realise that the choice of my case studies implies that my own values and cultural biases cannot be fully ignored, as landscape governance can easily be prone to normative thinking. This is particularly the case when using concepts that are intrinsically normative, as the concepts of sustainability and legitimacy are conditioned by discipline, educational background, cultural background and political context (Kumar, 2011). I am fully aware my own bias and subjectivity may have influenced the outcomes of my findings. To overcome this bias, I abstained as much as possible from making any value judgements, as any definition of 'good' landscape governance as captured in concepts of sustainability and legitimacy would be biased. Respondents and interviewees were selected with the aim of including the widest variety of perspectives, and all the research outcomes were discussed with research participants. Critical dialogue and reflection with respondents and research partners were incorporated in the fieldwork, and in all the case studies the research partners co-authored the article written. All the articles (included in this thesis as chapters) have been peer reviewed and developed under the supervision of my PhD supervisors.

Within each of the case studies I applied a flexible approach to data collection, using multiple sources; this allowed for progressive insight and continuous contextualisation and joint reflection. I held semi-structured interviews, focus group discussions and interactive workshops, organised with partner organisations from the location. Whenever topics were too politically sensitive or culturally biased, I employed participatory observation, which allowed me to obtain information which was later validated with partners and subjects. In all cases, a validation workshop was held, during which lessons were shared and conclusions were drawn.

Quantitative data collection

In order to support the qualitative data of my case studies, I carried out a larger survey among landscape actors around the world. The survey was intended to supplement the case study research with quantitative data on the different interpretations of landscape governance, the challenges encountered and strategies employed. The survey had a

particular focus on the capabilities which landscape actors have or wish to have. As this survey involved many more respondents than there were in the case studies, the outcomes would allow for some generalisation of the outcomes.

The 166 respondents were sampled from a much larger data base composed of a) alumni of the annual 'Landscape Governance' course organised by Wageningen Centre for Development Innovation and developed and facilitated by myself; and b) the project portfolio I created from 2010 to 2020, in which the case studies were a part. The advantage of this sampling method is that all respondents had been engaged in some kind of landscape-oriented activity or event and thus all had a certain level of prior understanding of landscape governance. As all were professionally engaged in landscape governance, each from their own position as producer, government official, civil society representative and/or academic, multiple perspectives are represented. Selecting respondents from a relatively knowledgeable data base helped me to receive high quality answers, representing a range of perspectives on and experiences with the topic.

Despite the large sample size of the survey, I abstained from deep statistical analysis, as I did not pursue any testing or confirming of predefined hypotheses based on analysed data. Yet the survey outcomes added value because they supported the qualitatively oriented case studies and confirmed my contextualised findings.

1.9. Scientific and societal relevance

This thesis aims to contribute to the still limited scientific basis of landscape governance. Existing conceptualisations of landscape governance do not sufficiently cover its different manifestations, the challenges encountered, the strategies employed and the capabilities needed for this. In order to enhance the scientific basis, I therefore explore the growing body of landscape governance literature and complement it with additional strands of literature, to fill the abovementioned knowledge gaps. The thesis presents case study research that helps understand the variety of landscape governance modes, the nature of the challenges encountered and the repertoire of strategies stakeholders have at their disposal. The combination of multiple bodies of literature contributes to the inter-disciplinary basis for landscape governance. In doing so, I sketch the contours of whether and how landscape governance aims to contribute to more sustainable forms of land use and more legitimate forms of spatial decision making, highlighted from different disciplinary entry points. By so doing, I hope to expand the emerging scholarship on landscape governance which, until now, has remained instrumental for the implementation of externally designed landscape and landscape restoration programmes and projects.

Besides its scientific relevance, this thesis has societal relevance, especially with regard to the emerging global debate on landscape restoration. It increases understanding of how restoration can contribute to balancing production, consumption and protection, and which are the critical factors which make it a success. It dives into the nature of place-based governance arrangements, and their potential and shortcomings when pursuing more sustainable landscape restoration. It sketches the challenges encountered in crafting landscape governance arrangements, as well as the ability of landscape actors to design and develop strategies to overcome these challenges. In doing so, this thesis will provide government agencies, civic organisations and companies involved in landscape restoration with the knowledge and skills they need to design and develop good landscape programmes on the ground. It argues the case for landscape governance arrangements as catalysts for more locally designed restoration, to build on the power and agency of landscape actors to drive the global restoration agenda forwards. It strengthens the *theories of change* of programmes and projects, and provides a scientific basis for national or international capacity development efforts, by highlighting existing capacity gaps and needs, and sketching the contours of a more systemic approach to capacity development at local, national and international levels.

1.10. Thesis outline

Each chapter has its own problem statement which corresponds to one or more of the four research questions as formulated in section 1.7. Whereas each of the four research questions are formulated as *overall* questions, the problem statements of the different chapters are more explicit. Each chapter has been independently published in an international peer-reviewed scientific journal (see Table 1.1). All the case studies present landscapes which are described in detail using the socio-cultural, ecological, productive and political dimensions of landscapes as presented in section 1.2. In this way, the responses to the research questions are all based on a thorough understanding of the socio-spatial conditions, the actor constellations and the historically shaped and contemporary institutional practices of the landscapes under study.

The second chapter provides an overview of how landscape governance is shaped by the interplay between the socio-ecological conditions of landscapes and the actor constellations within. It responds to the first research question *How is landscape governance manifested in different modes of governance?* by analysing different modes of public–private, public–civic and public–private–civic governance, each of which leads to different manifestations of landscape governance. It concludes that landscape governance is not a static process but

is a dynamic process that enables the transformation from rather top-down modes of governance to more collaborative modes based on public–private–civic collaboration.

Chapter three presents a case of civic-driven landscape governance which is deeply rooted into historically grown social relations and networks stretching beyond political boundaries. It also shows how these relations and networks are influenced by regional and global economic forces and global debates on forest and landscape restoration. It highlights the *multi-scalar nature of landscape governance and the dynamics of societal learning* to connect the multiple tiers of spatial decision making.

The landscape governance case presented in chapter four is an example of a private sector initiative. It highlights the role of private commodity firms responding to the global debate on sustainable commodity production. It presents a typical 'commodity'-scape in which landscape actors are searching for more sustainable and inclusive production models based on the multiple functions of the landscape. In doing so, it responds to the second and third research questions, which concern the *substantive and process challenges* encountered, and the *strategies employed by stakeholders to overcome these challenges*.

Chapter five presents a public-sector-driven case of landscape governance which highlights the roles of local and central governments in landscape governance. It responds to the third research question regarding the *strategies employed by stakeholders to deal with substantive and process challenges* and the effectiveness of these strategies.

Chapter six provides an overview of the challenges and strategies, and identifies the *capabilities that stakeholders need to successfully employ the strategies to overcome the challenges,* which is reflected in the fourth research question.

Finally, chapter seven provides a synthesis in which the findings of the previous chapters are synthesised. It responds to the main purpose of my thesis, which is to contribute to a deeper understanding of landscape governance, focusing on the way in which balanced outcomes as well as inclusive and legitimate spatial decisions are or can be achieved.

Although most of the chapters focus on more than one research question, they each address one question in particular. By following this structure this thesis will not only provide a global overview of landscape governance in its various manifestations but will also deepen understanding of the way in which modes of governance, challenges, strategies and capabilities interact.

Table 1.1: Overview of the articles in relation to the research questions

Ch.	Chapter title	Published article	Main research question addressed
2	Governing forest landscape restoration: cases from Indonesia	van Oosten C., Gunarso P., Koesoetjahjo I., Wiersum F. (2014). Governing forest landscape restoration: cases from Indonesia. *Forests* 5:1143-1162	Research question 1: How is landscape governance manifested in various modes?
3	Restoring landscapes – governing place: a learning approach to forest landscape restoration	van Oosten, C.J. (2013). Restoring landscapes – Governing place. A learning approach to forest landscape restoration *Journal of Sustainable Forestry*, 2013, 32:7: 659-676	Research question 2: What are the major challenges that hamper landscape governance, and what are the deeper causes of these?
4	From product to place – spatialising governance in a commodified landscape	van Oosten C., M. Moeliono, F. Wiersum. (2017). From Product to Place – Spatialising governance in a commodified landscape. *Environmental Management*, 2018, 62(1): 157-169	Research question 3: How do landscape actors deal with these challenges, and what explains their strategies chosen and outcomes achieved?
5	Strategies for achieving environmental policy integration at the landscape level. A framework illustrated with an analysis of landscape governance in Rwanda	van Oosten, C., Uzamukunda A., H. Runhaar (2018). Strategies for achieving environmental policy integration at the landscape level. A framework illustrated with an analysis of landscape governance in Rwanda. *Environmental Science and Policy* 803 (2018): 63-70	
6	Capable to govern landscape restoration? Exploring landscape governance capabilities, based on literature and stakeholder perceptions	van Oosten, C., H. Runhaar and B. Arts (2020). Capable to govern landscape restoration? Exploring landscape governance capabilities, based on literature and stakeholder perceptions. *Land Use Policy*, volume 47, online available at https://doi.org/10.1016/j.landusepol.2019.05.039	Research question 4: Which capabilities do landscape actors have or need to have in order to employ the strategies to overcome substantive and process challenges?

Chapter 2: Governing forest landscape restoration: cases from Indonesia[7]

Abstract

Forest landscape restoration includes both the planning and implementation of measures to restore degraded forests within the perspective of the wider landscape. Governing forest landscape restoration requires fundamental considerations about the conceptualisation of forested landscapes and the types of restoration measures to be taken, and about who should be engaged in the governance process. A variety of governance approaches to forest landscape restoration exist, differing in both the nature of the object to be governed and the mode of governance. This chapter analyses the nature and governance of restoration in three cases of forest landscape restoration in Indonesia. In each of these cases, both the original aim for restoration and the initiators of the process differ. The cases also differ in how deeply embedded they are in formal spatial planning mechanisms at the various political scales. Nonetheless, the cases show similar trends. All cases show a dynamic process of mobilising the landscape's stakeholders, plus a flexible process of crafting institutional space for conflict management, negotiation and decision making at the landscape level. As a result, the landscape focus changed over time from reserved forests to forested mosaic lands. The cases illustrate that the governance of forest landscape restoration should not be based on strict design criteria, but rather on a flexible governance approach that stimulates the creation of novel public–private institutional arrangements at the landscape level.

KEYWORDS: forest, landscape, restoration, governance, stakeholders, institutions, institutional space, institutional bricolage

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[7] Originally published as: Cora van Oosten, Petrus Gunarso, Irene Koesoetjahjo, Freerk Wiersum, Governing Forest Landscape Restoration: Cases from Indonesia, Forests 2014, 5, 1143-1162, Published: 28 May 2014.

2.1. Introduction

Forest landscape restoration (FLR) is rapidly gaining ground as an integrated approach towards allocating and managing land to achieve social, economic and environmental objectives in areas where agriculture, mining, and other productive land uses compete with environmental and biodiversity goals (Sayer et al., 2013). Active lobbying by international organisations has led to FLR being integrated into international commitments such as the *Reducing Emissions from Deforestation and Forest Degradation* (REDD) arrangements identified by the UN Forum on Forests, the Aichi target No. 15 of the Convention on Biodiversity aiming to restore 15% of degraded ecosystems, and the Bonn Challenge, which aims to restore 150,000,000 ha by 2020 (van Oosten, 2013). As part of the Bonn Challenge, an increasing number of governments have been pledging part of their national territory to be restored, and national assessments of the potential are currently being carried out looking at where and how these pledged areas could best be situated (Global Partnership on Forest and Landscape Restoration, 2011).

Although the FLR approach is formally recognised, many FLR programmes are still experimental in nature. In general terms, FLR refers to restoring the ecological services of forests within landscapes: not necessarily by bringing them back to their original state, but by restoring their functionality in terms of biodiversity, ecological functioning, livelihoods, or income (Sayer et al., 2013). Despite global efforts and ambitious targets for such attempts to reconcile conservation and development, there are as yet no general and effective solutions for meeting both nature conservation and human needs. The main reason is that the competing demands on land for conservation and development imply inevitable trade-offs, and there still is no unambiguous framework for how best to guide the process of decision making and implementation of forest restoration at the landscape level. Sometimes it is assumed that forest landscape restoration can be approached as a professional planning exercise, based on the idea that international and national targets 'naturally' trickle down through the spatial planning systems of states. However, it is increasingly acknowledged that these politically and administratively oriented planning mechanisms do not always tally with the socio-ecological identity of forested landscapes. Several authors (Görg, 2007; Colfer, 2011; van Oosten, 2013) have recognised the shortcomings of formal governance structures and their relative inability to govern restoration at the landscape level. These authors see the restoration process as involving 'living' forest landscapes that are shaped by multiple social actors and networks, who operate across the bureaucratic sectoral and scaled planning structures of states. The landscape provides its inhabitants with the basis for their socio-cultural and production practices, which in turn provide the institutional space for

governance mechanisms to emerge. Consequently, forest landscape restoration involves multi-actor networks composed of people living in the landscape or indirectly belonging to it and requires new forms of planning and implementation of socio-ecological complexes. Such new forms of landscape governance should be characterised by (1) a geographical focus, integrating multiple sectors (agriculture, forests, water, *etc*.) within a single space; (2) a multi-actor focus bringing together public and private actors operating within a shared space; and (3) operating at multiple scales, meaning that they stretch across local, regional and global networks of spatial decision making, sometimes referred to as 'politics of scale' (Görg, 2007; Colfer, 2011; van Oosten, 2013). Based on these principles, Sayer et al*.,* (Sayer et al., 2013) identified ten major design principles for a landscape governance approach, including multifunctionality of landscapes, multi-level and multi-stakeholder involvement, the importance of a shared concern, strengthened stakeholder capacity, negotiated and transparent change logic, clarification of rights and responsibilities, and continual learning and adaptive management. These principles are still rather generic, as they do not specify whether and how they are related to the two major critical issues in forest landscape restoration, i.e., the object of governance and the nature of the governance process (Kooiman, 2003 and 2008). As a result of the multidimensional nature of the FLR governance process and the generic nature of the identified design principles, there is still a great deal of variation in the way FLR programmes are planned and implemented in practice. Consequently, further understanding is needed of the multiple interpretations of the concept of governing forest landscape restoration.

This chapter aims to contribute towards a better understanding of the nature and diversity of the process of forest restoration governance in terms of the object to be governed and the nature of the governance process. It takes the reader through an analytical framework based on (a) the different interpretations of forested landscapes and their relevant forms of restoration, and (b) the various modes of governance for steering decision making at the landscape level. Combining these two, the authors claim that the governance of forest landscape restoration can be regarded as a management tool; as a multi-stakeholder decision making process; or as the creation of new institutional space for spatial decision making. These three modes of governance are illustrated by three cases of forest landscape restoration in Indonesia, which are governed in different ways, depending on the gradual changes in both the substance and the modes of governance, which emerge out of their local realities.

2.2. Analytical framework

Although the concept of forest landscape restoration is relatively new, the notion of the need to restore degraded and deforested landscapes is a long-standing one. As early as the mid-20th century, this notion resulted in programmes for watershed management and reforestation of degraded (or wasted) forest lands (Hamilton, 1983; Savenije and Huijsman, 1991). These 'first-phase' forest restoration programmes were based on concerns about the loss of forest functions with respect to hydrological regulation, soil conservation and timber production. These programmes focused both on rehabilitation of denuded forest lands as well as erosion control and agroforestry development on the adjacent private agricultural lands. Gradually, the interpretation of forest degradation was extended to include a larger variety of forest services, such as supporting, regulating, provisioning and cultural services (Bishop et al., 2002; Reid et al., 2005). As a result, attention within forest restoration gradually shifted from the original emphasis on watershed services to a larger complex of ecological services, and understanding of the multiple manifestations of restored forests widened (Wiersum, 2013). One repercussion of this development was that the concept of forest landscape restoration became more holistic and inclusive on the one hand, but it strengthened the forest focus on the other, with less attention being paid to adjacent agricultural lands. At the same time, the interpretation of the best approach to forest landscape governance and the related approaches to decision making and implementation also changed. Initially, an administrative and professional approach predominated, but gradually a multi-level and multi-actor governance approach evolved. Consequently, when considering the actual nature of forest restoration programmes and their governance, divergent interpretations can be identified in terms of (1) the substance of the governance process with respect to the type of forested landscapes and related forms of restoration; and (2) the modes of governance for steering decision making at the landscape level.

2.2.1. Types of forested landscapes and their relevant form of restoration

The notion of a 'forested landscape' is open to various interpretations. On the one hand, it may be interpreted in an ecological sense as referring to a complex of different forest ecosystems which are integrated in a natural ecological structure, allowing good provision of ecological services and good distribution and dispersal of biodiversity. Alternatively, it may be interpreted from a socio-geographical perspective as referring to a spatial unit of land with a mosaic of forest and agricultural fields, created by local people as part of their livelihood activities. These mosaics often include a variety of forest types ranging from natural forests to various forms of anthropogenically modified forests, the latter also being referred to as rural or domestic forests (Wiersum, 1997; Michon, 2007; Genin et al., 2013). These different interpretations of forested landscapes imply different approaches towards

their restoration. The first interpretation leads to a restoration which focuses predominantly on restoring the ecological structure and environmental services of the forests as natural ecosystems. It is recognised here that ecological restoration improves the environmental services that forests provide for the various stakeholders, but little attention is paid to the question of how these services are delivered to the intended beneficiaries (Wiersum, 2013). In contrast, the second interpretation leads to the recognition that forest landscape restoration often takes place in areas where forests have been adapted to human needs and where agriculture and other productive land uses compete with the environmental and biodiversity goals of restoring the forests. The second interpretation therefore considers not only how to ecologically restore forests, but also how to optimise the interactions between forests and other forms of land use. This offers scope for focusing not only on the restoration of natural forests, but also on anthropogenically modified forests and agrarian lands that are incorporated into forest mosaic landscapes.

This latter issue raises the question of what the role of people in the forest landscape is. Although forest degradation is the result of human exploitation of forests, it does not mean that local people should be considered as mere environmental degraders, who should be removed from the forest landscape; people can also act as an aggrading rather than degrading force in forested areas (Lemenih et al., 2011). Such human agency is illustrated by the many creative examples of hybrid and sustainable human/nature systems in the form of rural (or domesticated) forests, managed by local people (McKey et al., 1993; Hecht et al., 2010). Such adapted forests, in which the provisioning services for local use have been optimised, indicate the potential for developing ecologically healthy landscapes with forests types that are adjusted to the needs of the inhabitants. Forest mosaic landscapes consisting of a mix of natural forests, adapted forests and agrarian land often provide better human living conditions than extended natural forest reserves, which implies that restoration of forested landscapes may imply more than the restoration of forests (Chomitz, 2007).

2.2.2. Modes of governance for steering landscape decision making

Forest landscape restoration concerns not only the implementation of a specific set of technical and ecological practices for developing a specific type of restored forests, but also the design, the planning and the decision making at crucial moments during the process (Sayer et al., 2013). It is generally agreed that this process is quite complex, due to the nature of a landscape as involving multiple land uses and multiple stakeholders. In particular, the restoration of mosaic landscapes usually requires participation of the stakeholders involved in the various landscape components. The process even becomes more complex when landscapes stretch across political and administrative boundaries, and therefore cover more than one administrative planning unit. Whereas the initial watershed management projects mainly involved forestry agencies and local communities, in the

current forest landscape restoration programmes, a much larger variety of stakeholders are recognised, including commercial enterprises. Moreover, the increased focus on a variety of forest services has resulted in increasing numbers of sectoral regulations and guidelines that need to be taken into consideration.

As a result, it is becoming increasingly recognised that landscape restoration requires the involvement of multiple stakeholders operating in multiple sectors, and at multiple scales. This type of stakeholder involvement in design, planning and decision making of forest landscape restoration programmes is increasingly referred to by the term 'landscape governance' (Colfer, 2011; van Oosten, 2013). During the last decade, the concept of landscape governance has become generally accepted as referring to the multi-stakeholder process of negotiation and decision making about policies and programmes for effective conservation and sustainable use of forests, and for implementing the planned measures within spatial landscape units (Görg, 2007; Arts and Visseren-Hamakers, 2012; van Oosten, 2013). Despite this general acceptance, there still is divergence in the way landscape governance is perceived and implemented in different restoration programmes. Treib identifies different modes of governance with respect to the three different dimensions of politics, polity and policy (Treib et al., 2007). The modes of governance in the political dimension are related to whether only public actors are involved or also private ones (the actor constellation). The modes of governance in the polity dimension may vary, depending on whether they are based on a hierarchical government or a market approach; on a central locus of authority *versus* dispersed loci of authority; or on institutionalised versus non-institutionalised interactions (the institutional properties). The modes of governance in the policy dimension are related to whether the process is based on legally binding rules or on soft law; on a rigid approach to implementation versus a flexible one; on the presence or the absence of sanctions; and on material versus procedural regulation (the steering instruments). Deriving from these ideas, the authors conclude that three main modes of governance may be identified within forest landscape governance, i.e., landscape governance primarily as a management tool; landscape governance as a multi-stakeholder decision making process; and landscape governance as the creation of new institutional space for spatial decision making.

Landscape governance as a management tool is still based on a rather traditional hierarchical system of decision making based on a central locus of authority, professional knowledge, binding regulations and a rather rigid approach to implementation. This does not mean in practice that stakeholder interaction may be less rigid, and management responsibilities may be shared. Such sharing of responsibilities is generally considered to be more effective than straightforward governmental control, as it increases a feeling of responsibility among landscape users and provides an opportunity to incorporate location-specific information. Sharing of responsibilities is also seen as an effective tool for

mitigating conflicts, as it helps improve relationships between governments, private actors and a landscape's inhabitants. This interpretation of landscape governance is closely related to the concepts of co-management and collaborative management that are frequently applied in the local management of forest resources (Colfer, 2011). Stakeholders can be trained as co-managers in implementing management techniques and be made jointly responsible for the results. This is especially relevant to conservation agencies that plan forest restoration programmes on the forest lands they own.

Landscape governance as a process of multi-stakeholder decision making is a mode of governance that pays attention specifically to the formation of new institutional interactions with increased scope for private actors and a flexible soft law approach to stimulating location-specific landscape practices rather than just implementing professional practices. This governance mode is often adopted in programmes covering complex mosaics of different land uses, where management involves a process of delicate and politically oriented decision making concerning preferred land use, paying attention not only to the rules, regulations and practices from the forest sector, but also to those from the agricultural sector. Multi-stakeholder decision making thus becomes a complex process of negotiation, conflict mediation and trade-offs (van Noordwijk, 2003; Colfer, 2011). This process is often conflictive in nature and needs careful facilitation and procedural management. Decisions about different land uses involve not only the direct stakeholders but also the complex networks they represent; networks that may transcend the boundaries of sectors and scales. There is a need here to recognise the different power positions of stakeholders operating from various sectors and scales, influenced by institutional drivers related to access to resources, as well as external drivers such as global market forces.

Landscape governance as the creation of institutional space is a mode of governance that allows more power for the private actors and market forces within the governance process. This requires more flexible forms of institutionalisation and implementation, especially in cases where landscapes are not restricted to a specific level in the spatial decision making structures of the state bureaucracy (provincial, district or municipal level). Where landscapes stretch across administrative boundaries and political entities, multi-stakeholder decision making at the landscape level is hampered by the absence of spatial decision making structures embedded in formal institutional frameworks. These cases illustrate the fact that landscapes are socio-ecological constructs, shaped and reshaped by landscape actors themselves, stretching beyond the planning structures of states. In such cases, landscape governance cannot be the outcome of formal planning structures, but is rather the outcome of 'institutional bricolage': landscape actors from different sectors and scales create new institutional space by creatively combining traditional and locally embedded institutions with new governance mechanisms coming from the outside, thereby crafting

new and hybrid institutions adapted to the socio-ecological characteristics of landscapes (Cleaver, 2002 and 2012; de Koning and Cleaver, 2012; van Oosten, 2013).

The distinction between these modes of governance emphasises the distinction between governance as based on clearly institutionalised central locus of authority, established rules and regulations, and a professional interpretation of the nature of the restoration process on the one hand, and governance as a process based on dispersed authority, following a flexible approach to implementation based on procedural rather than predefined ecological standards, on the other. Whereas the mode of landscape governance as a management tool is based on a refinement in the political dimension of governance, the polity and policy dimensions are not subject to major change. In contrast, the mode of landscape governance as the creation of new institutional space involves major changes in all three dimensions, as it leads to the development of new institutional arrangements at the landscape level. Such institutional bricolage (Cleaver, 2002 and 2012; de Koning and Cleaver, 2012) involves not only combining traditional institutions with new governance mechanisms, but also adapting nationally and internationally designed measures and plans to local circumstances.

2.2.3. Framework for comparative analysis of cases

The various interpretations of the nature of forested landscapes and their restoration, as well as the different modes of landscape governance, have been combined into one analytical framework to allow comparative analysis of different cases of forest landscape restoration (Table 2.1). The table also indicates how both are related to the design principles of the landscape approach as identified by Sayer (Sayer et al., 2013).

2.3. Research background and methodology

The analytical framework described in section 2.3 served as a basis for assessing three case studies on landscape governance in Indonesia that were prepared by three MSc students from Wageningen University (Wageningen, The Netherlands) in 2012 and 2013. Each of these three students assessed the governance process behind forest landscape restoration from different angles. This section presents a systematic comparative analysis of these three studies. The analysis focuses on two main questions: (1) What form of forest landscape restoration has been at stake? (2) How was the governance process initially designed, and how did it change over time?

Table 2.1. Analytical framework for assessing different interpretations of forest landscape restoration and landscape governance

Nature of a forested landscape and its restoration	Relevant modes of landscape governance	Relationship to the main design principles formulated by Sayer
Ecological complex of different forest ecosystems needing restoration of ecological services	Landscape governance as a management tool	Importance of common concern entry points as formulated in sectorial regulations and guidelines;
		Strengthened stakeholder capacity for implementing professional norms
Socio-geographical space of complex mosaic land use requiring restoration of both conservation and productive functions	Landscape governance as a multi-stakeholder decision-making process	Importance of common concern entry points deriving from multi-stakeholder negotiation process
		Multi-stakeholder involvement for better coordination and planning
		Negotiated and transparent change logic
		Clarification of rights and responsibilities
Socio-geographical space, stretching over administrative boundaries and jurisdictions requiring restoration of both conservation and productive functions	Landscape governance as the creation of new institutional space for spatial decision making.	Multi-stakeholder involvement for joint decision making
		Multi-scale linkages for effective institutional embeddedness at scale
		'Navigating complexity' through adaptation and continual learning

2.3.1. Research methodology

Three of Indonesia's diverse forest restoration programmes were selected to be subjected to in-depth study (Figure 2.1). All three cases are part of the Masyarakat Bentang Alam Indonesia (MASBENI), which means Landscape Community of Indonesia, a network of restoration advocates in Indonesia. All three cases have a working relationship with Tropenbos Indonesia, which is part of the Netherlands-based NGO Tropenbos International, a Netherlands-based NGO active in forest-related knowledge brokering and research (Tropenbos International, 2013). The three cases were purposively selected as representing different interpretations on the nature of forested landscapes and their

restoration; and representing different governance mechanisms, marked by differences in stakeholder involvement, institutional embeddedness and scale of operation. In all three cases, landscape governance has been used as a management tool, i.e. as a tool to steer informal negotiations regarding managerial decisions. In only two of the cases, landscape governance has been used as a multi-stakeholder decision making process, while in only one case has landscape governance been used to create new institutional space for spatial decision making. In view of their different geographical contexts, each of the original studies focused on location-specific issues and used specific conceptual approaches. All cases were studied through mixed methods. In each of the cases, a stakeholder analysis was carried out, based on which an average of 32 interviews were conducted among the most relevant stakeholders. This data was complemented with participatory mapping, ranking and scoring; focused discussions with mixed stakeholder groups, in-depth interviews with experts, analysis of satellite images and maps, and literature review. Further details of the precise research designs and methodologies are reported in the original studies by Hennemann (Hennemann, 2012), Brascamp (Brascamp, 2013) and van den Dries (van den Dries, 2013). The comparative analysis of the cases presented in this chapter is based both on the original case study results as well as on the authors' own observations at the case study sites.

2.3.2. Historical background

Indonesia is one of the countries where forest landscape restoration is high on the agenda (Nawir et al., 2007a and 2007b). The country is known for its high net loss in forest area, estimated at 8.3 million hectares from 2000–2010, representing a net decrease of about 1% per year (Miettinen et al., 2011). Forest degradation, land-use conversion and fragmentation have led to a sharp reduction of ecosystem services and their benefits, which is not favourable for Indonesia's rural and urban population, nor for its economy, which is based on natural resources. Consequently, the importance of maintaining forest cover and restoring the lost forest is increasingly being acknowledged. This is reflected in the government's Green Growth Agenda, which aims to integrate ecology, economy and human welfare (Government of Indonesia, 2001; Badan Kebijakan Fiskal, 2011; Gunarso, 2013).

Since the second half of the 20th century, Indonesia has been a pioneer of forest landscape restoration. Initially, restoration focused on internationally sponsored watershed rehabilitation programmes. Currently, however, the scope has broadened to (urban) re-greening, restoration of waste land such as formal industrial sites, and post-mining restoration. The organisation of the restoration programmes has also gradually changed. The first watershed management programmes were managed by the Directorate of Reforestation and Land Rehabilitation, in collaboration with local communities. Currently,

restoration of forested landscapes is increasingly done by governmental forestry departments in close collaboration with international conservation organisations and local NGOs, often within the framework of Reducing Emissions from Deforestation and Forest Degradation (REDD). Additionally, an increasing number of forest landscape programmes are carried out in collaboration with commercial forestry enterprises through the newly introduced ecosystem restoration concessions (Gunarso, 2013). This latter collaboration has not always been successful.

Figure 2.1: Location of the three case study areas in Indonesia

Especially during the 1990s, inappropriate incentives for encouraging timber companies to restore the timber production potential of 'degraded' secondary forest resulted in the clearing of approximately 1.3 million hectares of forest land. The 'degraded' sites from which previously valuable timber trees had been extracted were cleared and replanted as part of the Ministry's restoration programme (Barr, 2002; Barr and Sayer, 2012). Nonetheless, these negative experiences provided important lessons for involving commercial enterprises in forest restoration programmes in the form of industrial forest plantations. The recent shift from the restoration of forests to the restoration of landscapes, recognising the multifunctionality of forested landscapes and the variety of restoration practice, has led to new dynamism in Indonesia's forest community. A new voluntary association of landscape restoration advocates (MASBENI) has recently been formed, with the aim of actively promoting landscape restoration, in line with the international debate on integrated landscape approaches (Gunarso, 2013).

Simultaneously with the changed interpretation of forests, landscapes and their restoration, the Indonesian legal and institutional frameworks have also evolved. Whereas

administrative decentralisation led to enhanced regional authority regarding the control over natural resources, including financial forest-related benefits, governmental regulation of private investments remained to be poorly monitored (Obidzinski and Barr, 2003). To allow for more transparent stakeholder involvement in forest management and restoration, new guidelines for companies investing in forest landscape restoration are currently in the making. Examples are the strict regulations for the restoration of former mining sites. Another novelty is the recognition of mosaic landscapes consisting of multiple types of land use, in which forests provide multiple services to their inhabitants. Acknowledgement of this multifaceted aspect of forested landscapes has led to increased inter-institutional coordination and more freedom for provincial authorities in determining the allocation of land to forestry versus non-forestry purposes within provincial spatial plans. There is also increased recognition of communities' multiple forest use and land rights, in an attempt to reconcile formal and informal land-use regimes. All these shifts seem to be leading to more creative restoration initiatives through multi-stakeholder arrangements at the landscape level (Royo and Wells, 2012).

2.3.3. Description of the case studies

The first case study was carried out in the Halimun Salak National Park in West Java covering around 113,000 ha. This park covers the original area of Salak National Park (created in 1992), its extension towards the adjacent Halimun forest (2003), and the heavily degraded area in between. In 2003, it was proposed to restore this degraded area in between, and label it as an ecological corridor. The aim was to restore the ecological connectivity between Halimun and Salak, thus creating a much larger conservation area. Its principle focus is on restoring the landscape's original ecological structure, internal connectivity and species mobility. An additional aim is to restore the area's function as water provider to West Java's major cities of Bogor and Jakarta. An important fact however, is that the degraded area to be restored is populated by approximately 100,000 people, who suddenly found themselves incorporated into the park, facing sharp restrictions regarding their land use and livelihood practices, which depend heavily on the natural resources (farm land, construction materials, firewood and collection of non-timber forest products). The restoration plans therefore resulted in fierce conflicts between the inhabitants and the park's authorities (Hennemann, 2012). To avoid further escalation, a multi-stakeholder dialogue was started, which led to the agreement that farmers can continue to farm in the area, under a number of conditions, one of which is the planting of trees. Seedlings are provided by an energy firm, operating a geothermal plant in the area.

The second case study was carried out in East Kutai district in East Kalimantan, where the private company Kaltim Prima Coal (KPC, which has a mining permit valid from 1991 until 2021) has taken the initiative to restore its former coal mining site of 90,000 ha, in line

with formal government regulations. The main focus of the programme is to restore the productive function of the area, not only for commercial production, but also in the interests of the communities in and around the former mining site. These activities are based on KPC corporate social responsibility policy, which includes good post-mining management, meeting environmental standards, and involving stakeholders in the planning of social, environmental and economic development projects. Before the mining starts, the topsoil is removed and stored elsewhere. It is moved back after mining and the area is returned to its original state. This procedure is entirely in line with government regulations. KPC however has gone far beyond government regulations by initiating an intensive dialogue with local stakeholders, which has made KPC realise that just restoring the ecological structure of the forest is not enough: restoring the productive function of the landscape is more interesting to the landscape's inhabitants. KPC is therefore actively promoting a multifunctional approach to restoration, aligned with the needs and desires of the inhabitants. The costs of restoration are not covered by the company's social responsibility budget, but from the company's restoration fund, thus calculated as part of the real production costs, fully integrated in its business model (Brascamp, 2013; van den Dries, 2013).

The third case focused on the peri-urban forest of Sungai Wain, just outside Balikpapan City, East Kalimantan. Due to its proximity to the city, this 10,000 hectare forest has an important function as a provider of clean air and recreational and leisure activities for the urban people. It is also important as the major provider of clean water for the urban population and the major industries located in the area. The state-owned oil company Pertamina in particular needs large amounts of water for pumping, cooling, electricity supply and water consumption for its many employees. The area used to be heavily degraded due to fierce forest fires in the 1990s. Fire-fighting campaigns initiated from civil society resulted in massive collective action and restoration, providing Balikpapan with its current identity of a 'Green, Clean and Healthy City', expressed in the Sun Bear which appears in the city's logo as well as the organisation of cultural events featuring puppet shows and songs on forest and forest restoration (van den Dries, 2013; Kaltim Prima Coal, 2010). Protection of the Sungai Wain forest is still high on the local political agenda, and strict regulation mechanisms have been designed by the municipality. Forest expansion is also envisaged through the establishment of a multifunctional buffer zone, offering surrounding communities the opportunity to collect non-timber forest products and practise agroforestry. The creation of the Botanical Garden as a tourist attraction also highlights this multifunctional approach, as it contributes to the biocultural identity of the area (van den Dries, 2013). Funding for these activities is provided by the government and the industries operating within the landscape.

2.4. The results: governing forest landscape restoration in Indonesia

The three cases differ both in terms of the interpretation of forested landscapes and their form of restoration, and with respect to the mode of governance for steering decision making. However, these interpretations were gradually adjusted in all cases during the implementation of the restoration programme.

2.4.1. What form of forest landscape restoration has been at stake?

Although all three programmes were considered as forest landscape restoration programmes, they differ significantly in their original interpretation of the nature of the forest landscape and the restoration process. Whereas two projects initially focused on restoring specific forest ecological conditions in forest reserves, the third project focused primarily on restoring the ecological services for urban residents in an urban landscape.

In Halimun Salak, the restoration plans were initially identified by the Park Authorities in the form of an ecological corridor, devoid of agricultural activities. This plan was developed without consulting the large population (approximately 100,000) living in the area. This non-participatory approach led to serious conflict, and required adaptation of the rules: local inhabitants were allowed to farm in the newly created corridor, on the strict condition that they should actively plant trees. Notwithstanding the status as a formal conservation area, agricultural land use became tolerated as a way to mitigate conflicts and to help improve relations between governmental conservation services and local people. Consequently, local people became co-managers in the collaborative management of the forest and an energy company with local geothermal operations assisted in providing seedlings. So, while the government remained responsible for design, farmers became co-managers, and a commercial company contributed to the investments in restoration.

In East Kutai, the Kaltim Prima Coal company initially aimed to comply with the regulations of the Ministry of Mining, Energy and Mineral Resources (ESDM) regarding restoration of former mining areas; the regulations of the Ministry of Forestry regarding the structure and function of the new forest; the requirements of the Ministry of Environment for National Corporate Performance Rating Programme (PROPER); and various related regulations of the provincial and district government. However, during implementation, it was realised that establishing new forests on the denuded lands was not the primary interest of local inhabitants; hence, it was decided to broaden the scope of the restoration programme, by including community development activities (livestock rearing, agro-business and eco-tourism development, health, education and infrastructural development).

In order to stimulate a process of joint planning, the original management approach was broadened to a more holistic and integrated landscape approach, with ample attention for the multifunctionality of the landscape, and the needs of local stakeholders.

In Sungai Wain, restoration activities were a direct response to the forest fires during the 1990s, and the result of collective action (NGOs, international donors and the general public). The activities did not just focus on restoring the forest cover, but rather on restoring its significance for people. The collective action provided the entire landscape with a new identity as a provider of green space and clean air for the inhabitants of Balikpapan City and clean water to Balikpapan's residents and industry. These activities contributed greatly to providing the city with a clean, green and healthy image. Within this context, the municipality has developed an active approach of involving stakeholders in formal planning procedures and implementation of management plans, while the private sector has taken care of the bulk of the investments required.

Hence, although the three projects initially differed in their interpretation of the nature of the forest landscape and the process of restoration, the interpretation of the forest landscape focused increasingly in all cases on forested mosaic landscapes.

2.4.2. How was the governance process initially designed, and how did it change over time?

In the cases of Halimun Salak and East Kutai in particular, the restoration programmes were initially characterised by a professional management approach. However, during implementation there was a shift in all cases from a strict management approach to a more inclusive governance approach of stakeholder involvement. In the case of Halimun Salak, stakeholder involvement was forced by local inhabitants supported by NGOs. Together they formed an advocacy network, and claimed institutional space to negotiate better land-use options with the Park Authorities. Thus, an informal platform was created, offering space for negotiations. An agreement was reached through this platform, allowing local people to farm within the boundaries of the extended park, but only under strict conditions. The park management realised that this would be the only way to manage the land-use conflict and create an acceptable level of co-existence (Royo and Wells, 2012). In the case of East Kutai, it was KPC's initiative to involve local stakeholders, which led to a multifunctional approach to restoration. KPC recognised that involvement of local stakeholders is essential for the realisation of such a multifunctional approach; hence, KPC facilitated a platform for stakeholder participation and dialogue. Most stakeholders accepted the invitation, although some NGOs refused, as they did not agree with KPC's dominant position in the platform, and its full financial responsibility over the joint landscape design (Hennemann, 2012). In Sungai Wain, stakeholder involvement has been

strong from the onset. Born out of collective action, restoration has become high on the municipal agenda. The municipal policy is based on participatory consultation and decision making through a specially created multi-stakeholder platform, which is fully formalised (Kaltim Prima Coal, 2010; van den Dries, 2013). Horizontal coordination is very strong, as governmental agencies, NGOs, industries and local communities are all represented in the Sungai Wain Protection Forest Management Body. This multi-sector management body has formal authority over the design, planning, implementation and monitoring of spatial projects.

In all cases, the process of creating institutional space has been the outcome of institutional bricolage. Not as a deliberate strategy, but as a 'way in which things happen'. In Halimun Salak, the bricolage was triggered by the clash between the Park Authorities and the local inhabitants, after the latter realised that the changed legal status of their land had substantial implications for their livelihoods. Through mediation of NGOs and a high level of willingness of the Park Authorities, various agreements were reached which were acceptable to both parties, yet remained informal and ad hoc, and recognised only for a limited period of time. In other words, the rules were bent, not changed. In East Kutai, institutional space was created by KPC, and the arrangements made were in the interests of both the company and local stakeholders. Initially, the restoration plans followed the formal government regulations, but during the process they were further adjusted and tailored to the needs of local stakeholders. During this bricolage process, local stakeholders managed to stretch the formal rules, and extended them to an outcome acceptable to all, in this case a jointly designed spatial plan. It is however not clear what the legal status of this plan is, or how it is aligned with the formal provincial planning mechanisms. The legal status of the restored land also remains unclear, which may be a source of conflict as it is unclear who will benefit from post-mining restoration, and what will happen when KPC withdraws from the area. The Sungai Wain restoration programme is clearly embedded in municipal structures and policies. Stakeholder involvement has been formalised and embedded in the municipal administration. Here, the bricolage can be found in the way in which partners creatively used symbols and stories to gain not only political space, but also massive public support. This strong horizontal forest restoration alliance has become fully embedded in municipal politics and planning systems and is contributing greatly to the notion of the Sungai Wain forest as biocultural heritage contributing towards the identity of the municipality. The case shows that local-level institutional networking and bricolage is important for coherent forest landscape restoration. However, the case also shows that horizontal arrangements are not enough. Sungai Wain is currently under threat. The national government is planning to develop a new industrial area and construct the Trans-Kalimantan Highway, connecting the new industrial area with the Kalimantan hinterland. This will affect Sungai Wain, as the new road is planned to pass along its border. This may result in new settlements, forest encroachment and fragmentation. Although there is strong

local consent for protecting and restoring Sungai Wain, this seems to be not enough. Vertical relationships with the higher political levels are poorly developed, anchorage in national politics is weak, and economically driven decisions from higher levels overshadow local rehabilitation networks (Fredriksson and de Kam, 1999; van den Dries, 2013).

2.4.3. Overall comparison

The analyses of the three cases indicate that their governance process differed in several respects (Table 2.2). In all of them, restoration programmes were initiated to serve ecological and biodiversity goals, although of a different nature. Initially, stakeholder involvement was predominantly adopted as a way to manage conflict, or to mobilise the public. Over time, however, managers became more sensitive to a more diverse set of provisioning, regulatory and cultural services of the landscape, and became more open to alternative restoration approaches better responding to the multifunctional nature of mosaic landscapes and to developing a more inclusive governance approach.

2.5. Discussion

Forest landscape restoration has gradually become part of the international policies on forests, climate change and food security. The understanding of its precise nature however is still developing. Forest landscape restoration is first and foremost shaped by the nature of the landscape, and the way in which the landscape is interpreted by those taking the initiative to restore. However, forest landscape restoration is also shaped by the process in which decisions are being taken regarding the aims of restoration, and the way in which restoration is implemented. This process can be referred to as landscape governance. Landscape governance differs from other forms of governance of natural resources in the sense that landscapes do not necessarily follow political or administrative boundaries, and therefore fall outside the scope of the formal spatial planning structures of states (Görg, 2007; van Oosten, 2013).

The emergent understanding of this multifaceted nature of forest landscape restoration is illustrated by the three Indonesian restoration programmes. The three programmes started off as a professional management approach, with the government setting the initial rules and regulations. However, over time, the rules were adapted in all three cases to the specific conditions of the landscape, and the needs and desires of the different stakeholders, evolving into a more inclusive approach of multi-stakeholder involvement. In all cases, the legal and institutional context was changed by stakeholders themselves, leading to a multifunctional approach, in which forests were placed within a wider landscape mosaic,

the functions of forests were better aligned with the landscape inhabitants' needs and desires, and non-forest functions of landscapes were equally taken into account. The underlying modes of governance have stretched beyond the formal spatial planning structures and sectoral fragmentation of the Indonesian state. They have included multiple stakeholders, making them co-responsible for planning and design, but also for investing in landscape restoration. In all cases, the private sector has started to play an important role as initiator, supporter or investor in restoration (van Noordwijk, 2003).

In each of the three cases, flexible governance arrangements at the landscape level were lacking originally, and institutional space for negotiated decision making at landscape level had to be claimed and created by the stakeholders involved through informal processes of bricolage (Nawir et al., 2007a; van Oosten, 2013). In all cases, the formal rules were bent or changed, and turned into more flexible governance arrangements. Over time, several of these informal governance arrangements and related landscape configurations were formally recognised. This helped strengthen the landscape's identity and enhance stakeholder collaboration. In all three cases, the new governance arrangements managed to link the stakeholders into a horizontal process of spatial decisions regarding the landscape, in a more or less formalised way. Their embeddedness in the vertical or multi-layered structures of the state has however been less successful. Such embeddedness in 'politics of scale' (Görg, 2007) seems to be a difficult yet crucial aspect of landscape governance, particularly in cases where international initiatives for forest landscape restoration require reconciliation of international, national and local interests, or in cases where landscapes are threatened by the pressures of economic development, and where stronger resilience of landscapes is needed in the face of externally driven resource exploitation and infrastructural development.

Table 2.2: Comparative overview of the governance process of three cases of forest landscape restoration in Indonesia

Case study	Original restoration approach	Mode of governance	Evolution in governance approach
Halimun-Salak	Restoration of an area degraded due to agricultural expansion. Restoration of an ecological corridor to restore ecological integrity and species mobility	Landscape governance as a management tool: plans are designed and implemented by Park Authorities; stakeholder involvement merely seen as a conflict management tool	Initially not participatory and highly directive. However, focus changed to more stakeholder involvement to mitigate conflict. Multiple resource use negotiated and accepted, yet not legalised. Institutional space claimed by local inhabitants with NGO support, but not institutionalised. Main funder: government. Additional funding provided by private sector
East Kutai (KPC)	Restoration of former mining sites, emphasis on restoring the original forest cover	landscape governance as a multi-stakeholder decision-making process: within the formal government regulations on restoration there is room for multi-stakeholder dialogue, which has led to more creative multifunctional restoration practice (agriculture, livestock, tourism)	Initially focused on implementation of government regulation, but later on turned into an instrument for participatory spatial planning. Institutional space created for multiple land use. Institutional space created by the company, in agreement with a majority of local stakeholders, yet not formalised or institutionalised in formal planning mechanisms of the government. Main funding: private sector
Sungai Wain	Restoration of fire damage. Emphasis on ecological restoration, provision of clean water and cultural identity	Landscape governance as the creation of new institutional space for spatial decision making: collective action and strong multi-stakeholder collaboration has led to new space for decision making, institutionalised in local government authorities	Integrated and multi-stakeholder approach from the onset; stakeholder involvement as instrument for joint planning; institutional space for multi-stakeholder dialogue created, and formally embedded in local government and its planning mechanism, however poorly embedded in national politics. Main funding: initially civil society and international donors. Later on: municipal government, with substantial co-funding from industries operating in the area

2.6. Conclusions

Our analysis indicates that forest landscape restoration should not be based only on design criteria such as formulated by Sayer et al. (Sayer et al., 2013), but rather on a good understanding of (a) the different interpretations of the substantive nature of forest landscapes and their restoration needs; and (b) the different modes of landscape governance including the dynamics of their institutionalisation. Our analysis underlines the opinions of various authors (Colfer, 2011; Görg, 2007; van Oosten, 2013) that forest landscape restoration must be based on the notion that local realities matter. It emphasises that landscape restoration requires a flexible approach of social learning rather than a strongly institutionalised approach based on design criteria. To be successful, also landscape governance has to be based on a thorough understanding of the nature of forest landscapes and their restoration. It cannot be solely based on considerations of the political dimensions of governance (with special attention to the participation of non-state organisations and private actors), but must include considerations on how best to incorporate space for social learning and a gradual adaptation of the polity and policy dimensions of governance through a process of institutional bricolage. All landscapes are fundamentally different, as they are the product of socio-ecological processes that are unique in time and place. It is therefore not only important to assess global potentials and design globally applicable instruments and guidelines, but also to support local landscape's stakeholders in planning and designing their own restoration programmes according to their specific needs and, more importantly, to help develop multi-actor, multi-sector and multi-scaled governance mechanisms that allow locally designed plans to be linked to overall planning mechanisms of the state. Most importantly of all, it has to be accepted that forest landscape restoration cannot be based on professional design alone, but rather depends on gradual changes in both the substance and the modes of governance, which emerge out of local creativity and the gradual emergence of innovative public–private arrangements at the landscape level.

living in and around the Halimun Salak National Park, East Kutai and Balikpapan City, who so actively participated in the field studies and observations. The research would not have been possible without them. The authors also acknowledge three anonymous reviewers whose comments helped develop the chapter.

Author contributions

Cora van Oosten and Freerk Wiersum are responsible for the overall research design and supervision of the entire research process. They are the main authors of the analytical framework, and the framework for the comparative analysis of the cases. Petrus Gunarso and Irene Koesoetjahjo are responsible for the fieldwork and supervised the process of data collection in Indonesia. They are the main authors of the description of the research background, the historical background and the case studies. All the authors are co-responsible for the analysis of the results, the discussion and the final conclusion.

Chapter 3: Restoring landscapes – governing place: a learning approach to forest landscape restoration[8]

Abstract

Forest landscape restoration is gaining ground, not least because of the role of forests in mitigating climate change. At present, pilot projects are initiated to generate 'good practice' and 'lessons learned' that can be scaled up to higher levels of policy making. However, landscape restoration is not new. People have always been constructing and restoring their landscapes to safeguard their livelihoods. A better understanding of existing local practice will help in identifying and implementing new restoration initiatives, and assure sustainable outcomes. Understanding local restoration practice means: (a) understanding how the biophysical conditions of landscapes are reshaped over time through the collective decisions of a landscape's inhabitants; and (b) understanding the governance mechanisms underlying these collective decisions. Thinking of governance from a landscape perspective adds a spatial dimension to governance as a means of reconnecting governance to landscape, citizenship to place. This offers the opportunity to cross administrative and political boundaries, allowing for broader groups of actors to engage in spatial decision making. Constructing networks across scales thus becomes an instrument for enhancing learning processes within and between landscapes and a means to scale up good forest landscape restoration practice for wider application at a global scale.

KEYWORDS: forest, landscape, restoration, governance, practice, institutions, spatial decision making, learning

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3.1. Forest landscape restoration: global demands versus local practice

Forest landscape restoration is of growing importance. Initially driven by the need to rehabilitate watershed areas, control desertification, and rehabilitate degraded productive land, forest landscape restoration has more recently been driven by a desire to restore biodiversity and mitigate climate change. The latter motivating factor is because it is increasingly recognised that the conservation and maintenance of existing forests is not enough and that restoration of the world's lost forests is necessary to mitigate the negative impacts of climate change. Studies show that no less than 2 billion ha worldwide offer opportunities for restoration, representing an area larger than Latin America (Global Partnership on Forest and Landscape Restoration, 2011). Moreover, forest landscape restoration aims to reconcile ecological and economic interests, offering opportunities for both conservation and direct foreign investment in commercial production. At a recent conference of the Global Partnership on Forest and Landscape Restoration in Bonn, a commitment was launched to restore 150 million ha of lost forests and degraded lands worldwide ('The Bonn Challenge', September 2011[9]). The 150 million ha restoration target directly relates to existing international commitments, including the Convention on Biological Diversity, which calls for the restoration of 15% of degraded ecosystems by 2020[10] and the UN Framework Convention on Climate Change, which calls for countries to not just halt but reverse the loss and degradation of their forests.[11] Forest landscape restoration therefore seems to have become fully incorporated in global environmental politics, offering an opportunity to satisfy the global demand for carbon storage with quantifiable results (Global Partnership on Forest and Landscape Restoration, 2011). To this end, the restoration potential of specific countries and landscapes is currently being assessed, and instruments to measure restoration outcomes as well as innovative financial mechanisms to support large-scale restoration projects are being developed (ibid.). The big questions are where to start pilot project activities, how to build up a coherent body of knowledge, and how to upscale good practices and lessons learned, to be translated into policy guidelines for wider application at the regional or global scale. How does this global debate on forest landscape restoration relate to local restoration as practised by landscape inhabitants who, over centuries, have shaped their lives and livelihoods according to their

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[9] 'The Bonn Challenge', September 2011, available at http://www.ideastransformlandscapes.org

[10] CBD Strategic Plan Target 15.

[11] The REDD+ goal and the Cancun COP 16 decision on reversing forest and carbon loss and enhancing forest carbon stocks.

individual and collective needs? How does it relate to the complex local ingenious systems of extraction, exploitation and protection that have emerged out of the local ecological, economic and social conditions of place? How does it respond to a landscape's inhabitants and their identities, as expressed in their collective sense of belonging, as they have been engaged in local decision making processes concerning the management, conservation and restoration of the landscapes they consider to be theirs?

Restoring forested landscapes from a local practice perspective means that forests need to be considered as part of the livelihood systems of a landscape's inhabitants, which includes the production of food, the generation of income and the maintenance of a socio-cultural identity. It also means that landscapes need to be considered as part of wider economic and political networks, such as value chains and regional political processes. This implies that landscape decisions are not based on local conditions alone, but also on processes and networks transcending the physical and politico-administrative landscape boundaries, as landscapes are increasingly linked to the wider world of global economic and political trends (Wiersum, 2004; Massey, 2005; Görg, 2007). Such an integrated, multi-layered perspective on landscapes opens up opportunities to link global interests to local practice, through the multiple networks and dynamics in which landscapes are usually embedded. Would these networks enable local practice to be scaled up and transformed into policy guidelines to be applied in other contexts? What are the governance mechanisms at the landscape level that allow for global policy agendas to be embedded in local space? How can deep understanding be obtained of located landscape dynamics, and how can these be tallied to global restoration goals? The following sections aim to answer these questions by providing insight into how governance mechanisms operate at the landscape level, and by critically assessing their 'scalability' to higher levels of policy making. The ultimate aim is to find a way to bridge the gap between local restoration practice and forest landscape restoration at a global scale.

3.2. Understanding landscapes: where local and global meet

It is hard to find a single definition of landscapes as the concept of landscape can be approached from different disciplinary viewpoints. Landscape ecologists tend to emphasise the importance of a landscape's ecological 'matrix'. Instead of focusing on the conservation of single habitats, they rather focus on larger areas, in which a strong ecological structure enhances species' migration and mobility, thus conserving biodiversity at higher spatial levels. Strong ecological matrices can be found in naturally shaped landscapes, but also in

mosaic landscapes with high levels of agro-biodiversity (Fleishman et al., 2002; Perfecto et al., 2009; Hecht, 2011). Based on this insight, many conservation organisations have moved from the conservation of single habitats to the conservation of larger landscapes by strengthening their internal connectivity (Sayer, 2009). Geographers and spatial planners do not contest this view, but they add the importance of anthropogenic influence, which increases the complexity of landscapes. Anthropogenic landscapes, they argue, are the result of human influence on natural systems, predominantly shaped by the productive land-use systems developed by a landscape's inhabitants (Wiersum, 2003). Productive land-use systems do not necessarily reduce the biodiversity of natural ecosystems; they can also enhance this by creating new landscape elements that increase the biocultural diversity of landscapes (Wiersum, 2003). This insight has led to an increased appreciation among conservation organisations for multifunctional land-use systems in which both production and biodiversity functions are valued because they offer scope for the ecologically sound and economically productive use of landscapes (van Noordwijk et al., 1997; Hobbs and Morton, 1999).

To add to the understanding of multifunctional land-use systems, landscapes can be considered as mosaics of heterogeneous land forms, vegetation types, and land uses 'pieced together to form an overall landscape-level patchwork', emphasising the internal coherence between the various components of a mosaic (Urban et al., 1987; Gilmour, 2008). Görg (2007) goes one step further by stating that the concept of landscape provides a bridge between the natural-spatial conditions and societal production in a particular place. According to Görg, landscape refers to the 'spatial-temporal aspects of the metabolism between nature and society', framing landscape as a realm of human–environment interaction, tagged into place. Social scientists like Taylor (2008) add the strong emotional attachment of inhabitants to their landscape, forming the basis for identity, belonging and a strong sense of place. In this way, shaping the landscape becomes 'making place', building stories and memories, and promoting a sense of local distinctiveness, a process that can be actively strengthened through dialogue, storytelling, naming, mapping, and using landmarks as symbols for regional identity, as shown by Buizer and Turnhout (2011) and van Oosten (2004, 2006, 2010). Place making, they say, can trigger collective concern, and mobilise stakeholders at various levels and scales to collectively shape, sustain, and restore their landscape. In this interpretation, landscapes become intersections of overlapping social networks, where the multiple identities of landscapes can merge. It is this multi-layered interaction that is represented by a landscape, meaning that landscapes are not tied to clear geographical boundaries, but are constructed across time and space, through human interaction within a particular spatial setting linked to a wider world (Massey, 2005). Place making is closely related to the issue of ownership; without having the right to access or resource use, there is neither a sense of responsibility nor place. This is why Diaw (2010)

links place making to the concept of *space granting*, referring to the legal and institutional environment which allows people to make place.

Landscapes not only represent harmonious social relations; on the contrary, landscapes often represent contestation and spatial conflict (contested land tenure, competing claims to resources, local versus global production, production versus conservation, etc.). This turns 'place making' and spatial decision making into difficult political processes involving the mediation of competing claims and conflicts, and negotiating outcomes that may themselves be contested because of power struggles and information imbalances between actors operating at various scales (Giller et al., 2008). In particular, the issue of restoration may trigger conflicts related to land tenure and resource access. Studies have shown that large-scale investments in reforestation increase the risk of creating new claims on forested landscapes that may potentially overlap with existing claims, thus creating or exacerbating existing conflicts over land-use rights and resource access (Sikor and Lund, 2009; Dressler, et al., 2012). Restoration therefore has to be implemented with great care, while considering local circumstances; i.e., local livelihood systems, tenure regimes and institutional frameworks specific to the landscape. It requires clarity on rights and responsibilities of different actors involved, as well as a fair justice system which allows for conflict resolution and recourse whenever needed. It also requires strong participation by landscape stakeholders at various levels and scales, which may imply complex decision making processes involving divergent stakeholder interests, hard negotiation, and potential trade-offs (Sayer et al., 2013).

3.3. Forest landscape restoration: from management to governance

Forest landscape restoration is often approached as a management practice. There are many handbooks and guidelines on *how* to manage and restore degraded landscapes from a biophysical perspective (suitability of soil types and plant species) or an ecological perspective (strengthening the matrix). This has led to a range of restoration programmes presented as local initiatives that can be scaled up to higher levels of implementation, once the appropriate management conditions are in place (Sayer et al., 2008). This approach fits into the ecological approach of strengthening the physical and ecological dynamics within the matrix, associated with formal ex-ante stakeholder engagement followed by a technically driven planning process, with little attention to issues like the social or economic relevance of species and land or tree ownership (Sayer, 2009).

As a reaction to this, a more reflective approach of on-the-ground engagement ('muddling through') has emerged, which is marked by a more reflective and adaptive form of management (Sayer et al., 2008). Within such an adaptive management approach, it is generally recognised that natural systems and social systems co-evolve, and their management has to be sensitive and responsive to constantly changing circumstances through intense monitoring and social learning (de Boo and Wiersum, 2002). The planning of management practices is therefore not just a technical management process based on specialist insights but embedded in processes of participatory decision making, taking into account the pluriformity and dynamics of stakeholder interests and power positions. Thus, the adaptive management of landscapes considers forests as parts of larger spatial units, feeding decisions on multifunctional land use at the landscape level that are not only reflecting locally applied management practices but also the changes in resource access, land-use rights, and marketing arrangements (de Boo and Wiersum, 2002). It considers not only the question of *how* to restore, but also *what* and *where* to restore, which once again comes back to the issue of land tenure and the question of who decides.

However, looking at landscapes as complex systems having multiple, conflicting benefits for a variety of societal demands, choices, and trade-offs implies that adaptive and reflective management is not enough. Besides (adaptive) management, governance is also required. Governance, sometimes defined as 'whole system management', sets out the institutional framework within which management can thrive (Ros-Tonen et al., 2008). Therefore, a governance framework encompasses not only the management arrangements but also the institutional arrangements such as laws, tenure arrangements, productive agreement, and the norms and principles that guide productive behaviour (Ros-Tonen et al., 2008). In the context of forest landscape restoration, the difference between management and governance is that the latter defines not only how, what and where to restore, but also *for whom* landscapes are being restored. 'Good' landscape governance would therefore provide an enabling environment in which forest landscape restoration can thrive. It would provide the institutional space for stakeholders to bargain and negotiate, based on their interests; it would allow for place making and space granting, for landscape actors to make spatial decisions in a democratic and transparent way. But are there appropriate institutions at the landscape level for stakeholder negotiations and decision making? Are there mechanisms for transforming negotiated decisions into rules and regulations regarding the landscape, while being linked to administrative structures and accountability systems already in place? In other words, is there room for governance at the landscape level? And if so, how would such landscape governance work?

Literature on landscape governance is not readily available as most governance literature focuses on formal state structures in which governments, citizens, civil society organisations and private companies use the existing democratic structures of states to

govern public space. The United Nations Development Programme (UNDP, 2004), for example, explains how governance is usually exercised within the politico-administrative constellation of nation-states, including their political constituencies and administrative units, with human interactions being framed by institutions at all levels of human enterprise (household, municipality, district/province, nation, region, globe). This is based on a general consensus that citizens articulate their interests, exercise their rights and responsibilities, and regulate power amongst those who govern and those who are governed, all framed in processes of political decision making within the boundaries of democratic state structures and public administration (ibid.).

Figure 3.1: The incongruity between governance, bio-geographical and relational scales
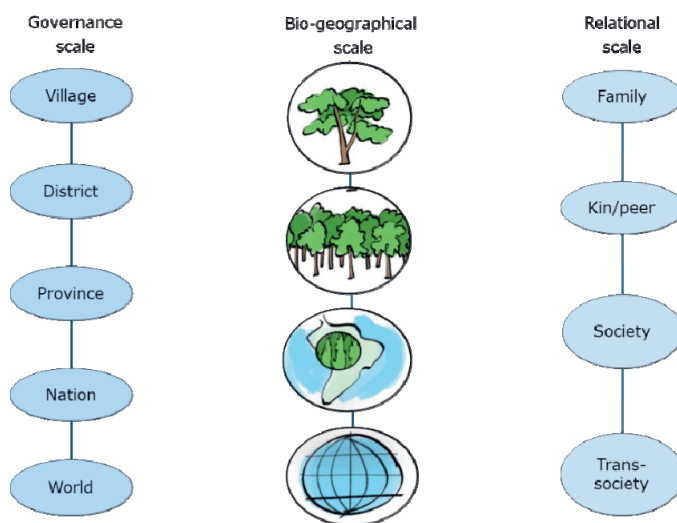
Free after: WUR IP/OP Scaling in Governance, 2009

But such boundaries usually do not coincide with the biophysical, ecological, or socio-cultural boundaries that define the landscape. This is visualised in Figure 3.1, which shows the incongruity between scales of governance, bio-geographical scales and relational scales – all of which are essential elements of what is called landscape. So once again, how are decisions regarding the landscape being taken, and what are the existing mechanisms guiding negotiation, decision making and trade-offs at the landscape level? Is there room for landscape governance moving beyond politico-administrative boundaries, matching the biophysical, ecological and socio-cultural characteristics of the landscape to the political and administrative structures of states?

3.4. Landscape governance: adding a spatial dimension to governance

Based on the previous sections, it can be concluded that politically and administratively defined governance structures rarely coincide with the spatial characteristics and boundaries of landscapes. This is most apparent in 'developing countries'[12] where political boundaries originated in rivalries between colonial powers, ignoring social, cultural and environmental notions of place. Present-day processes of state reform, such as the decentralisation and devolution of spatial decision making, are equally dominated by politico-administrative hierarchies of scale and do not take into account the spatial dimension of landscape characteristics and regional identities. This phenomenon has disrupted the 'natural' connectedness between landscape dynamics and its inhabitants - between people and place.

The lack of such a spatial dimension in the current governance debate is recognised by Görg (2007), who stresses the importance of 'restructuring the spatial dimension of politics'. He emphasises the interconnections between socially constructed spaces and the natural conditions of place. He interprets the term *landscape* as bridging the gap between social and natural sciences, and *landscape governance* as a means of reintroducing the spatial dimension and the relevance of spatial scales. Such a *spatialisation* of governance could respond to society's need for a sense of place, thus confirming that, despite globalisation, place does matter. If mosaic landscapes are considered to be spatial reflections of multiple networks cutting across ecological, geographical and political scales, then landscape governance would logically follow a network approach. According to such an approach, multiple actor networks operate at different political scales, but they all converge in or around the landscape, or the place they consider to be 'theirs'. It is the landscape that represents their shared interest; the continuity of their landscape that triggers collective concern and action. Without denying the existence of competing claims and conflicts, the collective space of the landscape provides the institutional space for dialogue in an otherwise conflictive process of negotiation, marked by power imbalances and strife, especially when it comes to issues of land tenure. Landscape governance would therefore not be a linear planning process targeting a single management outcome within a defined geographical area, but a highly volatile and unpredictable process of negotiations and trade-offs with multiple outcomes (Sayer et al., 2008). If landscape actors are entangled in overlapping networks connecting spatial and political levels and scales, then landscape

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[12] Although the term 'developing countries' refers to the old dichotomy between 'developed countries' and 'developing countries, ' which no longer exists, the term is being used here to refer to political systems that have been subject to strong exogenous influences, in this case by colonial powers.

governance represents the multiple-scale interface between the local and the global. It provides the missing link between multi-level politics and the specific natural-spatial conditions of place, and an appropriate realm for governance to be practised (Görg, 2007).

3.5. Landscape governance: an example from southwest Amazonia

An illustration of landscape governance in practice can be found in southwestern Amazon, an approximately 300,000 km^2 border region which is comprised of the adjacent borderlands of Madre de Dios in Peru, Acre in Brazil and Pando in Bolivia, popularly called MAP (Figure 3.2). In the past, this transboundary landscape has been affected by multiple border disputes and conflicts over land and resource rights. Since the turn of the 21st century, the area has been marked by drastic environmental change caused by the construction of the Inter-Oceanic Highway, which is part of a multinational infrastructure development, aimed at connecting Latin America's resource rich areas to the emerging Asian markets. This road construction triggered great concern among local stakeholders, who saw their forested landscape turn into a gross producer of raw natural resources (timber, gas, oil, soybeans and sugarcane). They not only feared an erosion of their livelihoods based on the extraction of forest products, but also a further deterioration of their cultural identity through immigration and further uptake into the global economy (van Oosten, 2004, 2006). A first meeting of concerned citizens was organised in 1999, convened by the University of Rio Branco (Brazil), bringing together a wide range of stakeholders from Madre de Dios, Acre, and Pando (the MAP region). The outcome of this meeting was the shared vision that, within the context of regional development, the landscape's identity and sustainability could only be safeguarded through collective action. Given the multiple interests of stakeholders, it was decided that the academic world should play a critical role in the development of such a landscape approach, and a multilateral agreement (Declaración de Rio Branco) gave birth to the 'MAP initiative', a multi-stakeholder initiative that aims for the development of a landscape approach geared toward sustainability and human progress. A new geographical map was drawn, a logo was designed and a tri-national monument was erected to symbolise the landscape's shared future; all of which provided a breeding ground for many initiatives to emerge within one common framework (van Oosten, 2004, 2006, 2010).

Figure 3.2: Southwestern Amazon, comprised of the adjacent borderlands of Madre de Dios in Peru, Acre in Brazil and Pando in Bolivia (Source: van Oosten, 2010)

In subsequent years, MAP meetings were organised on various landscape-related topics — such as land tenure and land reform, the construction of the Inter-Oceanic Highway and its positive and negative impacts on the landscape, land conversion within the MAP landscape, restoration of the landscape's forest and water resources, new market opportunities for timber and non-timber forest products, climate change, and landscape arrangements in the field of Payment for Environmental Services (PES) and Reducing Emissions from Deforestation and forest Degradation (REDD). Government institutions, NGOs, community organisations, farmers, indigenous peoples, private companies, politicians and other landscape stakeholders participated in the meetings. This profusion of encounters resulted in a strong network of stakeholders exchanging experiences and engaging in a polycentric inter-institutional learning process across multiple borders, fostering numerous cooperative agreements. Within this process of crossing multiple borders, the three universities

continued operating as network brokers, strengthening the process with data, and assuring a transparent flow of information (Perz et al., 2010; Perz, 2012). In relation to forest landscape restoration several activities were developed: exchange of experience with different land tenure arrangements within the region; recuperation of the degraded transboundary watershed of the transboundary river Acre entailing community action throughout the watershed; harmonisation of the legal frameworks for watershed management in the three countries; and the drafting of a transboundary water management plan. Moreover, several actions were taken to revive the rubber production in the region, through transboundary exchange of rubber processing techniques, joint exploration of new markets for sustainably produced rubber, and the construction of a condom factory through public–private investment in Acre.

Currently, patches of degraded forests are being restored with small-scale rubber plantations that fit into the landscape's ecology, its production system and its socio-cultural character. Despite historical conflicts and border disputes, the transboundary landscape of MAP developed into a scene for vivid landscape learning, because its inhabitants have taken up the challenge of creating collaborative networks across borders and appealing to the landscape's own identity, while transcending its boundaries to tap into global networks of production and political action (Brown et al., 2002; van Oosten, 2006; Perz et al., 2010; Perz, 2012).

The success of landscape governance in southwestern Amazon within its complex socio-economic and institutional context can be attributed to a number of factors:

1. a rapid uptake of the landscape into the global economy, triggering local concern;

2. stakeholders' ability to overcome diverging interests and learn collectively;

3. active participation of universities, governments, NGOs and private companies in a network of landscape learning across borders, sectors, and scales;

4. incorporation of the learning process in wider networks of national and international decision making;

5. tangible outcomes, in the form of increased market opportunities and restoration projects which fit into the local context.

The spirit of the MAP initiative is best illustrated by the slogans that have been developed over time, like '*construindo uma historia de cooperação para desenvolvimento da região MAP*' ('constructing a story of collaboration for the development of the MAP region') and '*cambios globales, soluciones regionale - sociedades locales diseñando soluciones regionales*' ('global change, regional solutions - local societies designing regional

solutions'), which express perfectly the aim of the MAP initiative: landscape inhabitants who, despite global challenges and local change, take the restoration and further development of their landscape into their own hands.

3.6. Landscape governance as landscape learning

The process of collaborative learning embedded in larger economic and political processes found in southwestern Amazon is in line with van Oosten (2013), Görg (2007) and van Paassen (2011), who all claim that landscape governance entails multiple actors engaged in multiple and partly overlapping networks, interacting, exchanging and collectively learning across levels and scales. Van Oosten, Görg and van Paassen thus agree that collaborative learning is an indispensable element of landscape governance: collaborative learning based on a shared understanding of natural-social interactions within a landscape, with the potential to help landscape actors to better understand, explain, or predict those processes taking place in, or having an impact on, their landscapes. Such *landscape learning* follows a problem-focused approach in which policy makers and practitioners do not necessarily strive for 'win-win' negotiations that tend to privilege compromise over problem solving, but engage in a multi-stakeholder process of mobilising knowledge, identifying and sharing good practice, and developing stakeholders' capacities to operate across levels and scales (International Union of Forest Research Organisation IUFRO, 2011).

In order to facilitate collaborative learning at the landscape level, it is useful to have a better understanding of how societies learn and how learning is related to the spatial context in which it takes place. Such socio-spatial learning is defined as 'a continuous dialogue and deliberation among scientists, planners, managers and resource users to explore problems and their solutions; communication together with experimentation which allows for a constant adaptation to adjust and improve management' (Maarleveld and Dangbegnon, 1999, quoted by de Boo and Wiersum, 2002). Moreover, elements like capacity building, conflict mitigation, definition of rights and responsibilities, stakeholder negotiation, and political decision making have been added as important elements of social learning (Buck et al., 2001), which links social learning to the broader concept of governance.

In an attempt to operationalise social learning, Wenger (2000, 2006) introduces the concept of *communities of practice*. Communities of practice are formed by people 'who engage in a process of social learning in a shared domain of human endeavour; because they share a concern or a passion for something they do and learn how to do it better as they interact regularly' (Wenger, 2006, para. 3). Members are practitioners who develop a shared repertoire of resources (experiences, stories, tools, and ways of addressing problems) and

use these to create a shared practice. It is this experience of sharing practice that creates a sense of 'belonging', or group identity, to which members adhere. Social learning systems, be it organisations, societies or landscapes, thus become constellations of communities of practice, each taking care of a specific aspect of reality, a specific practice. Since most people, inhabitants or citizens, are members of more than one community, they constantly move from one community to another, thus building bridges across communities, stretching their boundaries, reconfiguring relations, and creating networks of practitioners who, despite differences in professional background or specific interests, are all connected through one common background element. It is this common background that forms the basis for social cohesion, generates collective insights and strengthens the sense of belonging to an organisation, a society - or a landscape (Wenger and Snyder, 2000; Wenger, 2006).

The concept of learning communities fits the example of landscape governance in the southwestern Amazon, in which landscape stakeholders took part in a profusion of practical learning activities, linked together in a learning network or community of practice involved in spatial learning. It tallies with Keen's notion of spatialised social learning, which is defined as 'the collective action and reflection that occurs among different individuals and groups as they work to improve the management of their own environmental relations' (Keen et al., 2005, p. 4). Such landscape learning requires clarity on the rights and responsibilities of actors involved, allowing actors to overcome their divergent interests and start building metaphorical bridges to construct a common identity for their place. In this way, learning not only happens within communities of actors sharing compatible interests, thus *connecting the likewise* (Castells, 2009; Leeuwis and Aarts, 2010), but also connecting those with conflicting interests, reconfiguring their interdependent relationships, and triggering a common concern (Wals et al., 2009; Leeuwis and Aarts, 2010). It can be effective only if asymmetries of knowledge and power between different stakeholders are taken into account and effectively taken care of; something which requires a well-designed and facilitated process within a conducive learning environment (Giller, 2008).

Following the above, landscape learning can be described as a form of social learning within a specific spatial setting - a landscape. It can be perceived as a fluid process of interacting communities of practice, each having different spatial interests but sharing a common sense of place. Since community members move within and across communities, they learn more about the complexity of their landscape and the challenges of its governance. Linking these learning processes at multiple scales of spatial decision making helps to increase understanding, interaction, negotiation and collective action across scales. In other words, it helps stretching beyond the local fix (Lange and Büttner, 2010), linking local problems to larger landscape dynamics. New landscape institutions such as multi-stakeholder and multiscale learning networks, as in the MAP region, are anchored locally in

shared identities and common concerns. They form the basis of landscape governance as an instrument for re-establishing the connection between politics and place, between citizens and their environment, and between the local and the global.

3.7. Conclusion

Forest landscape restoration is playing an increasingly important role in global environmental policies. There is a demand for pilot experiences to be scaled up and multiplied to give a wider scale of operation. This assumes that restoration is a scalable management practice embedded in spatial planning procedures. However, forest landscape restoration could also be perceived as a governance practice in which landscape actors analyse their options, negotiate their interests and decide what is to happen in the landscape they consider to be theirs. A complicating factor in this interpretation, however, is that landscapes are usually not represented in formal constellations of governance and their institutional arrangements such as law, regulations, political mandates and the delegation of power. Nevertheless, landscape governance does exist in practice. Albeit not officially embedded in administrative and political scales, landscape governance is performed through informal institutions built upon landscape-related networks, identities, memories and shared practices across scales. Embedded in such informal yet functional landscape institutions, forest landscape restoration has the potential to bring together stakeholders who, despite their diversity and heterogeneity, share a common sense of place. A good example of this can be found in the MAP region, where stakeholders of a transboundary landscape found each other in a process of 'place making'. Crossing their national and socio-cultural boundaries, they constructed a vivid community of practice, which helped to overcome competing interests and nurtured multi-stakeholder dialogue across levels and scales. Within this community of practice several forest landscape restoration initiatives were developed and successfully implemented.

In the MAP region, it was the informal character of the community of practice that made the restoration initiatives thrive, as knowledge, ideas and experiments could freely travel across borders and scales. However, at a certain point the initiatives were formalised and linked to larger political networks, to become embedded in formal processes of spatial planning (transboundary management plans, public–private investments).

Institutionalisation of landscape governance through formal arrangements may thus help to better structure forest landscape restoration initiatives, and embed these in formal processes of policy making. But this may also weaken restoration initiatives, as formalisation may take away the collective learning spirit out of which they were born. Further research is

therefore needed to understand how processes of landscape learning are linked to larger policy networks, to what extent these could be formalised, how such more or less formalised arrangements would look, and which are the key factors and preconditions for their success. Such understanding would be an important step toward restoring and constructing more sustainable and inclusive forested landscapes across the globe.
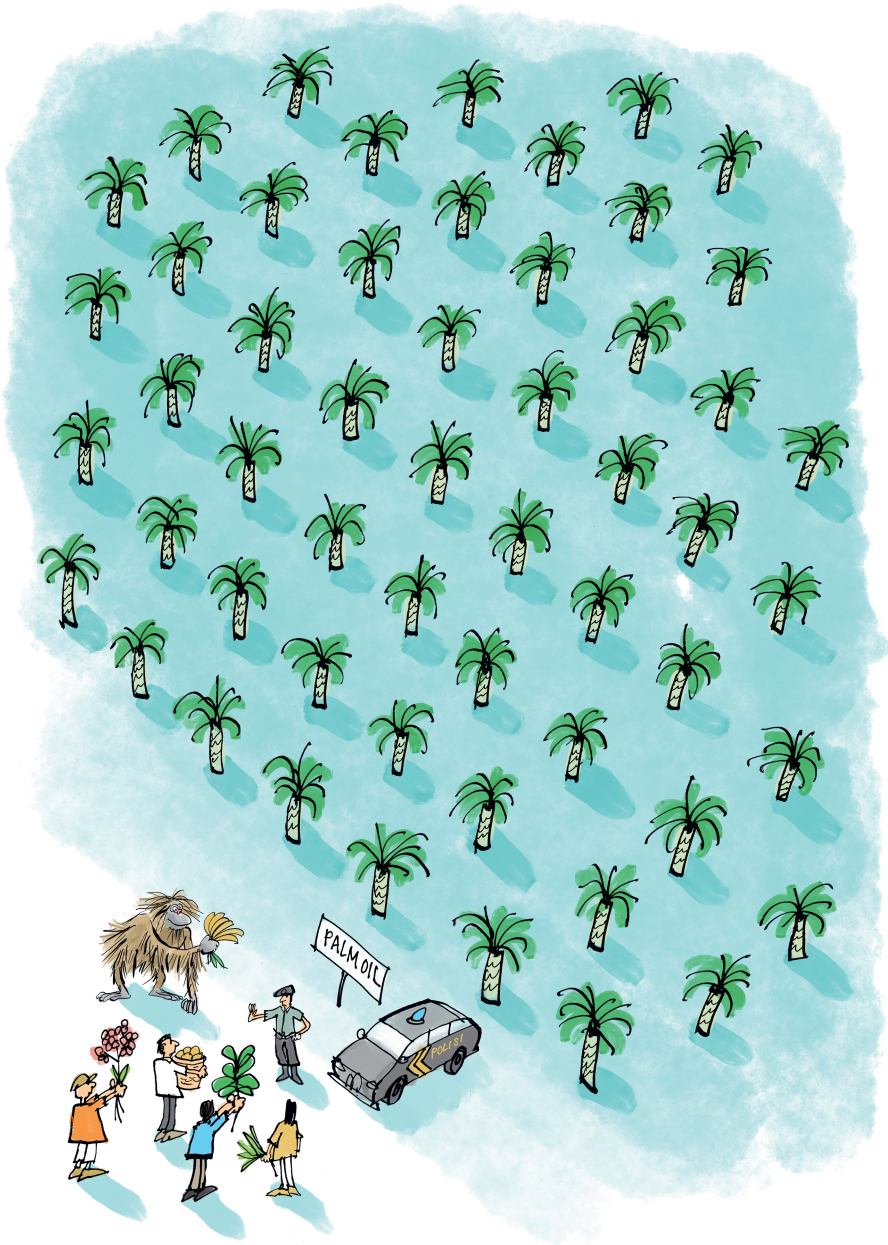
Chapter 4: From product to place – spatialising governance in a commodified landscape[13]

Abstract

This chapter analyses the potential for landscape governance in large-scale commodity landscapes in Indonesia. It conceptualises landscape governance as the spatialisation of governance, which entails the interplay between natural-spatial conditions of place, public–private actor constellations and policy responses. The chapter presents the case of a commodified oil palm landscape in West Kalimantan, where a potentially new type of landscape governance is emerging out of the experimental activities of an ecologically responsible commercial enterprise. It describes the development of a multifunctional concession as a process of productive bricolage involving the creative combination of different land uses within a single productive space. It also describes how such a multifunctional concession does not fit into existing policies, which are sectorally defined and embedded in sticky institutional frames. The formation of new public–private institutional arrangements needed for the development of multifunctional concessions is a difficult process, as it requires an alignment of contrasting discourses and an integration of sectorally-defined policy frames. If successful, it might facilitate the transition from multifunctional concessions to multifunctional landscapes. Such a fundamental change in land use and production relations however requires intensive stakeholder engagement and policy dialogue. Indonesia's continuous decentralisation process offers opportunities for this, as it increasingly provides institutional space at the landscape level, for public and private actors to explore common concerns, and craft public–private arrangements specific to the landscape.

KEYWORDS: landscape, governance, oil palm, multifunctional concessions, policy integration, Indonesia

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4.1. Introduction

In response to global agreements combating climate change, in particular the most recent sessions of the Conference of the Parties of the United Nations Framework Convention on Climate, landscape approaches are gaining popularity worldwide. As a means of reconciling forest conservation, agricultural production and livelihood options (Rahman et al., 2015), but also as a way to combine public and private interests, promote stakeholder collaboration within commodity chains, and highlight the importance of placing commodity chain performance within a place-based or landscape perspective (Ros-Tonen et al., 2015). Landscape governance has been defined as the process of multi-sector, multi-actor and multi-level interaction and decision making at the landscape level (Colfer 2011; van Oosten et al., 2014; Ros-Tonen et al., 2015; Kusters, 2015). It is in this context that Sayer (Sayer et al., 2013) developed a set of design principles to guide landscape-level decision making processes in a democratic, transparent and informed way, taking into account the interests of the various stakeholders involved. One instrument often proposed to enhance landscape governance is the establishment of platforms for public–private[14] dialogue. Such platforms offer a means to harmonise stakeholders' views and interests and embark upon a process of joint planning (Kozar et al., 2014; Kusters, 2015). Creating a platform, however, is only one aspect of landscape governance, and will only be beneficial if it forms part of a larger process of developing new institutional mechanisms for stakeholders to meet, deliberate, align discourses, and embark upon a process of shared learning (van Oosten, 2013; van Oosten et al., 2014).

The development of new institutional mechanisms not only relates to the process of governance, but also to the object to be governed — which is the landscape (van Oosten et al. 2014, building upon Kooiman, 2003, 2008). This substantive component of governance has a threefold importance. Firstly, landscapes are not static objects, but rather dynamic, due to the nature of the spatial processes they incorporate. Secondly, the characteristics of a landscape are perceived differently by the various stakeholders involved (van Oosten, 2013; van Oosten et al., 2014). These perceptions are often based on their interests or 'stakes' as well as formal sectoral considerations and policy frames defining the relations between the actors and the landscape. Finally, the specific landscape dynamics as perceived by actors influence the ways in which these actors interact and make decisions. This interplay between the social and biophysical dimensions of the landscape shapes both the landscape and the actors, and new forms of landscape governance may therefore require political and institutional reform.

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[14] With public we refer to governmental actors; with private we refer to non-governmental actors, such as private companies, citizens, and non-governmental organisations.

To illustrate this interdependency between the substantive matter and the process of governance, we will present a case study from Indonesia – which is a country with one of the world's highest deforestation rates, largely due to the rapidly expanding palm oil industry (Sirait, 2009). Societal criticism has only recently forced the palm oil industry to admit its devastating impact on forests, and publicly pledge to decrease or halt deforestation (Pirard et al., 2015). In order to realise these pledges, several palm oil producing companies have become supporters of sustainability and zero-deforestation movements and started searching for alternative production models that are more sensitive to the ecological conditions within their sourcing areas.

The aim of this chapter

This chapter aims to contribute to the understanding of the complexity of landscape governance as a combination of novel land-use practices and institutional bricolage. This requires a new institutionality, which stimulates the creation of novel public–private governance arrangements at the landscape level (van Oosten et al., 2014). A major question is how these public–private arrangements are shaped in practice, considering that the two actor categories have different relations to the landscape; relations which are discursively embedded and shaped through different institutional frames. To address this question, we focus on the commodified oil palm landscape of West Kalimantan in Indonesia. We present a case study on one company which is in the process of developing an innovative production model for its concession[15]. The case does not present a 'best practice' but illustrates the emergence of a new trend of ecologically responsible companies, proposing a more creative use of their productive space through the design of multifunctional concessions. These multifunctional concessions however do not fit within existing policy frames, which are embedded in sectorally defined, inflexible or 'sticky' institutions (Hajer, 2003). Thus, it is an open question whether these private initiatives can lead to the required institutional change for more sustainable production and more inclusive spatial decision making. In brief, this chapter addresses the following questions:

1. How did the West Kalimantan concession landscape emerge out of the interplay between its natural and its socially constructed conditions of place?

2. What changes in institutional arrangements occurred in the development of West Kalimantan's concession landscapes and how are these discursively embedded?

3. What was the outcome of the novel multifunctional concession design?

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[15] A concession is a contractual right to carry on a certain kind of business or activity, in this case palm oil, on government-owned land. Palm oil concessions in Indonesia are usually issued for a period of 30 years, which equals the life span of an oil palm.

4.2. Analytical framework: landscape governance unravelled

4.2.1. Landscape governance as a process of spatialisation

One of the first authors to systematically conceptualise landscape governance is Christoph Görg (2007). He characterises landscape governance as the interconnections between socially constructed spaces and the natural conditions of places. He argues that today's complex environmental problems are anchored in particular places yet have a global impact. This local-to-global relationship requires a system of governance, which links the spatial characteristics of place with higher scales of political decision making. He highlights these 'politics of scale' by outlining how this involves a restructuring of the spatial organisation of states. As the political and economic processes no longer overlap in spatial coverage, shifts between private and public regulatory areas and between the relationships of market processes and their political regulations are needed. As a result, new constellations of actors are emerging including non-state actors such as civil society movements and private companies, each having their own spatial reference regarding both the landscape and the political decision making process. Görg argues that due to this separation of the locus of spatial decision making and the source of commodities, newly emerging landscape governance arrangements may require policy responses beyond the current policy frames.

Görg identifies three key areas as determining the nature of landscape governance: (a) the natural conditions of place, (b) the public–private actor constellations, and (c) the policy responses. This conceptual model entails three questions: 1) how such spatialisation of governance works in practice; 2) how are these public–private actor constellations embedded in different discourses reflecting the difference between public and private use of space; and 3) how do the different actors develop new institutional arrangements across multiple levels and scales?

4.2.2. Changing institutional arrangements by navigating between sectoral discourses and practices

The spatialisation of landscape governance requires not only new actor constellations, but also new discourses and institutional reform. It is based on novel views on the desired nature and dynamics of the landscape and the segregation and integration of different land-

use types, e.g. agriculture and nature, production and protection, mono-and multifunctionality of a landscape (van Oosten et al., 2014). Integration of different land uses and their respective policies requires 'navigating' between land-use sectors, and between local, regional, national and supranational scales of spatial decision making. Such navigation implies that landscape governance is based on discourses as 'interpretative schemes, ranging from formal policy concepts and texts to popular narratives and storylines giving meaning to a policy issue' (Arts and Buizer, 2009; Buizer et al., 2016, page 4). The interplay between different discourses on which the institutionalised practices of the various stakeholders are based is inherently part of the spatialisation, or integration of institutional practices within place (ibid).

Landscape complexity also requires new governance arrangements that transcend existing institutional boundaries (Hajer, 2003). New actor constellations need to negotiate new rules and behaviours regarding the space in which they operate. It is this 'new spatiality' (ibid.) that demands actors be able to 'jump scale' not only in terms of territoriality, but also in terms of sticky institutional structures. This requires a process of crafting new institutional arrangements out of 'old' sectoral policy frames and 'new' place-specific arrangements.

4.2.3. Landscape governance as a process of institutional and productive bricolage

Cleaver (2002, 2012) characterised the process of crafting and reconstructing institutions as 'institutional bricolage'. The term institutional bricolage refers to the dynamic and ad hoc flexible nature of the governance process in the form of (re)constructing institutions, pieced together by individuals acting within the bounds of circumstantial constraints. The outcome of this process is often unforeseen, as much depends on the power relations between the different actors involved, and their respective agency as bricoleurs (Cleaver, 2012; de Koning and Cleaver, 2012; de Koning, 2014; Funder and Marani, 2015). Ros-Tonen (2012) introduced another form of bricolage which she calls 'productive bricolage', referring to the 'flexible and dynamic crafting together of various livelihood options and its associated impacts on the landscape' (p. 17). In proposing this term, she refers to Madge (1994) who describes how various land-based activities are combined as a strategy of local communities to cope with external stresses. She also builds on Batterbury (2001) who describes productive bricolage as a dynamic process, not only to cope with stresses, but also to grasp opportunities, and creatively build economic diversity at the local level. Ros-Tonen (2012) identifies this process of economic diversification as not only involving 'diversification by necessity', as response to external forces, but also 'diversification by choice', emerging from the multi-scalar interactions between the various actors involved. In this way, we consider the concepts of institutional and productive bricolage as

complementary in enabling the diversification of production models within the overall institutional landscape.

Although productive bricolage has predominantly been identified in relation to the land-use systems of local communities, it can also be applied to landscapes managed by local bureaucrats who negotiate their position between local communities and the central state by using both formal procedures and informal practical norms (Kubo, 2010; Funder and Marani, 2015). Such productive bricolage may also be applied by private companies which respond to changing market and policy conditions, e.g., in the form of increased demand for sustainably sourced commodities. This may challenge the justification of monotonous 'commodity-scapes' having high yields yet low biocultural diversity, and encourage more innovative sourcing strategies for combining commercial production, environmental conservation and communities' wellbeing through a clever integration of land use within a single space (Koh et al., 2009; Santika et al., 2015). Such innovative sourcing strategies may include a combination of productive and protective zones, including multifunctional agroforestry areas, and corridors between forests with high conservation value (Koh et al., 2009). Experiments in Brazil show that through the development of more land- and labour-efficient production techniques and more inclusive management, diversified concessions are feasible (Brandao and Schoneveld, 2015). Though financial returns may decline, this may be compensated through the avoided costs of environmental degradation and social unrest (ibid.). In the long run, productive bricolage practised by companies can be economically feasible, and socially and ecologically desirable as an alternative to the current unsustainable business practices.

4.3. Study area and methodology

West Kalimantan is one of five[16] provinces of the Indonesian part of Borneo. It covers approximately 14 million ha, and is inhabited by 4 million people, the majority living in rural areas (Sirait, 2009). Rubber and palm oil are the most important export commodities, with over 0.35 million ha planted with oil palm (Colchester et al., 2006; Potter, 2008). In addition, a large area has been cleared for palm oil production but not yet planted. West Kalimantan's contribution to Indonesia's palm oil production is estimated at 6% (USDA, 2010), a figure which, despite the recently announced moratorium on new palm oil expansion, is likely to grow (Jong, 2015; Diela, 2016). This trend is of great concern in view of the environmental effects of deforestation, and has led to the development of novel

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[16] In 2012 the province of North Kalimantan split from East Kalimantan.

ideas on mixed concession landscapes including both commodity plantations and conservation areas (Pirard et al., 2015).

We use an explanatory single case study approach, to assess the context specificity of landscape governance. Such a qualitative case study approach is useful to understand the relationship between the social phenomenon and the context in which the phenomenon occurs (Yin, 2009). We have taken the commodified landscape of Ketapang, on Indonesia's West Kalimantan, as an example. Here, we conducted a series of studies to assess the potential of multifunctional concession landscapes, beginning with an overview of the history and recent developments of the West Kalimantan commodified landscape. Second, a study was conducted on the current production models of West Kalimantan's palm oil industry, and their potential for innovation. Our case study in the Ketapang district of one particular palm oil company experimenting with a multifunctional concession design was purposely selected as an example of a new practice approach in the making. A final study focused on the institutional framework surrounding palm oil production in Indonesia, and the analysis of institutions hampering multifunctional concession design. The various studies were complemented and triangulated by empirical data based on interviews with private and public stakeholders, as well as with community members and leaders inside and outside the concession area. In 2014, a first series of 25 interviews were conducted amongst local inhabitants, rubber and palm oil farmers, processing companies, middlemen, NGOs and government officials in West Kalimantan. Additional interviews were held with CIFOR (Center for International Forest Research) scientists in 2014, 2015 and 2016. All interviews were documented in interview reports and analysed in a qualitative manner, to systematically assess stakeholder dynamics and institutional processes. The results were discussed and critically evaluated in the context of two international meetings in Indonesia organised by Wageningen UR and CIFOR (2015, 2016)[17], and a public seminar in Wageningen in 2016.

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[17] The international course on Landscape Governance is an annual course, which is jointly organised by Wageningen UR Centre for Development Innovation and CIFOR Center for International Forestry Research. Information can be found at https://www.wageningenur.nl/ en/Expertise-Services/Research-Institutes/centre-for-development- innovation/short-courses.htm.

4.4. Results: the process of developing a new multifunctional concession landscape

The process of developing a new multifunctional concession landscape is presented in three sections, corresponding to the three research questions presented in section 4.1.

4.4.1. The West Kalimantan concession landscape as the product of natural and socially constructed conditions of place

The historic formation of West Kalimantan's landscapes

West Kalimantan's landscapes have been historically shaped by their natural conditions, forming the basis of its production systems, which have in turn been subject to political trends, legal systems and markets. Traditionally, the population of West Kalimantan, known as the 'Dayak', named their landscapes after the rivers and dominant tree species. An example is Ketapang, the name of our study district, named after the *Terminalia catappa* tree, which is quite common in the area. Originally, the Dayak built livelihoods on swidden agriculture, supplemented by hunting and gathering forest produce; while commercial agriculture and trade were mainly carried out by the Malay and Chinese population living along the coast. During the colonial period, West Kalimantan gradually entered the global market. At the beginning of the 20th century, the Dutch colonisers introduced the rubber tree, originally from South America, with the aim of setting up plantations feeding into the market of the then-industrialising world. Initially, the rubber tree was not much appreciated by the local population. However, rubber became an unintentional means for the Dayak to acquire land rights (Peluso, 2009). Under colonial rule, the Dayak people could occupy and access 'customary land' if they could prove that they were actually using it. Within the swidden agricultural system, it was hard to prove land use, unless the swidden was 'tagged' with productive trees. This is how the Dayak people adopted the rubber tree, first as a means to 'tag' their plots, and later as an easy way to gain a monetary income. Rubber became popular, and West Kalimantan became the heartland of the rubber industry, dominated by smallholder production. The complex trading system dominated by middlemen formed a complex social structure of interdependent relations (interviews with local people, confirming earlier findings of Peluso in 2009 and Sirait in 2009). The resulting rubber gardens or agro-forests were and still are highly biodiverse, providing rural families with a diversified livelihood and collective identity, and contributing to a resilient socio-ecological system (Joshi et al., 2002). During field research, farmers remarked that although it is currently the oil palm that they prefer because of its price, they retain a deep-seated bond with the rubber tree: 'Where palm oil

provides us with our daily rice, the rubber forests provide us with our savings account'
(quote of a local respondent).

The commodification of West Kalimantan's landscapes

The introduction of the timber, rubber and mining industry since colonial times changed
perceptions of forests and the value of forestland (Barr et al., 2006). This process
accelerated with the introduction of the first oil palm plantations which were established in
West Kalimantan in the 1980s (Barr et al., 2006; Sirait, 2009). Oil palm plantations were
initially introduced as government enterprises using the 'nucleus plasma' model, in which
the enterprises formed the 'nucleus', while smallholdings constituted the surrounding
'plasma' (Acciaioli, 2016). However, during the structural adjustment period in the 1990s,
the plantations were privatised and purchased, mainly by multinational corporations.
Production, trade and processing became concentrated in horizontally and vertically
integrated conglomerates or business groups, often run as joint ventures with foreign
investors (ibid.). Government policies facilitated large-scale oil palm expansion through
cheap land concessions, state bank loans to companies, and state-organised transmigration
programmes to provide cheap labour. This expansion came at considerable cost to forests,
agro-forests and often in conflict with local communities and forest owners (Sheil et al.,
2009). More recently, decentralisation shifted the responsibility of issuing production
permits to the local authorities. This change involved an implicit acknowledgement of
community rights as the companies had to directly negotiate with communities to acquire
user rights to the land. From 1980 to 2009, West Kalimantan saw a ten-fold increase in
palm oil production (Sirait, 2009), often expanding to forest and peat lands. Forest
conversion went hand in hand with unconstrained forest exploitation, fires and road
building, and massive drainage of peat lands caused high emissions of carbon dioxide. In
our study district Ketapang, 70% of the land has been licensed to corporate plantation
developers. The district government has issued 39 oil palm permits that fully or partially
overlap with 400,000 ha of protected forestland (ibid.).

The growing disconnect between people and place

Some community leaders told us that they were fully aware of the ongoing land conversion;
others told us they discovered their land had been allocated to oil palm companies without
their knowledge. At the end of 2008, there were at least twenty major land conflicts in
Ketapang district alone (Zakaria et al., 2009). Most of these conflicts are related to land
registration, land conversion, and negotiation over contract conditions (Rietberg, 2011). In
many cases, the legal process has been correctly implemented, but the process itself reflects
the transformation from a dynamic to a static system of tenure rights, creating more
exclusive forms of rights over resources (Meinzen-Dick and Mwangi, 2009; quoted by
Rietberg, 2011). There are also conflicts over financial returns and additional benefits as

agreed in the contract (roads, public facilities) and discontent due to misaligned expectations at the outset of the process (Rietberg, 2011).

4.4.2. The discursive embeddedness of changing institutional arrangements

Ideas regarding commodified landscapes started to change around 2010, triggered by unprecedented annual fire and haze disasters. The *New York Declaration on Forests* (2014) represents a call to action by a group of leading international corporations. One of its commitments is *to at least halve the rate of loss of natural forests globally by 2020 and strive to end natural forest loss by 2030, and support and help meet the private sector goal of eliminating deforestation from the production of agricultural commodities by no later than 2020s* (New York Declaration on Forests, 2014). Although the declaration is a non-legally binding document, it does commit its signatories to drastically change the way in which they do business. As a result, the 'zero-deforestation movement' was born, representing a private sector-led initiative to eradicate deforestation from their operations and commodity chains (Fishman, 2014).

The Indonesian Chamber of Commerce and Industry representing Indonesian commodity companies embraced this movement, and many companies pledged considerable contributions. These pledges positively influenced the ongoing negotiations between the palm oil industry and civil society organisations at both the Round Table on Sustainable Palm Oil (RSPO); and the Indonesian Round Table on Sustainable Palm Oil (ISPO), which are less far-reaching than the RSPO guidelines, but mandatory for all oil palm companies operating in Indonesia (Pirard et al., 2015).

Despite these achievements, there have been concerns about the general neglect of the RSPO/ISPO standards to what is happening 'upstream in the commodity chain', particularly in relation to deforestation and the poorly defined land tenure systems (Brassett et al., 2011; van Bodegom, 2013). In response to these concerns, in 2013 a group of leading producing companies initiated the Indonesian Palm Oil Innovation Group (POIG) published a *No Deforestation, No Peat, No Exploitation Pledge* (Fishman, 2014; Pirard et al., 2015), which embraces a landscape approach, in the sense that it recognises the importance of forest conservation within concession areas. This was directly following a proposal of Indonesia's largest palm oil-buying companies, obliging their suppliers to assure that palm oil operations have no deforestation footprint. Although there is no clarity as to what 'zero-deforestation' means in real and measurable terms, several producing companies have started assessing 'high carbon stocks' and 'high conservation value forests' within their sourcing areas, and identifying potential set-asides for compensation. They also started community consultations in various high-conflict zones, and the development of sustainable peatland management plans. All these measures potentially affect companies' modes of operation and make them more sensitive to the 'socio-ecological characteristics of place'.

The critical point lies within the operationalisation of the commitments made, but there is overall optimism regarding the seriousness with which measures are being taken, implemented, and monitored (ibid.).

A novel landscape proposition: multifunctional concession design

The way in which companies aim to operationalise a landscape approach varies considerably. Incentivised by consumers demanding more sustainable products and local communities demanding more inclusive business models, some private companies claim to have adopted a landscape approach because they have set aside land outside of the concession areas to compensate for forest loss within concessions. Others claim to have adopted a landscape approach because they have swapped high conservation value forests within their concessions for degraded forestland outside of their concession area to be taken into production (Leone, 2015; Pirard et al., 2015). In both cases, the measures are focused on enhancing multifunctionality of the landscape outside of the companies' own productive space. More innovative are the companies, which decided to drastically change their concession design. With this, they try to comply with the governmental regulations on non-burning and conservation of riparian zones, but also to recognise the presence of high conservation value forests and multifunctional rubber gardens within their lease area. Adapting their production plan to this spatial reality creates more diverse and multifunctional production areas, but has implications for productivity and profitability. Some timber and paper enterprises experimented with such multifunctional concessions combining production and protection zones, benefitting commodity production, biodiversity and rural communities[18]. Several NGOs supported the initiative to operationalise the Zero-Deforestation pledges through such multifunctional concession design. Other NGOs however are more critical, saying that new production models, although well intended, do not fundamentally change production relations, especially with regard to land tenure.

The implementation of multifunctional palm oil concessions is not easy, as it requires working at the interface between agricultural and forestry laws. This can be illustrated by the experience of a young medium-sized Indonesian palm oil company, listed on the Singapore Exchange, in this chapter referred to as The Company[19]. The majority of its palm oil is produced on The Company's own plantations and associated plasma areas, while approximately a quarter (24.7%) is derived from nearby independent smallholders and out-growers. In reaction to a series of formal complaints from NGOs on illegal clearing, The

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[18] See for example the experiences gained by the 'New Generation Plantations', see http://newgenerationplantations.org.

[19] The Company is a member of the RSPO, has approx. 200,000ha under oil palm production mainly in Kalimantan and Sumatra, and owns eight processing mills, three of which are RSPO/ISPO certified. The Company has a 'zero burning' and a 'zero waste' policy, and has a relatively large percentage of its land under the nucleus plasma model.

Company has built upon the RSPO principles in formulating a new sustainability policy. This policy states that we need to develop a strong integrated landscape approach to ensure that natural habitats are protected whilst not depriving local populations from meeting their development needs. Our holistic approach provides for the protection, restoration, compensation and/or co-management of forests and other areas identified as having high conservation value. We are trialling participatory landscape approaches within and around the boundaries of our plantation lease areas to promote conservation and sustainable use of forest, peat, agro-forestry with oil palm plantations to promote diverse landscapes that contribute to long term food and income security. Our exploration of options places the village level at the centre of decision making (The Company's Sustainability Report, 2014).

Since the revision of its sustainability policy, free, prior and informed consent has become part of The Company's operational procedure, to openly dialogue with communities and individuals whose customary land claims are impacted by The Company's concessions. The Company reserved one entire concession of 16,900 ha for the real-life development of a multifunctional concession design to explore, develop and test a more sustainable and inclusive production model. The new concession design shows a much larger variety of land uses than its original block pattern design. Whereas in the original design, 12,500 ha (74%) of the total concession area was planned to be planted with oil palm, in the adapted design there is only space for 6,581 ha (39%) of oil palm plantations. The other 61% of the concession area is allotted to conservation forest, rubber agroforest, protected riparian zones and cultural-spiritual sites, which offer local communities the option to maintain the multifunctional character of their production system, and keep their rubber agro-forests intact. The fundamental difference between the old and new designs is that the new design departs from the common block division but uses much more natural features and incorporates a much larger variety of land uses. As well it is developed in consultation with the communities inside or surrounding the concession area. All ongoing land acquisitions were put on hold while a multi-stakeholder negotiation process on access rights was initiated. This, to the content of community members who did not want to sell; yet to the discontent of others who had wanted to sell and move to the city. While the negotiation process is ongoing, the alternative design is being assessed for its technical and financial viability, social acceptability and ecological impact. Initial studies confirm that the alternative design reduces The Company's income from oil palm considerably. However, the costs of resource degradation and social unrest are also expected to decline. Although it might be naïve to assume that the opportunity costs will compensate for the decline in oil palm income, the novel concession design opens new vistas to explore alternative incomes to be derived from the concession (Joshi et al., 2002; Wibawa et al., 2006; Molenaar et al., 2011; Saavedra and Guijt, 2015). It stimulates the development of multiple-product business models, including NTFPs (such as rubber) and carbon sequestration (ibid.). It is predicted to also stimulate the formation of new business alliances with smallholders and

out-growers, as well as with other industries such as the rubber industry. This would allow for a combination or integration of production systems on a larger scale. Such collaborative landscape design has the potential to create space for conservation areas between production units to serve as ecological corridors, thus combining production and protection at the macro landscape level.

The operations of The Company may not be representative of all palm oil companies in the area. But it does show the example of a pioneer company, which seems genuinely motivated to learn from past mistakes, and search for alternative pathways to change mainstream production models into more sustainable and inclusive ones.

4.4.3. The Outcomes of the multifunctional concession design: an institutional mismatch

In principle, multifunctional concessions fit into the historically developed landscapes of multifunctional production systems based on productive bricolage by local households. Its development would increase the social acceptability and environmental sustainability of the palm oil industry. Multifunctional concessions would tailor well with the increasing number of smallholders engaged in palm oil production, either through the nucleus plasma system, or as independent smallholders. Nonetheless, their feasibility is still uncertain, as the financial viability of multifunctional concession design still has to be proven. Moreover, institutional feasibility seems very complex.

Fitting multifunctional concession landscapes in existing legal frameworks

Although multifunctional concessions fit into the traditionally shaped landscape, they do not fit into the existing legal frameworks regarding agrarian and forest land use. The higher the multifunctionality of the concession, the more complex becomes its legal embeddedness, as the various land-use components fall under different legal domains. This was illustrated by respondents from different ministries who gave substantially different answers to the question as to which law is responsible for regulating palm oil concessions. Palm oil production in Indonesia is formally under the purview of the Directorate General of Plantations, under the Ministry of Agriculture. However, as oil palm concessions usually harbour various types of land cover, the concession holders must comply with agrarian, forest, environmental and spatial planning laws, which have different perspectives regarding land use (Leone, 2015; Suryadi, 2015). The agrarian law provides the basic rules for obtaining a location permit on land designated for agricultural use. However, if the permit issued contains forest land, the status of the land has to be changed under the forestry law. The environmental law provides regulation on impact assessment, management and control. The spatial planning law regulates land-use systems at national, provincial and district level. The different regulations, implemented through different

ministries, are often in conflict. For instance, the Ministry of Agrarian and Spatial Planning recently issued a circular (10/SE/VII/2015) instructing local governments to stop issuing concession permits for areas of high conservation value forests outside the designated state forest and to prevent clearing of these forests. This letter is in opposition to an earlier regulation requiring complete cultivation of the area covered by the concession permit within 6 years (Leone, 2015). Whereas this regulation was originally meant to avoid land speculation, it is currently hampering the development of more multifunctional production models.

The influence of multi-level governmental institutions

Considering the complex and sometimes conflicting legal requirements, the development of multifunctional concessions not only requires productive bricolage, but also institutional bricolage. Such institutional bricolage not only relates to the crafting of new interfaces between the requirements of multiple legal frameworks, but also to the development of new roles and responsibilities of government institutions operating at different levels. Within the context of decentralisation, local governments are increasingly allowed to 'bricole' within the spirit of the different laws, provided they avoid negative socio-ecological impacts (Barr et al., 2006). Such 'institutional bricolage' is legal, as local authorities are legally mandated to adapt spatial and environmental law if it helps to reduce environmental degradation or social unrest (Leone, 2015). The decentralisation law of 2014 (Law 23), although re-centralising part of the authority over forests at the provincial level, did not change much in the agriculture sector (Simarmata and Firdaus, 2016; Steni, 2016). Thus, oil palm plantations will still be governed by the district if contained within one district; or by the province if it straddles more than one district. That said, the new law on villages (Law 6, 2014) gives full authority to village governments to manage their 'assets' which include village land. According to respondents, Ketapang's District Government is known as being progressive, using its mandate to actively tailor the law to local circumstances, facilitate public–private-dialogue, and mediate in company-community conflict. However, the District Government also needs revenues to respond to the demands of their constituencies, which is most easily obtained through the levies raised by concessions. This dual interest makes it hard for The Company to negotiate with the District Government and have its production plans approved.

Efforts to craft new institutional arrangements at the interface of land-use regulation and the raising of government revenue become more problematic at the level of the central government. The government has stated its opposition to the zero-deforestation movement and announced a presidential directive that would serve as the legal basis for a 5-year moratorium on new palm oil concessions (Diela, 2016). As a representative of the Ministry of Economic Affairs has publicly argued, the most effective driver of economic growth in Indonesia is the palm oil sector; operationalising the zero-deforestation pledges would

jeopardise the country's economic growth. He also argued that raising operational standards for palm oil production will put restrictions on the growing group of smallholder producers and cause problems for smaller palm oil firms in their commodity chain (Taylor, 2015). Officials even fear the emergence of cartel practices, encouraged by deliberately setting standards too high for smallholders to comply with (Shenq, 2016). Despite the contribution of smallholders to deforestation, the government will continue to protect them in order to avoid them being driven out of business through standards set by foreign-owned buying companies (Jong, in Jakarta Post, 29 August 2015). A second argument against the zero-deforestation pledges is that the government considers them to be too much of a pro-active private sector engagement in policy reform. According to the Ministry of Environment and Forestry, the scope of the pledges interferes with the authority of the government, therefore breaching the State Constitution. According to a representative of the Ministry, the government risks losing sovereignty when its authority is taken over by the private sector (Jong, in Jakarta Post, 29 August 2015). This stand reflects the government's discomfort with the idea that non-state actors (Pirard et al., 2015) can govern land use within private concessions. As a result, some of the largest palm oil companies decided to backtrack on their zero-deforestation pledges. They realised that if the government is really taking on a more active role in shaping the palm oil industry, working against the government will be counter-productive; cooperating with the government would be a more constructive course (Shenq, 2016).

4.5. Discussion: spatialisation of governance as a process of productive and institutional bricolage

Our case study illustrates the importance of addressing landscape governance as a place and context specific process. It shows how the process of governance depends on its substance, that is, the historically grown spatial conditions of place.

Referring to the first research question, how did the West Kalimantan concession landscape emerge out of the interplay between its natural and its socially constructed conditions of place, our chapter illustrates Görg's theory that landscapes have been shaped through the interplay between its natural and socially constructed conditions of place. However, the influence of the natural and the socially constructed conditions has never been equal, and the balance between the two has shifted over time. The pre-colonial landscape was a product of rich ecosystems and the Dayak production system of swidden agriculture that shaped a bio-culturally diverse landscape. During the colonial period, the introduction of alien commercial crops changed the landscape, opening the way to global markets and

changing land tenure arrangements. People-place relations were further changed due to the introduction of the oil palm, which led to land alienation and high numbers of land-related conflicts. Whereas natural conditions shaped the original indigenous production systems, it was the global political economy that shaped the transition to more commercially oriented production systems. The resulting monotonous commodity-scapes are far from the original bio-culturally diverse landscapes.

Referring to the second research question, what changes in institutional arrangements occurred in the development of West Kalimantan's concession landscapes and how are these discursively embedded, our data illustrate how landscapes are subject to changing relations between the public and the private sector. In pre-colonial times, the Dayak population shaped the landscape through their customs, traditions and livelihoods. During the colonial period, the government appropriated resources and delegated concession rights to private concession holders. After the colonial period, the Indonesian government maintained the concession model whereby corporations were given the right to exploit resources and provide revenues to the state. This concession model is based on the arguments that palm oil production requires large upfront investment and strong vertical integration because of the perishable nature of the product (Deininger and Byerlee, 2011; Byerlee, 2014). In fact, the concession model was maintained for its economic importance, and the existence of the Dayak and their claims on resources were systematically ignored. The tenure system transformed from a flexible system depending on a family's needs, to a static system, depending on an individual's or enterprise's formal tenure rights (Rietberg, 2011).

It is during the past few years that the discourse of the private sector has changed from solely efficient commodity production to environmentally and socially responsible production. This is reflected in the growing zero-deforestation movement. Some authors argue that the zero-deforestation movement has been a response to the absence of government regulation (Pirard et al., 2015). Others claim that it is the decentralisation process itself that resulted in the incorporation of new players; and that in a context of weak states, corporations gained control and reframed their interests as responsible yet only superficially changed modes of production (Lemos and Agrawal, 2006). The zero-deforestation movement and its operationalisation through multifunctional concession design indeed reflects an ecological modernist discourse striving for win-win solutions, satisfying both the market and the environment (Dryzek, 2013; Buizer and Kurtz, 2016). However, the government's counter-discourse opposes more private sector involvement in spatial decision making and argues for increased smallholder production instead. According to Indonesian politicians, the zero-deforestation movement interferes with the authority of the government and its monopoly on spatial planning; hence, the government's fear of loss of sovereignty, as it sees its authority being taken over by the private sector. This is why

some palm oil companies withdrew their zero-deforestation pledges, as they realised that a more pro-active government attitude towards balancing land-use regulations would be in their favour (Pirard et al., 2015; Shenq, 2016). This could potentially be the beginning of more mutual understanding and even more collaborative relations between state and non-state actors, based on the belief that both have a legitimate role to play as co-governors (Pirard et al., 2015).

Referring to the third research question, what was the outcome of the novel multifunctional concession design, we have seen that multifunctional concession design fits within the traditional multifunctional landscapes of West Kalimantan. However, it does not fit into the modern institutional framework surrounding palm oil production, which, despite some recent adjustments, is still sectorally defined, and has not allowed any form of multifunctional land use within the boundaries of a concession. If The Company implements its multifunctional concession design, it risks losing its concession, as it does not comply with any of the laws regarding oil palm plantations. In order to make it fit, a process of institutional bricolage as suggested by Cleaver (2002, 2012) would be required, to challenge existing policy frames and political power relations. Considering Hajer's thinking on institutional stickiness (2003) this is however not very likely to happen. Nevertheless, under the political decentralisation process, discourses are changing, and districts are accorded a certain freedom to adapt rules and regulations to specific local circumstances. There is room to institutionally manoeuvre at the local level (Funder and Marani, 2015), especially since the new decentralisation law has given provinces more power of oversight (Simarmata and Firdaus, 2016; Steni, 2016). It does however require courage on the part of district officials to make use of this institutional freedom and divert from centrally defined policy pathways.

From these observations it can be concluded that our case study reflects the notion of landscape governance as combining productive and institutional bricolage. It also shows that productive bricolage is much easier than institutional bricolage. Productive bricolage is not a strange concept in the context of West Kalimantan landscapes, as the Dayak population applied productive bricolage in shaping its indigenous production systems, and to acquire land rights. Also multifunctional concessions can be considered as productive bricolage (Ros-Tonen, 2012), as they lead to new and more creative landscape configurations, which fit much better into the natural-spatial conditions of place. Following Ros-Tonen (2012), multifunctional concessions can be considered as productive bricolage by choice, as it reflects a voluntary attempt to diversify production, reinterpret the concession model and enhance collaboration with smallholders. However, it can also be considered bricolage by necessity, as power relations have changed, and consumer demand, environmental damage and social unrest force companies to reconsider their production models (Pirard et al., 2015). In both cases, productive bricolage can only be successful if it

goes hand in hand with institutional bricolage. This is not unlikely, as local governments are constantly adapting the centrally-defined policies to their landscape-specific circumstances (Funder and Marani, 2015). Nevertheless, our case illustrates that the institutional bricolage required for legalising novel production models is not an easy process. Not only because of the sticky sectoral policy frameworks, but also because the discourses of the private and the public sector are in such sharp contrast, that a constructive public–private dialogue seems hard to achieve. Where Görg (2007) sees the need for a change in the relationship between market processes and their political regulations, Ros-Tonen (2012) points to the lack of institutional interactions between administrative scales. The 'new institutional spatiality' referred to by Hajer (2003), demands actors be able to 'jump scale' not only in respect of territoriality, but also in respect of sticky policy frameworks. This requires more than just a process of crafting new institutional arrangements out of 'old' sectoral policy frames, but also the balancing of rights, responsibilities and power positions of different actor categories sharing a single space.

Scaling up: from multifunctional concessions to multifunctional landscapes

Still, a classical concession implies a single-owner production model and unequal production relations between concession holders and local communities. Consequently, it is debatable whether the planning and management of multifunctional concessions can be conceived of as multi-actor landscape governance. However, The Company's experimental concession design in principle provides space for a combination of both concession and smallholder production, allowing for multiple tenure arrangements and co-management of the area. Multifunctional concessions could therefore be considered a precursor to moving away from the classical monofunctional concession landscape towards a multifunctional landscape consisting of a diversified land use, ownership structure and power relations adapted to a new local reality. This is in line with a global trend of moving away from large-scale concessions to collaborative smallholder production systems (Byerlee, 2014). The management of The Company is not opposed to this trend, as it is well aware of its wider political ecology. It recognises that currently 40% of the total palm oil production is estimated to come from 'independent' smallholders (Budidarsono et al., 2015). This percentage is expected to grow given the strong government support for smallholder cooperatives. Thus, The Company is considering the option of concentrating on supporting production from smallholders rather than managing large concession areas with different types of land-use systems. This does not necessarily imply a weakening of The Company's power position; it rather allows The Company to concentrate on its core business of producing and processing palm oil, which does not require land ownership per se. This could strengthen The Company's collaboration with other commodity companies in for example rubber. Collaborating with other companies as well as smallholders would improve social relations and enhance sustainability. Such spatial transformation could

simplify the presently complex governance arrangements on commercial and smallholder land-use systems and bridge the private and public sector discourses. This would not weaken but rather strengthen the role of the State, especially the District Government, in its role of facilitating landscape-level dialogue, enabling the emergence of public–private partnerships specific to the landscape, and overseeing the level of inclusiveness of such new public–private partnerships.

4.6. Conclusions

Since the emergence of international agreements to combat climate change, landscape approaches and landscape governance have received growing attention. Our case study illustrates that landscape approaches are gradually embraced by commodity companies and their proposition of combining productive plantations, smallholder production systems and conservation forests within a single space. Our study illustrates how these initiatives involve both a process of spatialisation of production models, as well as changing relations between the private and the public sector. Due to its experimental nature, this process is characterised by both productive and institutional bricolage. However, the process of institutional reconfiguration is fraught with difficulties as a result of the persistence of competing discourses. Whereas private actors explore the opportunities of operating from a multi-sectoral landscape approach, public actors adhere to a sectoral orientation with a clear legal differentiation between agrarian production and forest conservation. Moreover, differences in opinion still exist in respect to the role of governments and private enterprises in land-use planning. Consequently, whereas multifunctional concession design can be regarded as successful productive bricolage, it is the institutional bricolage, or the creation of a 'new institutional spatiality' which appears much harder to achieve. If landscape governance entails the creation of a new spatial reality embedded in spatially-integrated policies, it will take time.

This does not mean that multifunctional concession design is impossible. Currently, The Company and the District Government are negotiating the operationalisation of one multifunctional concession on a pilot basis. Having a pilot status, The Company would be exempted from the general rules, to further test its viability. This provides space for combining productive and institutional bricolage, creating a new spatial reality, which reflects more diverse landscapes under multiple tenure arrangements. Such new spatiality may fit better into existing policy frameworks, and offer space for smallholder production, and a mosaic of production models and tenure arrangements to co-exist. This could be a precursor to more inclusive smallholder-dominated landscapes in future. However, we

realise that our case study represents not more than a single case, the outcomes of which, especially in view of the institutional mismatch, may not lead to structural change.

In conclusion, we have seen that global environmental concerns have triggered the private sector to design innovative production models that better serve social and environmental interests. This can be interpreted as the 'spatialisation of production' through productive bricolage by necessity and choice. This trend however has not yet led to a new institutionality in which private and public actors jointly craft the institutional arrangements to give multifunctional concessions their licence to operate. There is room for change at the landscape level, where a holistic approach would allow stakeholders sharing the same space to more easily come together to explore common concerns and align discourses. Indonesia's decentralisation policy does offer the institutional space for such exploration. But the actual use of this space depends on the ability of both the public and private sector to better align with the specific natural-spatial conditions of the landscape and embark upon a process of public–private collaboration. This implies the capacity of all parties to understand each other's interests, respect each other's legitimate role as co-governors, and jointly create the appropriate mechanisms for landscape-level dialogue to take place.

Chapter 5: Strategies for achieving environmental policy integration at the landscape level. A framework illustrated with an analysis of landscape governance in Rwanda[20]

Abstract

Environmental Policy Integration (EPI) refers to the incorporation of environmental concerns into sectoral policies in order to reduce policy incoherence and achieve synergies to more effectively address environmental problems such as environmental degradation. Landscape governance can be considered as a specific, spatial manifestation of EPI: it aims to balance agricultural production, nature conservation and livelihood needs at the landscape level through multi-stakeholder decision making. Despite their common focus on policy conflicts, both concepts have been elaborated in largely isolated bodies of literature, while little is known about their common concern of how actors at the landscape level deal with these policy conflicts. This chapter addresses this under-explored theme, by drawing from both EPI and landscape governance theories, and adding new insights from institutional and innovation literature. We develop a framework specifying how actors at local, district and national levels deal with policy conflicts and employ strategies to overcome them. We illustrate the analytical framework with a case from Rwanda, where landscape restoration has become a new policy area which has brought sectoral policy conflicts to the fore. We characterise these policy conflicts, and analyse the ways in which local, district and national actors manage to overcome them, by using the landscape as a functional regulatory space for policy integration. What we learn from this case is that EPI is not just designed at national levels by formally assigned policy makers, but it happens in landscapes where landscape actors define their priorities and set hierarchically defined policy objectives to their hand. They flexibly fit in and conform to existing rules yet

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informally combining these to suit their spatial context; or they entrepreneurially stretch and transform the rules, while seeking alliances with policy makers to have the outcomes institutionalised. In both cases they contribute to solving policy conflicts in both the horizontal and the vertical sense. By doing so, we show the usefulness of the framework for identifying policy conflicts and contributing to policy integration at the landscape level.

5.1. Introduction and aim of the chapter

Whereas the concept of Environmental Policy Integration (EPI) is long established (Lafferty and Hovden, 2003; Persson, 2004; Runhaar et al., 2014), landscape approaches are relatively new in their aim to effectively contribute to environmental protection by integrating agricultural production, nature conservation and livelihood options at the landscape level (e.g. Sayer et al., 2013; Reed et al., 2015). Landscape governance in particular refers to the process of spatial decision making within the socio-ecological boundaries of place. Landscape governance is both an empirical observation and a normative idea based on the principles of place-based multi-stakeholder dialogue, negotiation and spatial decision making, and aims to achieve environmental, economic and social objectives simultaneously (Reed et al., 2015). While EPI has its origins in sectoral policies and assumes that coherence can be achieved through better coordination across policy domains, landscape governance is more complex, as it cuts across boundaries of sectors and scales (van Oosten, 2013, 2014; Buizer et al., 2016). Landscape governance has attracted attention in the global debate on forest landscape restoration, which not only criticises the often observed disconnect between those who set restoration targets, and those who are to implement activities and sustain the outcomes (Holl, 2017). It also criticises the incoherence between sectoral policies which strive for restoration but are implemented through fragmented governance structures and conflicting policy objectives (Scarlett et al., 2016). This is particularly the case in countries where political-administrative boundaries are arbitrary constructs, not in line with the socio-ecological processes of landscapes, leading to policy conflicts on the ground (Görg, 2007; van Oosten, 2013, 2014).

Much is known about ways to achieve policy coherence through better coordination between sectoral policies at the national level, but relatively little is known about the way in which state and non-state actors experience policy conflicts at the landscape level, and the strategies they employ to overcome these policy conflicts. This chapter addresses this knowledge gap by drawing from both EPI and landscape literature, and enriching this with

institutional and innovation literature, to gain new insights on how landscape actors deal with policy conflicts. By so doing, we shed light over these strategies as 'consciously intended courses of action', purposefully developed to overcome policy conflicts on the ground (Mintzberg, 1987). We develop an analytical framework, which we illustrate with an empirical case from Rwanda, to help us apply the framework systematically, thereby revealing how these strategies work and whether landscapes could serve as a functional space for these. We have structured our case study around three research questions:

1. How do conflicting policies manifest themselves at the landscape level?

2. What strategies do state and non-state actors employ to address these conflicting policies?

3. What are the implementation logics to effectuate the strategies, and contribute to EPI?

5.2. Analytical framework: policy conflicts, strategies employed and means of implementing these strategies

In this section we present our analytical framework, which is built upon four strands of the literature: EPI, landscape governance, institutional and innovation literature. We believe that their complementarity allows for better understanding of how policy integration is negotiated through multiple levels of governance, and of the role of individual landscape actors in this process.

5.2.1. EPI, landscape governance and policy conflicts at the landscape level

The principle of EPI refers to the incorporation of environmental concerns into other policy areas to overcome policy conflicts (Persson, 2004; Runhaar et al., 2014). In EPI literature sometimes a distinction is made between 'process' and 'substantive' purposes of integration (Runhaar, 2016). Following this logic we make a distinction between policy conflicts that can be substantive or process related in nature (ibid.). Substantive conflicts are related to conflicting policy objectives, and are manifested in incompatibility between, for example, agricultural objectives of achieving food security versus forestry objectives aiming at large-scale reforestation of agricultural land. Process-related conflicts are caused by a lack of transparent and participatory processes in (spatial) decision making. As a consequence, stakeholders may not be given sufficient opportunity to put their priorities on the policy agenda, which thus can result in substantive conflicts where policy objectives from sectors and stakeholder interests do not align.

In this chapter we consider landscape governance as a specific, spatial manifestation of EPI, as it aims to balance agricultural production, nature conservation and livelihood needs at the landscape level. However, landscape governance not only focuses on formal governance structures and jurisdictions (as EPI often does) but also follows the socio-ecologically defined boundaries of landscapes. This makes landscape governance more complex than EPI, as it transcends sectoral and administrative boundaries. This brings landscape governance often in an 'institutional void' leading to additional policy conflicts, as there is no single legal basis for decision making at the landscape level where multiple interpretations of jurisdictions, territorialities and boundaries overlap (Hajer, 2003; Smith and Raven, 2011; Scarlett et al., 2016; Robinson et al., 2017). This is problematic because of the multiple rules according to which politics and policy measures are to be agreed upon (Hajer, 2003, quoted by Wejs, 2014). From a landscape perspective, it is therefore necessary to create place-specific institutions or 'new spatiality' where policy integration can be achieved (Hajer, 2003), but this can only happen if landscape actors behave creatively and entrepreneurially in order to address conflicting policies, and tailor these to the spatial realities of place. This suggests that landscapes could provide a functional space, as they are intrinsically multi-level and created by actor networks and synergies between the socio-spatial realities of place (substance) and local leadership (process). It is this socio-spatial identity that allows for integrated landscape propositions to be built, and people and politics to be reconnected to the specific characteristics of place (Görg, 2007; van Oosten et al., 2014; Scarlett et al., 2016). This is in line with Buizer et al (2015), who state that integrative processes are products of place-based actor networks that view landscapes 'as a whole' and that can contribute to policy integration 'from below' (Arts and Buizer, 2009; Buizer et al., 2015).

How should the results of integration processes be interpreted? In EPI literature this issue has been elaborated by various authors. Underdal (1980) argues that the output of successful integration is consistency in policies, which means removing contradictions between policies (both in a horizontal and vertical perspective). Horizontal consistency refers to consistency on one policy level, meaning that all executive agencies at a given policy level pursue the same policy to a given issue. Vertical consistency refers to consistency across different levels, implying consistency from (inter)national to local policies. Whereas vertical policy integration signifies administrative responsibility 'up and down' within one policy arena (Lafferty and Hovden, 2003), horizontal policy integration is more problematic as it is about cross-sectoral interaction, entailing the negotiation of policies between different sectors pursuing alternative sometimes conflicting objectives (ibid.). However, integration can also go a step further by trying to bring environmental objectives on equal terms with sectoral objectives ('harmonisation') or even by favouring environmental objectives over sectoral objectives ('prioritisation'; Persson et al., 2018).

Too often, the rigidity of administrative and political borders and the strength of sectoral interests and preferences are too strong, leading to small-scale and partial solutions (Stead and Meijers, 2009). Whereas the process of horizontal policy integration may provide an intersectoral platform for conflicting policy objectives to be harmonised (Lafferty and Hovden, 2003), the problematic nature of boundary mismatch remains, and is hardly touched upon. Landscape governance therefore adds a layer to EPI, by looking at landscapes as a functional space in which inter-policy coherence, trans-territorial regimes and multi-level governance are considered simultaneously (Varone et al., 2013; Robinson et al., 2017). Such a functional space requires a spatial shift from jurisdictions to, for instance, a landscape or river catchment, to better fit in place (Huitema and Meijerink, 2010; Balsiger et al., 2015). This brings us to the role of multi-level actor networks which are able to move across sectors and scales and make policy integration truly happen (Runhaar et al., 2014; Mullally and Dunphy, 2015).

5.2.2. Strategies of landscape actors to overcome policy conflicts at the landscape level

Landscape actors employ various strategies to overcome policy conflicts. If the conflicts are substantive, they try to get local production practice to conform to sectoral policies, and to make their own priorities fit into existing policy frames (Mintrom, 1997; Smith and Raven, 2011). When the outcome fits in and conforms to existing policy frames they can be referred to as productive and institutional 'bricolage', or the 'do-it-yourself' blending of productive practice and regulations. The concept of productive bricolage was introduced byRos-Tonen, who sees productive bricolage as a means for landscape actors to 'flexibly craft together various productive options and their associated impacts on the landscape'(Ros-Tonen, 2012, p.17). She describes productive bricolage as a process aimed not only at coping with livelihood stresses, but also at seizing opportunities and creatively building economic diversity at the local level. Ros-Tonen distinguishes between economic diversification 'by necessity', as a response to external forces; and diversification 'by choice' in which the options to choose from emerge from the multi-level interactions between the actors involved. Diversification by necessity shows a more responsive behaviour, whereas diversification by choice shows more pro-active and entrepreneurial behaviour.

However, productive bricolage alone is not enough to overcome substantive conflicts, as production systems are often embedded within sticky institutional frames, requiring additional 'institutional bricolage'. This term was introduced by Cleaver, who describes it as the unconscious yet creative process of blending old, place-based institutions with modern institutions, thereby crafting new institutional arrangements that fit into the specific realities of landscapes (Cleaver, 2002; Cleaver, 2012). Examples of such institutional

arrangements are landscape or river catchment committees which are tasked with managing larger landscapes that transcend administrative boundaries but that are not always mandated to take formal decisions. The outcomes of both productive and institutional bricolage are seen as 'reactive', as they aim to reform production systems but within the boundaries of existing policy frames. More pro-active strategies are employed by so-called 'institutional entrepreneurs': actors who manoeuvre strategically between sectors and scales, thereby stretching and transforming sticky institutional relationships and instigating more fundamental institutional change (Bulkeley, 2010, Wejs, 2013). Wejs (2013) identifies strategies to build local and trans-local networks which are used to negotiate for more integrated policy options that suit local realities. In the long run, such entrepreneurial behaviour may lead to policy networks having the transformative power to formally change policy frameworks and create a functional space in which policy integration can happen (Nilsson and Eckerberg, 2007; Huitema and Meijerink, 2010; Mullally and Dunphy, 2015; Hogl et al., 2016).

Fig. 5.1 visualises the three strategies of productive bricolage, institutional bricolage and institutional entrepreneurship, together with their implementation logic, which may be either to fit in and conform to the rules, or to stretch and transform the rules, so as to overcome substantive and process-related policy conflicts.

Figure 5.1: Strategies for overcoming policy conflicts
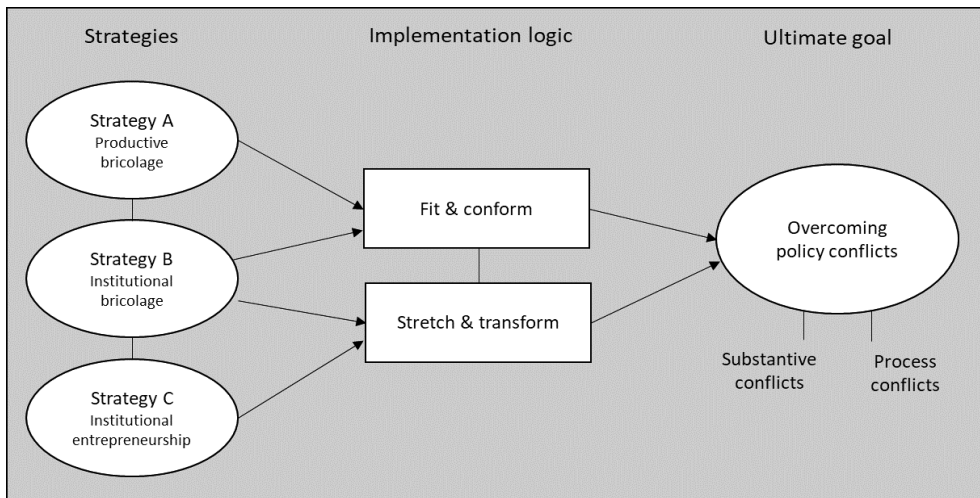
5.3. Illustrating the analytical framework: landscape governance in Rulindo district, Rwanda

In order to illustrate the framework and identify some specific strategies that actors use to overcome conflicting policies at landscape level, we have opted to present an illustrative single case study. We have chosen Rwanda, which is known for its rapid development and burgeoning economic growth, but also for its centralised governance system, where national policies on land, agricultural and forestry are conflicting, leading to policy conflicts on the ground. Rwanda was the first African country to contribute to the Bonn Challenge (GPFLR, 2015)[21], which has triggered the debate on forest landscape restoration as a new policy area; this has revealed incompatibility between sectoral policy domains (agriculture, forestry, land). Within Rwanda, we chose the district of Rulindo (Northern Province) for an in-depth study, for two reasons: 1) Rulindo is actively experimenting with forest landscape restoration, initiated by dynamic state and non-state actors; and 2) although Rulindo is a district, it is also part of the wider Nyabugogo catchment, which provides water to the capital of Kigali and thus it offers opportunities for adopting a landscape perspective.

5.3.1. Introduction to the case study

In Kinyarwanda, the official language of Rwanda, the word 'landscape' is translated as '*Ibisiza n'imisozi*' meaning 'the valleys and the hills', in which hills refers to the territory, habitat or home of people. Traditionally, Rwandans consider their landscapes to be multifunctional, and the historically evolved agro-silvo-pastoralism reflects people's needs for food and subsistence income (Biggelaar, 1994). Trees are planted to provide fuelwood, medicine and timber, and to combat soil degradation. 'Good farmers' (*abahinzi-boroze beza*) are locally defined as farmers able to produce a surplus because they have a reasonably-sized farm, a variety of trees, and soil made fertile by manuring (Biggelaar, 1994; Ndayambeje et al., 2013). This integrated practice changed, however, during the build-up to the Rwandan Civil War: increasing pressure on arable land forced farmers to shorten fallow periods and expand onto steep slopes (Bigagaza et al., 2002; Musahara and Huggins et al., 2005; Musahara, 2006). Average plot sizes dropped from 2ha in 1960 to only 0.35ha in 2007 (Sagashya et al., 2009).

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[21] The Bonn Challenge was initiated in 2011 by international organisations, governments and private companies, with the aim of restoring 150,000,000 ha of degraded landscapes throughout the world by 2020. Individual countries can make a pledge, after which they are held accountable for meeting their targets. The Bonn Challenge fits in with the Convention on Biological Diversity (CBD), which aims at restoring 15% of all degraded land areas by 2020 (Aichi target 15) and with the UNFCC climate change convention and its REDD framework aiming at increasing global carbon stocks.

After the war ended in 1994, massive resettlement of post-war returnees led to a high concentration of people in ecologically fragile areas, which was rapidly responded to by large-scale reforestation (Uzamukunda, 2016). The reforestation entailed centrally designed food-for-work tree planting schemes, in which Eucalyptus was planted: a fast-growing multipurpose tree suiting the need for soil fixation, timber and firewood. It was after this rapid-response period that policy frameworks on land tenure, forestry and agriculture were developed. Reforestation remained a responsibility of the Ministry of Natural Resources, while the Ministry of Land embarked upon a massive operation of land registration and the Ministry of Agriculture developed policies on agricultural productivity. All these activities were expected to raise agricultural productivity, stimulate market development, facilitate service delivery and promote reconciliation. And they did, but they also led to erosion of the endogenous vision of integrated landscapes, a fragmentation of policies, and policy conflicts on the ground.

Rwanda was the first African country to contribute to the Bonn Challenge (GPFLR, 2015)[22]. It pledged to restore 2 million ha by 2020. But given that the area of the country is 2.6 million ha, the pledge implies that almost the entire rural area will have to be restored, and that trees will have to be integrated into existing agricultural and pastoral systems through a 'tree-on-farm' or agroforestry approach. However, agroforestry does not fit in either the agricultural policy or the forestry policy. Making restoration plans fit into sectoral policies is therefore a struggle which requires compromises to be made about set priorities.

5.3.2. Data collection

Our data are based on four different data collection techniques. First, we conducted a review of Rwanda's environmental policies over the past decade within the light of forest landscape restoration (forestry, natural resources, agriculture, decentralisation). We checked them on their inter-policy coherence and potential substantive and process-related conflicts (Teheux, 2014; Leone, 2015). This review provided us with insight on the potential policy conflicts to be encountered during our interviews and focus group discussions.

Second, we used purposive selection to select seventeen stakeholder representatives to be subject to in-depth and semi-structured interviews. Selection was done on the basis of sectoral representation (government, civil society, private sector), level of operation (local, district, national) and gender. As for the government representatives we ensured representation of both technical staff and political authorities. As for farmers, we ensured that different types of farmers were represented (commercial farmers, subsistence farmers and horticulturalists, having plots on either the hillslopes or in valleys). This, with the

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[22] http://www.bonnchallenge.org/content/rwanda.

objective to verify whether the policy conflicts identified in the review are experienced indeed, and how these are dealt with within different sectors, by actors having different roles, positions and operating at different levels. The interview questions focused on: how do state and non-state actors experience policy conflicts; which strategies have they employed to overcome these; what is the role of district staff and authorities as brokers between national policies and local realities; and how is the responsiveness of national policy makers to better align sectoral policies? The transcribed interviews were coded according to the categories of conflicts (substantive and process), the strategies (productive bricolage, institutional bricolage, institutional entrepreneurship), and their implementation logic (fit and conform, stretch and transform).

Third, we conducted four focus group discussions at the local, the district and the national level. The aim of these focus group discussions was to verify the outcomes of the interviews, and place them within their local, district or national context.

Fourth, information was derived from two high-level inter-ministerial workshops: 1) '*Towards a coordinated action for forests and landscape restoration*', organised by FAO in June 2015; and 2) the '*Africa High-Level Bonn Challenge Roundtable*', organised in July 2016, at which the 'Kigali Declaration on Forest Landscape Restoration in Africa' was ratified. A third workshop, organised by FAO in August 2017, was used to share the outcomes of the research, and validate the outcomes with the interviewees.

5.3.3. The policy conflicts identified

Rwanda's National Constitution states that 'Every citizen is entitled to a healthy and satisfying environment. Every person has the duty to protect, safeguard and promote the environment' (GoR, 2003). The two main policy guidance documents Vision 2020 and the Economic Development and Poverty Reduction Strategy set out clear and measurable targets for environmental improvement as a prerequisite for development (Teheux, 2014). But achieving these targets is problematic: they are being pursued by different ministries, which are implementing contradictory policies. The result of these are numerous policy incompatibilities, most important of which is the incompatibility between large-scale commercial agriculture, environmental integrity and livelihood needs. This major incompatibility is manifested in a variety of policy conflicts, which are both substantive and process-related in nature.

5.3.3.1. Substantive conflicts

The National Forest Policy states that '*forestry is to be one of the bedrocks for sustainable development*", and aims to have increased the national forested area by 30% by 2020 (GoR, 2010). This is to be done through commercial forestry, private woodlots and 'trees

on farm'. Under the Land Law, each household must register its land. Those with small plots are advised to join forces with other smallholders, and operate collectively (GoR, 2013). Rwanda's agricultural policy strives for intensification and regional specialisation through massive 'land consolidation', which implies that once a single best crop has been indicated, farmers should form a cooperative and the government will initiate large-scale land improvement, provide farm inputs, and arrange market access (GoR, 2004). Production targets for consolidated land are set high, to stimulate farmers to concentrate on the main crop and produce maximally. This is not an incentive for the 'trees-on-farm' approach promoted by the Ministry of Natural Resources.

In Rulindo, substantive conflicts are predominantly encountered by farmers who are not allowed to practise their mixed cropping system and are enmeshed in a rigid framework of intensified commercial production through specialisation to achieve food security at the national level. This does not help farmers to achieve their households' livelihood security through mixed cropping and risk spreading within a single space. Substantive conflicts are also encountered by private companies, which are prevented from innovating their production systems and from meeting demand by introducing alternative crops and cropping patterns.

5.3.3.2. Process-related conflicts

Whereas Rwanda's traditional land-use practice was integrated, what led to process conflicts was the rapid and forceful implementation of the Land Law, agricultural specialisation and intensification, as these have undermined the livelihood stability of subsistence farmers (Pritchard, 2012). The policy of regional specialisation and intensification has forced farmers to concentrate on one crop, which has made them dependent on markets, as they are no longer able to grow their own food crops (Pritchard, 2012; Kathiresan, 2012). Besides this substantive conflict there is a process conflict, namely little room for local experience, which is frustrating for farmers (Uzamukunda, 2016).

With regard to the formal restoration programmes, it is the lack of farmers' commitment to take part in forest landscape restoration that can be considered a process conflict. Farmers believe forest landscape restoration is the government's responsibility. They do not see themselves as part of the process, as they were neither involved in the design, nor did they contribute their knowledge and experience. Some farmers have lost land to restoration activities, which has intensified the pressure on farmland. Some farmers did not like the species planted in the reforestation area, as they do not produce good timber and because the areas reforested with eucalypts are not very biodiverse, so are not a good source of food and medicinal plants. Neither do they like the large continuous areas of planted forests, as this reduces the availability of farmland.

Table 5.1[23]: Strategies to overcome policy conflicts

Strategies employed	Actor	Implementation logic	Type of policy conflict
1 Productive bricolage Diversification of land use Allowing for diversification and/or intensification of land use	Farmers/companies District staff	Fit and conform	Substantive
2 Institutional bricolage Informally changing the rules by combining sectoral rules and regulations Providing institutional space for dialogue	Companies District staff/authorities	Stretch and transform	Process
3 Institutional entrepreneurship Formalising dialogue and partnerships (internal or transboundary) Institutionalising partnerships through joint policies and performance contracts	District authorities National authorities	Stretch and transform	Substantive and process

If the choice had been theirs, they would have opted for different trees in different locations, and for agroforestry, even though they realise that large-scale agroforestry would depress agricultural production and hence jeopardise their performance contracts These findings are confirmed by studies carried out in other parts of Rwanda (Uzamukunda, 2016)

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[23] This table deviates from the table published in the original article. The published version mistakenly does not show the relation between the strategies employed and the actors involved.

5.3.4. The strategies public and private actors employ to address policy conflicts

Based on our data we identified three main strategies developed by landscape actors to overcome conflicting policies, each of which can be divided into two sub-strategies employed by different actors, and addressing different policy conflicts. Productive bricolage includes diversification/intensification of land use by farmers and companies and allowing for diversification/intensification of land use by district staff, both used as a means to address substantive conflicts by fitting in and conforming to the existing rules. Institutional bricolage includes informally changing the rules by combining sectoral rules by companies, and providing space for dialogue by district staff and authorities, both to address process conflicts by stretching and transforming the rules. Institutional entrepreneurship includes formalisation of dialogue and partnerships by district authorities and institutionalising these partnerships by national authorities, both to address substantive and process conflicts by stretching and transforming the rules. Table 5.1 shows these strategies and indicates which actor is in charge, which implementation logic is employed, and which type of policy conflict is addressed.

5.3.4.1. Productive bricolage

Productive bricolage is a strategy employed by farmers and locally operating companies to deal with substantive policy conflicts. In Rulindo, it consists of diversification of land use through mixed cropping, to achieve multiple objectives, reduce risks and enhance sustainability. Farmers participate in land consolidation, yet at the same time they keep small home gardens to grow multiple crops. As one (female) farmer says, *'I know I have to grow maize in the consolidated land area. But I prefer to have a mixed farm including sorghum, cassava and spinach so I swapped my land with my neighbour, who has land outside of the consolidation area'*. Farmers also arrange informal access to plots by renting or swapping land in different agro-ecological zones, (hills, valleys, wetlands), to diversify production and spread their risks. Although this formally runs counter the government policy of crop intensification (monocropping), it can be seen as a means of fitting in and conforming to current government rules. Productive bricolage is also employed by companies such as Shekina Enterprise, which processes the leaves of cassava (*Manihot glaziviovii*[24]). The operations manager of Shekina says, *'our leaf cassava is not in the intensification programme, as cassava it is not considered a marketable crop. However, our cassava grows like a tree, hence it fits in the land protection policy, so we advise farmers to plant it around their plots'*. The Sorwathe company produces tea, which falls

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[24] Well known is the cassava that produces tubers (*Manihot esculenta*). Less known is the locally grown cassava that produces large and juicy leaves (*Manihot glaziovii*). In contrast to *M. esculenta*, *M. graziovii* can grow up to 10 m high, and therefore looks like a tree.

under the crop intensification programme. Its management introduced trees as a way of maximising tea production. Its production manager says *'we are originally from Sri Lanka, where we are used to agroforestry. Here, we do not call it agroforestry, yet we do plant shade trees to increase our tea production'*. The district staff are aware of these creative interpretations of the rules. Yet they turn a blind eye, as they know the local reality, and understand local livelihood needs. As one agricultural offcer says, *'I am from here; I know our land is not suitable for intense maize production. I therefore advise for multiple cropping, but I do not put it in my performance report'*.

5.3.4.2. Institutional bricolage

Institutional bricolage is employed to overcome process-related conflicts. It is more strategic than productive bricolage, as it does not apply merely to farm or company level. The Shekina and Sorwathe companies introduce innovative production techniques, negotiate with district staff to flexibly apply the rules, and mobilise their business networks for necessary investment. By so doing, they do not just fit in and conform to the rules but instead stretch the rules, to create more room to manoeuvre productively. As Shekina's operations manager says, *'the district promised to include leaf cassava in the crop intensification programme if we increase our investment and enlarge our processing capacity accordingly'*. District staff also employ institutional bricolage. By not only tolerating but also stimulating innovations they stretch the rules, as a deliberate strategy to avoid conflict and build relationships with their constituencies. They create room for dialogue, and they combine elements of the crop intensification programme and the land protection programme, thereby allowing for mixed cropping to be practised. As one district staff member says, *'contradicting policies only exist in Kigali. In Rulindo, we have more room to manoeuvre. We know the conflicts between forestry, agriculture and land, so we have to be creative: mediate, stretch and combine rules as much as we can'*. Formal space for dialogue is created by the district authorities, through the Joint Action Development Forum (JADF)25. The aim of JADF is to bring together local governments, private companies and non-governmental organisations operationalise the country's decentralisation policy. In many districts, JADF is seen as a mandatory mechanism for strengthening central government control. But in Rulindo, JADF provides a platform for state and non-state actors to discuss contradictory policies and to find locally fit solutions. Governmental actors use JADF to build relations and engage citizens. Non-governmental actors use JADF as a strategy to overcome process conflicts and have their say. All together, they stretch and transform the rules, to make them fit local realities.

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[25] Joint Action Development Fora (JADF) were established across the country in 2007, as part of Rwanda's decentralisation policy. See http://www.rgb.rw/index.php?id=2.

5.3.4.3. Institutional entrepreneurship

Institutional entrepreneurship is employed by district authorities, in order to think beyond the district boundaries and engage in larger policy networks. They take advantage of Rulindo's strategic location in the lower part of the Nyabugogo catchment to negotiate a 'payment for environmental services' (PES) mechanism with the adjacent city of Kigali. They negotiate for the restoration of the degraded catchment, while Kigali's Water and Sanitation Corporation (WASAC) covers the costs. As one of the district authorities says, '*we are part of a larger area. We provide water to Kigali; let Kigali citizens help us save their water source*'. The newly established Nyabugogo Catchment Committee is a new institutional arrangement intended to oversee implementation of this mechanism in a transboundary and intersectoral set-up. This mechanism has the potential to transform policies by creating new functional space for substantive and process conflicts to be addressed. District authorities also take part in the *intersectoral task force on forest landscape restoration*. This *intersectoral taskforce* was established to identify and discuss inconsistency between the different sectoral policies related to forest landscape restoration. Task force members are high-level staff from the Ministry of Agriculture and Ministry of Natural Resources, who frequently participate in national and international conferences, where they are exposed to novel ideas on integrated action, such as forest landscape restoration and climate-smart agriculture. As one task force member says, '*while travelling, we get many ideas on integrated approaches. As we are frontrunners, we want to spearhead these novel approaches in Rwanda and integrate these in our policy process*'. They keep each other updated through a WhatsApp group, thus forming an informal intersectoral network. Rulindo's district authorities actively take part, as they see a clear task in informing national authorities on local realities, as one of them says, '*we know the local reality; we have the duty to inform our superiors about policy incoherence, and help them to improve*'. The task force has recently been mandated to oversee the formulation of an intersectoral and coherent policy on agroforestry. Institutional entrepreneurship can also be found within the national process of devolving spatial decision making to the district Councils and JADFs, to channel local and context-specific priorities and align them with national priorities (GoR, 2014). This is to be achieved by changing the individual performance contract system (*Imihigo*) into *Joint Imihigo*, which allows for multi-party performance contracts and fosters coordination between sectoral targets within local constituencies (Hasselskog, 2015; Hymowitz, 2016). As one of the district authorities says, '*we have designed a Joint Imihigo with private companies setting sustainable and locally responsive production targets to be achieved by public and private partners jointly*'.

5.4. Discussion

Our case study shows that substantive policy conflicts are created because of the asynchronous implementation of sectorally defined policies that are at odds with the local practice. It also shows that process-related conflicts are reflected in the lack of institutional mechanisms for allowing citizens to participate in spatial decision making. However, landscape actors have the ability to develop coping strategies. Through productive bricolage farmers and companies overcome substantive conflicts by diversifying land use, by fitting in and conforming to existing rules. Companies also employ institutional bricolage by negotiating land use and stretching the rules to allow for innovative production practice. District staff employ institutional bricolage not only by turning a blind eye, but also by tailoring informal agreements to create institutional space responsive to livelihood needs and market demands. JADF actively mediates in process conflicts by employing institutional bricolage to stretch the rules. District Authorities employ institutional entrepreneurship by navigating between nationally defined policies and local priorities, and influence the policy process. National policy makers employ institutional entrepreneurship by creating space for intersectoral dialogue and partnerships.

We know that the empirical evidence presented in the case study is relatively brief. But it should be noted that our case study is not intended to present a generic analysis, but rather serves as an illustration of our analytical framework and demonstration of its applicability and usefulness. It does illustrate how landscape actors are able to overcome substantive and process-related policy conflicts to meet the socio-spatial priorities of their landscape and create the institutional space to address policy conflicts at different levels. International commitments such as the Bonn Challenge are helpful in this, as they legitimise integrated action at all levels.

Our case study confirms Ros-Tonen's concept of productive bricolage (Ros-Tonen, 2012). Yet it also shows that productive bricolage remains restricted to the level of farm or company, unless combined with institutional bricolage. This confirms the findings of Foli et al. (2017), who contend that novel arrangements for integrated land use hardly move beyond the local level, unless embedded in multi-level networks, leading to broader stakeholder coalitions demanding institutional flexibility to overcome substantive as well as process-related conflicts. Whereas Deans et al. (2017) state that landscape actors' jurisdictional powers are often too limited to enable them to negotiate for locally adapted land-use policies, our case shows that landscape actors are able to stretch and transform the rules if they strategically engage in multi-level networks, and national policy makers are receptive to novel ideas. Building upon Cleaver (2002, 2012), Wejs (2014) and Funder and Marani (2015) we show how the blending of informal and formal rules can lead to

institutional change, and have the potential to grow into multi-level networks able to stretch and transform the rules through multi-level policy experimentation. This is in line with Mintzberg(1987) and Smith and Raven (2011), who plead that multi-level policy experimentation can create new institutional space for spatialised policy integration. And this is what landscape governance claims to be: deliberately develop connections across levels and scales, also called 'politics of scale' – responding to landscape priorities and linking to broader physical and socio-political settings and multi-level networks of communication and decision making (Hajer, 2003; Görg, 2007; Robinson et al., 2017).

5.5. Conclusion

Our aim was to contribute to EPI and landscape governance literature by elaborating an analytical framework for conceptualising strategies for overcoming conflicting policy objectives, a subject that thus far has not received much attention. In so doing, we set out to answer the following research questions: How do conflicting policies manifest themselves at the landscape level? What strategies do state and non-state actors employ to address these conflicting policies? And what are the implementation logics to effectuate these strategies, and contribute to EPI?

From the EPI literature we learned that the incorporation of environmental concerns into other policy areas is problematic, because of the existence of substantive and process-related policy conflicts. This is illustrated by our case, where the new policy area of forest landscape restoration is hampered by existing policies on land, forest and agriculture. From landscape governance literature we learned that landscape actors are capable of dealing with these policy conflicts, if they are given the institutional space to develop strategies to either fit in and conform to the rules, or stretch and transform the rules. From institutional and innovation literature we learned that productive/institutional bricolage and institutional entrepreneurship are crucial for actors at various spatial levels to experiment, communicate and form networks across levels and scales. Also this is illustrated by our case, where the debate on forest landscape restoration has triggered bricolage, entrepreneurship and the discovery of landscapes as new functional regulatory space for doing so. Considering landscape governance as multi-level networks rooted in place, it may be the key for setting local environmental priorities and 'selling' them to higher levels of policy making, for them to be institutionalised in integrated environmental policies that work.

We did not explicitly analyse the outcomes of policy integration in terms of the frequently used triptych of policy coordination, harmonisation and prioritisation (Lafferty and Hovden, 2003; Mickwitz et al., 2009, Runhaar et al., 2009). Neither did we focus on

environmental policy integration explicitly, but rather to policy integration in the general sense. Nevertheless, we consider the way in which farmers, district government staff and locally operating companies try to fit in and conform to existing policies fits in the idea of harmonising (sectoral) policies at the landscape level (horizontal policy integration) (Lafferty and Hovden, 2003). The way in which district officials and other entrepreneurial landscape actors try to stretch and transform existing policy frames can be interpreted as harmonisation but also as coordination between different sectoral policies as well as between different levels of policy making (horizontal and vertical policy integration) (ibid.). According to Collier (1997) *all* good policy making would involve a high level of policy coordination which is therefore not restricted to achieving environmental objectives alone. In our case, environmental objectives are not prioritised beforehand, yet landscape actors prioritise those policy objectives which are most relevant to their production model or livelihood. These are are mostly focussed on spreading risks, multiple cropping and integrated production systems, which happen to be more environmentally friendly than the formal and centrally defined prioritisation of maximum productivity through monocropping.

Chapter 6: Capable to govern landscape restoration? Exploring landscape governance capabilities, based on literature and stakeholder perceptions [26]

Abstract

Scholars, planners and practitioners worldwide are increasingly recognising that landscape governance is a promising approach for restoring forested landscapes and simultaneously achieving ecological, economic and social objectives. Because of its integrative nature, landscape governance involves actors who restore landscapes while operating in different economic and policy sectors and at various scales. Consequently, the governance of landscape restoration is typically associated with multi-stakeholder dialogue and negotiation on the different types and forms of restoration, and what these mean in terms of necessary trade-offs. In this chapter we consider landscape governance to be an indispensable element of landscape restoration that deserves specific attention in the restoration debate. Despite the growing body of literature on the challenges faced in landscape restoration, literature on the role of landscape governance in overcoming these challenges is scarce. Scholars often refer to the importance of the capabilities of the landscape actors involved, but without specifying the capabilities required, which actors require them and why. This chapter aims to fill this knowledge gap by analysing landscape restoration from a governance perspective, focusing on the key challenges faced by landscape governance and the key capabilities required by landscape actors to overcome them. To define landscape governance capabilities, and to identify their dimensions and categorisations, we consult the literature on landscape governance and on capability. We complement this literature review with our empirical data on the landscape governance capabilities as perceived by landscape professionals engaged in landscape restoration projects and programmes. Based on both, we develop an analytical framework that specifies some of the typical capabilities required for addressing the challenges faced by

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landscape governance aiming to achieve well-balanced and long-lasting landscape restoration legitimately. The framework not only helps fill a knowledge gap but can also be used to structure the debate on landscape restoration by elucidating landscape governance in various contexts.

KEYWORDS: landscape, restoration, governance, challenges, capabilities, balanced outcomes, legitimacy

6.1. Introduction and aim of the chapter

Over the past decade, forest landscape restoration has gained momentum as a means of jointly addressing climate change and future agricultural demands. Forest landscape restoration aims to restore landscapes from a broader perspective, allowing simultaneous restoration of the ecological and productive functions of forests (GPFLR, 2011; van Oosten, 2013a). The many ways of doing so depend partly on the biophysical characteristics of the landscapes, but mostly on the interests of the stakeholders in the landscape in question. The process of deciding what to restore, where and how is increasingly referred to as landscape governance (van Oosten, 2013b; Kozar et al., 2014; Kusters et al., 2015). This term generally refers to a place-based multi-stakeholder process of negotiation and spatial decision making within its wider institutional context, with the aim of maintaining, enhancing or restoring the landscape's functions, goods and services for the long term (van Oosten et al., 2014). Ideally, landscape governance contributes to more sustainably restored landscapes by striking a balance between a landscape's functions of production, consumption and protection. It aims to move towards a state in which social and ecological conditions are improved in the long run, while the benefits are equally distributed among the actors involved. Moreover, 'good' governance is relevant for landscape restoration, as it strives for a process of participatory, inclusive and legitimate decision making on what to restore, and how to sustainably and equitably implement the decisions taken. We therefore argue that sustainable socio-ecological improvement and legitimacy are important outcomes of the governing of landscape restoration.

Despite being essential to unlock the potential of sustainable and inclusive landscape restoration legitimately, 'good' landscape governance is hard to achieve, largely because competing claims and conflicts are frequently encountered within landscapes (Giller et al., 2008); they make it difficult to design a process that leads to restoration outcomes acceptable to all parties involved. In their frequently quoted Ten Principles for an

Integrated Landscape Approach[27], Sayer et al. (2013) plead for sustainable and inclusive restoration through a multifunctional approach that works across sectors and scales and enhances stakeholder participation. Yet in practice, operating according to these principles remains challenging, due to the complexity of landscape dynamics, stakeholder processes, power disparities and institutional hurdles that hamper governance at the landscape level (Sayer et al., 2016). Despite the existence of the principles, there is no concrete guidance for landscape actors on how and when to identify and engage key stakeholders in restoration (Mansourian, 2016). In practice, landscape actors draw upon the principles selectively and multiple institutional hindrances prevent them from achieving the desired consensus-based, integrated and enforceable restoration plans (Sayer et al., 2016). Various authors have blamed this selective implementation on the limited capabilities of actors involved, but are unclear about what these capabilities are exactly and where they fall short (Sayer et al., 2014, 2016; Kozar et al., 2014; Kusters et al., 2015; Reed et al., 2016; Deans et al., 2017; Foli et al., 2017; Ros-Tonen et al., 2018).

Following on from the above, this chapter has two aims: 1) to identify the major challenges hampering landscape governance in relation to landscape restoration, and 2) to identify some of the typical abilities that landscape actors require to overcome these challenges, so they can achieve sustainable and legitimate landscape restoration. In this chapter we understand capabilities as being the set of collective abilities of individuals, institutions and systems to perform functions, solve problems and achieve objectives within or outside of these systems (UNDP, 2007; Baser and Morgan, 2008; Keijzer et al., 2011).

We first provide an overview of the scant literature on landscape governance, defining what it is and what it aims to achieve. Secondly, we draw on additional landscape, governance and institutional literature to identify the generally recognised challenges hampering landscape governance. Thirdly, we draw on geography and international development studies to define capabilities and to identify their different dimensions and categorisations. We then compare the literature with our empirical findings on the challenges encountered by landscape actors themselves. Here, we particularly focus on landscape professionals, i.e. the landscape actors professionally engaged in landscape restoration, and on their ability to overcome these challenges. Based on both the literature and our empirical findings we develop an analytical framework that defines and operationalises landscape governance capabilities in relation to some typical challenges for landscape governance and helps to

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[27] The Ten Principles for an Integrated Landscape Approach according to Sayer et al. (2013) are: 1.learning and adaptive management; 2.building on common concerns; 3. recognition of influences from multiple scales; 4. multi-functionality, requiring choices and trade-offs; 5. strong stakeholder engagement; 6.negotiated and transparent change logic; 7.clarification of rights and responsibilities; 8. participatory monitoring; 9.building system-wide resilience; 10. strong capabilities of all stakeholders involved.

identify, analyse and enhance landscape governance capabilities within the specific context of landscape restoration.

6.2. Methodology

This chapter is built upon two components. The first is a review of the scant literature on landscape governance, its envisaged outcomes and challenges. Although there is no literature on landscape governance capabilities specifically, in order to identify and evaluate landscape governance capabilities we review some papers exploring the concept of capabilities within other scientific domains and try to relate them to landscape governance.

The second component is a survey that we carried out among landscape actors to assess how they perceive landscape governance challenges, and the abilities they perceive as needed to overcome them. While acknowledging that all landscape actors play a role in landscape governance, we deliberately focused on landscape professionals, i.e. the landscape actors having to deal professionally with one or more of the challenges mentioned above. They are formally mandated to solve substantive and process-related challenges they have never been trained for. They often have the obligation to make choices and take tough decisions, yet may not have the skills to do so appropriately. The professionals we recruited for the survey had registered for one of seven international workshops organised by Wageningen University and partners. The workshops took place in the Netherlands, Indonesia, Ethiopia, Nepal, Brazil, Rwanda and the Philippines and were attended by a mix of regional public and private actors professionally engaged in landscape restoration or sustainable landscape management, most often from a sectoral perspective (forestry, agriculture, rural/urban planning). In total, 166 landscape professionals took part in the survey. They were a very diverse group: the only thing they had in common was their professional interest in landscape restoration and their willingness to learn more about aspects of its governance. An overview of the respondents, including their professional backgrounds, age, sex, and work experience is provided in the footnote below[28].

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[28] Of the 166 respondents, 54% were from Africa, 28% from Asia, 14% from Latin America; and 8% from Europe. Their average age was 40.8 years; 63% were male and 37% were female. 49% of the respondents had an MSc or equivalent; 32% had a lower level of education, and 19% had a higher level of education. 60% of the respondents were employed in the natural resources management or environmental sector (including wildlife and ecology), 15% in agriculture and the remaining 25% in other sectors.

We kept the survey as short, simple and open as possible, and formulated four questions in line with our theoretical framework: how would you define landscape governance?; what should be its desired outcomes?; what are the challenges that hamper the achievement of the desired landscape governance outcomes?; and which are the capabilities needed to overcome these challenges? We asked respondents to respond on a personal basis, not as representatives of their organisations. They were a self-selected group of professionals engaged in landscape restoration or sustainable landscape management who had enrolled in one of the workshops. We realise that they may not be representative of all landscape actors, and that farmers/producers are underrepresented. We believe, however, that their professional interest added value to the outcomes, as they were knowledgeable on the topic and familiar with the local issues and capability gaps encountered. All were formally mandated to carry out tasks within the difficult process of landscape governance, hence they have much influence on its outcomes. In order to minimise bias and to avoid influencing the answers, we conducted the surveys prior to the workshops, immediately after arrival.

The survey was carried out in two phases. In the first phase, all 166 respondents were asked to define landscape governance, its desired outcomes and the major challenges to achieving them. The second phase included only a subset of 62 respondents from Rwanda and the Philippines, which was not selected deliberately but solely for practical reasons. In this phase we focused on the capabilities, asking respondents to state the capabilities that would enable them to overcome the challenges encountered. We asked them to identify and rank the capabilities. In both phases, only open questions were asked, in order to elicit a wide variety of challenges and to add to the set of substantive and process challenges we derived from the literature. The outcomes of both surveys were entered into a database, clustered, coded per topic and analysed.

We did not carry out any in-depth statistical analysis, as this would exceed the purpose of this chapter, which was to be a first attempt to identify and categorise landscape governance capabilities. To achieve this aim, we needed a rich group of respondents with a large variety of responses, rather than respondents from different groups or regions. More differentiation between professional background, sex, age and geographical provenance would have been interesting and possible but would not contribute usefully to the aims of the present chapter. However, when presenting the survey results below, we have twice noted the influence of geographical provenance for illustrative purposes.

6.3. Literature review

In our review of landscape governance literature we focus on the challenges landscape governance encounters and the capabilities required to overcome these.

6.3.1. Landscape governance: a brief introduction

6.3.1.1. Definition and typical aspirational outcomes of landscape governance

Landscape governance is a relatively new academic concept that aims to address the difficulties of unsustainable and conflictive land use. According to Reed et al. (2015), landscape governance is both an empirical observation and a normative idea based on the principles of place-based multi-stakeholder dialogue, negotiation and spatial decision making, while aspiring to achieve environmental, economic and social objectives simultaneously. Landscape governance aims at balancing production, consumption and protection (Holmes, 2012; van der Sluis, 2017), leading to long-lasting socio-ecological improvement or restoration that meets the needs and aspirations of most, ideally all, actors involved (Termorshuizen and Opdam, 2009; Westerink et al., 2017). Important herein is the process leading towards these balanced outcomes and socio-ecological improvement, which needs to be legitimate, i.e. fall within what is generally accepted as authority and justified as political power within or outside of the state (Bernstein, 2005; Behagel and Turnhout, 2011). Legitimacy in general terms has three components: the participation of the actors involved (input legitimacy); the effectiveness of the resulting policies (output legitimacy); and the efficacy, accountability, openness and inclusiveness of the process in between (throughput legitimacy; Scharpf, 2010; Mees et al., 2013). All three components can be directly linked to the Ten Principles (Sayer et al., 2014).

6.3.1.2. Two dimensions of landscape governance

Following Kooiman (2003, 2008), Görg (2007), van Oosten et al. (2014, 2018) and Westerink et al. (2017), there is a distinction between the *substantive* dimension and the *process* dimension of landscape governance. The substantive dimension entails the landscape to be governed: the functions, goods and services it provides, and the way in which restoration can be achieved. The process dimension entails the process of governance, including the process of multi-stakeholder dialogue and decision making concerning the types and forms of restoration, as well as the legitimacy of the decisions taken. Both dimensions have a strong institutional component. The institutional component for the substantive dimension involves regulating landscape functions through different

policy sectors; most of these are steered independently from outside the landscape by sector-based policy directives, instruments for sectoral restoration management and by planning at higher administrative levels of scale. The process dimension is reflected in landscape governance *happening* across sectors, scales and jurisdictions, through a range of formal and informal institutional arrangements, such as formal interactions between policy makers and stakeholders, as well as informal stakeholder networks and policy influences across sectors and scales (van Oosten et al., 2018).

6.3.1.3. Origins and applications of landscape governance

Landscape governance responds to the global debates on unsustainable use of natural resources, deforestation, loss of biodiversity, climate change and the manifold opportunities for restoration. In these debates, the multi-sectoral and integrative perspective of landscape restoration is increasingly promoted as an alternative to sectoral approaches that focus on one specific policy domain such as forestry, nature conservation or agroforestry (Arts et al., 2017). Scholars have advocated making landscape restoration more sensitive to space and scale, i.e. more specific to the biophysical, social, cultural and spatial conditions of a landscape, and taking account of the multi-scalar nature of spatial decision making (Görg, 2007; Padt et al., 2014; Reed et al., 2015; Ros-Tonen et al., 2018). Such governance of landscape restoration ultimately fits into the wider discourse on sustainable development, which proposes cross-sectoral and multi-stakeholder collaboration, and restoration policy at the 'appropriate' scale: the landscape. As such, landscape governance is increasingly recognised by international agencies (IUCN, WWF, WRI), governments and private companies. They perceive forest and landscape restoration (FLR) as having the ultimate aim of combating climate change, and landscape governance as a means to meet international political commitment such as the Bonn Challenge, the CBD Aichi Targets, the Paris Agreement on Climate Change, and private sector agreements such as the New York Declaration on Forests and its resulting 'zero-deforestation' movement. These efforts have led to several regional initiatives on FLR that go beyond the classical ecological restoration or industrial reforestation operations by incorporating social, environmental and economic benefits simultaneously. Examples are LA20X20 in Latin America and AFR100 in Africa, which are attracting large public and private investments.

6.3.2. Challenges to landscape governance

Notwithstanding the situation described above, landscape governance is often mistakenly presented as the silver bullet to restore degraded landscapes by facilitating win-win options and minimising trade-offs (Scarlett and McKinney, 2016) through a legitimate (participatory, effective and inclusive) process. However, the literature mentions several

challenges that have deeper institutional causes and that hamper landscape governance in terms of substance as well as process.

6.3.2.1. Challenges associated with substance: how to achieve balanced outcomes

One challenge frequently mentioned in the literature is that of managing restoration that aims at balanced outcomes, as achieving this aim implies consensus on lasting socio-ecological improvement or restoration through a socially acceptable balance between production, consumption and protection. Most landscapes are shaped by vested interests that are opposed and counter-productive, leading to competing claims and conflicts between producer demands, livelihood needs and biodiversity needs, and hence to unavoidable negotiations and trade-offs (Giller et al., 2006; Holmes, 2012; van der Sluis, 2017; Arts et al., 2017). Achieving balanced outcomes is therefore hard, as there is no single way to do so. The frequently suggested restoration proposition of multifunctionality is not always realistic, as the interpretation of multifunctionality greatly depends on scale: a multifunctional forest is different to a multifunctional farm, a concession or a wider landscape. Too much emphasis on multifunctionality may even lead to spatial contradictions and incompatibilities being overlooked, and to trade-offs being resolved on the basis of power relations rather than on consensus (Arts et al., 2017). After all, landscapes are intrinsically subject to plurality, contestation and conflict, which makes it hard to arrive at common visions and consensus on their restoration outcomes (Leibenath and Lintz, 2017). From an institutional perspective, the management towards balanced restoration outcomes is challenging in the sense that various landscape functions are embedded in externally steered institutional *silos* that often overlap and contradict. Because they lack a shared landscape vision, the different sectors strive for sustainability outcomes simultaneously, without coordination, harmonisation or integration either horizontally or vertically (Runhaar, 2016). This lack of a shared vision leads to policy conflicts that are played out at the landscape level, where they are left for landscape actors to use their individual capabilities to muddle their way through a myriad of competing and contrasting rules and regulations that hardly match their interests (Sayer et al., 2008).

6.3.2.2. Challenges associated with process: How to shape a legitimate process

Landscape governance is a *messy* process that cannot be centrally steered. Rather, the process is steered by multiple actors who take on various roles in the landscape; the result is a kaleidoscope of parallel, sometimes partly overlapping bottom-up as well as top-down restoration initiatives that often transcend the boundaries of political-administrative jurisdictions (Termorshuizen and Opdam, 2009; Kuindersma and Boonstra, 2010;

Westerink et al., 2017; Ros-Tonen et al., 2018). Therefore, many of these restoration initiatives remain informal: are not embedded in more formal governance arrangements and so are not very effective. If not based on accepted forms of authority, political power and peoples' rights to vote within constituencies and jurisdictions, landscape governance requires other sources of legitimacy. These could be direct representation, a greater role for non-state actors, and collective action across jurisdictional boundaries – which in turn raises new legitimacy issues (Bekkers and Edwards, 2007; Biermann and Gupta, 2011; Mees, 2014). The proposition of securing legitimacy in landscape governance therefore needs to be redefined as requiring more direct involvement of stakeholders (van Oosten et al., 2014), without threatening the sovereignty of elected governments and blurring public and private interests (Sørensen 2005; Mees, 2014). In that sense, the new functional spaces or 'new spatialities' suggested by scholars (Hajer, 2007; Görg, 2007; Huitema and Meijerink, 2010; Scarlett and McKinney, 2016) may be hard to achieve, as the decisions taken within such new functional spaces may not have a clear mandate, or the legitimacy to operate as formal and accountable institutions in the process of spatial decision making (Mees, 2014; van Oosten et al., 2014, 2018; Riggs et al., 2018). Examples are the predominantly informal yet functional institutional landscape arrangements on transboundary spatial planning and social learning in southwest Amazonia (van Oosten, 2013a), multi-stakeholder platforms and partnerships for landscape restoration in Indonesia (van Oosten et al., 2014), the emergence of multifunctional commodity-scapes in Indonesia (van Oosten et al., 2016), and experimental policy integration at the local level in Rwanda (van Oosten et al., 2018).

6.3.3. Capabilities to overcome the challenges to landscape governance

As already mentioned, there is no literature on landscape governance capabilities per se, as the concept of landscape governance is still relatively new and the capabilities that it requires remain largely unexplored. But there is literature on capabilities in general, which can help identify what governance capabilities are in a more general sense, at what levels they are defined and how they can be classified. The following overview of geography and international development studies and governance literature sheds light on capabilities and how they contribute to achieving balanced landscape outcomes and legitimate landscape governance arrangements. There is a clear distinction between the collective capabilities of institutions and systems and the individual abilities or competences of landscape professionals: each requires a different approach.

6.3.3.1. Capabilities in general

The term *capability* has been widely used in literature on international development studies and capacity development mainly focused on the Global South. It is widely recognised that the best road to development is that of having people develop their own potential in *a*

process by which people, organisations and society as a whole create, strengthen and maintain their capacity over time (UNDP, 2007). Nevertheless, there is no single and generally accepted definition of what *capability* is exactly, and how this could relate to landscape governance. Keijzer et al. (2011) state that capabilities are the collective abilities of individuals, groups or organisations to do something either within or outside their own system; they can be considered a combination of the competencies (knowledge, skills, attitudes, mind-sets and motivations) of individuals or groups of people within the context of their surrounding conditions, in our case, the landscape. Well known is the *capability approach*, introduced by Nobel laureate Amartya Sen, in which capabilities are attributed not to individuals, but to the deeper development objectives of the society of which they are a part. Capabilities, so Sen argues, refer to the set of abilities that allow *all* individuals within society to enhance their valuable options – also called freedoms – to choose their destination (Sen, 1999, 2000). However, it is the larger societal system that often hampers individuals from enjoying their freedom and keeps individuals entangled in webs of dependence on institutions, politics, markets and their underlying values (ibid.).

So far, this approach has not been applied to landscapes or landscape governance, but looking at its components it seems to be relevant and helpful for identifying and categorising landscape governance capabilities. Although not empirically verified, we can associate Sen's capabilities with the collective abilities of landscape actors to enlarge their access to and control over natural resources and be able to collectively shape the kind of landscape they need and want. This certainly does not relate solely to the inhabitants of a landscape, but instead extends to all actors engaged in spatial decision making, including governments, private companies and international organisations. It links to the concept of social capital, which is generally defined as the value of social networks and institutionalised relationships, and produces civic engagement, shared interest and consensus (North, 1990; Putnam et al., 1993; Bertin and Sirven, 2006). The capability approach recognises social capital as a central capability, which can be acquired and used in the case of need (Sen, 1999; Nussbaum 2000; Bertin and Sirven, 2006).

Based on Sen's capability approach, Baser and Morgan (2008) developed the 'Five Capabilities Framework', which may also be useful for our purpose. They identify the capabilities to 1) commit and engage; 2) to carry out functions and tasks; 3) to relate and attract resources and support; 4) to adapt and self-renew; and 5) to balance coherence and diversity. All five capabilities focus on *interrelationships* between individuals or groups of people and the systems in which they operate, which in our case could be the landscape. Capabilities, so they say, are the collective abilities of a system (landscape) to carry out a particular function or process (Baser and Morgan, 2008). In order for a system (landscape) to do so, it must have competent people committed to achieving. It is people who contribute

to the overall functioning of the system (landscape): hence it is their technical knowledge, their social skills and their personal attitudes that make the difference (ibid.).

6.3.3.2. Capabilities to overcome substantive challenges

The term 'landscape capacity' is used in landscape ecology to refer to the landscape's biophysical and ecological capacity to fulfil its functions of production, regulation, habitat and information (Bolliger and Kienast, 2010), as well as the regenerative capacity of component ecosystems to restore degraded functions. Within the context of this chapter, however, we interpret 'landscape capability' as the capability of *actors within the landscape* to assess and restore a landscape's functionality and its potential to restore its provision of goods and services to society, within the carrying capacity of the place (Arts et al., 2017). Translated into human capabilities, this comes down to the ability to describe and analyse spatial dynamics, as well as to the possession of practical and technical skills for processing spatial information, including modelling and scenario planning, assessing and analysing trade-offs, and evaluating and selecting appropriate restoration options through adaptive management (Burkhard, 2009; Willemen et al., 2010; Bolliger and Kienast, 2010; Liu and Opdam, 2014). Communication skills are also required, in order to involve local land users/managers in striving for a socially acceptable restoration outcome (Burkhard et al., 2009; van Oudenhoven et al., 2012; Swetnam et al., 2011; Sohel et al., 2014; Inkoom et al., 2017). And landscape capability also refers to the ability to assess a landscape's goods and services, assess the potential for their restoration, and perform an economic valuation of this potential (Arts et al., 2017). Allocating values (whether monetary or non-monetary) to different goods and services also helps to balance restoration options and clarify trade-offs on both monetary and non-monetary grounds (Heal, 2000). In institutional terms, balancing restoration options requires the capability to build bridges between institutional silos and work towards more coordinated and harmonised policies. This is linked to the ability to build institutional *congruence*, which refers to the ability of institutions and their agents to operate across sectoral hierarchies and administrative scales (Boonstra, 2006; Görg, 2007; Arts and Visseren-Hamakers, 2012). This ability refers not only to creating congruence across formal institutions, which is often challenging (rules, policies, regulations), but also to creating congruence between formal and informal or customary institutions, which are typically place-based and landscape-specific. The ability to creatively combine and stretch rules, policies and regulations though institutional bricolage (a term coined by Cleaver 2002, 2008), refers to the ability to creatively blend old and new institutions to craft hybrid institutions that are more place-based. It also refers to institutional entrepreneurship, which is a more deliberate process than institutional bricolage, as it refers to a more strategic manoeuvring between sectors and scales, and to building policy networks in between (Wejs, 2014; van Oosten et al., 2018). Both

institutional bricolage and institutional entrepreneurship are important abilities, as they help to overcome substantive as well as process-related challenges.

6.3.3.3. Capabilities to overcome process-related challenges

The literature on governance capabilities focuses mainly on process-related challenges. Governance capabilities, albeit not specifically related to *landscape* governance, are defined as the collective abilities of societal actors to work together to solve collective problems (Nelissen, 2002; Arts, 2006; Termeer et al., 2015; Dang et al., 2016). Termeer et al (2015) defines governance capability as the ability of policy makers (and other actors) to deal with the complexity of multi-actor governance. This includes the ability of individuals to observe issues from different perspectives and the capability of an entire governance system to enable such observing and acting to take place. She identifies five interdependent abilities of a governance system: *reflexivity*, *resilience*, *responsiveness, revitalisation* and *rescaling* (Termeer et al., 2015; Candel et al., 2015). Nelissen describes governance capability as the ability of public–private or network governance to successfully diminish or solve problems that transcend existing jurisdictional and administrative boundaries (Nelissen, 2002). Arts and Goverde (2006) highlight the role of novel, trans-sectoral or transboundary governance arrangements in the ability of governance to do so. Their analytical *policy arrangement* framework covers the 'capacity to govern', which depends on the resources available, the key policy actors involved, the rules of the game, and the dominant policy discourses. In institutional terms this goes further than institutional coordination and harmonisation; rather, it is about fundamentally integrating institutions and it demands space for new place-based institutions to emerge. As already briefly mentioned in the previous section, this can be done intuitively through institutional bricolage, by creatively blending old and new institutions to craft hybrid institutions that are more place-based (Cleaver, 2002, 2008). But it can also be done more deliberately, through institutional entrepreneurship, which is more strategic, as it helps to deliberately build policy networks capable of fundamentally transforming institutions (Wejs, 2014; van Oosten et al., 2018). Institutional entrepreneurship requires institutions and their agents to have the capability to critically rethink current institutions and then take action to change them (Ochieng, 2017). These institutional capabilities have both a political and administrative dimension; they are related to the capability of institutions and the actors in charge of them to augment the level of participation, reach a shared vision, enhance the effectiveness of the resulting policies and increase the accountability, openness and inclusiveness of the process in between (Scharpf, 1997; Schmidt, 2013; Chazdon and Laestadius, 2016; Ochieng, 2017).

6.3.4. Overview of challenges and capabilities relevant to landscape governance

Several studies address the substantive challenge of balancing restoration outcomes, highlighting the capability of understanding landscape dynamics and of using tools and techniques for balancing trade-offs to arrive at consensus on a restoration solution. These tools and techniques allow for socio-ecological and economic valuation of landscape functions that is helpful for making informed and negotiated choices to restore landscapes adaptively. Other literature discusses the institutional capability of building congruence to create coherence between different sectoral silos and to stretch or transform sectoral policies into better coordinated, harmonised or integrated spatially defined restoration policies (Boonstra, 2006; Görg, 2007; Burkhard, 2009; Bolliger, 2010; Willemen et al., 2010; Liu and Opdam, 2014; Arts et al., 2017). Process-related challenges include recognising the capabilities of reflexivity, resilience, responsiveness, revitalisation and rescaling (Termeer et al., 2015; Candel et al., 2015), the capability to broker novel governance arrangements, and the institutional capabilities to create legitimate processes through legitimate input, output and throughput (Scharpf, 1997; Schmidt, 2013; Mees, 2015; Ochieng, 2017).

Figure 6.1: Schematic overview of the relation between landscape governance capabilities, the challenges they overcome and the envisaged outcomes

Figure 6.1 visualises the major concepts and ideas on capabilities encountered in the literature, which could form the basis for an analytical framework for FLR or for developing other landscape governance capabilities. This visualisation is helpful for systematically analysing the relationship between the landscape, its restoration, its governance, the challenges encountered and the capabilities required to overcome these challenges. However, the theoretically formulated capabilities remain rather abstract, and do not permit identification of the individual abilities and competences of the actors

involved. This is a shortcoming, as a better understanding of these individual abilities and competences would elucidate both the role of individuals within the landscape and their abilities, and hence could be used to strengthen landscape governance as a whole.

6.4. Survey results

The outcome of our survey presented below reveals the challenges and capabilities from the perspectives of landscape actors who experience landscape governance challenges in their day-to-day work. As mentioned before, we have deliberately focused on landscape professionals, as they are formally mandated to solve substantive and process challenges they have never been trained for. Here, we define landscape professionals as those actors who are professionally engaged in landscape restoration or sustainable landscape management. They may be employed by governments (local or otherwise), private producers, companies or civil society organisations operating in the area. Our aim is to obtain insight into the specific challenges associated with landscape governance and the individual abilities or competences of these landscape professionals require to overcome them.

6.4.1. Defining landscape governance and its desired outcomes

The respondents commented that they found it hard to define landscape governance and its outcomes; they came up with a wide variety of descriptions, ranging from the collective management of common resources for the benefit of landscape users in a sustainable manner to a structured process of decision making by multiple stakeholders regarding issues in a spatial context. They said it was easier to identify three key words characterising landscape governance outcomes. As the key words were highly diverse, we listed and coded them, and then clustered them into 21 key words[29] but excluded the words 'landscapes' and 'governance', as these were too obvious. Instead of presenting the key words in a frequency table we present them in an illustrative word cloud, in which the frequency and weight of the words corresponds with the frequency of occurrence (see figure 6.2).

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[29] 'Resources', for instance, includes words such as forest, water and soil, while 'institutions' includes rules, regulations and laws. 'Policy' was mentioned so frequently that we did not include it in 'institutions' but considered it separately.

Figure 6.2: Word cloud of key words defining landscape governance (http://www.wordle.net/)

Although a word cloud does not provide rigorous scientific evidence, it does illustrate the way in which the surveyed landscape professionals from various geographical and sectoral backgrounds conceptualise landscape governance. Based on the cloud we can derive the following description: landscape governance refers to the (ideally inclusive and legitimate) process whereby public and private stakeholders collaboratively manage and restore their landscape and its resources. In the case of competing interests, landscape governance strives for informed and negotiated decisions about the trade-offs and choices to be made. Important words are *sustainable* and *balance*, as well as *inclusive* and *legitimate*. It seems that the landscape professionals envisage landscape governance as aiming to achieve the right balance between people, production and protection through land-use planning, while taking into account the rights and responsibilities of all stakeholders involved, including those vulnerable or less vocal groups who may be underrepresented in formal planning processes. Clearly, such a process may be conflictive, as it touches upon the diverging interests and powers of the stakeholders involved. The definition also acknowledges the roles of institutions, policies (spatial or otherwise), and policy integration within and beyond the spatial boundaries of the landscape.

There are striking differences in answers, depending on respondents' geographical backgrounds. Respondents from countries with rather authoritarian governments, such as Rwanda and Ethiopia, highlighted key words like institutions and policies, while

respondents from countries with less authoritarian governments, such as Nepal and Brazil, tended to emphasise key words like people, rights and inclusiveness. Collectively, however, the respondents' description of landscape governance does not differ much from the definitions provided in our overview of theory on landscape governance. The description addresses both substance (landscape, resources, balance, restoration, management, sustainability, production/consumption/protection, knowledge) as well as process (stakeholders, decision making, institutions, policies, regulations, conflict, power, collaboration, inclusiveness and legitimacy). However, respondents did not clearly differentiate between substance and process, and considered them to be strongly interrelated. This is not surprising, as in theoretical terms, landscape governance is all about the interaction between people and their environment (Görg, 2007; van Oosten et al., 2014; Buizer et al., 2015). It is noteworthy that respondents mentioned more key words related to substance than to process. It seems that these landscape professionals are more comfortable with the substantive dimension that they have often been trained to cope with, as many of them have a rather technical/ecological background. They seem to find it more challenging to position landscape restoration in the process dimension of governance, given the difficulties of stakeholder dynamics, institutional challenges and power relations involved. This hypothesis is further confirmed in section 6.4.2.

6.4.2. Challenges to landscape governance

Respondents identified multiple challenges to landscape governance, related to substance as well as to process. We listed, coded and clustered the answers, again, not based geographical differences but on commonalities. In general, the answers corresponded quite well with our distinction between substantive and process challenges described in section 6.3.2. Yet again, the challenges related to process outnumber the challenges related to substance.

The most frequently mentioned challenge is the lack of multi-stakeholder dialogue and collaboration. The respondents find it hard to work with multiple stakeholders at the same time, mentioning in particular the difficulty of '*Bringing all stakeholders together in one understanding and one vision; meeting the expectations of all concerned'*. They mention the challenge of getting stakeholders to meet with them and engage in deliberation and dialogue. Too often, stakeholder conflicts hamper collaboration, and it is hard to mediate in spatial conflicts because of the underlying multiple interests. Failure to involve all parties when setting agendas, unequal power relations and injustice lead to low levels of legitimacy, and a bias towards favouring the interests of elites. Respondents also mentioned the domination of sectoral silos, institutional rigidity or 'stickiness', top-down governance and bureaucracy as challenging. These landscape professionals consider it to be confusing to manoeuvre between sectoral policies, as they themselves are trapped in institutional

silos. They are held accountable for sectoral performance, while in practice, the challenges are intersectoral and require policy integration which they often consider to be beyond their remit.

A challenge the respondents mentioned frequently is that posed by competing claims on a landscape's resources and the difficulty of finding the right balance between production, consumption and protection in order to arrive at balanced restoration outcomes. Most of them lack experience with tools and instruments for landscape restoration modelling, scenario planning, decision-support mechanisms, impact assessments and other tools that can help in finding an appropriate balance. Yet because of their geographical provenance, most of the respondents have to deal with landscape inhabitants who cope with poor conditions for earning a livelihood and experience poverty, multiple conflicts relating to resource use, a lack of business opportunities, and an absence of investors. They encounter difficulties in identifying economic opportunities for restoration and in supporting these through appropriate land-use planning. They feel they have insufficient knowledge on landscape dynamics and landscape change, as they find it hard to think in an interdisciplinary manner and lack the tools and skills to identify and analyse socio-ecological and spatial processes in depth.

Finally, the respondents acknowledge a general lack of personal motivation, commitment, engagement and leadership among themselves and among other landscape professionals. This lack of motivation hampers the performance of individual landscape professionals, as often they do not feel personally attached to the landscape in which they work, and do not have the ability to personally commit and engage in its restoration. They expressed this as a lack of leadership of themselves and of landscape professionals in general.

Table 6.1 in section 6.4.3 provides an overview of all the substantive and process challenges the respondents encountered. Clearly, the landscape professionals surveyed acknowledge and struggle with the socio-spatial reality in which they operate. They do not feel well equipped to face these challenges and find it hard to react appropriately. More widespread are the challenges related to multi-stakeholder processes such as the facilitation of dialogue, nurturing of collaboration and mediation in conflict. The landscape professionals are aware of the deeper institutional causes underlying substantive and process-related challenges. They understand that institutional fragmentation hampers appropriate landscape restoration as well as stakeholder collaboration, but they feel unequipped to influence and change institutions. They feel they operate in an arena of vested power relations, which makes it hard for them to navigate between personal and collective interests. The leadership that they feel is needed to overcome these challenges requires true commitment and engagement, but too often these are absent.

6.4.3. Capabilities to overcome these challenges from professionals' personal perspective

In order to elicit responses that could help guide practice, we asked respondents to identify the abilities or competences they would need or considered important for overcoming the challenges they encounter. The responses were often formulated in terms of knowledge, skills and attitudes or a combination of these three.

6.4.3.1. Capability to deal with substantive challenges

The most important ability that enables the landscape professionals to overcome substantive challenges they encounter is that of being able to deal with resource pressures and competing claims on natural resources through land-use planning and more robust restoration plans. In many countries, spatial planning is a new professional domain and few professionals work in this area. Most of the landscape professionals had been trained in sectoral natural resources management, forestry or agriculture. They therefore consider interdisciplinary knowledge about landscape dynamics to be important. They frequently mention the practical skills of scenario planning, impact analysis and other decision-support tools that enable the right restoration options to be found. Strongly related is the ability to deal with the poverty and livelihood constraints of rural communities. Overcoming these challenges requires knowledge on local economic development, and the practical skills of developing livelihood strategies, business models and attracting finance for effective landscape restoration.

6.4.3.2. Capability to deal with process-related challenges

An important ability mentioned by the landscape professionals was that of creating institutional space for stakeholders to meet, resolve conflict, engage in dialogue and come up with a joint vision. This is closely related to the social abilities to communicate, mediate, negotiate and network, which many technically oriented landscape professionals have never learned. Related abilities which were frequently mentioned were those of understanding and influencing institutional processes, and crafting or strengthening institutional arrangements at the landscape level. Theoretical terms such as institutional bricolage and institutional entrepreneurship were not mentioned, but the respondents recognised the importance of the ability to understand and influence institutional dynamics and broker novel institutional arrangements across sectors and scales. Understanding and addressing political imbalances and power dynamics requires abilities in the areas of stakeholder empowerment, lobby and advocacy. These elements are highly dependent on the personal attitude of the professionals involved, and their individual motivation to personally commit and engage in restoration. This touches upon ethics and moral behaviours related to power

and politics and entails the ability to understand the interplay of rights and duties, and the commitment to defend peoples' rights when trampled upon.

Table 6.1 shows the individual abilities and competences mentioned by landscape professionals in more detail. The abilities that help them to overcome substance challenges outnumber the abilities related to process challenges (63% versus 37%). This can be explained by the fact that many of the landscape professionals had a technical background, and that abilities in that area (land-use planning, scenario planning, economic development, etc.) can be fairly easily acquired within current circuits of professional training. More difficult to acquire are the social and personal skills and attitudes required to facilitate multi-stakeholder dialogue, strengthen and change institutions, deal with political and power dynamics, and gain personal motivation to engage and commit.

Table 6.1: Abilities that enable landscape professionals to overcome substantive and process challenges, as identified by respondents

Challenge	type	Freq.	%	Abilities and competences needed by landscape professionals
Poor land-use management and planning, including restoration	substantive	23	9%	Land-use management and planning skills • ability to prepare and implement good land use and restoration plans • ability to use the appropriate planning tools including geo-data management • ability to monitor implementation of the plans
Poverty, lack of business opportunities and investment	substantive	32	12%	Economic development, business development skills and finance • ability to strengthen local economic development • ability to design landscape business models • ability to mobilise financial markets to invest
Difficulty of analysing the right balance between production-consumption-protection based on modelling, scenario planning and	substantive	34	13%	Balancing landscape interests and outcomes • ability to acquire the right information to build insightful scenarios for restoration • ability to make information available to stakeholders through the right channels • ability to predict the consequences of the choices made, especially related to restoration (impact assessment)

decision support				
Knowledge about local landscape dynamics	substantive	15	6%	Landscape knowledge • ability to understand the socio-spatial dynamics of the landscape • ability to understand the specific dynamics of landscape governance • ability to make 'sense of place', or fully familiarise and 'become part of' the landscape
Lack of multi-stakeholder dialogue and collaboration; lack of vision on a landscape's future	process	57	22%	Facilitation of multi-stakeholder processes • ability to facilitate complex multi-stakeholder processes and broker relations, networks and partners • ability to co-create common visions and joint restoration plans • ability to mitigate conflicts and nurture collaboration
Sectoral policies, weak institutions and poor institutional/policy integration at the landscape level	process	38	15%	Institutional strengthening and institutional entrepreneurship • ability to understand institutional dynamics and become engaged • ability to broker cross-sectoral and transboundary arrangements, institutional arrangements (including transboundary ones) • ability to adequately institutionalise landscape arrangements within existing or new institutional arrangements which are legitimate in terms of input, output and throughput
Lack of personal motivation, commitment and leadership	process	13	5%	Personal engagement, commitment and leadership skills • ability to show leadership and communicate effectively • ability to engage and motivate others to become engaged • ability to show entrepreneurial behaviour and see and grasp opportunities
Political interests and vested power relations	process	46	18%	Dealing with political imbalances and power dynamics • ability to engage in political processes • ability to balance power relations through lobby and advocacy • ability to empower stakeholders in spatial decision making
Total		258	100%	

6.5. Synthesis and discussion

Whereas in section 6.3 we provided an overview of the way in which capabilities are conceptualised within various strands of literature, in section 6.4 we provided insight into how landscape professionals perceive the landscape governance capabilities they need to overcome their day-to-day challenges. The perceived capabilities are much more practical than the theoretical conceptualisations and can therefore be considered as an operationalisation of the more general conceptualisations in the literature. Within this operationalisation, the focus moves from the collective capabilities of landscape or governance systems to the more practically formulated abilities and competences of individual professionals operating on the ground. Both are important, as we have learned from Baser and Morgan (2008) that it is people who contribute to the overall functioning of the system (landscape), hence it is their technical knowledge, their social skills and their personal attitudes that make the system work.

Combining the more conceptual challenges, outcomes and capabilities with the abilities perceived by landscape professions we arrive at Figure 6.3, which is much more detailed and practically oriented than Figure 6.1. We therefore believe that the capabilities mentioned by the landscape professionals are a valuable addition to the literature and enrich the content and enhance the quality of governing FLR.

Figure 6.3: Landscape governance identified in literature, enriched by the capabilities identified by the landscape professionals surveyed
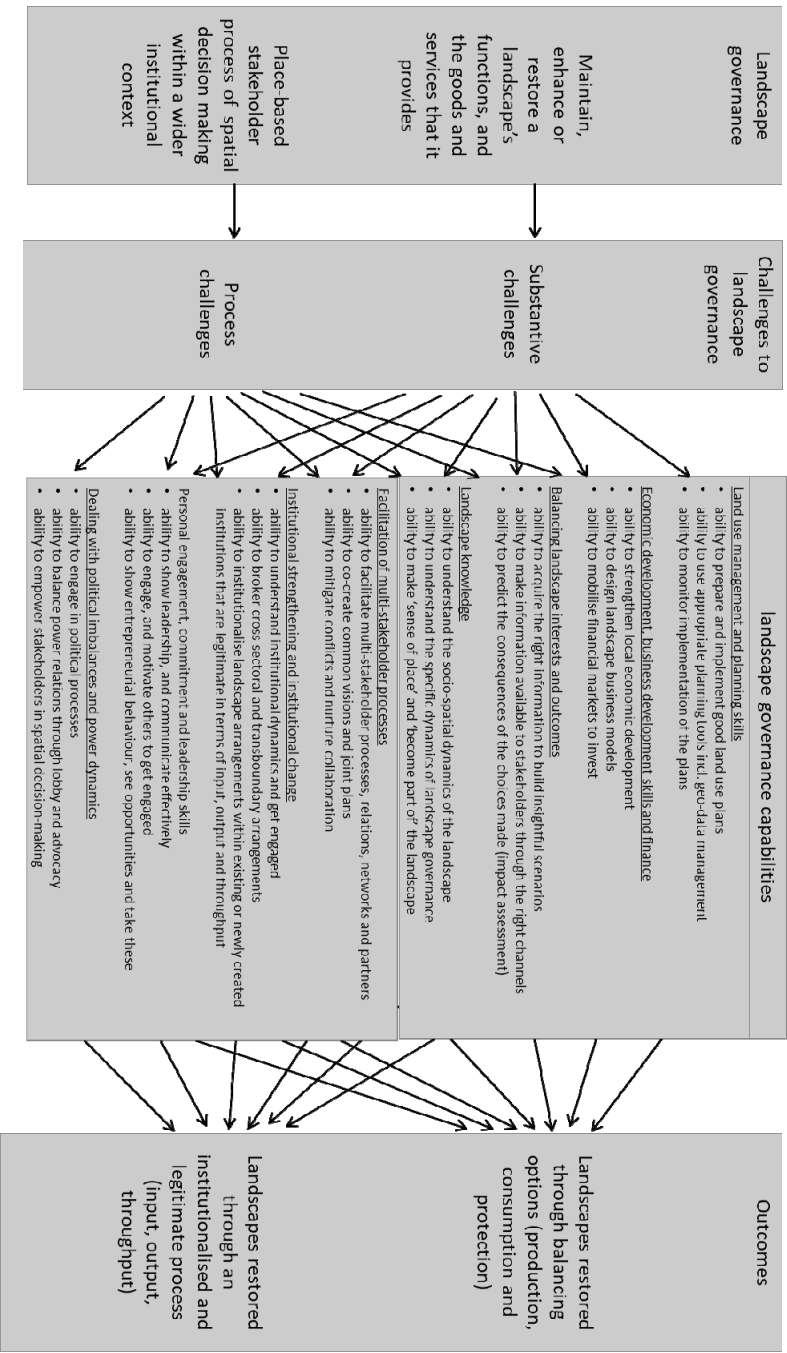
As shown in Figure 6.3, most of the landscape governance capabilities are related to tackling substantive and process challenges simultaneously. The differentiation between substance and process may therefore not be as strict as the literature suggests, as landscape professionals look at the challenges in a much more integrated way. It is also hard to link each of the abilities directly to one of the envisaged outcomes of landscape governance, as these too are more integrated than the literature suggests.

Although substantive and process challenges are highly interrelated, professionals tend to emphasise the importance of the abilities related to process challenges. In practice, many landscape professionals have state-of-the-art technical knowledge on restoration, as they have been trained as a forester, agricultural expert or planner, but they lack the interdisciplinary and transdisciplinary knowledge to look beyond their own sectoral interests and expertise. They may not have been trained to address the process challenges they encounter. They may not have the ability to reflect, commit and engage and they may not have the skills to facilitate multi-stakeholder dialogue and institutional change (Bodegom et al., 2008; Ameyaw, 2018). The ability of actors to deal with the complexity of multi-stakeholder governance requires the social skills to facilitate dialogue, mitigate conflict, build mutual understanding and negotiate compromises (Klaver, 2009; Ameyaw et al., 2015; Ameyaw 2018). The ability to navigate across institutional levels and scales, and to broker legitimate institutional arrangements is not something that professionals learn in college. It requires the personal ability of institutional *bricolage* (Cleaver, 2002, 2012) and institutional entrepreneurship (Bulkeley, 2010; Wejs, 2014) to stretch and transform existing institutions and thereby achieve the desirable 'new spatiality' or new functional space for governance arrangements to emerge (Hajer, 2003; Huitema et al., 2016; van Oosten et al., 2018). This transformation is achieved through strategic networking, and an entrepreneurial attitude to action, engagement and commitment. Such initiatives require courage, the ability to deal with political imbalances, and the personal motivation to lobby and advocate in favour of those needing empowerment vis-à-vis the established status quo. They also require the ability to acquire and use social capital, which produces civic engagement, shared interest and consensus (North, 1990; Putnam et al., 1993; Bertin et al., 2014). All these depend on the ability to be critical, think spatially and behave in an ethical and moral manner, to be able to change political cultures, elite capture, corruption and poor enforcement of laws (Bodegom et al., 2008; Ameyaw, 2018).

Based on the foregoing, can we say that landscape professionalism is a newly emerging disciplinary domain that requires a new generation of interdisciplinary professionals whose niche is landscape governance? Or would it be better for professionals to remain in their own sectoral domain, but with the additional ability to cross boundaries and integrate knowledge, skills and attitudes from other domains? Arts et al. (2017) plead for the latter, arguing that the differences (and, sometimes, incompatibilities) in scientific epistemologies

hamper a true integration of disciplines. They therefore plead for professionals who are well trained in a single discipline but at the same time able to integrate – or at least combine – this discipline with different knowledge domains. Key to this is inter- and transdisciplinary communication and collaboration between professionals who have a strong disciplinary basis (Arts et al., 2017).

The value of defining landscape governance from a professional's perspective is that it makes the existing and the desired learning needs explicit. It sketches a clear picture of the knowledge, skills and attitudes that professionals have or need to acquire in order to enhance the governance of landscape restoration. This helps in the operationalisation of the theories and in the design of capacity development products based on the principles of competence-based learning. The value of the theoretical concepts is that they make it easier to put practical knowledge, skills and attitudes into a more systematic context. This is in line with Baser at al., 2008), who advocate taking a systemic approach to capabilities, in which the capabilities of a system are comprised of the individual abilities and competences of the people, in our case, the professionals within a landscape. Collectively, able and competent professionals will stimulate inter- and transdisciplinary collaboration or *meta-capability* that will help achieve small wins, thereby taking small steps of continuous change and new learnings (Weick, 1984; Termeer et al., 2015). Such meta-capability for landscape governance entails the capability to balance stakeholder interests and engage stakeholders in a legitimate process of collaborative landscape restoration. Moreover, it entails the capability to alleviate poverty, to attract landscape business and finance, and balance power relations, so that landscape restoration favours all actors involved, while remaining within the carrying capacity of place. The development of landscape governance capabilities towards achieving better FLR practices should therefore not be a mechanical process of training individuals to gain specific know-how, best practices or skills, but a systemic process of societal learning: to understand patterns of societal behaviour, to alter power and authority, and redistribute access to and control over a landscape's resources.

6.6. Conclusion

Within the debate on landscape restoration, landscape governance is a relatively new concept that addresses the difficulties of unsustainable and conflictive land use that hamper effective landscape restoration. Landscape governance is both an empirical observation and a normative idea that aspires to achieve environmental, economic and social objectives simultaneously through multi-stakeholder dialogue, negotiation and spatial decision making. The scant literature on landscape governance focuses mainly on the challenges

encountered in relation to the substance and process of landscape restoration. Although there is no literature on the capabilities required to overcome these challenges, there is general literature on capabilities, which has relevance to the issue of landscape governance. Combining landscape capabilities, institutional capabilities and governance capabilities gives us a good insight into the capabilities of landscapes and governance systems and their institutional dynamics. During our survey we identified these landscape governance capabilities as perceived by landscape professionals (i.e. the landscape actors who have to deal with these challenges professionally in their day-to-day work). The outcomes show that landscape professionals tend to identify the individual abilities that they need to overcome the practical challenges they encounter in their daily reality. These abilities are much more practical and may serve to operationalise the more general conceptualisations from the literature. Translating these abilities into competences helps in the design of capacity development processes based on the principles of competence-based learning. The advantage of this is that landscape governance can be enhanced through developing the abilities of landscape professionals. However, this risks reducing landscape governance to a rather mechanical process of capacity development and training of individuals in terms of know-how, best practices and practical skills, without addressing the bigger system to which they belong. Linking the individual abilities of landscape professionals to the theoretical capabilities that address the larger landscape governance system leads to a more realistic approach to the enhancement of landscape restoration through landscape governance. Such an approach would lead to a more systemic process of societal learning, which addresses drivers of degradation, patterns of societal behaviour, issues of power and authority, and (re)distribution of access to and control over a landscape's resources. This helps to unlock the potential of landscape professionals *and* other landscape actors to shape the landscape they need and want, and to *spatialise* existing governance systems to effectively restore their landscapes.

Acknowledgements

Chapter 7: Research findings, discussion, conclusion

As noted at the beginning of this thesis, landscape governance is an upcoming topic in both the scientific literature and in practice. In chapter one I defined landscape governance as 'a place-based, multi-level and multi-stakeholder process of negotiation and decision making for sustainable land use, in which it is attempted to balance the production, protection, and consumption needs and aspirations of the actors involved' (cf. Termorshuizen and Opdam, 2009; Holmes, 2012; Sayer et al., 2013; van Oosten et al., 2014; Reed et al., 2015; van der Sluis, 2017). Ideally, the outcome of this place-based process is sustainable landscapes; achieved through legitimate spatial decisions. The research does not evaluate the outcomes of sustainability and legitimacy itself, but the process towards their outcomes, by studying the modes of landscape governance, the challenges encountered and the strategies used to overcome them. As explained in chapter one, the literature on landscape governance is scant. It is anchored within the much broader body of landscape literature, which builds upon the socio-cultural, ecological, productive and political dimensions of landscapes (see section 1.2.1). As first defined by Görg – and echoed by others – landscape governance is a spatially explicit form of environmental governance departing from the notion that a landscape is shaped by its spatial conditions, its actor constellations and its institutional practices (Görg, 2007; Buizer et al., 2015; Arts et al., 2017). It highlights the multi-level and multi-scalar relations that link local actor and institutional dynamics within the landscape to broader social, political and economic networks reaching beyond the landscape (ibid.). Because of its spatial focus, landscape governance is closely linked to spatial planning. But it differs from spatial planning in the sense that it has an explicit focus on the sustainable use of a landscape's natural resources and puts landscape actors in the driver's seat. Unlike spatial planning, it does not necessarily follow political or administrative boundaries, which makes it hard for landscape governance to be operationalised and institutionalised through formal spatial planning and decision making (Opdam et al., 1991, 2008, 2015; Termorshuizen et al., 2009; van der Sluis, 2017).

The reason for the growing interest in landscape governance can be found in the global debate on nature conservation and climate change, which since the turn of the century has shifted from fighting environmental degradation to promoting the restoration of landscapes, especially forested ones. The underlying argument is that by restoring the multiple functions of a landscape the concurrent crises of food insecurity, biodiversity decline and climate change can be tackled in an integrated manner (Sayer et al., 2013, 2016; Pistorius

and Freiberg, 2014; Mansourian, 2016; Pistorius and Kiff, 2017; Reinecke and Blum, 2018). Within this debate, landscape governance is increasingly considered the *new silver bullet* to reconcile environmental, social and economic concerns (Ros-Tonen et al., 2018; Reed et al., 2020). This has motivated practically oriented scholars to promote landscape governance as a means for realising national and international restoration targets at the local level, based on a strong belief in the potential of multi-stakeholder collaboration to do the job (Pfund, 2010; Colfer, 2011; Kozar et al., 2014; Kusters et al., 2015; Scarlet, 2016; Sayer et al., 2016; Foli et al., 2018; Daens et al., 2018; Ros-Tonen et al., 2018). However, much of this work ignores the difficulties of multi-stakeholder collaboration and the substantive and process-related challenges that this entails. As stated by Agrawal and Reed, there is a need for a more robust conceptualisation of landscape governance, and for a systematic analysis of the existing knowledge gaps regarding the challenges encountered in landscape governance and the potential options for overcoming them (Guaregita and Brancalion, 2014; Agrawal, 2017; Arts et al., 2017; Reed et al., 2020).

Recognition of this abovementioned need led to the research objective of this thesis, which is to attempt to fill the multiple knowledge gaps relating to how landscape governance is manifested in different modes of governance: what challenges are encountered? how are they tackled by landscape actors? and, what capabilities are needed for this? To achieve the research objective, the following four research questions were formulated:

1. How is landscape governance manifested in various modes?

2. What are the major challenges that hamper landscape governance, and what are the deeper causes of these?

3. How do landscape actors deal with these challenges, and what explains their strategies chosen and outcomes achieved?

4. Which capabilities do landscape actors have or need to have in order to employ the strategies to overcome substantive and process challenges?

Given the exploratory character of this research, it followed a flexible research design based upon a pragmatic research paradigm (Tashakkori and Teddlie, 2008; Kumar, 2011). Based upon Yin and Mohd, it employed a multiple case study design, in which the cases were purposely selected landscapes reflecting different modes of governance, challenges and strategies (Yin, 2003; Mohd, 2008). For data collection, qualitative methods were combined with quantitative methods, as described in section 1.3 and in further detail in the different chapters. In order to illustrate the rich variety of landscape governance in different socio-spatial contexts, my chosen case studies were in various parts of the world: Indonesia (chapters two and four), Rwanda (chapter five), and the southwest Amazonian borderland of Peru, Brazil and Bolivia (chapter three).

In this final chapter the four research questions will be answered and the results will be discussed. This will be followed by a critical reflection on the research approach and methodology used. Finally, both the scientific and the societal relevance of this thesis will be reflected upon, followed by some recommendations to advance scientific research, policy and practice.

7.1. The research questions answered

In answering the four research questions, I mobilised the scant landscape governance literature, while adding from adjacent strands of literature, to build an analytical framework. I revisited the empirical material from chapters two to six and placed it within this analytical framework. Each answer is preceded by a brief review of literature, and followed by a reflection on the answer in question.

7.1.1. Landscape governance is manifested in various modes of governance which shift over time

Chapter one describes the environmental governance literature on modes of governance. It sketches how modes of governance are expressed in the relational constellations of actors involved, the instruments they use and the environmental issues at stake (Kooiman, 2003; van Tatenhove and Leroy, 2003; Treib et al., 2007, see also chapter one). It builds upon environmental governance scholars who argue that modes of governance are subject to societal change and continuously shift along the more generally observed shifts in society and its governance (Driessen et al., 2012; Arnouts et al., 2012). Although environmental governance scholars do not particularly look at the role of spatial factors, I consider their work to be relevant, as it provides a framework for analysing modes of *landscape* governance.

In chapter two I use the work of Treib to describe the modes of landscape governance in Indonesia in terms of their politics, polity and policy (Treib et al., 2007). After completing all the chapters, I gathered the cases and examined them using the lens of the frameworks developed by Kooiman, Driessen and other scholars who have identified *idealtypical* modes of governance. Within these frameworks, scholars distinguish between hierarchical or top-down modes of governance by national or local governments, interactive modes or co-governance with more equal relationships between public and private actors, and self-governance by private actors such as companies and/or civil society groups, without much interference from the state (e.g. Kooiman, 2003; Hysing, 2009; Driessen et al., 2012;

Arnouts et al., 2012; Hegger et al., 2020). In reality, so these scholars say, governance is not necessarily manifested in precisely these modes, and often more than one mode or hybrid modes can co-exist (van Tatenhoven and Leroy, 2003; Treib et al., 2007; Driessen et al., 2012; Arnouts et al., 2012; Ingold et al., 2019). Moreover, modes of governance can shift over time, caused by drivers or *modifiers* which are to be found in rapid changes in physical circumstances or environmental shocks, the institutional settings, the dominant societal discourses and human agency. Each of these modifiers may lead to new relationships and coalitions taking responsibility for environmental governance (Folke et al., 2005; Hegger et al., 2020).

The research findings

The outcomes of chapters two and four confirm that landscape governance is manifested in multiple modes of governance which can co-exist, overlap and shift over time.

Multiple modes of governance

In *Halimun Salak* (chapter two) I found a dominant mode of centralised hierarchical governance, in which the national park management strives for the conservation of two adjacent national parks and the restoration of the buffer zone in between them. Management is according to the nationally formulated regulatory frameworks on national park management. In the buffer zone, which belongs to neither park, I encountered a decentralised hierarchical mode of governance. Here, in an attempt to mitigate resource conflicts, the national park management dropped its original autocratic governance style, instead adopting a more responsive co-management style responding to locally expressed demand for more flexible rules regarding land use. The resulting informal agreement between the park management, local inhabitants and NGOs reflects a more balanced and participatory mode of natural resource management, operating under commonly agreed rules.

In the peri-urban forest of *Sungai Wain* (chapter two) I observed a dominant mode of interactive governance in the way in which restoration is realised through intensive public–private–civic collaboration. An initially civic initiative of concerned citizens – which in itself could be considered a mode of self-governance – found its partner in a responsive municipal government which not only endorsed the initiative, but also gave it formal status. The resulting Sungai Wain Protection Forest Management Body is comprised of citizens, local government agencies and locally operating companies. It reflects an interactive mode of governance and is fully embedded within the spatial planning structure of the Municipality of Balikpapan. It is formally mandated to plan and decide on the management, conservation and restoration of Sungai Wain.

In *East Kutai* (chapter two) I encountered a dominant mode of self-governance within a private coal mining concession, where the company has moved away from its original 'compliance' approach towards a more open approach to restoring its exploitation site. Instead of employing the most cost-efficient reforestation model, it initiated an informal multi-stakeholder dialogue and co-designed a restoration plan for the area which responds to the multiple demands of local communities and enterprises. Outside the realm of this co-design, I found a centralised hierarchical mode of governance reflected in the way in which the government keeps its authority to oversee the company's compliance with formal regulations, ensuring that the plan does not obstruct the formal spatial plans. Yet direct government interference remains low.

In *West Kalimantan* (chapter four) I observed a dominant mode of self-governance in the search for more sustainable and inclusive palm oil production. In collaboration with local communities and NGOs, one palm oil company has developed a proposition for a multifunctional concession which not only produces palm oil but also harbours alternative forms of land use such as smallholder agriculture, rubber forest and nature conservation. This proposition is supported and promoted by the privately run Round Table for Sustainable Palm Oil (RSPO), which in itself represents a mode of self-governance[30]. A centralised hierarchical mode of governance is reflected in the way in which the company's design clashes with the regulatory frameworks for palm oil production. An interactive mode of governance manifested in the ongoing process of dialogue between the company and the provincial authorities. This dialogue may lead to the legal endorsement of the innovative concession design and a more interactive mode of governance for the entire Indonesian palm oil sector in future.

Shifting modes of landscape governance

Governance of the Halimun Salak National Park and surroundings shifted from a hierarchical-centralised mode with national park management firmly in the driver's seat, to a decentralised mode of governance, with park management diverging from national guidelines by initiating multi-stakeholder dialogue. The reason for this divergence was the growing cases of conflict in the buffer zone where communities and companies have more objectives than nature conservation alone. Here, park regulations did not apply and informal dialogue led to more collaboration (see chapter two). In Sungai Wain the initially hierarchical mode of forest governance grew into an interactive mode of landscape governance, after protests from local inhabitants, urban citizens and locally sourcing

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[30] The Round Table for Sustainable Palm Oil (RSPO) should not be confused with the Indonesian Round Table for Sustainable Palm Oil (ISPO), in which the Indonesian government actively takes part.

companies. The establishment of the Sungai Wain Protection Forest Management Body represents a multi-stakeholder arrangement which is formally institutionalised within the municipal planning structure. It is authorised to take legitimate decisions not only regarding forest protection, but also regarding agricultural production and other livelihood sustaining activities (see chapter two). In both East Kutai and West Kalimantan, hierarchical-centralised modes of governance were replaced by modes of interactive and self-governance through collaborative design and implementation of restoration and multifunctional concession plans. In both cases, conflicts with inhabitants motivated private companies to initiate multi-stakeholder partnerships to accommodate the multiple needs and interests of stakeholders. Government involvement was reduced to endorsing plans and overseeing implementation, without much direct interference. However, should the plans not align with government regulations, then the government keeps the right to decide (see chapter four).

In general terms, I observed shifting modes of governance from hierarchical-centralised to hierarchical-decentralised modes, from hierarchical-decentralised to interactive modes, from hierarchical to self-governance, and from self-governance to interactive governance. I did not find any shifts from interactive or self-governance to hierarchical or centralised modes of governance. Although this does not mean that no such shift exists, it seems that landscape governance is mostly manifested in interactive governance, which is more easily tailored to the spatial conditions of a landscape. In all cases, more institutional space for stakeholder dialogue was created, although only in Sungai Wain was this institutional space formalised and institutionalised within municipal structures. This was possible because municipal forest management is a responsibility devolved to the municipal authorities, who consider themselves to be co-responsible for the sustainability of the landscape. Moreover, the boundaries of Sungai Wain align with municipal boundaries, hence no boundary mismatches occurred. In the other cases, the more open and interactive modes of landscape governance have remained informal. They may influence public opinions, but true decision making power remains with the government, which is not obliged to follow advice from landscape stakeholders that deviates from formal government policy.

The drivers or modifiers of shifts in modes are to be found in (1) the decentralisation and democratisation of the Indonesian state, where sub-national governments have increased their mandates and augmented their responsiveness to the interests of citizens; (2) civic organisations and local communities have emancipated and are increasingly empowered to take control over the environmental issues affecting their livelihoods; (3) the changing behaviour of (at least some) private corporations, which have started to take more responsibility for their concession areas. The international discourse on landscape restoration amplifies the effect of these drivers. It has motivated national and international conservation agencies to argue for stronger environmental policies, with the result that

landscape restoration explicitly figures in national policy agendas. Indonesia is a proponent of the Bonn Challenge, and several large commodity companies have joined the zero-deforestation movement (see chapters two and four). All actors contribute to shifts in governance and use the landscape restoration discourse to strengthen their own arguments.

Reflection

The research findings show that landscape governance is a shared endeavour of public, civic and private actors, based on their concern about environmental degradation, deforestation and livelihood loss. It is manifested in multiple co-existing and overlapping modes of governance, but mostly in interactive governance which is more easily tailored to the spatial conditions of landscapes. The cases show government-led park management, private sector-led concession design and citizen-led action for more inclusive forest management. The level of formalisation can differ, as reflected in informal multi-stakeholder arrangements where stakeholders are consulted on management issues, semi-formal arrangements where stakeholders influence spatial planning structures, and formal arrangements which mandate stakeholders to take formal spatial decisions legitimised by law. In all the cases, the shifts from single-actor-steered governance to multiple-actor-steered were triggered by decentralisation and democratisation, emancipation of civic organisations and local communities, and changing behaviour of private corporates, stimulated by the international discourse on landscape restoration.

The research findings confirm environmental governance literature, which states that multiple modes of governance can co-exist and overlap, and constantly shifts towards more room for interaction and self-regulation at decentralised levels (Lemos and Agrawal, 2006; Mansourian and Sgard, 2020). It also confirms that shifts are triggered by broader societal processes such as decentralisation and democratisation, and societal discourses which change the behaviour of actors (van Tatenhoven and Leroy, 2003; Folke et al., 2005; Driessen et al., 2012). However, more than is the case for environmental governance, the research findings about the role of landscapes as arenas where governance arrangements are formed are more explicit. This is in line with the work of Görg (2007) and Buizer (2015), who highlight the role of landscapes as places for articulating stakeholder needs and interests, and with Arts (2017) who highlight the landscape's importance for nurturing place-based institutions as a basis for interactive governance. The findings in this thesis echo the more spatially oriented literature which considers *place* as being historically and socio-culturally evolved, harbouring a potential for place-based stewardship and 'sense of place' (Davenport et al., 2005; Ostrom, 2005; Taylor, 2008; Nagendra and Ostrom, 2012), which offers a strong basis for more spatially anchored governance (Görg, 2007; Jordan et al., 2015; Lazdinis et al., 2018). However, despite the potential of landscapes to provide space for public, private and civic actors to interact, much of this interaction remains
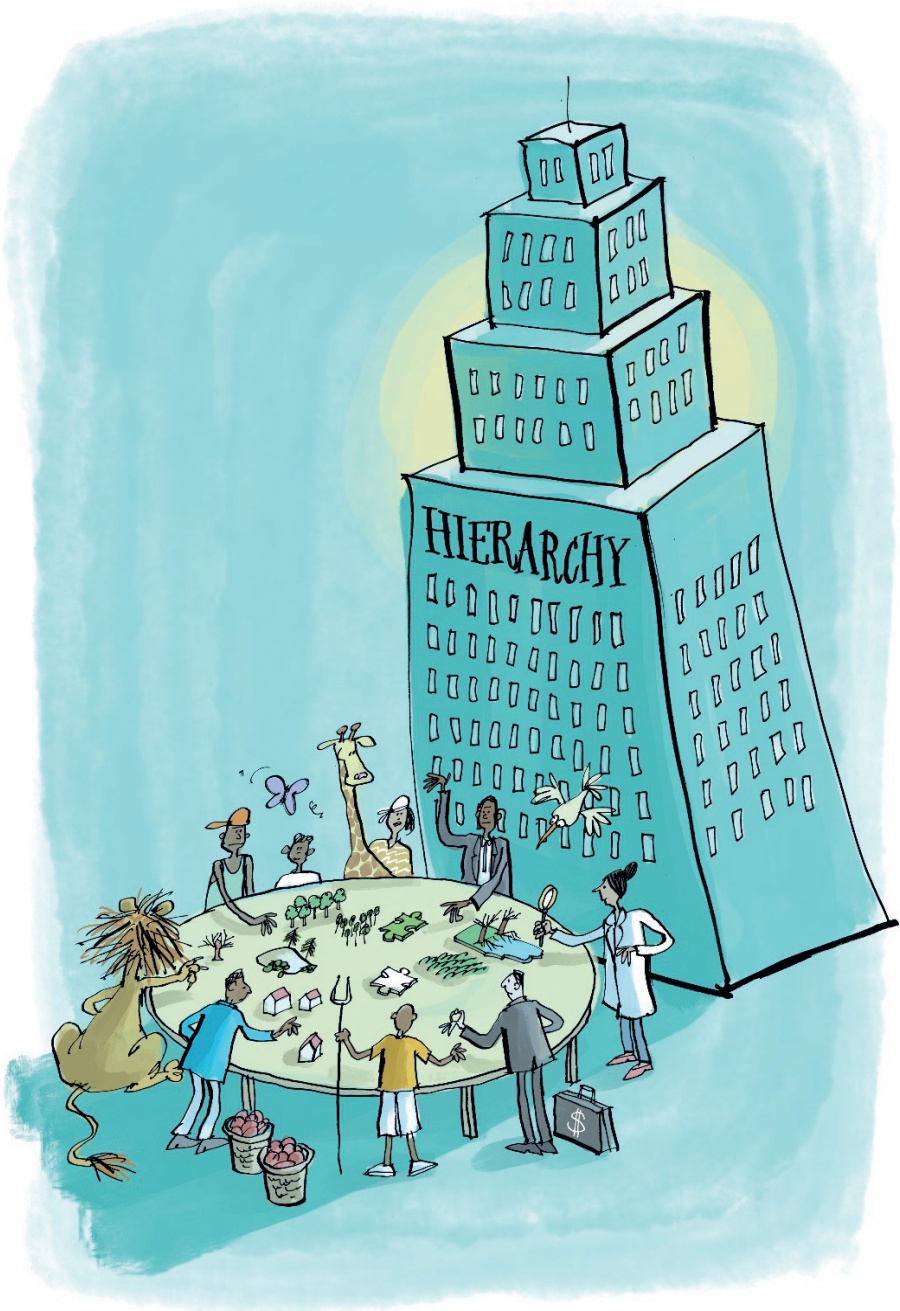
informal, while the formal authority remains with governments and its legitimate decision making structures (Scharpf 1997; Heritier and Lehmkuhl, 2008; Peters, 2010). In such contexts, landscape governance risks remaining in the *'shadow of hierarchy'* (ibid.), being organised in parallel structures and herewith limited in its ability to deliver its premise of sustainable landscapes through legitimate decisions.

7.1.2. Landscape governance is hampered by challenges related to substance and process that have underlying institutional causes

Landscape governance scholars recognise a number of challenges, such as spatial pressures, resource conflicts, and the lack of win-win options which are not easily overcome (Colfer, 2011; Kozar et al., 2014; Guaregita and Brancalion, 2014; Kusters et al., 2015; Foli et al., 2017). To these, other scholars have added the incompatibility of sectoral policies which impede the balancing of livelihood needs, producer demands and wider societal interests such as climate change (Holmes, 2012; van der Sluis, 2017; Arts et al., 2017; Leibenath and Lintz, 2017). Boundary mismatches are mentioned, making it hard to solve landscape problems through formal spatial planning (Termorshuizen and Opdam, 2009; Kuindersma and Boonstra, 2010; Westerink et al., 2017; Wiegant et al., 2020). However, there has been no systematic overview of the challenges – and their causes – that hamper landscape governance.

Environmental governance scholars have a much longer tradition of addressing the challenges of reconciling diverging stakeholder interests, power positions and policy objectives (Lemos and Agrawal, 2006). They explicitly differentiate between substantive and process challenges, which helps to distinguish between *'what'* governance aims to achieve, and *'how'* this is to be achieved (Treib et al., 2007; Kooiman, 2003, 2008; Driessen et al., 2012; Runhaar, 2016; Ingold et al., 2019, see chapters two, four and five). In relation to landscape governance, such substantive challenges may be reflected in the top-down manner in which spatial plans are prepared and sectoral policies are implemented, which does not lead to sustainable landscapes. Process challenges may be reflected in the way in which actors collaborate and decisions are made (Beunen et al., 2011; Schmidt et al., 2019). Key to this is the level of legitimacy, which is defined in chapter one as the acceptance by the stakeholders involved and the public endorsement by some sort of governance body (Bexell, 2014, see chapter one).

The research findings

In all the cases studied, I encountered substantive and process challenges that hampered landscape governance. Although in practice it is not always easy to differentiate between

these two, for analytical purposes it is useful to maintain the differentiation, to better understand their dynamics.

Substantive challenges – competing land use and policy incoherence

In all the cases studied, there is a sharp contrast between locally steered landscape dynamics and externally steered landscape dynamics. This contrast was expressed in conflicts between local interests of livelihood and income security and the national or international interests of commercial agriculture, direct foreign investment and regional economic growth. In southwest Amazonia (chapter three) local interests are under pressure from higher-level policy objectives of infrastructural disclosure and land conversion towards commercial agriculture (van Oosten, 2004; Perz et al., 2011, see chapter three). In Indonesia (chapters two and four) the externally introduced systems of mineral extraction and oil palm production are at odds with the original multifunctional forest-based production systems, leading to environmental degradation and disputes over land use, land rights and financial returns (Zakaria et al., 2009; Meinzen-Dick and Mwangi, 2009; Rietberg, 2011). In Rwanda (chapter five), locally integrated agro-silvo-pastoralism has changed into segregated land-use patterns favouring commercial production over local livelihood security, leading to pressure on scarce available land. In all cases, historically evolved multifunctional landscapes have turned into monofunctional landscapes aiming at commercialisation, intensification and segregation of land use, backed by sectorally defined policy objectives. In Indonesia, the strict divide between commercial agriculture, subsistence agriculture and forest land is regulated by law, hampering the development of innovative integrated production models (Barr et al., 2006; Sirait, 2009; Sheil et al., 2009, see chapters two and four). In Rwanda, too, policies on land consolidation and crop intensification have resulted in strict segregation of commercial land use from subsistence farming. Smallholders and companies are stimulated to 'consolidate' their land to produce high value commercial crops, which is at odds with their own objectives of crop diversification, risk spreading and livelihood security (see chapter five).

Process challenges – participatory process and legitimate decisions

In all the cases, many respondents were dissatisfied with the way in which their landscape is formally governed, and felt their local needs and aspirations were not sufficiently taken into account. As a response, they established alternative place-based governance arrangements with the expectation that through multi-stakeholder collaboration their needs and interests would be better catered for. Yet in most cases these place-based governance arrangements have remained informal and are not connected to formal spatial decision making processes. The decisions produced are not formally recognised as the result of a legitimate process, therefore are not considered legitimate and are not taken into account in formal plans and programmes. Southwest Amazonia's transboundary coalition provides a

platform for stakeholders to meet, share information and exchange ideas. But it never achieved formal status and is therefore not recognised as an instrument for transboundary spatial planning (see chapter three). In Ketapang (Indonesia), collaboration between the palm oil company, local inhabitants and NGOs remains informal, and the outcomes have not yet been endorsed or legalised by provincial authorities, so the company is reluctant to make further investment (chapter four). Local farmers, companies and extension workers in Rwanda's Rulindo interact and experiment with local crop varieties, mixed farming and integrated production systems, but the formal rules prescribe the use of modern hybrid seeds and segregation of crops. The 'Joint Action Development Forum' provides a formal space to address land-related issues, yet the issues of unpopular land-use regulations and crop choice are too sensitive to be addressed (see chapter five). In all cases, strong arguments for policy change are raised from the landscapes. But in all cases except Indonesia's Sungai Wain, these arguments are not sufficiently backed by formal democratic procedures and are therefore hardly taken into account.

The underlying institutional causes

The substantive and the process challenges both have deeper underlying institutional causes. The main one is that landscape governance mostly operates outside the jurisdictional scale of village, district, province, country, etc. and instead follows the spatial and temporal scales through which its spatial, ecological, social, cultural and historical processes have evolved (see chapters three, four and five). Wherever scale boundaries do not coincide, friction occurs. Examples are to be found in clashes between historically grown cultural identities and 'modern' life (Rwanda), traditional production practice versus mechanised and commercialised production practice (Indonesia), integrated land use versus segregated land use (Indonesia and Rwanda), customary rules versus contemporary law (Rwanda), place-based governance mechanisms versus political systems (southwest Amazonia), etc. The results of these clashes are reflected in substantive challenges of competing land use, sectoral matches and policy conflicts. They are also reflected in process challenges of lack of participation, lack of representation and lack of legitimacy of decisions taken.

In all the cases, landscape actors created institutional space to connect, interact and jointly plan. But in none of these cases have the institutional mismatches been overcome, and new institutional spaces have remained restricted to the landscape and have not reached far beyond. This means that whereas at landscape level actors were successful in creating space for dialogue, their dialogue remained informal and did not succeed in bridging the scale divide. As a result, the outcomes of landscape governance remained unsatisfactory in terms of sustainability, as true balances between production, consumption and protection were not achieved. They also remained unsatisfactory in terms of decision making, as in all cases, except for Sungai Wain, the landscape arrangements created remained informal and did not
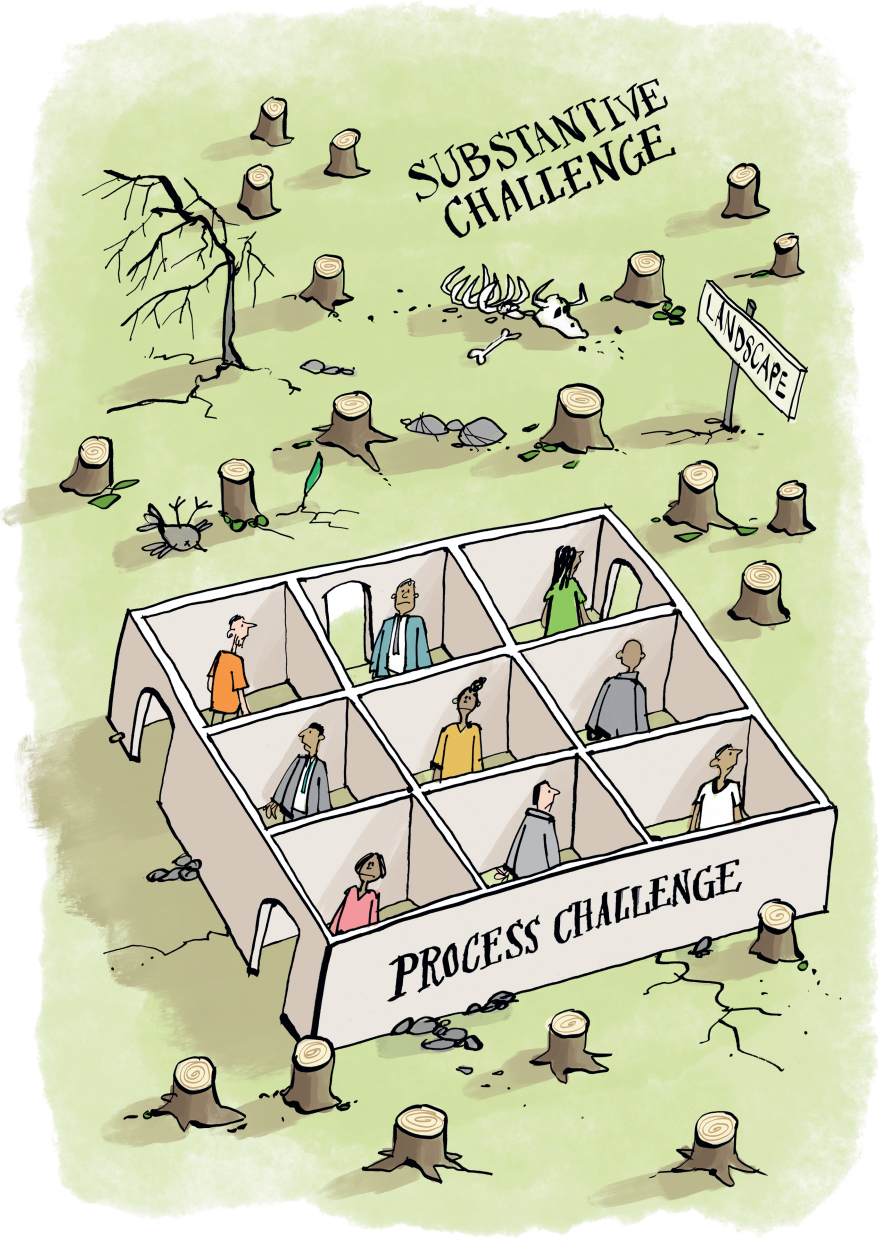
lead to wider institutional change. Even in Sungai Wain, where the Sungai Wain Protection Forest Management Body is mandated to take formal decisions with regard to the Sungai Wain forest, its mandate does not go beyond the boundaries of the municipality. Neither is it connected to provincial and national policy networks, therefore not able to influence the construction of the Trans Kalimantan Highway which will have environmental impact on Sungai Wain.

Reflection

The research findings are in line with environmental governance literature and institutional literature which argue that centralised or decentralised hierarchical modes of governance may not suffice for solving multiple environmental problems. Instead, locally crafted arrangements may be better positioned to suit local interests and broker locally agreed spatial decisions (Kooiman, 2003; Cash et al., 2006; Huitema et al., 2009; Padt and Arts, 2014). In theory, a shift towards more interactive modes of governance would allow for more of such bottom-up arrangements, yet in practice their influence remains small, as they often fall beyond the scope of the formal democratic decision making process, and the outcomes are considered to be not legitimate. If they do, such as shown by the case of Sungai Wain, they may not be embedded in policy networks beyond the strictly local (Ingold et al., 2012; Mees et al., 2014; Dale et al., 2018; Morrison et al., 2019, see chapter one).

Institutional mismatches between jurisdictional, spatial and temporal scales were encountered in all the cases. Landscape actors do not perceive boundaries as problematic and tend to manoeuvre within and between scales without even realising it. Their environmental perception stretches beyond jurisdictional boundaries, as does their action radius. But participation in spatial planning and decision making forces them into a jurisdictional scale of operation, which is not in line with their socio-cultural and productive practice. A *'jurisdictional'* approach – as suggested by some environmental scholars – would therefore not help them solve their problems. A jurisdictional approach may be the easiest way to overcome scale mismatches, by adjusting informal landscape governance arrangements to jurisdictional boundaries, formality and rule of law (Feldman, 2016; The Earth Innovation Institute, 2018; Wunder et al., 2020). But applied to landscape governance, it would not solve scale mismatches but would aggravate them, as it ignores the spatial and temporal scales along which landscapes have evolved, and disconnects inhabitants from their livelihoods, and stakeholders from their stakes. Strengthening jurisdictional boundaries would make it harder for stakeholders to bridge boundaries, thereby undermining the potential of new place-based institutions to emerge. Instead of questioning the legitimacy of place-based or landscape arrangements, I would prefer to

question the legitimacy of jurisdictional boundaries, especially in countries where boundaries were imposed by previous colonial powers (see chapter three).

Given the situation described above, more geographically oriented scholars suggest alternative ways for looking at what they call place-based governance arrangements and their legitimacy. They argue that place-based arrangements are often not explicit in terms of legitimacy because they are a product of informal practices rather than of formal rules (Swyngedouw, 2005; Connelly, 2011). They have fewer and less explicit rules for decision making, as they are issue- and place-based, and draw on old or new rules which are temporarily or permanently agreed upon by those having a stake (Hajer, 2003; Swyngedouw, 2005; Connelly, 2011). This approach requires a more nuanced view on legitimacy, going beyond the formal. Helpful here is the work of Scharpf, who differentiates between *input legitimacy,* which relates to whether decisions are made by involving those who have a 'stake', and *output legitimacy*, which refers to the effectiveness and acceptability of the resulting policies (Scharpf, 2010; Lau, 2014; Mees et al., 2014; Newig et al., 2016). *Throughput legitimacy* refers to the democratic process through which different interests are accommodated and outcomes are monitored (ibid.). If landscape governance produces networks of stakeholders taking decisions (input legitimacy), it may lead to outcomes which are more effective for a landscape's sustainability as perceived by its stakeholders (output legitimacy). But this means that the process (throughput legitimacy) should be interpreted more flexibly and not, as is usually the case, interpreted as being 'merely' a formal democratic rule. A more flexible process could also lead to legitimate outcomes, in which legitimacy is not restricted to the formal (Swyngedouw, 2005), but can also be derived from informal stakeholder agreement, based on their spatial relations, norms, perceptions, identities and informally crafted arrangements (Behagel and Turnhout, 2011; Connelly, 2011; Lau, 2014).

7.1.3. Landscape actors have multiple strategies to deal with landscape governance challenges

Landscape actors employ multiple strategies to deal with the challenges they face, but landscape governance literature pays little attention to these strategies, as if the establishment of multi-stakeholder platforms, networks and partnerships suffices to overcome the challenges encountered. From the case studies, the latter appears questionable. Spatial planning literature provides many tools and instruments which help to optimise land use and satisfy the demands of – ideally all – stakeholders involved. But these tools are usually applied within formal planning processes and therefore do not suit the informal context of landscape governance (Lebel et al., 2005; Schmidt et al., 2019; see chapter one). Furthermore, environmental policy integration literature describes the potential of horizontal and vertical policy coordination, harmonisation and integration

(Underdal, 1980; Lafferty and Hovden, 2003; Runhaar et al., 2009; Persson et al., 2018, see chapter five), but also here, jurisdictional boundaries are followed. For this reason, instead of focusing on the formal strategies mostly employed by governments, I focused on the informal strategies employed by landscape actors instead.

Within the literature there are three groups of *'bottom-up'* strategies which I consider relevant to landscape governance: social learning, productive/institutional bricolage and institutional entrepreneurship. Social learning as a process of interaction and collective problem solving helps to address substantive challenges (Folke, 2005; Cash et al., 2006; Giller et al., 2008; Wals, 2009; Huntjens, 2011; Wulf, 2015, see chapter three). But to overcome process challenges, more is needed. Productive bricolage covers strategies of combining and diversifying land-use options, either to cope with stress (diversification by necessity), or to grasp opportunities and build economic diversity (diversification by choice, after Ros-Tonen, 2012, see chapter four). Institutional bricolage covers strategies of creatively manoeuvring within the bounds of productive or institutional constraints (Cleaver, 2012; de Koning, 2014; de Koning and Cleaver, 2012; Ros-Tonen, 2012; Funder and Marani, 2015, see chapters four and five). It includes articulating or rejecting new institutions, or aggregating them with pre-existent socially embedded institutions (de Koning and Cleaver, 2012; Kuindersma et al., 2012; de Koning and Benneker, 2013; Faggin and Behagel, 2018). Institutional entrepreneurship entails more deliberate strategies to either horizontally communicate and spread innovative practice, or to vertically link innovative practice to multi-level policy networks, and to have these networks institutionalised within formal policy frames (DiMaggio, 1988; Bulkeley, 2013; Wejs, 2014; Raffaelli and Glynn, 2015; van Doren, 2018, see chapters five and six).

The research findings

In chapters three, four and five I describe social learning, productive/institutional bricolage and institutional entrepreneurship as strategies employed by landscape actors to overcome the challenges they face. Although more strategies may exist in practice, I used this selection to get grip on the informal strategies employed by landscape actors. For analytical purposes, I maintain the differentiation between strategies to tackle substantive challenges and those for tackling process challenges, although in practice such strategies are interrelated and are employed simultaneously by different actors.

Overcoming substantive challenges

Chapter three presents the case of southwest Amazonia, where social learning was being employed to develop a coalition of actors across jurisdictional divides. Landscape actors developed a progressive learning strategy based on an agenda for transboundary collaboration in various domains. Initiated by the three local universities, a neutral space for

multiple stakeholders was created for addressing commonly felt environmental concerns within a context of trust. The polycentric leadership of the coalition helped stakeholders to overcome their partial interests and build a shared spatial identity. They combined social learning with spatial planning and horizontal policy integration in the development of a transboundary watershed management plan. A multi-stakeholder core group organised and facilitated interactive planning sessions and used maps, scenario modelling and participatory planning tools to create a vision and devise the plan. Despite being embraced locally, the plan was never formally endorsed by the three countries involved, though it was endorsed formally by the Brazilian state of Acre, which enjoys a high degree of autonomy.

In Indonesia's Ketapang (chapter four) and Rwanda's Rulindo (chapter five) farmers and companies collaborated and experimented with integrated production models combining economic objectives with ecological objectives and livelihood needs. They combined forces to creatively blend multiple land uses at farm, concession and landscape level. They combined social learning with productive bricolage when diversifying their options to cope with stress (diversification by necessity), or to grasp opportunities and build economic diversity (diversification by choice, after Ros-Tonen, 2012, see chapter four). Farmers in Rulindo cultivate food crops on the edges of their plots and swap fields designated for specific crops, respecting government rules regarding monocropping, while maintaining their multiple crops to spread their risks (productive bricolage '*by necessity*'). Indonesia's oil palm company designed its multifunctional concession to offer space for the conservation of biodiversity and for communities to maintain their preferred rubber forests. Although this has reduced the income derived from oil palm, it also reduced the costs of resource degradation and social unrest, while tapping into new sources of climate finance (productive bricolage '*by choice*'). However, despite the innovative behaviour of landscape actors, the resulting production practices remained in the margins of formality, at best tolerated, if not illegal.

Overcoming process challenges

Whereas social learning and productive bricolage enable landscape actors to design sustainable production practices and management plans, more strategies are needed to bridge the gap between sustainable practice and formal sectoral rules. In both Indonesia and Rwanda, landscape actors therefore took more deliberate action to 'sell' their innovative production practices to the government, which I consider examples of institutional bricolage. In Rulindo (chapter five), farmers knew that they cannot always mix commercial and subsistence crops, but they deliberately planted crop varieties which can be considered to be both. Companies promoted mixed cropping as a management practice that increases the commercial value of crops. In doing so, they combined different sectoral rules, thereby bending – but not breaking – the rules. Together, they established relationships with local government agents who accept this quasilegal behaviour, and tailored informal agreements

to allow producers to combine local livelihood needs and market demands, thereby jeopardising their performance targets and future career.

In Indonesia (chapter four) it was shown that the multifunctional oil palm concession design, however sustainable, does not comply with Indonesia's laws on agriculture, forest and environment, which makes it hard for it to be legally recognised. The company therefore employed institutional bricolage, by starting a public–private–civic dialogue on sustainable palm oil production, so that the provincial government could bend – not break – the rules and grant pilot status to one experimental multifunctional concession. The dialogue resulted in a temporal exemption from the general rules, to further test the concession's viability and the options for legalisation, which resulted in a new regulation legalising the conservation of non-productive areas within commercial concessions. However, it must be noted that since the publication of chapter four, the innovative provincial regulation has been revoked by the central government because it contravened investment legislation (Sayer et al., 2020). This example shows that despite the good intentions, the multi-level inconsistencies proved to be too great to overcome.

Addressing the underlying institutional causes

In the cases described above, a combination of productive and institutional bricolage was not enough to address the deeper institutional causes of scale mismatches, which required more fundamental institutional change. To address the mismatch between jurisdictional and spatial scales, some entrepreneurial actors used institutional entrepreneurship to build inter-scalar relations and connections, as a deliberate strategy to take institutional change into their hands. The key difference between institutional bricolage and entrepreneurship lies in the way these actors not only took local initiatives, but also linked them to larger networks operating at different levels and scales. The resulting multi-level and multi-scalar relations allowed for institutions to be built beyond sectoral strongholds and to operate beyond jurisdictions, following landscape boundaries and connecting the stakeholders within.

Although institutional entrepreneurship was found in all the cases, I particularly looked for it in the case of Rwanda (chapter five). Here, I found Rulindo's district government staff had agreed with farmers and companies to combine local livelihood needs and market demands, thereby consciously deciding to act in *the spirit of the law not just the letter of the law*. District authorities used their legitimate political power to propose this technical innovation to their superiors, which led to the invitation to take part in the *intersectoral task force on forest landscape restoration*, which is mandated to address sectoral inconsistencies hampering forest landscape restoration. This appeared to be a strategic move, as the task force was mandated to draft a new intersectoral law on agroforestry. The task force itself represented an example of institutional entrepreneurship, as its members actively took part

in international conferences, where they obtained new ideas on integrated land use which they shared with their own national networks (see chapter five).

In addition, institutional entrepreneurship was reflected in the Rwandan case in the newly established interjurisdictional Nyabugogo River Catchment Committee. Rulindo is strategically located upstream of the Nyabugogo catchment, which provides water to the downstream capital of Kigali. Given Kigali's water stress, Rulindo's local government leaders proposed a *payment for environmental services* scheme (PES) to Kigali's Water and Sanitation Corporation, which led to a public–private governance arrangement in which urban water consumers pay for restoration in Rulindo's territory. Restoration was proposed to be done through agroforestry, as a pilot case of the previously described intersectoral task force on agroforestry. The resulting Nyabugogo River Catchment Committee was institutionalised by national authorities to foster interjurisdictional water management, making use of the new agroforestry law (see chapter five).

Reflection

The research findings show that social learning, productive/institutional bricolage and institutional entrepreneurship are valuable concepts for analysing the wide range of strategies landscape actors use to tackle challenges. The three types of strategies are complementary in how they tackle substantive and process challenges and address the underlying institutional causes. Landscapes provide a suitable context for social learning to happen, as they harbour an environment for public, private and civic actors to engage in place-based learning activities to design better ways of managing their landscapes, building on a shared identity and a common concern (Keen et al., 2005; Folke, 2005; Wals et al., 2009; Leeuwis and Aarts, 2010). They provide an opportunity for landscape actors to develop more balanced land-use options, framed as productive bricolage (Ros-Tonen, 2012); and to creatively craft place-based initiatives supportive to this, framed as institutional bricolage (Cleaver, 2012; de Koning and Cleaver, 2012; Koning, 2014; Funder and Marani, 2015, see chapters four and five).

In addition to these locally employed strategies, landscapes provide the multi-level and multi-scalar arena for strategically positioned landscape actors to network beyond their landscape. These entrepreneurial actors use their positions within sectors and hierarchical levels to develop horizontal and vertical pathways to connect locally crafted initiatives to multi-level policy networks. Such institutional entrepreneurship helps to overcome institutional mismatches and create new institutional space for landscape governance arrangements to be built and produce spatial decisions (Smith, 2011; Wejs, 2014; Robinson, 2017, see also chapters four and five). However, it remains hard to achieve the legitimacy that allows the outcomes not only to be accepted by stakeholders, but also to be accepted and endorsed by formal governance mechanisms (Connelly, 2011; Lau, 2014).
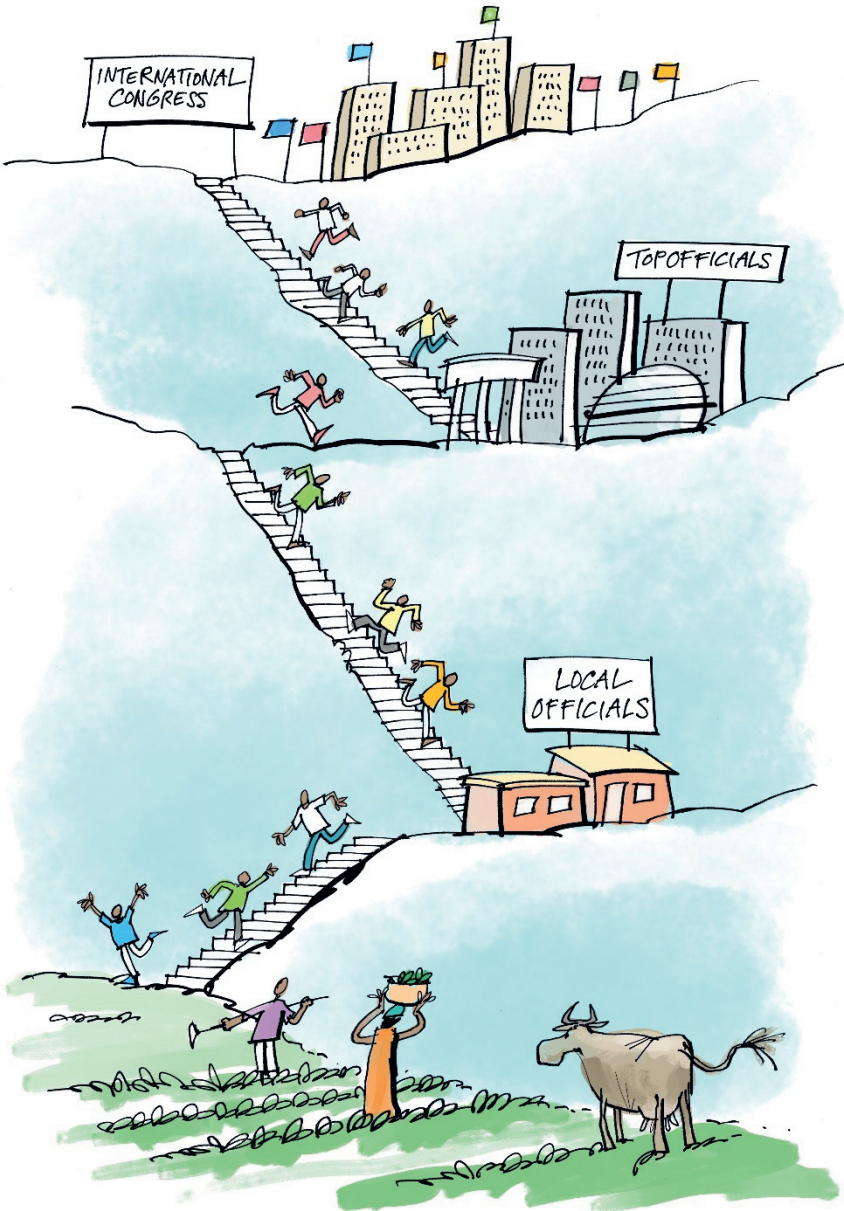
Altogether, the strategies to tackle substantive, process and institutional challenges are based on the creative and entrepreneurial behaviour of landscape actors, each employing the strategy that suits them well. This behaviour brings the ensemble of actors far in tackling substantive and process challenges, although the institutional mismatches are often too persistent to be tackled by landscape actors alone. Building flexible and responsive institutions which provide input, output and throughput legitimacy to the spatial decisions that these institutions produce remains difficult, meaning that landscape governance requires a broader institutional change than landscape actors can bring about.

7.1.4. The capabilities of landscape actors to employ strategies to overcome landscape governance challenges

The success of the strategies to overcome substantive and process challenges partly depends on the capabilities of landscape actors. I say *partly*, as attaining sustainable landscapes and legitimate spatial decisions cannot be achieved by landscape actors and their strategies alone; also important is the wider biophysical, political and institutional environment in which these strategies are employed. Capabilities are regularly mentioned in the landscape governance literature, but in a context of capabilities falling short, to justify proposed actions such as capacity development (Sayer et al., 2013, 2014, 2016; Kozar et al., 2014; Kusters et al., 2015; Reed et al., 2016; Deans et al., 2017; Foli et al., 2017; Mansourian, 2017; Ros-Tonen et al., 2018). Hardly any analysis have investigated what these capabilities are exactly and how they can be developed. I therefore used the international development studies literature to obtain a deeper understanding of capabilities, and the literature on governance, institutional and institutional innovation to further detail what these capabilities could be in a context of landscape governance.

Although in practice it may be hard to differentiate between substantive, process and institutional capabilities, for analytical purposes I maintain the differentiation. In chapter six I describe substantive capabilities as those capabilities which enable actors to optimise sustainable land use: they cover the ability to understand landscape dynamics and manage them sustainably. Also in chapter six I describe process capabilities as the capabilities that enable actors to engage in governance processes and steer towards legitimate decisions, in which legitimate is defined in terms of participation, democratic process and acceptable outcomes (see the answers to research questions two and three). Institutional capabilities were not mentioned specifically in chapter six. However, the research findings justify the addition of institutional capabilities as a category. These institutional capabilities refer to those capabilities that allow individuals or groups to transcend jurisdictional, sectoral and scale boundaries (Nelissen, 2002; Arts and Goverde, 2006; Candel et al., 2015). They include the ability to engage in multi-level and multi-scalar governance dynamics and to address scale mismatches by building bridges between institutional levels and scales

(Termeer and Dewulf, 2014; Wiegant et al., 2020, see chapter six). This implies the attitude of being 'scale sensitive' (Termeer and Dewulf, 2014) and strategically manoeuvre across multiple levels and scales of governance, addressing power issues and employing lobbying and advocacy whenever needed (Cleaver, 2002, 2008; Boonstra, 2006; Görg, 2007; Arts and Visseren-Hamakers, 2012; Ros-Tonen, 2012; Wejs, 2014). In this final chapter the three categories of substantive, process and institutional capabilities were used as a framework to analyse the cases and come to a deeper understanding of what landscape capabilities are and how they can be developed.

The research findings

The outcomes of the survey presented in chapter six provide a systematisation of the individual capabilities of landscape professionals – i.e. farmers, producers, planners, policy makers etc. – who are professionally engaged in landscape governance. The survey data complemented the findings of the case studies, showing that those landscape actors engaged in landscape governance have a range of capabilities at their disposal, as they are constantly addressing substantive and process challenges, either consciously or unconsciously.

Substantive capabilities

The survey shows that landscape professionals identify four categories of substantive capabilities. The first category entails general landscape knowledge, which includes the ability to identify a landscape as such, and to understand its biophysical, ecological and socio-spatial dynamics. Such landscape knowledge helps actors to develop the abovementioned awareness and sense of belonging which lies at the heart of environmentally responsible behaviour. A second category entails the capability to use a landscape's resources to drive local economic development, including the development of economically viable models for landscape business and finance. A third category entails the capability of land-use management and spatial planning, including the ability to prepare and implement land-use plans by using appropriate tools to monitor implementation of the plans. A fourth category entails the capability to balance landscape interests and outcomes, including the ability to acquire the right information, to make information available to stakeholders through the right channels, to build insightful scenarios and to predict the consequences of the choices made (impact assessment).

The case studies provide many illustrations of substantive capabilities: the pro-active behaviour of southwest Amazonian citizens to save their forest (chapter three); Sungai Wain's citizens to protest against forest destruction (chapter two); Halimun Salak's civic coalition to engage in planning the buffer zone (chapter two); private companies' actions in East Kutai and West Kalimantan to restore their mining site and improve their business model (chapters two and four); Rulindo's farmers and companies actions to secure local

livelihoods (chapter five). In all the cases there were government officials, planners, NGO staff and otherwise professionals who designed spatial plans and managed the natural resources within their professional mandate. Watershed plans, forest management plans, restoration plans, multifunctional concession designs, payment for ecosystem services schemes, sustainable multi-cropping and agroforestry demonstrated the substantive capabilities of the actors involved.

Process capabilities

The process capabilities identified by the survey respondents are captured in three categories. The first category covers the ability of actors to work together to solve collective problems, using means which include the engagement in and facilitation of multi-stakeholder processes to build networks, co-create common visions and joint plans, and to mitigate conflicts. The second category covers the leadership skills to personally engage and commit, including the ability to communicate effectively, the ability to motivate others to become engaged, and the ability to see opportunities where others do not. The third category identified covers the ability to address political imbalances and power dynamics, including the abilities to engage in political processes, to balance power relations through lobbying and advocacy, and to empower stakeholders in spatial decision making.

The cases studies provide illustrations of process capabilities as expressed in the place-based governance arrangements they managed to create. Halimun Salak has its informal multi-stakeholder network for the co-management of its buffer zone (chapter two); East Kutai has its informal stakeholder coalition to restore their mining area (chapter two); Sungai Wain has the formal Sungai Wain Protection Forest Management Body to manage the peri-urban forest (chapter two); southwest Amazonia has its transboundary coalition which operates across borders (chapter three); West Kalimantan's oil palm company has its collaborative design of a multifunctional concession (chapter four); and Rulindo's stakeholders take part in the intersectoral task force on agroforestry (chapter five).

Institutional capabilities

The survey respondents had difficulty identifying what institutional capabilities are and what is needed to mobilise these capabilities. They did identify the ability to understand institutional dynamics and become engaged, the ability to broker cross-sectoral and transboundary arrangements (including transboundary ones), and the ability to adequately institutionalise landscape arrangements. They did mention the need to enforce rules and regulations, which requires deeper understanding of the process of rule-making itself, including the concept of legitimacy. But they considered themselves hardly capable of tackling the institutional mismatches, as they felt they lacked the right networks and

political connections to do so effectively. In other words, of all the capabilities mentioned, the ones the professionals felt inadequate about were the institutional capabilities.

In contrast, the case studies provide illustrations of the institutional capabilities demonstrated by landscape actors in practice. These are expressed in the multi-level and multi-scalar relations that they built. In southwest Amazonia, actors successfully crossed boundaries to build transboundary relations, which resulted in a transboundary watershed management plan (chapter three). West Kalimantan's private actors initiated multi-level and multi-sectoral dialogue with communities, NGOs and provincial and national government agencies to get their multifunctional concession design accepted and formally approved (chapter four). Rulindo's district authorities crossed jurisdictional boundaries in building a formal partnership within the Nyabugogo catchment (chapter five). They used their political connections to 'jump' scale and take part in the intersectoral task force on agroforestry. This gave them the opportunity to be part of larger networks through which they could acquire and share innovative ideas. With this, they could challenge sectoral hierarchies to arrive at institutional arrangements that better respond to their landscape's specific needs and demands.

Reflection

Landscape professionals find it relatively easy to identify the substantive capabilities which are usually acquired through their upbringing, their formal education or additional professional training they have undergone. Landscape professionals have more difficulty identifying process capabilities, as most professionals struggle with stakeholder dynamics in their landscapes. They consider these capabilities to be closely related to social skills, communication, mediation and collaboration, which they do not acquire through formal education, so instead rely on their own personal attitudes and moral behaviour. Institutional capabilities are hardly recognised as such, and whenever they are, they are associated with the difficulty of manoeuvring between levels and scales without fully understanding them. Most professionals have little appetite for challenging the established hierarchies and institutional structures, jeopardising their positions and future careers.

Although the landscape professionals surveyed hardly recognised institutional capabilities, the cases illustrate that in practice institutional capabilities are reflected in the institutional arrangements that exist. Apparently, landscape actors do have the institutional capabilities to build arrangements which, although not formalised, meet their goals. Perhaps this is because the social networks within landscapes are stronger than the political and bureaucratic networks within jurisdictions. It may also be that the shared place-based identity of landscape actors helps them to combine their different capabilities, to collectively commit and engage in institutional arrangements which suit them well (Folke, 2005; Baser and Morgan, 2008; Pattberg et al., 2019). The question is, however, whether

capabilities alone suffice for transitioning from jurisdictional to landscape governance. Landscape governance capabilities may be *necessary* for such a change, but not *sufficient* as a precondition to make this happen, as other preconditions are also at play. Landscape governance capabilities increase stakeholders' potential to facilitate change, but there may be factors such as bureaucratic hierarchies, power inequalities, poor institutional functioning, counterproductive sectoral plans or larger political obstacles which hamper landscape governance from thriving. If these factors are not taken into account, landscape governance may lead to new challenges of inclusion and exclusion, and to power shifting to the actors who are most capable of having their voices heard (see also Arts et al., 2017; Mugo et al., 2020).

The question now arises whether *capacity development* as frequently proposed by landscape governance scholars is sufficient to instigate governance change. Most likely it is not, unless embedded in a wider process of systemic change (Baser and Morgan, 2008). Such a systemic approach to capacity development would not simply address individual capabilities, but instead would consider the capabilities of the total ensemble of actors to develop the institutional adjustments to reorganise the system, including the roles, responsibilities, hierarchies and power positions of all actors within it (Folke et al. 2005; Baser and Morgan, 2008; Termeer et al., 2014; Pattberg et al., 2019). Such development of a landscape's *meta-capability* seems more effective, as it will help actors to employ multiple capabilities and combinations of strategies which lead to system-wide learning and incremental change (Weick, 1984; Termeer et al., 2015).

7.2. Overall conclusion and final discussion

When I started working on landscape governance in 2010, I found only one scholarly article on the topic, written by Christopher Görg in 2007. I found his article highly inspiring and decided to build upon it. The literature on landscape governance is now burgeoning, a recent addition being the special issue of Land use Policy titled 'Key challenges for governing forest and landscape restoration across different contexts' (Chazdon et al., 2020[31]). Its fourteen authors agree that forest and landscape restoration is a response to the failure of traditional restorative practice that focuses solely on ecosystems, which had been reported by Mansourian et al. (2016), Mansourian (2017) and Sayer and Boedhihartono

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[31] The article presented in chapter six forms part of this special issue, and will soon be available online. It currently is available at https://doi.org/10.1016/j.landusepol.2019.05.039.

(2018). The authors agree that the following are key factors for successful restoration practice: the active participation of multiple stakeholders; an integrated, and multi-level approach to planning, implementation and monitoring; and a proper governance assessment prior to implementation of restoration interventions (Mansourian and Parrotta, 2019; Chazdon et al., 2020). They conclude that instead of 'just' planting trees, the focus should be on the creation and support of landscape arrangements which are self-governing (Chazdon et al., 2020). Although I fully agree with their contention, my research findings show that landscape governance is not necessarily the process to achieve this desirable outcome. Landscape governance is not easy, as it cannot be planned as a project intervention, nor can it be managed as a means for solving erratic or contradictory restoration interventions. Neither is it a clear-cut procedure which, if carefully followed, would lead to more sustainable and legitimate spatial decisions. Instead, landscape governance is a fuzzy process hampered by multiple challenges which are deeply rooted in political and institutional structures of society.

My research findings show that landscape governance needs to be understood as a place-specific process which builds on the interplay between the ever-changing socio-spatial conditions, its institutional practices and its multi-level and multi-scalar policy context. It is anchored in place-based identities, practices and institutions, which makes it powerful and unique, but it is hampered by persistent challenges. Some of these challenges relate to the landscape itself, the sustainability of its functions and the services that it provides. Others relate to the process of its governance, not only the participatory nature of the decision making process, but also the legitimacy of the decisions taken. Both these substantive and process challenges have deeper institutional causes which include the multiple mismatches between the jurisdictional, spatial and temporal scales in which landscapes are enmeshed. Landscape actors are faced by these challenges in manifold ways, yet they are not empty-handed when it comes to overcoming these challenges. They intuitively or strategically develop and employ strategies, thereby making use of the capabilities they have as individual persons or groups of people. Commonly available are their capabilities to overcome substantive challenges. Less commonly available are their capabilities to overcome process challenges. And scarcely available are their capabilities to overcome the underlying institutional mismatches.

Having thoroughly studied the literature and conducted in-depth case study research, I conclude that despite its premise, landscape governance is not the new silver bullet to solve problems of food insecurity, environmental degradation, biodiversity loss and climate change. The idea that landscape governance provides the key to achieving win-win options is naïve; a more critical take is needed to understand how landscapes are governed, and how landscape governance relates to more formal governance structures and hierarchies within societies. Very often, landscape governance remains in the sphere of informality,

with locally agreed landscape governance arrangements not leading to spatial decisions which are formally endorsed, implemented and sanctioned by governments. It raises questions on the potential of landscape governance to provide legitimacy to the decisions that it produces. On the other hand, landscape governance raises questions about the legitimacy of formal spatial decisions and about the sustainability of landscapes which are planned and monitored through the legal instruments provided by states. Many of these formal decisions and outcomes are not acceptable to a landscape's stakeholders, as these decisions and outcomes do not seem to contribute to a landscape's sustainability.

Formalising landscape governance by adding an additional bureaucratic layer to the jurisdictional scale is not a solution to institutional mismatches. What is needed to bridge jurisdictional, spatial and temporal scales of governance is a more radical reconfiguration of statehood, or spatialisation[32] of governance, as this would create new institutional space for aligning different stakeholder needs and interests and integrating sectoral policies goals. Formal and informal place-based arrangements could be a first step towards such reconfiguration, as they bring decisions back to their spatial context and build upon the spatial identities and agency of a landscape's stakeholders. It is here where legitimacy has to be found, through stakeholder agreement and long-term sustainability of the landscape itself. The cases studied in this thesis are examples of novel landscape governance arrangements. All these arrangements have the potential to grow into new legitimising institutions striving for sustainable landscapes. There is a growing body of governance and institutional literature on exploring the potential of such new legitimising institutions such as interjurisdictional landscape councils, citizen's juries, landscape forums or other place-based bodies of stakeholders representing multiple levels of governance, including youth, to ensure a long-term perspective. Most of this literature however is focused on Europe and Latin America, while little is known about their functioning in other parts of the world. Although important for rethinking landscape governance and furthering the concept, these questions go beyond the scope of this thesis.

7.3. Rethinking landscape governance – suggestions for further research

While answering the research questions, new questions were raised which have so far remained unanswered. Remaining to be investigated are the issue of scale mismatches, the issue of legitimacy and the role of international discourse on landscape restoration.

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[32] Term coined by Görg (2007).

Scale mismatches

Throughout this research the issue of scale has been problematic. Scale is studied in various epistemologies, and is understood as the size, scope, magnitude or dimension of multiple phenomena (Padt and Arts, 2014). In chapter three I briefly described ecological scales which have a spatial and a temporal dimension, social scales which organise social life, and institutional or jurisdictional scales at which rules and decisions are shaped (Gibson et al., 2000; Cash et al., 2006; Termeer and Dewulf, 2014; van Lieshout 2014; Wiegant et al., 2020). I identified the different manifestations of scale incongruence as the main institutional causes of both substantive and process challenges. Although landscape actors have multiple ways of dealing with these mismatches, it is here that their capabilities fall short. Whereas I have used literature to describe how cross-scale linkages through interjurisdictional collaboration could help to overcome institutional mismatches, I have not paid much attention to their deeper causes, which are rooted in the political and historical processes of state formation and border creation. Multi-level and multi-scalar networks may bridge scale mismatches in the short term (Huitema and Meijerink, 2010; Smith and Raven, 2012; Scarlett and McKinney, 2016), but in the long term, more fundamental institutional change is needed (Cumming et al., 2006; Behagel, 2012; Swyngedouw et al., 2012; Syles and Baggio, 2017; Nanda et al., 2018). Questioning the legitimacy of jurisdictional boundaries and suggesting a rescaling of statehood, however, requires further exploration of the literature on *politics of scale* and *post-politics*, which I did not study.

Legitimacy

In all the cases studied, I found that landscape governance raises questions on legitimacy about the degree of stakeholder representation, about the democratic process and about the effectiveness of the outcomes. In all the cases, place-based governance arrangements were created, but many of these remained informal and transient. Contentious issues are the representation of stakeholders that do not have the right to vote even though they have a stake, and 'stakeholders' that have the right to vote but do not have a stake. I did not study the details of the decision making process of the governance arrangements in the case studies, nor did I study the quality of the outcomes. Neither did I search for alternative sources of legitimacy such as those suggested by scholars who argue that legitimacy can be found in the norms, perceptions and cultures of a landscape's stakeholders if it benefits both people and place (Swyngedouw, 2005; Massey, 2005; Sørensen, 2005; Lau, 2014; Larsen et al., 2016). Further exploring the issue of legitimacy would require deeper insight into political science and law, which falls beyond the scope of my research.

The global discourse on forest and landscape restoration (FLR)

As stated in chapter one (and subsequent chapters), it is the growing discourse on forest and landscape restoration (FLR) that has raised interest in landscape governance as a concept. The expanding number of regional programmes under the Bonn Challenge and most recently the UN Decade on Ecosystem Restoration are increasingly shaping landscapes and herewith the debate on landscape governance. Besides multilateral efforts there are private sector initiatives such as the New York Declaration on Forests and the One Trillion Trees Initiative, attracting global interest in designing and financing large-scale landscape restoration programmes, but these private sector initiatives also raise growing concerns. Scholars argue that the landscape debate is increasingly becoming a neoliberal and ecomodernist discourse (Pistorius et al., 2017; Nijbroek et al., 2020). Boedhihartono warns against landscape programmes that are *'whack-a-mole'* interventions which keep switching from one perceived solution to deforestation to another, without being very effective (Boedhihartono et al., 2018; Sayer et al., 2020). Scholars argue that many of the public–private interventions are not very well embedded in national or sub-national restoration policies or local initiatives and are increasingly being met with local resistance (Chazdon et al., 2016; Reinecke and Blum, 2017; Langston et al., 2019; Nijbroek et al., 2020). The insights gained from this thesis also confirm that different stakeholders tend to use the interpretations of landscape governance that best support their aspirations. Landscape restoration as scale frames has been studied by Leone (2014), Mulkerrins (2015), Reinecke and Blum (2018) and Nijbroek (2020). It would be worthwhile expanding this line of research to that of landscape governance, to see to what extent landscape governance is also subject to scale framing and what this would imply for emerging landscape governance arrangements and their effectiveness.

Based on these three remaining questions I propose a research agenda on the following interrelated topics: landscape governance and the rescaling of statehood; the legitimacy of new landscape governance arrangements; and the influence of global discourses in shaping place-based landscape governance. Such a threefold research agenda would help further the knowledge on landscape governance and its potential for governance innovation from below.

7.4. Adjusting the conceptual framework

During the research process the conceptual framework presented in chapter one was altered and adjusted several times. The initial version helped me to identify the most relevant

topics and find the literature to support them. Yet during the research the framework had to be adapted to accommodate new concepts and new relations which emerged.

The new concepts and relations which were identified are incorporated in the adjusted conceptual framework (see figure 7.1). Firstly added were the modes of hierarchical, interactive and self-governance, depending on the various modes of interaction between public, private and civic landscape actors. Secondly added were more details on the substantive and process challenges and the ways in which these are manifested within landscapes. Thirdly added were more details on the strategies employed, and fourthly added were the capabilities needed to employ these strategies well. Lastly added were more detailed interrelationships between the modes, the challenges, the strategies and the capabilities, all of which overlap and complement each other. The adjusted conceptual framework will hopefully be used by future researches, to start where this research has ended, and provide an even more robust conceptualisation landscape governance.

Figure 7.1: The adjusted conceptual framework
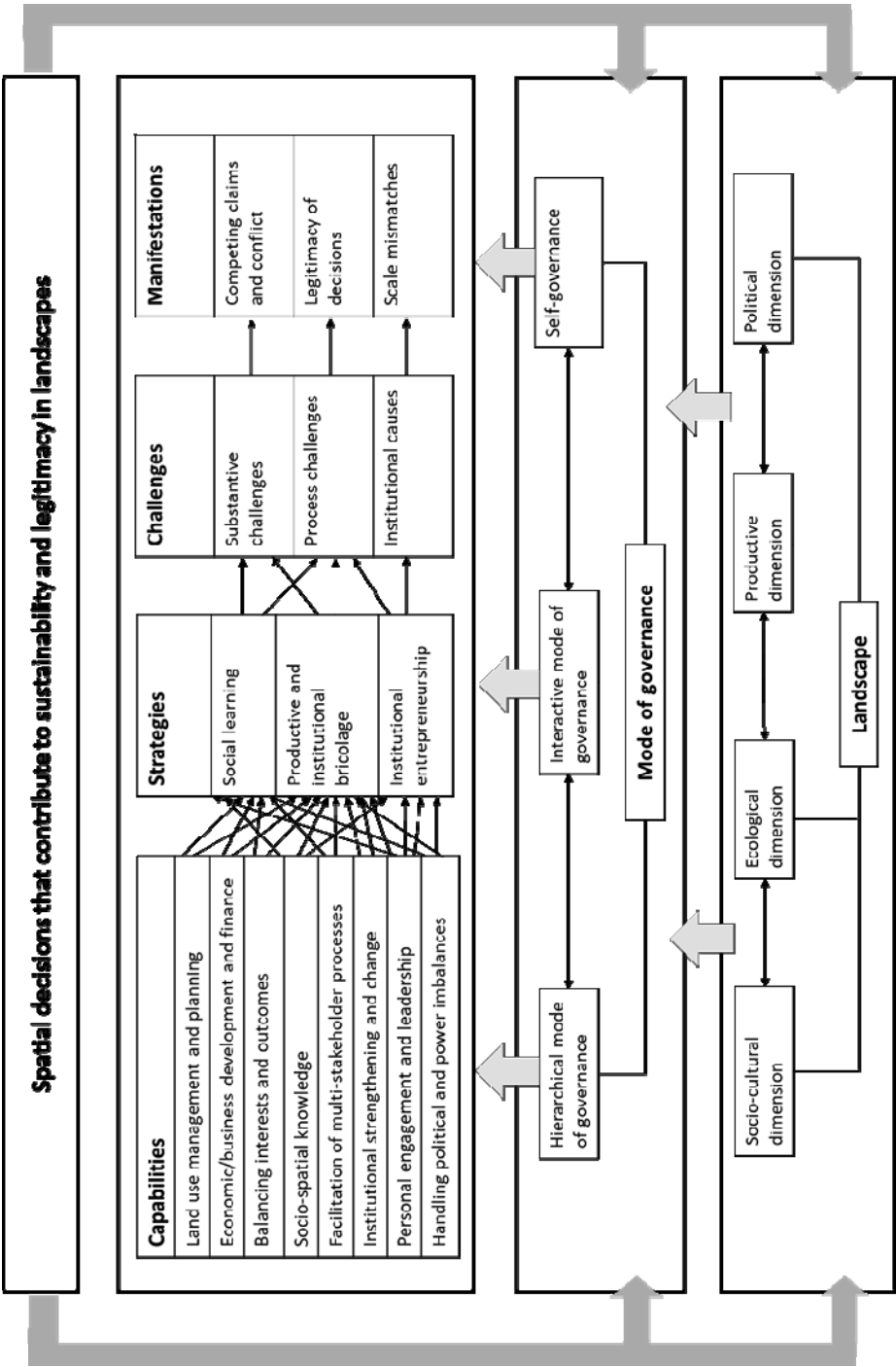
7.5. Reflection on the different methodologies and approaches used

In chapter one I described the methodologies and approaches that I used. In this section I reflect on these methodologies and approaches, highlighting the advantages and disadvantages that were discovered during the research.

Flexible and pragmatic research design

As described in chapter one I opted for an exploratory research design, to be able to flexibly explore the complex nature of landscape governance. I chose to work from a pragmatic research paradigm, as this would help me to manage the research process adaptively and accumulate insight along the way (Tashakkori and Teddlie, 2008; Baser and Morgan, 2014; Kaushik and Walsh, 2019, see chapter one). I did not make a detailed research design beforehand because I wanted to keep the approach open for inquiry and discovery. As mentioned in chapter one, the case studies were chosen progressively, based on the accumulating insights gained during the research process. This approach was helpful, as it prevented me from path dependency and made me search for new questions to be answered. The downside was, however, that every case study was built on its own research question, which made the cases hard to compare. I did realise from the outset that this approach would make it difficult to compare the multiple cases and that it would not be possible to generalise the outcomes to larger populations in different spatial contexts.

After finalising the thesis I realise that a more structured and predefined research design would have allowed me to draw more parallels between the cases and better identify the relations between the different outcomes. At the same time I believe that through a systematic analysis of landscape governance and mobilisation of various strands of literature I have provided a wide overview of landscape governance and its multiple manifestations, challenges, strategies and capabilities that have so far been unexplored. The cases may not be representative, nor can I generalise the outcomes, but the outcome of the cases paves the way for more systematic research to complement my findings with additional empirical work.

Data collection

As explained in chapter one I focused on qualitative data, which I collected predominantly by participatory data collection techniques. I held semi-structured interviews, focus group discussions and interactive workshops, combined with participatory observation. Validation of the findings was done with research partners who knew the context well.

An additional survey was conducted to supplement the case study research with quantitative data, particularly to address the landscape governance capabilities as discussed in chapter six. The 166 survey respondents were all landscape professionals (landscape actors who were directly engaged in landscape action as producers, government officials, civil society representatives and/or academics) and thus multiple perspectives were obtained. All the respondents had some level of understanding of and experience with landscape governance, which made it possible to gain in-depth answers to the questions asked. Although the number of respondents (166) was large enough to carry out a more in-depth statistical analysis, it was not my intention to do so. I do believe that more quantitative data would not have added much value to the findings, and it would not have done justice to the specificity of each individual case of landscape governance. Future quantitative research could, however, build a stronger evidence base for landscape governance, and be based on the revised conceptual framework that I presented in section 7.4.

Cultural bias

I am aware that the influence of my own values and cultural biases regarding landscape and governance cannot be ignored. I thought I would be able to minimise this bias by abstaining from value judgements or normative thinking, including abstaining from defining 'good' landscape governance. But as the research proceeded, I realised that this is not possible, as I used multiple normative concepts like balanced outcomes, sustainability, inclusiveness and legitimacy, none of which are neutral or uncontested. Although I still believe that there is no ideal example of landscape governance, I realise that my perceptions of landscape and of governance are shaped by European interpretations, in which appreciation of participation and democratic control is generally high. During the research process I had long and deep discussions with respondents and research partners on this. Discussions ranged from how a landscape should be interpreted, delineated and identified, to what it is that makes governance interactive and legitimate. My interlocutors challenged me by arguing that sustainability equals the *harmony* between people and their place, which implies that governance roles and responsibilities are not only attached to humans, but also to animals, soils, rivers and trees. They argued that it is the *happiness* of a landscape that provides legitimacy to spatial decisions, regardless of the happiness of humans, animals, soils, rivers and trees. These views inspired me and made me realise that my world view is indeed culturally biased. Throughout the process it was my fellow researchers, co-authors and PhD supervisors who kept me sharp on my biases and sometimes normative conclusions. Lastly, I believe that the awareness of my cultural bias and my persistent questioning helped respondents and collaborative organisations to better understand their own realities, and made them reflect on the uniqueness of their landscape. My curiosity may have helped both myself, and my research participants and partner organisations to learn from each other.

Duration of the research

The entire research process from its very beginning to the final result has taken almost a decade. Since my first article was published in 2013, scholarly debate on landscape governance has developed further and the body of literature has considerably increased. Moreover, the governance realities in the case study countries have changed in terms of modes of governance, as well as in terms of the awareness of and urgency of environmental degradation. Nevertheless, I believe that the outcomes of my research are relevant and timely. The debate on landscape governance is highly relevant, as the implementation strategies for the UN Decade 2021-2030 are currently being designed. The collaborative nature of my research, its publications, presentations, citations and uptake contributed directly and indirectly to this debate.

7.6. Implications for policy and practice

In chapter one I described the societal relevance of this thesis as providing a scientific underpinning of landscape restoration practice, herewith strengthening the *theories of change* of restoration programmes and projects. The thesis has provided an analysis of the critical factors defining the success of landscape restoration. It has highlighted the potential of landscape governance arrangements as an entry point to drive for more sustainable forms of landscape restoration which are better tailored to the socio-spatial characteristics of landscapes. But it has also highlighted the challenges which are encountered on the way.

The challenges to landscape governance are closely related to the way in which policies are designed and implemented. Recognising and acknowledging these challenges will help local and national policy makers to reflect on the implications of their policies, and to value the importance of direct communication with a landscape's stakeholders. The thesis provides insight in how landscape actors attempt to influence policies by stretching their reach. These insights may help local and national policy makers to be more sensitive to local actors' behaviour and to understand the role of social learning, productive and institutional bricolage and institutional entrepreneurship herein. Allowing and stimulating landscape actors to employ and improve their strategies, and constructively responding to these attempts, may be more effective than strengthening command and control. The case studies show the key role of local producers and inhabitants as policy innovators, knowing what works best in their place. They show how local government agents act as brokers of good (and bad) practice between the local and the national, and how national government agents act as brokers of good (and bad) policy options. Facilitating the creation of

institutional space for all these actors to meet, talk and debate is key in designing policies that fit in their context.

Chapter one also mentioned the value of this thesis in providing a scientific basis for national and international capacity development efforts by highlighting existing capacity gaps and needs. The outcomes of the thesis show, however, that capacity development alone is not enough to strengthen landscape governance in practice. Moreover, the usual modalities of capacity development such as training or skill-building workshops do not lead to the active engagement of actors in a systemic approach to landscape change. Instead, approaching landscapes as systems of multiple actors, each with their own needs and aspirations, may lead to critical thinking and more experimental behaviour. The development of a landscape's *meta-capability* seems more effective, as it will help all actors to employ multiple capabilities and employ combinations of strategies for system-wide change. Exposing actors to alternative models of governance through international exchange may inspire them to try out new things, and supporting international networks which do so may be an effective intervention towards achieving incremental change.

Finally, for experts and practitioners designing restoration projects and programmes, I would like to highlight that landscape governance has potential for balancing production, consumption and protection. But the creation of landscape governance arrangements cannot be done *for* people, but is done *by* people, if they have the option of crafting the institutions that they like and respect.

7.7. Personal reflections

My motivation to carry out this research was that after thirty years of engagement in development-related work, I felt the need for deeper reflection on what I had been doing so far. I decided to carry out deeper research focused on landscape governance, which had become my main area of work. My aim was to understand the deeper complexities of landscape governance and its implications for governance in general. I wanted to understand the relation between landscape governance and landscape restoration, and build a more thoughtful framework for governing landscape restoration to ensure that restoration is done for the benefit of those living in and owning the landscape.

The road has been long but pleasant, and I have learned a lot. First of all, I learned that landscape governance is far more complex than I thought it was. It can only be understood through an interdisciplinary and participatory approach. It is not a solution to the multiple problems of resource pressure, environmental degradation, biodiversity loss and climate

change. Nevertheless, it provides opportunities to strengthen local stewardship, create ownership, and nurture new forms of governance which better fit its spatial context.

Secondly, I learned to enjoy the continuous interaction between my regular work and my scholarly work. Combining practice with science made me realise the enormous value that science can add to practice. It places practice into a wider conceptual context, which helps to get to a deeper understanding of what practitioners tend to perceive as obvious. In every step of the process I learned to dig deeper, and put under scrutiny my prior experience and assumptions. I learned to question the relations between governance systems, stakeholder behaviour and the deeper values underlying spatial decision making. These insights did not make me do different things, but it made me do things differently, more reflexively, more thoughtfully, and more critical on the frequently changing trends in development-related work.

Lastly, the research made me reflect on my own role as a capacity development professional. It made me realise that new forms of governance cannot be planned or designed, neither can people be educated or trained for them. The overall effectiveness of capacity development is therefore limited, unless embedded in a wider context of policy and practice. Capacity development should therefore not be considered as a stand-alone action, but as a part of a larger change process, addressing an ensemble of stakeholders, each having their own roles, positions, responsibilities and capabilities to change.
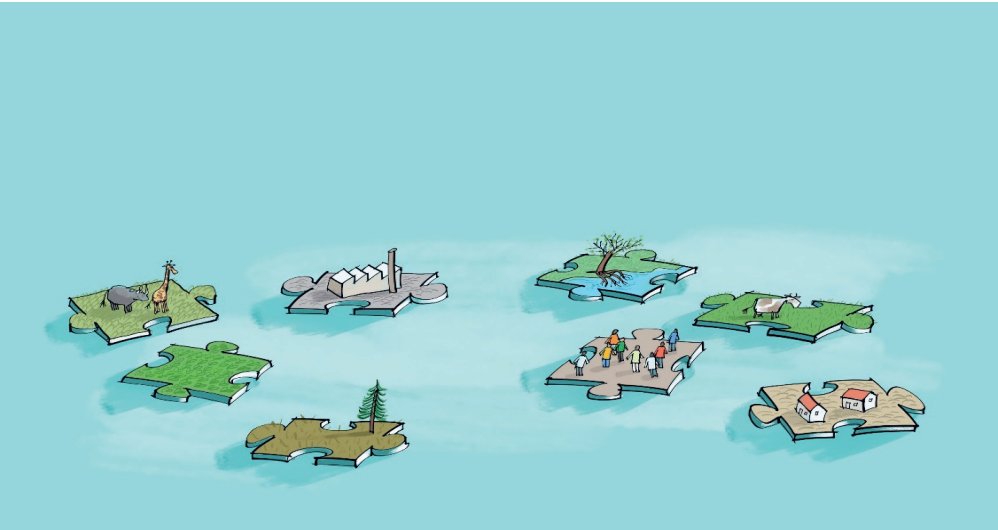
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Summary

Landscape governance has gained momentum because of its premise to reconcile conservation and development within landscapes. It is considered a pathway towards sustainable landscape restoration responding to the socio-cultural and productive needs of those living within landscapes. In this thesis, landscape governance is defined as a place-based, multilevel and multi-stakeholder process of negotiation and spatial decision making for sustainable land use. Ideally, it is achieved by balancing production, protection, and consumption needs and aspirations of the actors involved. Landscape governance bears some resemblance to environmental governance, yet it is more spatially focused. It has links to spatial planning but is not necessarily constrained by political or administrative boundaries, thus generally falls outside the scope of the formal spatial planning structures of states. Despite its popularity, however, little is known about landscape governance and how it unfolds within different socio-spatial contexts. This thesis therefore aims to fill knowledge gaps by systematically analysing its manifestations in terms of actor constellations and institutions, the challenges it encounters, the strategies employed to overcome these challenges and the capabilities this requires. It responds to the four research questions which are presented in chapter one as: 1) How is landscape governance manifested in various modes? 2) What are the major challenges that hamper landscape governance, and what are the deeper causes of these? 3) How do landscape actors deal with these challenges, and what explains their strategies chosen and outcomes achieved? 4) Which capabilities do landscape actors have or need to have in order to employ the strategies to overcome substantive and process challenges?

Chapter one provides an overview of the scientific literature relevant to landscape governance. So far, the literature is fragmented over various bodies of literature, ranging from concepts like 'sense of place' to ecosystem functions and services, productive landscapes and politically inspired 'politics of scale'. All these concepts are combined into an interdisciplinary conceptual framework for analysing landscape governance in an integrated manner. This framework lays the foundation of the empirical chapters two, three, four, five and six and the final reflection in chapter seven.

Chapter two presents three cases of landscape governance in Indonesia, each of which is the result of the interplay between the socio-ecological conditions of landscapes and the actor constellations within. It responds to the first research question as it identifies different modes of public–private, public–civic and public–private–civic governance. It shows how

each of these modes lead to different manifestations of landscape governance, ranging from top-down and managerial modes of governance to more collaborative modes of governance.

Chapter three describes a case of civic-driven landscape governance in Southwest Amazonia (Peru, Brazil, Bolivia). This continuous landscape stretches beyond political and administrative boundaries and finds itself in the midst of a turbulent process of infrastructural disclosure, regional integration and redefinition of its own identity. It responds to research questions two and three, as it analyses the way in which drastic environmental change has led to the emergence of a transboundary social network engaged in societal learning. However effective at the landscape level, this network has largely remained informal and is not used to its potential by governments for transboundary spatial planning.

Chapter four presents a case of private-sector-driven landscape governance in Indonesia's palm oil sector. It responds to research questions two and three by analysing how the global debate on sustainable palm oil production leads to private companies searching for more sustainable and inclusive production models. It sketches the development of a multifunctional concession design which is supported by local actors yet has difficulties in securing approval from government levels beyond the local.

Chapter five presents a public-sector-driven case of landscape governance in Rwanda and responds to research questions two and three. It shows how the strong government policies on land use, agricultural production and forest landscape restoration create substantive and process challenges for civic and private actors whose land use is steered by livelihood needs and commercial interests. Yet it also describes the strategies that these civic and private actors undertake to overcome these challenges, as expressed in their productive and institutional behaviour.

Chapter six does not present a particular case but analyses the outcomes of a survey among landscape professionals from around the world. It responds to research question four, as it analyses the multiple capabilities that stakeholders have or need to have to overcome substantive and process challenges. It concludes that capabilities to overcome substantive challenges are reasonably available, while capabilities to overcome process challenges and the institutional challenges underneath are much harder to find.

The final *chapter seven* provides a more systematic response to the four research questions asked and a meta-analysis of the overall outcomes, followed by a deeper reflection on the implications for research, policy and practice.

Research question 1: How is landscape governance manifested in various modes?

Responding to the first research question, the research outcomes indicate that landscape governance can be manifested in multiple modes of governance, depending on its spatial context, the drivers of degradation and the way in which public, private and civic actors collaborate in order to restore. Within landscapes, different modes of governance may co-exist and overlap, as a response to different environmental issues at stake. Moreover, landscape governance is not static, but dynamic, characterised by different modes of governance which continuously shift. The modifiers of these shifts are to be found in the wider societal trends of democratisation and decentralisation, international commodity chains, and societal discourses on nature conservation and landscape restoration. Within such changing contexts, landscape governance provides new institutional space for stakeholders to interact and find more collaborative modes of governance fitting the specific socio-spatial conditions of their landscape.

Research question 2: What are the major challenges that hamper landscape governance, and what are the deeper causes of these?

In many cases, landscape governance implies two types of challenges: substantive challenges which relate to the landscape itself, and process challenges which relate to its governance process. The substantive challenges are reflected in competing claims and conflict over land use, enforced by sectoral policy frameworks or *silos* which hardly interact. Process challenges relate to the level of participation in spatial decision making, and the legitimacy of decisions taken. Both challenges have deeper institutional causes related to mismatches between the jurisdictional, spatial and historical scales on which society is built. As landscape boundaries rarely tally with jurisdictional boundaries, legitimate stakeholder processes tend to involve stakeholders who do not have a clear stake in landscape issues, while those having a stake are underrepresented, leading to politically steered landscape agendas which are not supported by those living and working in landscapes.

Research question 3: How do landscape actors deal with these challenges, and what explains their strategies chosen and outcomes achieved?

Different stakeholders have different strategies at their disposal, depending on the livelihood objectives and the policy options that they have. In all cases, landscape actors overcome substantive challenges through different forms of integrated land use, sometimes based on traditional knowledge, sometimes based on novel business insights. Their strategies are either unconscious and intuitive, or more deliberate and strategically stretching the boundaries of sectoral policies on food production, nature conservation and economic growth. Actors overcome process challenges by following horizontal pathways of

engaging in place-based dialogue, social interaction and collaborative learning. With this, they create social support for more integrated land use, and strengthen their landscape's position within centrally steered policy frameworks which are poorly connected to landscape practice. More strategically positioned actors follow vertical pathways of engaging in multi-level policy networks and multi-scalar policy dialogue, in an attempt to negotiate alternative policy options and build bridges between the jurisdictional, spatial and temporal scales in which their landscape is enmeshed. The transformative power does not lie in the individual strategies but in the ensemble of strategies, as it is the ensemble of social interactions at multiple levels and scales that drives policy change.

Research question 4: Which capabilities do landscape actors have or need to have in order to employ the strategies to overcome substantive and process challenges?

The choice for a particular strategy or combination of strategies partly depends on the substantive, process and institutional capabilities that landscape actors have, but also on the wider institutional context and the social, sectoral and hierarchical position of actors within. In general terms, the capabilities of landscape professionals to tackle substantive challenges are relatively high, as they have sufficient technical skills and combine these with the particular landscape knowledge and experience that they have. Their capabilities to tackle process challenges and institutional challenges, however, often fall short. Process capabilities are rarely learned at school and therefore depend on the personal motivation and interest of individuals. Institutional capabilities not only fall short but are hardly recognised as such and rarely addressed in professional capacity development programmes. These seem to depend on the professionals' networking skills and their ability to move beyond their mandate, which is influenced by the institutional environment in which they operate and the hierarchical positions that they have.

The overall conclusion as presented in chapter seven is that despite high hopes, landscape governance is not the *silver bullet* to reconcile environmental, social and economic concerns, as its challenges should not be underestimated. Landscape governance cannot be captured in just one mode of governance, as in reality, multiple modes co-exist, overlap and constantly shift, due to changing roles and behaviours of the public, private and civic actors involved. In all the cases studied, landscape governance arrangements provide space for these actors to interact, but too often the results remain informal. The reason for this is that landscapes do not necessarily represent a formal level of governance, meaning that decisions taken are not based on formally agreed democratic rules and therefore remain 'in the shadow of hierarchy'. The deeper causes lie in the mismatch between jurisdictional, spatial and temporal scales, leading to substantive and process challenges which are not easily overcome. Typical are the interrelated challenges of asynchronous jurisdictional and sectoral boundaries and the lack of legitimacy of decisions taken, which frustrates decision-making processes and makes these prone to power imbalances and conflict. Despite these

challenges, landscape actors have multiple strategies to advance, based on their productive and institutional behaviour. These strategies are either informal and intuitively employed to stretch rules and regulations, or more deliberate and strategically employed, to transform the rules into more flexible ones that better suit their spatial context. Usually, actors are capable of combining productive practices at field, farm or landscape level and create multifunctional land use systems that combine production, consumption and protection. However, more strategic capabilities of tackling multi-level policy conflicts and finding alternative sources of legitimacy through place-based governance arrangements often fall short. Strengthening the capabilities of individual actors through capacity development interventions is not enough to arrive at the desired transformation from jurisdictional to landscape governance. Rather than developing individual capabilities, a more systemic institutional change is needed, which requires a total ensemble of capable actors to reorganise systems, including the roles, responsibilities, hierarchies and power positions of all actors within. The landscape governance arrangements studied in this thesis have the potential to contribute to such systemic change, provided their internal and external dynamics lead to new legitimising institutions that bring decisions back to their spatial context. If so, landscape governance may provide a new entry point for more sustainable forms of landscape restoration which are better tailored to the socio-spatial context of their landscapes.

About the author

Cora van Oosten (1964) was born in Zeist, which is in the heart of the Dutch landscape Utrechtse Heuvelrug. Driven by her interest in the connectedness between nature, society and culture she studied human geography at Utrecht University (Netherlands, 1982-1988). She specialised in the geography of developing countries, currently referred to as International Development Studies (IDS).

Cora's first international endeavour was in 1986, when carrying out her MSc research commissioned by the African Studies Centre in Leiden, in the remote Kwale District of Kenya. Here, she explored the relation between people's food security and their socio-spatial environment and developed a passion for discovering the 'elsewhere'. Cora started her career at the International Agricultural Centre (IAC) in Wageningen. But driven by curiousity, she joined Netherlands Development Organisation SNV, fulfilling multiple long-term contract periods overseas. She was posted to the Northern drylands of Burkina Faso's Sahel (1989–1994), as an advisor to the spatial planning service of the regional government. Her next assignment was in Ghana (1995–2000), in Nkwanta, a small town in the mountainous Northern Volta Region (currently named Oti Region). Here, she established a programme for socio-economic empowerment of women, in collaboration with the Catholic Diocese of Jasikan. Her subsequent assignment (2000–2003) brought her to Bolivia's Department of Pando, deep in the Amazon rainforest, where she spent three years working on decentralisation and local governance within the borderland neighbouring Peru and Brazil. From 2003 to 2006 Cora lived in Cambodia, where she carried out voluntary and consultancy assignments on decentralised natural resources management with UN agencies and partners in Phnom Penh. Throughout the years, *place making* became Cora's second nature, as she found joy in adapting to and blending in the biophysical, social and cultural identities of her new homes, and learning to appreciate the sometimes harsh conditions of remote places.

In 2006, Cora returned to the Netherlands and joined her Alma Mater in Utrecht to assist in the design of an IDS master programme and explore the world of education. In 2008, she returned to the IAC, which is now the Wageningen Centre for Development Innovation, part of Wageningen University and Research. In the position of senior project and programme manager she developed a portfolio on landscapes, restoration and governance. This position brought Cora straight into the heart of the upcoming global landscape debate

and made her engage in international networks such as the Global Partnership on Forest and Landscape Restoration, the Landscapes for People, Food and Nature Initiative, and the Global Landscapes Forum, the latter being part of CIFOR-ICRAF. It was in 2018 that she became more directly involved in the latter, in the position of coordinator of the GLF-WUR-UNEP-led Landscape Academy and its learning programme.

Cora's work has always been characterised by high levels of participation, interaction and capacity development. She has run dozens of training programmes, workshops and learning events on landscape approaches and landscape governance across the globe and has taken part in various policy processes and multi-stakeholder dialogues. While doing so, she came to realise that she was learning as much as her participants, which made her reflect and start a more systematic process of asking questions and finding answers – a continuous learning process which resulted in this thesis. Its finalisation is well timed, at the beginning of the UN Decade on Ecosystem Restoration, which makes it a direct contribution to the Decade, and to the design and implementation of restoration projects worldwide.

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