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Scale Framing in a Landscape Restoration Process:
The Case of Water in the Langkloof, South Africa



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List of Abbreviations

10Ps	The Ten Principles of a Landscape Approach
4R	The Four Returns Project
4R DevCo	The Four Returns Development Company
AIP	Alien Invasive Plants
BEE	Black Economic Empowerment Programme
CDI	WageningenUR's Centre for Development Innovation
CoE	The Council of Europe
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DFF	Deciduous Fruit Farmer
DRDAR	Eastern Cape Dept. of Rural Development and Agrarian Reform
DWS	Department of Water and Sanitation
EC	The Eastern Cape Province
FAO	The Food and Agriculture Organisation of the United Nations
GIB	Gamtoos Irrigation Board
GPFLR	The Global Partnership on Forest and Landscape Restoration
IB	Irrigation Board
IJR	The Institute for Justice and Reconciliation
IUCN	The International Union for the Conservation of Nature
LL	Living Lands
LOWFT	Language of the Wilderness Foundation Trust
NMBM	Nelson Mandela Bay Municipality
NWA	National Water Act, 1998
NWRS	National Water Resource Strategy, 2004
PE	Port Elizabeth
SA	South Africa
SANBI	South African National Biodiversity Initiative
SES	Social-Ecological Systems
WC	The Western Cape Province
WfW	Working for Water
UN	The United Nations

Abstract

Landscapes are presented here as complex social-ecological systems which play host to the multitude of entities, situated on multiple scales and levels with often competing productive and environmental needs and priorities. The dynamic cross-scale, cross-level interaction of these entities impact a landscape's capacities to provide for the needs of its inhabitants and internal and external dependents.

The analysis of scale framing, being the positioning of a frame at a specific scale or level, is posited as yielding useful information on scale dynamics, the understanding of which should provide benefits for the design, planning and implementation of a landscape restoration process.

In this thesis, a scale frame analytical approach was applied in an effort to understand the scale dynamics around the Kouga River Catchment in the Langkloof, South Africa. The objective was to gain an understanding of relationship and interactional challenges which are impacting the situation on water provision and contributing to stagnation in the issue resolution process. A series of semi-structured interviews were conducted with key actors including commercial farmers and various administrative officials, as well as a host of civil society actors and representatives of local organisations.

The results show that while a host of temporal, spatial and administrative scale frame mismatches on a plurality of issues contribute to communication, knowledge sharing and networking disconnects which affect the achievement of water security, areas of common concern, shared ideas on how to progress and motivation toward improved relationships and a cross-level co-management structure, offer valuable entry points and positivity toward a coming landscape restoration process.

The thesis concludes that awareness of the roles of scale framing in complex interactional processes allows scale frame analysis to be considered a useful analytical approach to understand scale dynamics in a landscape restoration process.

Chapter 1 - Introduction

This thesis is the outcome of a research project conducted as the final element in my MSc International Development Studies (MID) at Wageningen University. The project was completed under the supervision of prof.dr.ir. C (Cees) Leeuwis of the Strategic Communications Department (COM).

The topic of the research project is “Scale Framing in Landscape Restoration Processes”. For this research project, a scale framing approach is applied in an attempt to gain an insight into scale dynamics in landscape restoration processes and further to demonstrate scale framing as one method of gaining an understanding of the actor relationships contributing to and derived from these scale dynamics.

To achieve this aim field work was completed in the form of a case study in South Africa, as part of the Four Returns project’ initial ventures into the Langkloof region in the Eastern Cape. For this project, some 30 interviews with public and private sector actors within and outside of the landscape were completed. This case study has been the main body of work during the research project and has allowed the formulation of most of the results and conclusions presented in this thesis.

Parallel to this field work, an online discussion on the Learning Network of the Global Partnership on Forest and Landscape Restoration (GPFLR) took place. Despite best efforts however, and in consideration of logistical challenges, this discussion failed to bare much information of use.

This thesis will discuss the theoretical underpinning of decisions and actions during the course of the project, the methodology used to design and conduct the research, present the final results derived from the activities and provide concrete conclusions on the role of scale framing for understanding scale dynamics during a process of landscape restoration. In the discussion chapter, the validity and relevance of the findings, the employed methodology and the impact of logistical challenges on outcomes will be analysed.

Firstly though, in this introduction, it is important to present my own motivation for this research and starting point in reference to landscapes and restoration, give an introduction to the key topic of the research and present the main objective and questions which have guided the research.

1.1 Personal Motivation and Starting Point

Landscapes are systems. Like any systems, landscapes have inputs, processes and outputs. In the case of a landscape the many inputs can be weather, flora and fauna, inputs for industrial and agricultural production, homes and infrastructure and of course humans and human behaviour, emotions, wishes and ideas.

Within the landscape, the processes at work see the formulation of relationships between people and the ecological aspects of the landscape, between people themselves, between different ecological elements within the landscape and between inhabitants and elements within the landscape and the outside world. These relationships develop and exist over the course of time, are intermittent and are long lasting or come and go in the blink of an eye. Through interaction, these relationships shape and define their constituents, determine the well-being of the landscape and its inhabitants, give a sense of place and meaning and allow the landscape to act as a reference point in looking out to the world.

The outputs then of this landscape system and its internal and external relationships are not limited to the produce of agricultural and other industrial processes, but include natural assets such as biodiversity, carbon-capturing capabilities, habitats for wildlife, green leisure areas, water sources and disaster risk reduction areas such as flood plains. Other landscape outputs take on more social paradigms such as conflict and cooperation, wealth and poverty, risk and uncertainty, power and inequality, education, leisure and enjoyment as well as psychological elements such as a sense of home and ownership, belonging, connection to individual and shared histories and wishes and wants for the future.

As such a system, a landscape can, for some, represent their home and total life experience, while for others, a landscape can be an event in space and time, a workplace, a holiday destination, a statistic or study area, a policy subject, a sourcing area for materials and represent nothing more than one element in a wider picture. Landscapes then, are very different things for different people, each with their own needs, challenges and expectations. The ability of each of these groups of people to obtain what they desire from the landscape depends on their interaction, negotiation, compromise and trading. Some have more success than others however, as structural issues of access to policy and resources, wealth, culture and education, create and highlight disparities, inequalities and other social challenges. Imbalances and inequalities do not only exist between human inhabitants and beneficiaries of the landscape however. In the relationship between humans and nature, humans consistently fare better and benefit more from the landscape than the landscape does from humans. This inequality leads to resource depletion of the landscape and degradation of its natural capacities.

This has and is now happening to such an extent that the effects are impacting human livelihoods, animal wellbeing and economic outlook.

These previous paragraphs are my own view on landscapes and human interaction with landscapes. I have formed this view during my (albeit limited) interaction with landscape approaches, particularly restoration, during my studies and work. This view was further enhanced in the process of this thesis project. These experiences have shown me that landscapes are place-bound examples of damaged and challenged relationships, the understanding and reparation of which are key for the future of the many millions of people who depend on physical landscape outputs.

Given that the processes in a landscape are affected by and contribute to processes and issues outside of the landscape, issues of scale become relevant. Scale thinking involves the analysis of relationships of people, policies, decisions, actions, ideas and moments at different levels of many different scales, be they spatial scales, administrative scales or temporal scales. There is an acceptance that processes on the global level have consequences on the local level and vice versa and also that communication and participation in these cross-scale, cross-level decision-making processes can often be unbalanced and ineffective. Thus, how events at one level on a scale relate to and impact points on other levels and the impact on the landscape will form a central theme in this research.

Framing theories offer a chance to understand how actors perceive, incorporate and act upon their situation in a landscape and in their interaction with other landscape actors. These theories hold that through interaction, and based on their own personal experiences, norms and values, people cognitively form understandings that they carry with them in their interaction with the world, often verbalising or presenting these as issue frames. These issue frames and the processes which contribute to their formulation offer an analytical entry point from which to understand landscape relationships. Scale framing is in this case particularly relevant, as it highlights the different perceptions actors may hold about out proceedings at different levels on different scales.

The core of this project is aimed at finding a way for actors involved in and around the landscape to interact for mutual and landscape benefit, while allowing outsiders, such as development practitioners, to understand these relationships and incorporate this understanding toward producing balanced, sustainable interventions and ideas.

1.2 Landscapes Under Threat

Human activity has, over the centuries, utilised many of the world's natural resources. Agriculture, resource extraction, pollution and the general spread of human occupation has placed pressure on the global ecosystem. As a result, two billion hectares of land are considered to be degraded (IUCN website). This comes at a time when the global population is growing and with increased standards of living, come increased demand for resources such as food, fuel and fibre (van Oosten, 2013). This increase in demand for resources coincides with an increased demand for conservation, environmental protection and biodiversity concerns, which together produce the a perfect storm of struggle and conflict to meet and balance these challenges (Sayer et al., 2013). Agriculture, both through farming and deforestation for farming space, produce 20-27% of global greenhouse gases (Hammersley/Atkinson, 2007) and with continued rapid urbanization, the need for continuing industrialisation and intensification of agricultural practices is ever present (van Oosten, 2013), further pressurizing the world's landscapes, which are often inhabited by some of the world's poorest communities and countries.

While this situation appears dire, action is being taken at the highest levels. Under the umbrella of the Global Partnership on Forest and Landscape Restoration (GPFLR), the 2011 launch of the Bonn Challenge, the largest landscape restoration initiative ever, serves as an implementation platform for numerous existing international commitments with restoration components, with a goal to restore 150 million hectares globally by 2020. As such, the Bonn Challenge seeks to catalyse early action on Reducing Emissions from Deforestation and Forest Degradation (REDD+) under the UN Framework Convention on Climate Change (UNFCCC) as well as stimulate concerted action towards achieving Aichi Biodiversity Target 15 on restoration of at least 15 per cent of the world's degraded ecosystems by 2020, and international goals related to combating desertification and land degradation (Silverman, 2008).

Private sector involvement in landscape restoration processes is also a growing theme and represents the core message and purpose of both COMMONLAND and Four Returns Development Company. With the global middle-class expected to rise 172% by 2030, the desire to serve this market will take place in an operating environment of scarcer and more price-volatile markets and production chains (Stake, 2010). Add to this the fact that global water supply will be challenged as by 2030, 40% of the population will have limited or no access to fresh water and sustainability mega-forces such as climate change, urbanisation, resource scarcity, food security, deforestation, etc. will all pressure the business operating environment, the rational for action is clear (Stake, 2010).

Given the impetus behind landscape restoration and related landscape approaches (van Oosten, Gunarso, Koesoetjahjo, & Wiersum, 2014), the need for a broad conceptualisation of landscape approaches was felt (Sayer et al., 2013). The resulting Ten Principles of a Landscape Approach to reconciling agriculture, conservation, and other competing land uses (Sayer et al., 2013) are the result of an extensive literature review, consensus-making process and are further validated by a practitioner survey. The principles are normative standards, guiding points, rather than static points on a checklist. The objective of the 10Ps and their formulation is to define good practice in relation to working with landscape-focused theories and processes. The 10Ps are suitable and justifiable for use in this research as they have been adopted by a wide array of leading organisations engaged in landscape approaches, including the GPFLR, IUCN, and UN bodies.

So what are the 10Ps? Since Sayer et al. proposition that any successful landscape approach should incorporate the principles into their thinking, and that current conflicts around land use and environmental goals exist due to the lack of consideration of the principles, they can then be considered as people centred reflections on best practice, shifting from “where and what” thinking to “how and why”, providing a normative basis for the consistent application of the landscape approach and allowing benefits to flow mutually to a wider array of stakeholders (Sayer et al., 2013). The principles have the ultimate aim of acting as an innovation which can address the challenges of agricultural production while minimising environmental impact and degradation. They are; Principle 1-Continual learning and adaptive management: The non-linear and complex relations that exist within a landscape mean that the landscape is open to continual change and perception. These changes must inform decision-making, so continual learning and adaptation is necessary. Dynamic management is necessary to recognise and adapt to the fluent situation to learn and enhance cooperation; Principle 2-Common concern entry point: This principle promotes the formulation of an easy-to-agree-to overarching objective which will stimulate the participation of stakeholders. Securing commitment when stakeholder objectives are opposing can be difficult, so the entry point should be mutually beneficial for all participants; Principle 3-Multiple scales: Processes active on different scales and levels inherently affect each other. Feedbacks and system influences affect decision-making and thus outputs at different levels, requiring an awareness of each level of each scale; Principle 4-Multi-functionality: As many sectors exist within a landscape, trade-offs exist as to the goods and services offered and required around the landscape. The interactions between these different functions represent a management challenge to prevent conflict or competing claims; Principle 5-Multiple stakeholders: Multiple stakeholders will frame the issues at hand in different ways. Thus it is important to include all stakeholder considerations while recognising that only some will form central objectives in negotiation. Thus a patient exploration of frames is required; Principle

6-Negotiated and transparent change logic: Building and maintaining a widely understood and accepted change logic and objective is vital for restoration success. Stakeholders need to agree on the change that should take place and the legitimacy of other actors which effect that change; Principle 7-Clarification of rights and responsibilities: The rights and responsibilities of different actors need to be clear to, and accepted by, all stakeholders. Rules and regulations should be explicit to inform good management and practice. Clarification of conflicting claims will require negotiated changes, impacting expectations; Principle 8-Participatory and user friendly monitoring: Information gathered through monitoring and evaluation should be available to all stakeholders within the process. This entails the participatory generation, processing and distribution of knowledge to inform better decision-making, issue framing, etc.; Principle 9-Resilience: Identifying threats and challenges to a landscape can prevent the occurrence of major unplanned changes and shocks, which in general are unwelcome. Maintaining and bolstering resilience, which is the capacity to avoid or deflect such threats and to absorb and recover from their manifestations, is vital to sustain processes and benefits in the longer term. Improving resilience can be achieved through effective communication leading to shared learning; Principle 10-Strengthened stakeholder capacity: The shared learning facet of landscape approaches and processes seeks to develop stakeholder capacities to contribute to and benefit from the interaction.

The 10Ps do take into account the complex nature of landscapes. The principles detail the multi-functionality, multi-scale and multi-stakeholder nature of landscape activities and processes, confirming the need to incorporate analysis of stakeholder relations across different scales and levels, as well as analyse the relationships between people and the environment and each other. These cross-scale, cross-level relationships with their inherent causes and effects, are called scale dynamics (Cash et al., 2006). Scale dynamics in a social-ecological system (SES) or human-environment relationship are essential to understand if any sustainable co-management or co-practice can take place to support the landscape and its dependents. Determining these scale dynamics warrants an investigation of the many perspectives held by the many different actors who are each situated at different levels and focus on different scales. To do this a scale framing approach was applied in order to understand stakeholder perspectives on a landscape issue. Both of these concepts are explored in the conceptual framework.

1.3 Problem Statement

Academically speaking, the problem that this research hopes to address is a lack of knowledge in relation to the role of scale frames in a process of landscape restoration. Scale frame analysis has been shown to be of use in analysing complex environmental and governance processes (Kurtz, 2003;

Lieshout, 2014; Termeer, Dewulf, & van Lieshout, 2010; Maartje van Lieshout, Art Dewulf, Noelle Aarts, & Catrien Termeer, 2011b; van Lieshout, Dewulf, Aarts, & Termeer, 2012) but within the landscape-based literature, although evidence exists that the need to recognise scale issues and stakeholder perspectives is accepted (Sayer et al., 2013), no explicit mention of scale framing has been found. Although there is knowledge to show that scale frames are employed strategically by actors to set agendas for interaction, thereby making it possible to strengthen their own position and reduce that of other actors (Lieshout, 2014) it is also felt that scale frame analysis may be useful to understand cross scale and cross level dynamics which are accepted to cause challenges in engaging with and addressing the needs of constituents of a human-environment relationship (Cash et al., 2006; Ostrom, 2009b; J. Vervoort et al., 2014; J. M. Vervoort, 2011). If this can be demonstrated, it offers landscape restoration practitioners an approach through which they can further their understanding of the relationships in and around their targeted landscape.

1.4 Research Objective

The objective of this research is to contribute to the understanding of how complex multi- and cross-scale landscape relationships can be understood by highlighting the current and possible roles of scale framing in landscape restoration processes.

The conceptual framework chapter of this thesis will show that socio-ecological systems, or human-environment relationships, are impacted by complex, dynamic, cross-scale and cross-level relationships and interactions. The recognition and interpretation of these scale dynamics requires an approach in which the explicit thoughts, perceptions, interpretations and convictions of actors are analysed and correlated to specific levels on specific scales. It is my assumption that scale frame analysis, taken as analysing the formation and situation of actor issue frames to specific scales and levels, is an approach which could yield this useful information.

On an operational level, the research seeks to use a case study and online discussion to explore how scale frame analysis could contribute to understanding scale dynamics around landscapes and thus is useful for consideration in future landscape restoration processes.

1.5 Research question

Following from the research objective outlined above, it is primarily important to understand and analyse the role of scale framing in these restoration processes. Only once this is achieved can any thought for future uses be formulated. Thus, the main research question is:

- *What is the role of scale framing in landscape restoration processes?*

My assumption is based on the need to understand scale dynamics around human-environment relationships. However, since scale framing is a relatively new element in framing discourse and in wider literature and research, other methods for understanding scale dynamics may exist. It is important to understand these as well as how issues of scale are considered by landscape restoration actors and practitioners. Fully understanding the roles of scale framing in landscape restoration requires understanding how the different actors employ scale frames in their interaction. These two elements are elaborated on and translated into specific research questions in the conceptual framework.

1.6: Research Context - The Water Issue in the Langkloof, Eastern Cape, South Africa

South Africa is a country of some 54 million people on the southern tip of the African continent, covering 1.2 million square kilometres. In 1994, the election of Nelson Mandela as President brought an end to Apartheid; a system of law which enforced racial segregation, the exclusion of black and coloured people from many public and private institutions and extreme income and welfare inequality. Although this system has been gone for 20 years now, much inequality remains and the country still suffers from political, economic and social problems (IJR, 2014; Twala & Oelofse, 2013). Unemployment stands at 25%, with 50% unemployment for youths, HIV/AIDS is a major social and economic challenge, with almost 20% of the population infected (World Bank Data) and racial issues are still prevalent, with limited integration in many areas and across different socio-economic statuses (IJR, 2014). Poverty is widespread, particularly among the non-white sections of society, and is spreading, particularly in rural areas which are home to around 20 million of the population (World Bank Data).

The country is classed as semi-arid and water supply is a key issue; the country is ranked as the 30th most arid country in the world (Sandbrink, 2013). The pressure on the hydrological system is a primary hindrance to national development, as 98% of current surface water resources are committed for use for agriculture, domestic supply and industrial use (DWS, 2009).

The agricultural sector is the primary user of water in South Africa, accounting for over 54% of total use. This heavy use is at odds with the benefit of agriculture for the nation, as only 14% of the workforce are engaged in agriculture and the sector contributes only 4% of GDP (Perret, 2002)

A growing population, increased demand from a rising middle class and the unpredictability around the impacts of climate change are likely to contribute to the country reaching its water provision limits in the coming years (Sandbrink, 2013).

The National Water Act of 1998 also considers the challenge of water, recognising its scarcity, inequalities to access, poor infrastructure and need to use water to benefit the development of the country (NWA, 1998 preamble). The Act also enforces the shift in ownership of all water resources to the National Government, where previously water was owned by those on whose land the water was found. Together with the Water Services Act of 1997, which provides for the rights of basic water access, the setting of standards and tariffs for water services and the framework around the establishment of water boards and associated institutional arrangements (Water Services Act, 1997), the legislation provides the framework for the implementation of the 'water rights system', in which water users pay on a per-use basis. The expropriation of water use toward paid water rights has been a major legal and political issue (Pienaar & Van der Schyff, 2007) and the source for much alienation between farmers and government.



Image 1- Study area. South Africa (upper left) and the Kouga Catchment, within the Langkloof (boundary in dots) with the Kouga river and Eastern Cape / Western Cape provincial boundary (white line). (Sandbrink 2013)

The Eastern Cape is one of SA's nine provinces and is situated on the south eastern tip of the country. The largest city is Port Elizabeth, with over 300,000 inhabitants in the city and close to 1 million in the surrounding area. This metropolitan area has suffered from increasing levels of unpredictability in natural water supply due to prolonged droughts as well as challenges arising from the management and maintenance of the water infrastructure (Gull, 2012). The administrative body for the area, the Nelson Mandela Bay Municipality (NMBM) have had to implement water saving measures in their communities and residents periodically have no water in their taps, cisterns and pipes, with major water shortages becoming increasingly common. This has had an implication on businesses in the area as well, with major industries as well as smaller businesses feeling the financial impact of a lack of water (ECDC, 2009).

Port Elizabeth receives the majority of its water from three upstream rivers; the Baviaanskloof (Baboon Valley), the Kromme and the Kouga. Together the Kouga and Kromme Catchments are known as the Langkloof (Long Valley). These three catchments are of varying size, with varying populations and geographic typologies, but they do have some commonalities; they are rural in nature; agriculture is the primary industry; rural livelihoods are perceived to be under threat; the three areas suffer from the presence of high-water-use alien invasive plants (IAPs) which impact the available water for domestic, industrial and agricultural use, both in the catchments and downstream users (Four Returns Background Document, 2014)

This research focuses on the Kouga Catchment area within the Langkloof. This area is vastly different from the Baviaanskloof in that the area is easily accessible (there is only one dirt road into and out of the Baviaanskloof), has a much higher population and the primary industry is deciduous fruit farming, with apples and pears being the most common crops. The Langkloof is an area of just under 300,000ha (Sandbrink, 2013) and with some 60,000 inhabitants. There are 7 major settlements including, Twee Riviere, Joubertina/Ravinha, Krakeel, Louterwater, Misgund, Haarlem and Avontuur. Most of these settlements, except for Haarlem and Avontuur, are in the Eastern Cape and fall under the administration of the Koukamma Municipality. Haarlem and Avontuur are in the Western Cape and fall under the jurisdiction of George Municipality.

Within the Langkloof, water is the key issue. Agriculture is the primary user of water in the area and farmers have long controlled the flow of water to their land through the construction of dams and use of sluices. The major farmers in the area are all white and operate large farms, often with 250-400ha under fruit. Apples, pears, plums, peaches are the most common fruits, but some farms have diversified their business, with additional fruits, small scale tourist-oriented endeavours and cottage industries, such as jam and honey. Their farms are situated on the peripherals of the valley and thus

they are the first recipients of water which is captured from rain on the mountains, before it flows downwards to the towns in the middle of the valley.

The towns are compiled of a mix of standard neighbourhoods and isolated houses but also contain rows of government-provided houses for poorer people. There is generally a clear separation between these styles of living; the 'normal' neighbourhoods can be described as 'middle-income' and portray a comfortable standard of living. Their inhabitants are generally white. In contrast, the areas of government provided housing, known as settlements, are populated mainly by black people. Here, the standard of living is significantly lower; poverty is rife, as is unemployment; alcoholism, drug abuse and rape are major social challenges; but above all, frequent instances of no water provision are the main problem.

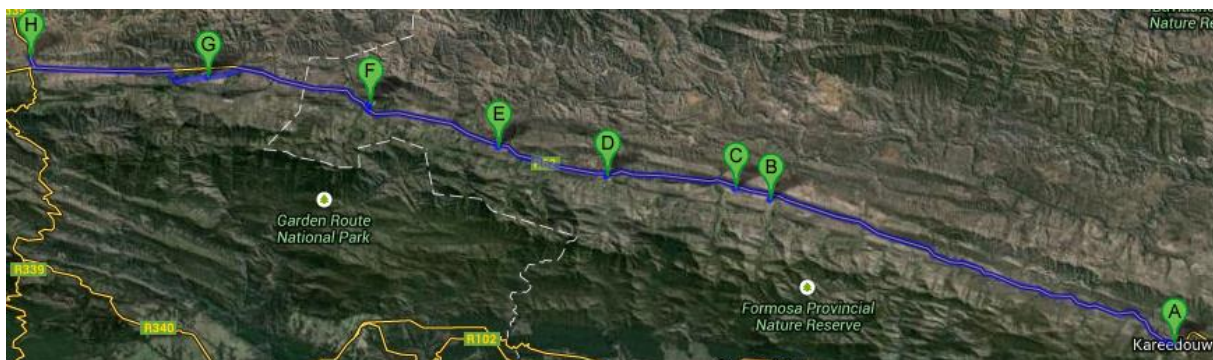


Image 2 - Towns in Langkloof (on the R62) - A:Kareedouw; B:Twee Riviere; C:Joubertina; D:Krakeel; E:Louterwater; F:Misgund; G:Haarlem; H: Avontuur

Within these settlements, the majority of those that do work, are employed as farm labour or in the Working for Water Programme (WfW); a government-sponsored public works initiative which provides employment for those that need it, but also focuses on the removal of the alien invasive plant species from the valley. This programme, in itself a landscape restoration initiative, wants to remove the "alien invasives", predominantly Black Wattle (*Acacia*) and Hakea (*hakea sericea*) so as to increase the water supply to the valley's inhabitants. The WfW is a major actor in the area and has interactions with the municipal and provincial governments as well as all of the farmers. WfW clear the invasive plants, poison their roots, but do not burn the remnant wood. They work on public land but are also contracted to work on the farmers' land. The farmers do not have to pay for the service, as the cutting of the trees is beneficial to the wider community.

The institutional arrangement to manage the water use and infrastructure in the Langkloof revolves around Irrigation Boards (IBs), which exist for each town and which comprise of selected farmers and municipal representatives. Different IBs may have additional support and advisory staff to help meet their objectives. The IBs are designed to act as fora for the discussion of current issues, such a

droughts, shortages, infrastructure damage and repair, etc. and for the local administration of water rights (Perret, 2002). Selected farmers hold seats on the IBs, with the Municipality also holding a seat as representatives for the town and settlement inhabitants. The chairmanship of the IBs rotates on a periodic basis and differences exist in the frequency of their meetings, with some only meeting once per year. Contact through text messaging and email though is regular, at least between farmers, whereas Municipal participation will later be shown to be somewhat lacking. The IBs are mostly informal, with no staff or offices, and although legally constituted bodies, should be seen more as relatively informal, background bodies. The (white) farmers are also members of the Langkloof Farmers' Association, another forum in which the prevailing issues are discussed.

Within the valley, other types of farmers also exist. These are black farmers who can be split into two categories; Black Economic Empowerment (BEE) farms are those in which a large share of ownership of a white owned farm has been bought by the government and given to the existing workers, who receive a dividend, and 'emerging farmers' who have been provided land by the government on which to run their farming business independently. While these farmers also have seats on the IBs, they do not attend meetings and do not get involved. This is discussed in the results. These farmers receive support from the Eastern Cape Dept. of Rural Development and Agrarian Reform (DRDAR), a sub-Dept. within the Dept. of Agriculture and who have a field office in the valley.

The Koukamma Municipality is the main administrative body for the majority of the Langkloof and though they have small offices in some of the towns, their head office is located at the top of the valley, in Kareedouw. This body is responsible the management of the water infrastructure, refuse collection and disaster response, including fire brigade. The municipality has had challenged relationships with the residents, in particular, the farmers over the years. The George Municipality, located in the town of George, Western Cape has the same responsibilities, but their involvement in the Langkloof is limited to the towns of Haarlem and Avontuur. Their relationship with relevant actors has been less strained than that of Koukamma, with this being ascribed to a comparatively more transparent system of operation and to the availability of more resources than their Eastern Cape counterparts.

Addressing the challenge: The Four Returns Project

In an attempt to address the challenges around water use, provision and management, The Four Returns Project was initiated in 2014. The project seeks to create public-private partnerships (PPPs) toward developing sustainable business for landscape restoration (Four Returns Background Document, 2014). The project is funded by COMMONLAND, new Dutch organisation that aims to upscale restoration and to stimulate large-scale business investment in large-scale restoration

initiatives. The Four Returns Project saw the creation of the Four Returns Development Company (4R DevCo), who initially partnered with Living Lands, a local NGO who have been active in restoration initiatives in the catchment areas over the last seven years.

The project operates on the basis of the Four Returns model of Ecosystem Return Foundation (ERF), who themselves have now evolved into being the COMMONLAND organisation. The model promotes landscape restoration delivering on four unique returns:

1. A Return on Inspiration: This return focuses on the engagement of actors to create a positive outlook, a sense of ownership and an awareness of the importance of them and their actions in restoration, while emphasising the opportunities that participating in landscape restoration can create for their future situation. Here, process outcomes also serve to inspire others to take up restoration activities in other locations.
2. A Return of Social Capital: This return seeks to deliver on income security, sustained educational opportunities, the strengthening of social services and safety nets and access to and representation in, the decision-making infrastructure. Key here is the contribution of restoration activities toward enabling actors to feel economically and situationally (food/water etc) secure and confident of their own capacities in a society.
3. A Return of Natural Capital: This return delivers on the restoration of the productive capacities of a landscape, including the enhancing of biodiversity, environmental aspects as well as the agri-production capabilities of restored land. Further, restoring degraded landscapes serves to fight erosion, increase carbon capture, promote indigenous varieties, etc.
4. A Return on Financial Capital: Given the aim to restore the productive capacities of degraded landscapes, this return aims to deliver long term, sustainable profits and income to investors and stakeholders, highlighting the economic benefits of successful restoration endeavours.

The model recognises and promotes the addressing of the various relationships within a complex human-environment relationship; there is due attention to not only the natural and environmental aspects of the landscape, but also to the social and productive elements.

Achieving the four returns promotes the inclusion of a wide array of actors and in their efforts until now, primarily in the Baviaanskloof, collaboration has involved local businesses, municipal representatives, provincial government and national and international business. Efforts until now

have mostly been in the Baviaanskloof as this area has been deemed the most “restoration-ready” for activities; there is an in-depth understanding of the situation through Living Lands’ experiences there; there is a network of interested and capable local stakeholders and the area has and does receive much attention through its ‘mega reserve’ status. In 2015 however, a new impetus will see the project expand into the Langkloof.

Specific Research Assignment in the Area

As mentioned, the Langkloof contains both the Kromme and Kouga catchments. Living Lands and the Four Returns Project have divided these into two separate project areas for operational reasons; they possess different challenges in terms of water users; the Kromme has no government settlements, while the Kouga part is home to all of these; the catchments feed into different major dams; there are differences in the agriculture; Kouga farmers are almost all deciduous fruit farmers, while cattle (beef and dairy) are more common in the Kromme. This research has taken place only in the Kouga Catchment.

Living Lands have been active in analysing the water issue over the past number of years. This has resulted in a proposal for a “water forum”, which would seek to supersede the IBs and unite farmers, municipality and other stakeholders in one interactional, administrative structure. This process, although not an active priority due to the focus of the Four Returns Project in identifying sustainable business cases, is still on-going as of February 2015. In formation of the proposal, Living Lands have conducted interviews with some farmers and municipal representatives and their work has shown relationships to be strained, with high levels of suspicion and resentment. However a detailed and wide understanding of the relationships and key challenges in interaction is not yet known. The Four Returns DevCo have had only initial contact in the area, but have already considered an idea of a composting facility which would use the felled AIPs as an input, with the mulched wood sold to farmers as fertiliser, strengthening the soil quality and thus reducing the need for water.

Initially, the task of the proposed research was to investigate this composting idea. Before arrival in the field, research was undertaken to develop an understanding of composting and the related situation in the Kouga part of the Langkloof. Once on the ground however, it was decided that the case was too sensitive and inappropriate to research; hence the topic was changed to researching relationship challenges around the water issue. All reference to composting was removed from the research process, except where brought up by the interviewees

Thus, the specific research undertaken in this case study was to assess the communication and interaction challenges and opportunities in the Langkloof. Understanding these is seen as key in order to:

1. Understand the main challenges faced by stakeholders
2. Understand the current relationships between relevant stakeholders
3. Identify intervention points to build collaborative action on restoring the landscape

The information derived from the research would act as a furtherance of Living Lands' knowledge in the area, while also laying a map for the Four Returns Project into the key landscape dynamics at play, hopefully highlighting entry points.

The research positions itself at the very beginning of a landscape restoration process. Although Living Lands have been researching and pursuing a water forum idea in the Kouga Catchment area of the Langkloof, at the time of writing of this thesis, the water forum idea will not be pressed for the time being. Instead, the focus will shift toward the Four Returns project, with attempts made to identify sustainable business cases around which collaboration can form. Thus, this research should be considered as the initial step in that, to formally map out current perspectives to offer insight and possible entry points. This is also true in consideration of the use of Theory U; a key concept used by Living Lands and the Four Returns; this research is at the beginning of the U Process. The use of Theory U is discussed in the Discussion chapter of this thesis. To be clear though, the 'landscape restoration' component of this thesis is the stimulation of interaction toward better and more equitable management of the water resource in the Langkloof; contributing to the landscape's ability to provide water for its dependents.

Unfortunately, due to the timing of the field work, no interactive events were scheduled during which participant observation could take place. Further, it was advised not to try to create such an event as there was no guarantee that any resulting interaction or discussion could be sustained after completion of the research and it would be inappropriate to stimulate motivation or attention without this guarantee. This meant that aside from reading relevant literature to the case, the only research method applied was semi-structured interviews.

Chapter 2 Conceptual Framework

In this chapter, I discuss and justify the inclusion of the key theoretical concepts applied in the research. A central theoretical concept in the study is scale dynamics in SESs / human-environment relationships and this is examined through a scale frame analysis approach. Further, scale framing is not only the employed analytical approach, but also the suggested method to be employed in landscape restoration processes, so as to determine and understand the context and impact of actor perspectives and relationships on scales and levels relevant to the landscape. These topics are discussed here and translated into specific research questions.

To provide a platform for the discussion of these concepts, it is firstly important however to provide a working understanding of how landscapes and landscape restoration are defined and used in this thesis.

2.1 Defining landscapes and landscape restoration

Landscapes and landscape restoration are at the heart of this research. Many different interpretations exist for what a landscape is, each having strong and weak points. Similarities in these definitions however show an acceptance of this fuzzy nature of landscapes (Sunderland, 2013) and what is held in common is a definition is often dependent on the context of the research or work to be completed (Turner, 2001). (Forman & Godron, 1986) defined landscape as a heterogeneous land area composed of a cluster of interacting ecosystems that is repeated in similar form throughout, while (Gergel & Turner, 2002) define landscape as an area that is spatially heterogeneous in at least one factor of interest. Both of these definitions lack a certain social aspect that detracts from the current thinking on socio-ecological thinking on landscapes. (FAO, 2012) referenced and accepted 2 such definitions that recognise the social elements of landscapes:

- *CoE, (2000) "An area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors"*
- *WHC, (1996) "distinct geographical areas or properties uniquely representing the combined work of nature and of man, illustrative of the evolution of human society and settlement over time, under the influence of the physical constraints and/or opportunities presented by their natural environment and of successive social, economic and cultural forces, both external and internal."*

However, while both of these definitions adequately cater for the human-environment relationship present in current landscape thinking, they lack the systems' perspective which is central to the

thinking of, not only my own background and thoughts, but to the thinking of current major landscape-related institutions such as the International Union for the Conservation of Nature, (IUCN), through the Global Partnership on Forest and Landscape Restoration, (GPFLR). Thus, a definition found in their website and in other locations, and which adheres to the systems, and human-environment relationship aspects of other institutions has been selected. For this research then, landscapes are defined as place-bound, geographical constructs that include not only the biophysical components of an area but also the social, political, institutional and cultural components of that system ((Sunderland, 2013)& GPFLR Website, retrieved Jan 2015).

2.1.1 Restoration

Defining the specific approach of restoration also showed the need to incorporate some personal thinking. A published and accepted definition of restoration can be described as the restoration of the environmental and productive capacities of a landscape (van Oosten et al., 2014). This definition however does not specify to what location in time or state the restoration attempts to achieve. Neither does the definition address the decision-making around what is it that is being restored or to whose desires or needs restoration attempts to adhere. The Ten Principles of a Landscape Approach some insight into how restoration should be framed. Principles three, four and five cover the topics of multiple scales, multiple functions and multiple stakeholders respectively, within and around a landscape (Sayer et al., 2013), implying that different people in different locations and roles have different uses, needs and objectives from and of a landscape, and this takes place at different times and for different durations. To satisfy these multiple needs a common concern entry point should be found as well as a negotiated and transparent change logic (Principles 2 and 6 respectively) should be sought (Sayer et al., 2013). The recognition of the needs of stakeholders and the need for interaction to product balance, shared interests allows for the formulation of a clear definition and one which is related to and derived from literature used and advocated by central landscape restoration agencies:

- *Restoration can be defined as the amelioration of a landscape's capacity to a level where it can again sustainably meet the productive and environmental needs of its internal and external dependents and constituents.*

2.2 Scale and Scale Dynamics

There is a recognition that the terms ‘scales’ and ‘levels’ are used interchangeably in the social sciences and that this lack of clear definition has been the cause of miscommunication and as contributing to the challenges of sustainable interventions, processes and decisions (Ostrom, 2009a). Thus, it is necessary to enter into the research and this report with a clear understanding of how scales and levels are treated here. “Scale” is defined as the spatial, temporal, quantitative, or analytical dimensions used to measure and study any phenomenon, and “levels” as the units of analysis that are located at different positions on a scale (Cash et al., 2006; Gibson, Ostrom, & Ahn, 2000; Ostrom, 2009a; J. M. Vervoort, 2011). Administrative, temporal and spatial scales are the most commonly understood, studied and referenced scales in the academic literature (Cash et al., 2006; J. Vervoort et al., 2014; J. M. Vervoort, 2011). While this is acceptable in most cases, some studies on human-environment relationships would benefit from an expansion of considered scales to fully understand the interplay of stakeholder perspectives (Cash et al., 2006):

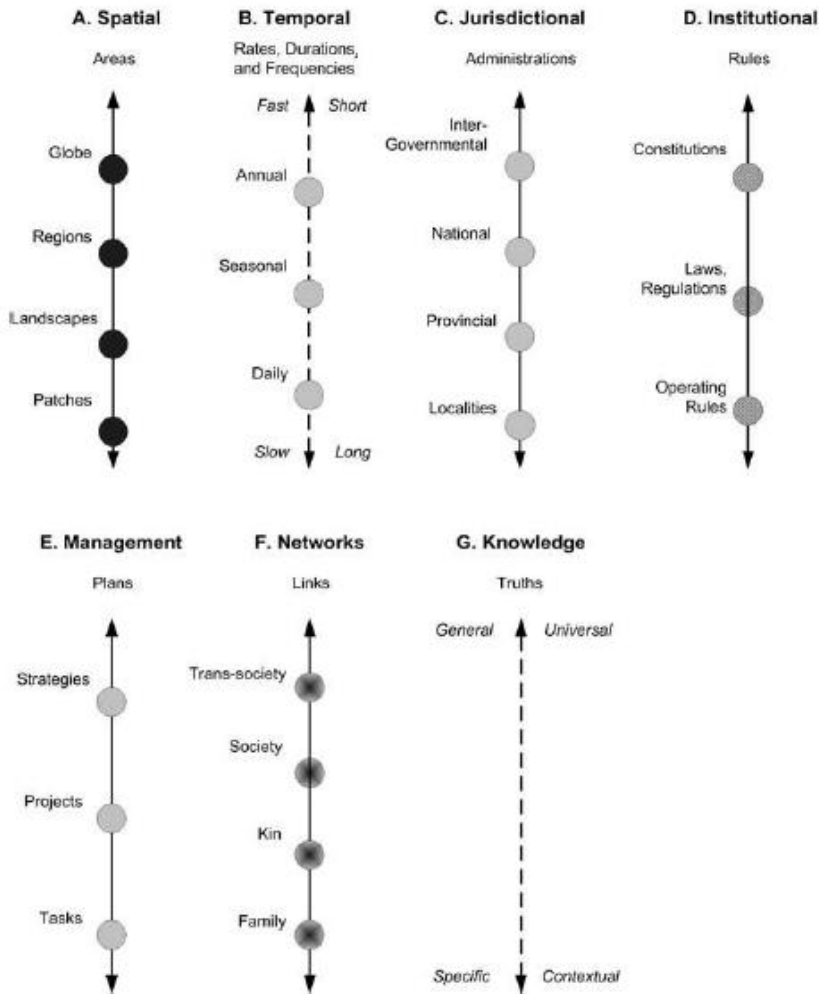


Figure 1 - Seven Scales Essential To Consider in Analysis of SES (Cash et al. 2006)

The incorporation of these scales allows for a wider view and analysis of interaction around landscapes and the recognition of the variable points and levels is inherently necessary if an understanding of the whole or part of the socio-ecological system is to be achieved (Kurtz, 2003).

However, interactions may occur within or across scales, leading to substantial complexity in dynamics. “Cross-level” interactions refer to interactions among levels within a scale, whereas “cross-scale” means interactions across different scales, for example, between spatial domains and jurisdictions (Cash et al., 2006) This implies that the interaction and relationship across levels and scales should be an important area of focus. The interaction and relationship of levels and scales and the entities, events and processes that take place at these points is known as scale dynamics (Cash et al., 2006).

Sayer et al, (2013) posit that no successful landscape approach or effort can be successful without a recognition and incorporation of the 10Ps. Principle Three specifically describes the importance of recognising the causal relationships and interdependencies between scales and levels, stating that an awareness of the feedbacks, synergies and interactions of these levels/scales is crucial to achieve a balanced and sustainable positive outcome (Sayer et al., 2013).

(Cash et al., 2006; Ostrom, 2009b; J. Vervoort et al., 2014) elaborate on this stating that in-depth understanding of the cross-scale, cross-level dynamics of human-environment relationships, or social-ecological systems (SES) is essential for sustainable governance and to prevent a collapse of the interactional system.

Further, the role of scale dynamics should be considered not only in attempting to understand SES relationships, but should be incorporated into the design, implementations, monitoring and outcome of SES governance structures and processes, further implying the necessity to discover and incorporate stakeholder perspectives on scalar relations from the beginning of an interactive process (Ostrom, 2009b).

But this is not without its challenges. Attempting to understand these relationships and interactions across scales and levels leads to three main problems (Ostrom, 2009b):

1. *Identification*: From a researcher perspective, understanding these relationships warrants the identification of patterns. In finding these patterns, the extent of analysis and the scale and level chosen as entry point will surely shape the outcome of the investigation and which patterns are identified. This has implications for future decisions.

2. *Explanation of causal processes:* Scale and level help to identify patterns, not explain or justify them. The crucial issue linking scale and level to explanation is whether the variables used to explain a pattern are themselves located at the same level as the pattern or at different levels. A causal conclusion cannot therefore be determined without identifying patterns that have sources and outcomes at multiple levels or scales.
3. *Generalizability:* it is often the case that after observing processes occurring in one or more settings, researchers and practitioners formulate and generalise theoretical propositions discovered about entities interacting at one level to explain relationships operating at a different level. This is an improper process as most often they will miss out on a variable that challenges the application of that theory at different levels.

What we can conclude from these challenges then, and what is relevant for this research, is that in attempting to understand the cross-level, cross-scale relationships in and around a landscape, it is necessary to view each scale frame, when discovered, as either a new entry point to understand a relationship, or as a validation of another scale frame thus contributing to the formulation of a pattern. However, given that research participants will be drawn from multiple levels and constituent of different scales, it is important to also attempt to understand the reasons behind their perspectives and accept them as perhaps specific to their own situation and experience, not a shared or common interpretation.

2.3 Framing and Scale Framing

As discussed, understanding scale dynamics from the perspectives of many actors is vital to understanding why some human-environment systems are sustainable and why some collapse (Ostrom, 2009b). It is therefore crucial to understand these multiple perspectives held by these actors. Identifying and analysing the issue frames of these people is thus, key.

Framing theory is often applied to conflict situations in which different interpretations on the same contentious issue exist and contribute to the existence of the conflict (Dewulf et al., 2005), with framing also contributing to the protraction of conflict and the prevention of solutions, while reframing processes are deemed necessary to the resolution of the conflict (Gray, 2004).

Framing refers to the process of how people construct and represent their interpretation of the outside world (Dewulf et al., 2009). Framing is a sense-making process that is affected and develops through interaction with other actors and the environment (Brummans et al., 2008; Dewulf et al., 2009) The analysis of framing is useful to gain a working understanding of complex systems and

situations, in which an actor's worldview, past experiences and personal characteristics influence how the situation is perceived (Shmueli, Elliott, & Kaufman, 2006).

Two separate standpoints exist on the nature of framing; one referring to framing as "what people think" with the second viewing framing as a strategic move toward guiding "what others think". More specifically, the first standpoint on framing focuses on framing as cognitive knowledge schemas or mental structures that, "facilitate organizing and interpreting incoming perceptual information by fitting it into already learned schemas or frames about reality" (Dewulf et al., 2005); in essence, taking in information on the world and adapting its incorporation dependent on the person's own ideas and experiences and further, using this interpretation to guide action (Brummans et al., 2008).

The second standpoint on framing refers to the framing as a sense-making processes used for interacting and communicating with others (Dewulf, Craps, & Dercon, 2004). Here, framing occurs through negotiation and interaction (Aarts & Van Woerkum, 2006) and in which strategic element selection is employed to promote a particular problem definition, causal interpretation, moral evaluation and offered remedy for the problem at hand (Entman, 1993); in essence, framing is a strategic attempt to further one's own position during interaction.

The approach to framing employed in this study is a complimentary incorporation of both standpoints on framing. Combining both approaches to framing enriches the understanding of the framing process, taking into account actor considerations on the content, context, process and relationships at stake (Aarts & Van Woerkum, 2006). It is felt that this enriched understanding is necessary to facilitate processes of reframing toward the resolution of conflicts (Aarts & Van Woerkum, 2006; Gray, 2004).

Issue framing focuses on how parties negotiate the meanings of issues in social interaction, highlighting certain aspects of the situation as a problem (naming), detailing how they think this problem has arisen (blaming) and assigning responsibilities and roles (claiming). This process occurs through the provision of information, the asking of questions, making of statements to define and delimit how the issue should be understood (Dewulf et al., 2005). The result of the issue framing process is a definitive, yet fluid, interpretation of the situation or specific priority elements of it. In interaction, this can be expressed as an opinion, an answer, a derivative question, or general statement; and is known as an 'issue frame'. These issue frames offer a first insight into how stakeholders in a multi-stakeholder process (MSP) perceive the situation or topic at hand and are rooted in their daily practices of sense-making (Wenger, 1998 from (Dewulf et al., 2004)). Actors utilise their issue frames to position themselves in an interactive process, highlight what is important to them and use this to strategically set the agenda for future interactions.

There is justification within landscape-based literature for the exploration of actor issue frames. Principle 5 of the 10Ps recognises the fact that the multi-stakeholder nature of landscape focused processes mean that many different issue frames and objectives will be held and expressed in and around the landscape and thus each needs recognition to promote a sense of inclusion and shared benefit (Sayer et al., 2013). Principle 2 concerns the identification of a common concern entry point for intervention. This common concern can only be achieved by determining what the stakeholders adjudge to need addressing. Principle 6 follows along the same line and promotes the creation of a negotiated and transparent change logic, which itself warrants a sharing of perspectives and wishes among stakeholders (Sayer et al., 2013). Further (J. Vervoort et al., 2014) have developed an interactive tool, “Scale Perspectives” specifically designed for use during an MSP to identify and analyse stakeholder perspectives around SES.

With an acceptance then that multiple issue frames exist, this opens the possibility that conflicting or mismatching issue frames can also exist, leading to and enabling an understanding of existing conflict. Frame divergence, being the separation and misalignment of frames on a given situation contribute to the intractability of conflicts (Gray, 2004; Shmueli et al., 2006). Participants in a dispute apply their own personal characteristics and experiences to a situation and form understandings that demote others and their interests leading to focus being placed on outcomes that impede the exploration of more harmonious alternatives (Shmueli et al., 2006). This divergence in effect creates a feedback loop; conflicting frames lead to conflict in interaction which in turn strengthens antagonism and further polarises the conflicting frames (Shmueli et al., 2006). This research though does not focus on conflict and framing, but will aim to show that identifying conflicting or mismatching frames, particularly those that are cross-scale or cross-level, can lead to a better understanding of current relationships in and around a landscape.

2.3.1 Scale Framing

Given the nature of this research, in which landscapes are treated as systems connecting to and comprised of various levels of multiple scales, one particular type of framing becomes particularly relevant; scale framing. Scale framing is the process of situating one’s issue frame at a specific level or scale (Lieshout, 2014). Through the process of framing, actors highlight different aspects of a situation as relevant, problematic, or urgent, and by doing so situate issues on different levels and scales (van Lieshout et al., 2012). Actors scale frame their issues according to which level or scale they might adjudge the root cause or possible solution of an issue to be (Lieshout, 2014). Scale frames are not however, limited to expressing problems or blame to entities at alternate levels or scales, rather they can be seen as discursive practices that construct meaningful linkages between the scale or level at which a social problem is experienced and the scale or level at which it could be

politically addressed or resolved (Kurtz, 2003). Thus we can say that scale frames offer an opportunity to understand relationships of entities who are situated at different levels and on different scales.

As discussed above and within any cross-level, cross-scale relationship, different and sometimes conflicting perspectives can be found. Analysing scale frames can help to identify different and sometimes mismatching scale-situated perspectives. Within the literature, the importance of these mismatches is discussed as being a cause of tension and stagnation in complex processes (Kurtz, 2003; Lieshout, 2014). These often opposing scale frames have various names, each with specific characteristics; counter scale frames are those which are expressed in response to an initial scale frame of another actor and as an attempt to redirect attention (Kurtz, 2003); scale frame differences are those which focus on different areas of attention, but do not necessarily contradict an initial scale frame and can serve to enliven and deepen interaction (Lieshout, 2014); while scale frame mismatches specifically oppose each other, cause and show conflict, stagnation etc (van Lieshout et al., 2011b).

Three separate types of these scale frame mismatches can be distinguished (Lieshout, 2014; van Lieshout et al., 2011b):

1. *Framing the issue using conflicting scale frames*: David Cameron blaming the international economy for UK downturn, while Nigel Farage blames immigrants for the lack of jobs for British people.
2. *Framing the issue on different scales*: Farage saying things have gotten worse since the Conservatives came to power (temporal scale); Cameron saying the UK is in a great position compared to the rest of the EU (spatial scale)
3. *Faming the issue at different levels of the same scale*: Farage saying policy should happen at the UK level, not in the EU, while Cameron (this is however ever-changing as we come close to the election) speaks of the importance of coordinated EU policy.

Given that actors employ frames and scale frames to voice their position and interpretation of the situation, strengthen their own perspective in relation to others and strategically set the agenda for interaction, it is clear that scale frame mismatches also have the ability to consciously and unconsciously include and exclude other actors and their ideas and frames from the interactive process (Lieshout, 2014; van Lieshout et al., 2011b). In doing so, actor scale frames have the ability to inflate or reduce the view of the problem as they see it, also shifting accountability of the causes of the problem. Since it is usually the dominant scale frame in the debate or interaction that leads the

agenda and process in a desired manner, it is important to analyse the power situation that allows this dominance to exist.

Certain aspects in relation to scale framing should be considered in light of power issues or more specifically, power disparities. Power is the organisational and discursive capacity of agencies either in competition with one another or jointly, to achieve outcomes in social practices (Arts & Van Tatenhove, 2004). In relation to scale framing, actors who either deem themselves or are deemed by others to be in a position of power have the ability to use their scale frame to set agendas and possibly legitimise the inclusion or exclusion of certain actors and facets of the interactive process (van Lieshout, 2014). Similarly, power is an important dimension to give attention to as the dominant scale frame in a dialogue can influence the results of that dialogue.

The preceding paragraphs have shown framing, in particular scale framing, to be a useful approach to understanding actor perspectives on their situation, the issue at hand and their relationships to other stakeholders in complex cross-scale/level MSPs. Thus it is useful to consider in reference to landscape restoration processes which are also defined as complex, multi-stakeholder and multi-scale in nature.

As discussed in this chapter, the literature has promoted the analysis of scale dynamics in human-environment relationships. This thesis presents landscapes as one such relationship. Thus, it is derived that scale dynamics should be determined in a landscape restoration process. This thesis explores scale frame analysis as one way of doing this. Scale frame analysis then is both the lens through which scale dynamics are analysed in this research and also the theorised approach to be employed to understand scale-related stakeholder perspectives in a landscape restoration processes which should allow an understanding of scale dynamics. This results in a specific research question:

SRQ 1 – How does the analysis of scale frames toward understanding scale dynamics contribute to a landscape restoration process?

If scale frame analysis is to be explored as being useful in understanding scale dynamics, it should be done so in relation to other existing approaches. Thus, an attempt should be made to determine how landscape practitioners seek to understand actor perspectives and scale dynamics in their work:

SRQ 2 – How do landscape restoration practitioners currently seek to understand actor perspectives and scale dynamics in a landscape restoration process?

Chapter 3 - Research Design and Methods

3.1 Research Design

This research is an attempt to understand relationships between different landscape stakeholders by discovering and analysing their perceptions on their own situation, their perceptions of other stakeholders and their thoughts on present challenges, opportunities and benefits in cooperating on a given context. To do this, it is necessary to learn about their experiences, what they hold as important, what meaning they give to different events and what stories they have of their lives. As such, the research can be considered as qualitative in nature.

Qualitative research is interpretive, experience-based, situational and personalistic (Stake, 2010) and can be defined as having five major features (Yin, 2011); it concerns studying the meaning of people's lives under real-world conditions; representing the views and perspectives of participants; covering the contextual conditions in which they live; contributing insights into concepts which explain human behaviour; utilising multiple sources of information and evidence. The first three of these features align to the need to gain and describe an understanding of the existing situation on the ground, as experienced by those who live it. The last two elements focus on contributing to an understanding of common experiences of society. This is what this research hopes to achieve; an understanding of landscape relationships that contributes to the theoretical understanding of scale dynamics and scale framing in complex human-environment relationships.

The methods selected for this research follow from the qualitative nature of the data required to achieve the research objective. The main source of data for this research was a case study in South Africa, which is described in detail below. Case studies are a highly suitable qualitative research method and relevant for this research, as they analyse a phenomenon in a real-world context (Yin, 2011) and act as a concrete and limited scenario in which many other research methods are applied (Silverman, 2008; Yin, 2011). During the case study, I have conducted interviews in semi-structured format, studied relevant background literature including project documentation, legislation and theses of other students and academic literature completed in and relevant to the research area. The time frame of my field work did not allow for ethnographic or participant observation methodologies, but during the interviews, it was possible to gain some further insight into the interviewees by observing their behaviour and the interview location.

Parallel to the case study, I initiated an online discussion within the Learning Network of the GPFLR. This is a network of some 500 landscape restoration practitioners. The goal was to try to understand how they treated issues of scale and scale dynamics in landscape relations in their work. Logistical

constraints and a poor uptake level however, meant this discussion bore no useful measure of data. This activity is discussed in detail in this chapter.

This chapter will also discuss the methods employed to analyse the data once it had been collected and collated. Data analysis was completed by the creation of a code book of key terms derived from theory, interview notes, recordings and reports and was used to further highlight emergent patterns and central themes noticed during the data collection.

Finally, this chapter will discuss some ethical considerations which were made before and during the research and incorporated into the design and completion of the research.

3.2 Methods of Data Collection

Due to the nature of events around the online discussion, that research trajectory has been presented in its entirety above. Here, the data collection methods described refer exclusively to the case study, during which semi-structured interviewing was the primary method employed. Data was obtained from relevant literature, but that is not presented as an independent trajectory as the data served not to highlight specific results, but to underpin other decisions, actions and understandings and is presented throughout the thesis. The selection for this method of using literature is discussed in the Discussion chapter.

Interview Design

Semi-structured interviews as a qualitative method of data collection are suitable when attempting to explore attitudes, beliefs, values and motives. Although making comparability more difficult than administering surveys, semi-structured interviews are superior, as they overcome the opportunity for poor survey response rates as well as enhance validity and reliability as they remove the opportunity for respondents to receive assistance or pressure in formulating responses, while allowing for the inclusion of analysis of non-verbal communication (Louise Barriball & While, 1994). Through interviewing, it is hoped to discover unique information or perception held by the interviewee (Stake, 2010). However, this interpretation may be lost on the interviewer without understanding the context, at least to some degree, in advance. (Seidman, 2012) details the “Three Interviews” approach to a model of semi-structured interviewing he calls “phenomenological based interviewing”; a model which employs open-ended questions toward having the participant reconstruct his or her experience within the topic under study. In this approach, interviews should appear less structured and more as “friendly conversations”. The three separate interviews within the approach are, respectively, designed to; 1) establish the context of the participant’s experience

by asking him or her to tell as much as possible about him or herself in light of the given topic; 2) allow participants to reconstruct the details of their experience within the context in which it occurs, concentrating on the concrete details of the participants' present lived experience of the topic; and 3) encourage the participants to reflect on the meaning their experience holds for them, addressing the perceived implications of the topic on their work, life and future.

This approach was deemed suitable for the interviews in the Langkloof. However, due to time and interviewee availability limitations, it was impossible to schedule more than one interview with the target persons. Thus, this approach was adapted to design three specific sections of the interviews. Multiple interview guides were created (see appendix) to better fit each interview; word and sentence structure were marginally different, so as to provide reminders for specific aspects of knowledge I hoped to attain. However, the core of the interviews was exactly the same across the board.

Given the need to stimulate descriptive responses which would hopefully contain scale frames on which to analyse scalar relations, many of the questions were formulated completely open, for example, "Can you tell me about...?", or, "How would you describe?". These general questions can be considered as only opening questions in the dialog and dependent on the answers provided, I sought additional information on an instance-specific basis. For example, early on in the research, it was clear who the relevant administrative bodies were. If respondents did not mention them, they would be prompted to do so; "Ok, and what about the....."

It should be noted that the following questions were guides only; in many instances the wording may have changed to suit the context of the interview, but the general purpose and subject of the question was the same.

In the first section the interview sought to stimulate the interviewee to give their context in which they feel they operate; to determine their place and role, what they do and where they position themselves. The questions were guiding and open-ended, so as to stimulate an open, friendly and in-depth response:

- Can you tell me about yourself, your role and what keeps you busy?
- Are there major challenges you find yourself dealing with?
- Are there people and groups you work with on a regular basis?

By getting answers for these questions, it would be understood who it was that was being interviewed and how they perceived themselves. Also, it would be known whether they would consider the water issue as key for them. These questions also hoped to stimulate initial scale

frames, highlight at which levels and on which scales these may be and to identify the actors perceived to be of relevance, both in addressing the issue, and as possible future interviewees.

The second section of the interview, would focus attention on the water issue. It was hoped to understand how they perceived the water issue as well as the role of other stakeholders in the water issue. Further, the aim was stimulate them to discuss whether any challenges in working with other stakeholders contributed to the water-based challenges:

- How would you describe the water issue in the Kouga?
- Can you tell me about how this impacts you and how do you try to address this?
- Who do you work with in trying to address the problem? Who would you like to work with?
- How would you describe your relationship with these people?

Question 4 here is a direct attempt to stimulate a broad scale frame of the water issue. It is phrased specifically to stimulate a wide-ranging answer. Questions 6 and 7 attempt to create a clear understanding of the relationships across levels; who is involved and who should be and what is happening with these other stakeholders. This is highly relevant given that Principle 3 of the 10Ps advocates the recognition and incorporation of the many scales and levels relevant for landscape analysis (Sayer et al., 2013). Question 5 is an attempt to analyse impacts of human-human relationships on human-environment relationships; specifically for farmers, but also for administrative interviewees, whose work with water in and around the landscape is affected by human-human relationships.

In the third section of the interview, the idea was to stimulate a personal reflection on their situation, to try to understand what the water situation actually meant for them; their lives and future hopes, as well as trying to understand their motivation to take action, their more emotive standpoints. This would help to understand the landscape relations more in-depth. As an external researcher, understanding what is happening is only one thing, understanding what the stakeholders want to happen and think will happen, reveals a lot about the relationships, not only between people, but between people and the landscape itself.

- Why do you think these challenges exist?
- Can you tell me what you want to and think needs to happen to solve these challenges?
- If you look 10 years into the future, what do you think the situation will be and why? Is that the situation you want and how likely is it to happen and why?

Here, questions 9 and 10 address Principles 2 and 6 of the 10Ps, which state that a common concern entry point in the form of a shared understanding of the challenge as well as negotiated and transparent change logic; what should be done to address the shared challenge, should be sought.

Finally, it was important to offer the chance for participants to discuss other issues they may have on their mind. This was important due to the fact that, as I will discuss later, I was conducting interviews with other students who had prepared long and technical interviews that covered a wide array of topics:

- We have come here to ask a questions that are about the research we are conducting. Are there any other things happening in the area that you feel should be talked about or are related to the water issue?

This question was important to ask, not only to highlight other dimensions of landscape relations and the water issue, but also to show that attention is being given to their situation, not purely to the research topic.

The answers obtained from the first 10 questions were of course general in nature in many instances; hence use of made of the seven scales considered important for analysing an SES such as a landscape (Cash et al., 2006). The levels provided in these scales helped to seek clarification on answers that were perhaps too general; stimulate interviewees to consider different actors or events and help to position unclear answers in wider context.

In light of the specific research questions concerning whether and how landscape restoration practitioners seek to understand stakeholder perspectives and landscape scale dynamics, interviewees from Living Lands and the Four Returns DevCo were asked what tools and methods they employ to understand these perspectives and scalar relationships. Further, they were asked as to how they treat the issue of scale, how they view the impact of scale on their work and whether they could see benefits in understanding cross-scale, cross-level relationships.

Sampling and Completion of Interviews

Many students complete their theses with Living Lands and stay at the PRESENCE Learning Village. Even though the topics of their theses differ, it is often necessary and beneficial to collaborate, share data and contacts and even complete interviews together. This is necessary not only to efficiently use resources, but also to limit interference or bother on the interviewees, who Living Lands see as clients, partners and target groups.

During the research period, many of the completed interviews were conducted with two other WUR students who were working on a joint thesis on climate changes adaptation strategies; Amilcar Guzmán Valladares and Arjan de Groot. Amilcar and Arjan, were also researching in the Kouga part of the Langkloof and were attempting to understand the practical and financial implications and mitigation strategies around climate change for deciduous fruit farmers. This involved collecting detailed information on farm practice, expenditures, partnering and knowledge procurement processes, natural disaster experiences and prevention, and insurance concerns.

Since the targeted interviewees were for the most part the same, it was agreed to plan and conduct the interviews together. This was both useful and challenging; they had been on the ground before my arrival, so had composed a database of possible interviewees and found contact details, which saved time, but due to the nature of their research, their interview guides were extremely large, technical and detailed. In contrast, the descriptive nature of my own research called for a structured conversation approach, in which the goal is to stimulate open discussion around a smaller number of general topics, rather than a detailed, point-by-point approach. After some negotiation, we found a solution in which we would each take turns 'leading' the interview and where necessary the others could 'jump-in' to ensure they got enough required data. We agreed to trial the approach on the basis that we would share notes and give honest feedback to ensure we worked well and were happy as a team. We further agreed that in exchange for a sharing of resources for which this thesis is funded, they would transcribe the interviews in greater detail; and that after reviewing the transcriptions, I would add my own notes and comments where necessary. In general, this approach worked well; the quality of their transcriptions was more than sufficient; interviewees appeared to like having a multi-national team of students coming to visit and their presence contributed to wider, more in-depth discussions as well as highlighting different aspects of interaction, relationships and landscape experiences that I may otherwise have missed. These are discussed further in the results section. Although we worked as a team around the interviews, some additional sampling and interview conducting considerations were made that were specific for this research:

Sampling

Purposive sampling concerns the selection of research units, in this case interviewees relevant to the landscape. The sample should be relevant to the topic of the research, representative of the major actor groups and be of a sufficient size and scope to gain a wide incorporation of the prevailing different viewpoints (Silverman, 2008; Stake, 2010; Yin, 2011). Further, the sample should be selected so that a high degree of the generalizability of the results can be counted on; it should be sure that the results obtained from interviewing the sample can be generalised and applied to the wider population (Seidman, 2012) .Here, a further priority should be to identify and target research

units that may offer contrary or conflicting information or perspectives which allows for the testing of rival explanations (Yin, 2011). This tallies with the application of Principles 4 and 5 of the 10ps, which advocate an inclusion of a wide array of multi-sectoral stakeholders and perspectives who together draw on the multiple functions of a landscape (Sayer et al., 2013).

As mentioned, many students have conducted research in the Kouga area before. As such, a detailed database of actors has been created and updated over time. This database contains farmers, government representatives from municipal to national levels, scientific advisors, NGO representatives and employees of relevant support industries. Although convenient, the use of this database should not be considered “convenience sampling” (Yin, 2011) as it has not been stocked with willing interviewees who are easily available, but rather with people who are considered essential components of research into agricultural processes. The accompanying comments from other researchers showed that although relevant, many of the people in the database had no interest in participating in research or were impossible to contact. This did reduce the number of available interviewees, which made it necessary to engage in another form of sampling; snowball sampling. Snowball sampling, the process of selecting interviewees as off-shoots (Yin, 2011) or through recommendations or leads (Seidman, 2012) of other interviewees can be considered valid if it is done purposefully and in a manner relevant to the topic. For example, the other students conducting research were connected to a bee-keeper, who would advise on climate change issues, but who had no real relevance for this research, so I did not participate in the interview and its results are not incorporated here. On the other hand, a recommendation was given to contact specific advisors to the irrigation boards; this advice was followed so as to gain their very relevant perspective.

While available data was useful for compiling a list of possible candidates, some factors played a large role in who actually was interviewed:

- Some farmers were not contactable. The contact details held in the database were out of date and no other contact information was able to be retrieved.
- Some farmers declined to be interviewed, not giving reasons as to why this was the case.
- The Four Returns and Living Lands staff did not freely allow contact with governmental staff. This was due to the fact that they were attempting to organise their own dialog process and wanted to combine interviewing efforts so as not to over-disturb interview candidates. This meant waiting a number of weeks to get the go ahead to contact people, by which time it was too close to the Christmas holidays, as well as the time constraints around a Ministerial visit to the Dept. of Water and Sanitation (DWS).

- It was especially difficult to make contact with representatives from George Municipality. Despite attempting to contact eight separate people, through references from the stakeholder database, farmers and Koukamma Municipality, nobody from this Municipal setup was interviewed.
- The sheer size of the Eastern Cape meant that the costs to reach some people were too high. For example, one trip to meet the Dept. Head of Institutional Reform in the EC DWS cost over €100 in petrol. Only one interview could be held on that date and another possible interview, which was not guaranteed to happen, was declined due to the cost. The person was not happy to be interviewed by Skype/telephone.
- The (DRDAR) provided a list of 22 emerging farmers as interviewees, however those few that did answer the phone could not speak English. Best efforts were made to find an appropriate Afrikaans translator as Living Lands staff were unavailable to accompany, but the fee demanded by one possible translator was too high. Thus, no emerging farmers were interviewed. The implication of this is discussed in the discussion chapter.
- In general, there was an apparent lack of enthusiasm from many people contacted. Some people did not return calls, did not answer the phone for confirmations, did not reply to emails. No understanding of why this happened was achieved.

In total, 25 interviews were completed directly for this research, while the results of another 5 interviews have been included, as they were completed by the other students, Amilcar and Arjan, who were aware and considerate of the nature of this research. These 30 interviews include:

- 12 deciduous fruit farmers
- Head of Langkloof Farmer's Association
- 3 senior members of Koukamma Municipality; water infrastructure dept.; Joubertina Unit Head; disaster management dept.
- Irrigation Board Haarlem/Avontuur technical advisor
- Unit Head, Eastern Cape Dept. of Agriculture and Land Affairs, Joubertina
- CEO Gamtoos Irrigation Board: Implementing Agent for Working for Water Programme
- Area Head, Working for Water (responsible for Langkloof)
- Head of Institutional Reform, Eastern Cape Dept. of Water and Sanitation
- 2 Senior members (national policy advisor and director for ecological infrastructure) of South Africa National Biodiversity Initiative
- Acting Director of Water Affairs, Nelson Mandela Bay Municipality
- 3 senior staff from Living Lands and The Four Returns DevCo.

Other interviews included different persons from the area who are not directly involved in solving the water issue, but have knowledge and influence in the area and who offer different, non-agricultural perspectives on the water issue. These include the Deputy Head of the Joubertina Resident's Association, a recently (2013) retired, yet very influential and reputable former head of the local RDAR office and the manager of a local conservation NGO, Language of the Wilderness Foundation Trust (LOWFT).

Based on the challenges outlined above and the input from Living Lands' staff, the fact that 25 interviews took place can be judged to be more than satisfactory. There is also a good balance of public sector (13) and private sector (12) interviewees, not counting LL and 4R staff. While this increases the validity of any derived findings, some issues about the sample should be noted:

- All of the farmers interviewed are those who are white and with large farms. No black BEE or emerging farmers could be interviewed.
- Only one interview took place with a government representative from outside of the landscape
- No interviews took place with any private sector actor who is not a deciduous fruit farmer.

The implications of these three points are analysed in the discussion chapter.

Despite these issues, some positivity can be taken from the sample and identified respondents. Early on in the research, it became clear that many of the interviewees 'were painting the same picture' of the water situation; most had similar understandings of the challenges and perceptions each stakeholder had on the other; new issues on water did not surface and later interviews served mainly to validate what was already known. Further, some of the interviewees wanted to examine our understanding of the situation and asked us to describe the situation; when this was done, it was well received. Given the open nature of the interview questions, which stimulated interviewees to offer their own story and interpretations, it is assumed that the understanding of the situation formulated through the interviews can be judged as reliable.

During the interviews

Most of the interviews took place face-to-face, but five interviews were conducted over Skype. Many of the in-person interviews took place in the offices and meeting rooms of the interviewees, while some took place in more relaxed settings, such as a café and the interviewees home. The different setting for the interviews had implications on the nature and outcome of the interview:

- Telephone and Skype (VoIP) technologies although not thought of as equal to face-to-face interviews in which additional data may be gathered, such as body language or ethnographic-style observations (Sturges & Hanrahan, 2004) can be considered as suitable research methods which sufficiently allow for open dialog according to a prepared text or guide (Hanna, 2012). The use of this tech. can be justifiably explained in consideration of the large distances and associated costs of travelling to meet an interviewee. This was the case in South Africa, where Skype interviews took place with persons situated in Cape Town and Durban. Also, due to busy schedules, it was not possible to 'formally' interview 2 LL and 4R staff while in the field. These were completed by Skype in mid-January 2015. Having comparable interview guides ensured that the interviews stayed along the same lines as the face to face interviews and although the connection was temporarily strained in two of the interviews, the discussions were open and informative in the same manner as the face-to-face interviews.
- The interviews conducted in offices and meeting rooms provided useful insight into the operational environment of the interviewees. In the case of the farmers, it gave an opportunity to see the farm environments, the professional nature of their businesses and the emotive nature of some of their perspectives. The style of the setting allowed a change of viewpoint on the farmer as a 'farmer'. Rather, many of the interviewees view themselves more as 'fruit company managers', not as farmers in the traditional sense; although they do refer to themselves as farmers. In the case of the administrative personnel, the office conditions served to support their claim that the lack of resources was a challenge. Particularly in reference to the Koukamma Municipality, whose building is dilapidated and in need of repair, but also to all branches of administration at different levels.
- The interviews that took place in informal settings allowed for a greater personal connection and resulted in far longer interviews; the average was 1.5hrs, each of the informally set interviews lasted at least 2.5hrs. During these interviews, more curiosity was shown by the interviewees into us as researchers and as people and each spoke more about their personal connections to the landscape.

Despite the advice of Living Lands staff that interviewees may not appreciate being recorded, Amilcar and Arjan did ask some farmers to be recorded during the interviews. This was understandable given the strong accents of some of the farmers and the fact that neither of them was a native speaker. These recordings were used to generate detailed, although, non-verbatim transcriptions. When Amilcar and Arjan were not present for face-to-face interviews, no recordings were made. This is due to a personal preference on recording, as it is felt that recording the interview can detract from the

open and somewhat conversational approach to the interviews that was sought. This is not to say that audio recording is not useful; it allows for a comparison of notes to the actual spoken words (Fasick, 1977) and to evaluate one's own performance as an interviewer (Halcomb & Davidson, 2006). However, the presence of recordings does not enforce the need for verbatim transcriptions as it has been shown that audio recordings when combined with field notes to generate a more in-depth exploration of the interview content and importantly, what it actually means to the interviewee (Halcomb & Davidson, 2006).

Thus, even in instances where recordings were made, such as the Skype interviews (in which the presence of a recording device does not distract the interviewee), verbatim transcriptions were not made. Rather, the recordings and notes taken were combined to produce reports of the interviews.

3.3 Methods of Data Analysis

Given the discussed fact that no real measure of data was collected from the online discussion, this section focuses on the analysis of the data obtained from the case study.

Aside from the literature studied relevant to the case study context, the data obtained came from the interviews. The vast majority of this was the answers to the posed questions, while some of this was observational notes taken during the interviews. As discussed, when interviews were conducted in a team, the main interview transcriptions were provided by the other students who were also present. These were supplemented where necessary with notes I had taken during the interview and with observations made by myself. For interviews that were conducted independently, interview notes were adjoined with recordings, where applicable, to create interview reports, which were completed as soon as logistically possible after the interview. Further, after each interview time was taken to reflect on what had been discussed; independently, this meant sitting in the car or in front of the computer and going through each of the questions in the guide and writing notes and points where relevant; and when in a team, this meant a short discussion on how the interview went, what the key points were and what was different and unexpected in light of other interviews.

The knowledge obtained from the interviews was analysed in two separate phases. The first stage of data analysis happened during the data collection itself. The initial interview data served to create early patterns and repetitions, signalling the need for further questions and points to address in future interviews. For example, it became clear early on that networks such as AfriForum (Afrikaner cultural network) played a large role in information delivery to the farmers. If this network was not mentioned naturally by a farmer in another interview, AfriForum would be mentioned to see if it was relevant for them too. The emerging repetition and patterns in responses also served to show that

note taking during the interviews was of sufficient standard; the interview notes and reports all detailed the same information on many topics. Clear key topics and words began to emerge which contribute to analysing the entire data set after the conclusion of data collection.

The second stage of data analysis saw the collation of the interview reports into a single document. As there was a time gap of roughly one month between the end of data collection and the beginning of in-depth analysis (apart from the interviews in mid-January of LL and 4R staff), it was beneficial to again listen to recordings and read the interview reports and notes taken.

The key words, phrases, sentences and patterns derived from the interviews were collated and added to the terms from the seven scales and related levels prescribed by Cash et al, (2006) as important to consider in the analysis of a human-environment relationship. Further, during the research, separate frame types were identified; issue frames, relationship frames, process frames and solution frames. These were also entered as codes. This compilation ensured that the key issues around the water situation in the Langkloof were comparable to theory and that the identified frames and seven scales (and constituent levels) themselves could act as a guiding analytical structure. This collection of terms was entered as codes into Atlas.ti and analysed for frequency and relevance. Aligning, where possible, these key words and patterns to identified scales and levels, allowed for the identification of scale frame mismatches of the three types mentioned in the literature; conflicting scale frames, situating issues at different scales and situating issues at different levels of the same scale (Lieshout, 2014).

The data obtained from the interviews is relevant for the case study. Through data analysis, the task is to evaluate and elevate this data toward answering the general research question on the role of scale frames in a landscape restoration process. This is achieved through comparing the resulting data to the literature-sourced and hypothesised roles of scale frames; as discursive tools to set agendas, strengthen positions, exclude actors and perspectives, direct interaction, and as analytical tools to highlight scale dynamics.

Further, given the approach of using scale frame analysis to understand scale dynamics, it is necessary to align the discovered frames to specific levels of specific scales to highlight these scale dynamics. (Cash et al., 2006) provide 7 scales deemed important in an analysis of these relationships, as necessary analytical dimensions to understand cross-scale, cross-level dynamics:

1. Analysing discovered frames against the **spatial scale** indicates whether stakeholders have a priority purely for their own direct environment/farm/company, or whether their

concerns focus more on their wider area. Further, do stakeholders recognise and consider issues, and their contribution to the wider, national situation.

2. Analysing discovered frames against the **temporal scale** allows learning as to whether the stakeholders compare their current situation to the past, how they view their future prospects and whether they consider the project to align to their priorities (does the project address their short term concerns or purely their longer term targets or wishes).
3. In reference to the **administrative scale**, analysing frames how do stakeholders view the influence of administrative entities at different levels; do they welcome this influence and do they perceive themselves as having influence in return
4. **Institutionally**, analysing the discovered frames should show how national legislation plays a role in their situation; or are local rules, norms and customs a more major contributory or dominant factor.
5. In terms of **management**, how do wider strategies on conservation and water management relate to and impact local tasks and activities?
6. How do stakeholders relate to personal and wider societal **networks** and what role or impact does this have?
7. In terms of **knowledge**, from where do stakeholders receive their knowledge; is it local and self-generated specific knowledge, or are they privy to, and do they benefit from wider sources of more general knowledge?

These scales are beneficial to use as a framework on which the discovered frames can be categorised to highlight patterns and mismatches on areas of interest and contention in scalar landscape relationships, allowing the formulation of conclusions as to the nature of scale dynamics in regards to the case study, and thus landscape restoration.

3.4 Online Discussion: GPFLR Learning Network

The Global Partnership on Forest and Landscape Restoration (GPFLR) is a partnership of leading bodies engaged in global landscape restoration initiatives who aim to fulfil the Bonn Challenge of restoring 150 million hectares of degraded land by 2020.

The GPFLR Learning Network is a network of some 500 restoration practitioners and scholars from around the world. This network shares knowledge on current themes and best practices around landscape restoration and is hosted online, on the “Ning” platform. The network is facilitated by the Centre for Development Innovation (CDI), part of WageningenUR.

In consideration of the specific research questions which seek to understand current practitioner thinking on the determination of stakeholder perspectives and scale dynamics, this network was deemed as a suitable research environment. Due to the qualitative nature of this research, the format chosen was not a quantitative survey, but an online discussion, based on a propositional paper, to which participants could reply and share their experiences, hopefully stimulating informative dialog between participants.

Much of the literature on online discussions focuses on the use of the method in a student-teacher relationship. Here, this is not the case, as the goal of the discussion is to share knowledge and experience. However, some key theoretical underpinnings support the applied design and conducting of this discussion:

- In order for discussions to be effective, there should be a clear understanding of what is expected, what the purpose of the discussion is and feedback should be provided on a regular basis (Al-Shalchi, 2009)
- Initial questions or propositions should be open-ended, interesting and relevant to the target’s needs and allow for multiple perspectives of the topic to encourage participants to relate to their own experiences (Oregon University Teaching Effectiveness Program)
- Specific time frames should be provided in which the discussion can take place; a fixed end date serves to limit and control the discussion and provide an expectation when the result can be published.
- When dealing with higher-order concepts, sufficient supporting literature or examples should be provided to enable participants to understand and participate in the process.
- Space should be provided in which participants can raise their own issues in the discussion, not merely serve to answer what the researcher wants answered.

These points were carried through into the design of the discussion. The participants of the network were informed in advance of the beginning of the discussion that it would take place, what the topic would be and for how long the discussion would run for. A propositional paper, known as a “kick-off paper” was created (see annex) and uploaded to the forum. This paper contained a brief introduction of the research and myself as researcher, an overview of the case study, short sections on scale dynamics, framing and scale framing and open questions around which participants could base their interaction. These questions were designed to:

- Stimulate the sharing of experiences in working with cross-scale/level issues
- Determine how this scalar work was completed
- Understand how these practitioners sought to identify and incorporate actor perspectives
- Whether any explicit use of framing theories could be found
- Judge their opinions on scale framing and the analysis of scale dynamics as useful to consider

These questions, as with the entire kick-off paper, were firstly discussed and cleared by the project manager of CDI, to counter any worries of professionalism and appropriateness in what is essentially a service provided by CDI to an important client. In this discussion, it was also decided not to limit the participation of network members; to invite all members to contribute and not a selected group.

Although not specifically mentioned in the questions, it was hoped that during the discussion, reference could be made to the selected principles from the 10Ps. By stimulating discussion on experiences with cross-scale/level issues I would incorporate further points related to Principle 3 (consideration of multiple scales) and with discussion on stakeholder perspectives, I would incorporate discussion on Principles 2, 5 and 6 (common concern entry point, multiple stakeholders and negotiated change logic, respectively).

However, the opportunity to do this did not arise. The online discussion never really took off, with only six responses, with none but one providing any real input. This can be judged to have happened for a number of reasons; the discussion took place in November and December, traditionally a busy time for practitioners who are busy calculating budgets for the coming year and completing end of year reporting; the network itself turned out to be less active than thought (many other discussions also have very poor response rates); and it also seemed that knowledge and interest of the topic was very low. Two responses were purely to recommend to read work the participants had completed themselves while two others asked for clarification on the topic of framing. This was provided, with clearer direct questions, but no further replies were received. Advice was given to directly contact some members for input; this was done, but went without reply.

Another factor played a role in the 'demise' of the discussion. The discussion was completed parallel to the case study; meaning it was facilitated from a rural area in South Africa. Over time, the internet connection became increasingly unstable in South Africa and this prevented continuous access to monitor and facilitate the discussion; even if it had been active. It was decided to end the discussion, rather than have contributions go unchecked, unmoderated and without reply.

Two useful points of information have been derived from the discussion though; one being an apparent lack of knowledge about specific framing theories and; second that stakeholder perspectives are often dependent on land ownership typologies. These are discussed in the results section, while the discussion's shortcomings are analysed in the discussion chapter.

3.5 Ethical Considerations

During the planning and data collection phase some ethical considerations came to light. These are important to note here as they contributed to both the design of the overall research and the interviews. In general, these considerations can be seen as an attempt not to negatively impact any of the research participants as a result of this project being completed:

1. In line with Principle 4 of the 10Ps (multiple stakeholders), serious attempts were made to ensure that a fair proportion of black farmers could be reached for interviewing. This is necessary, as there appears to be an acceptance that these farmers are already marginalised to a certain extent. On arrival in the field, it was immediately clear, based on input from LL staff, that reaching these farmers was difficult. Language issues are partly to blame; apparently many of these farmers do not speak English; but it was also found that when telephoned, they did not answer. We were also advised by the DRDAR representative, the key governmental and institutional focal point of the black farmer setup, not to simply turn up at their farms, as they would be suspicious of our incentives and connection to the authorities. Living Lands staff did offer to accompany us to visit some of these farmers, but scheduling conflicts made this impossible; no staff were available to accompany us after we had tried and failed to initiate contact ourselves. Further, it is not even sure that Living Lands' presence would overcome their suspicion. Consequently and rather unfortunately, this research presents farmer perspectives from an entirely white population, giving a strong bias in the findings.
2. My own position in CDI meant I was in possession of 'insider' knowledge of some aspects of the Four Returns project. I was asked and obliged to withhold this knowledge should questions be asked by interviewees. This happened on two occasions; in both I said I did not know of any future plans in the area. It is felt that this did not negatively impact the interviewees, but protected the business interest of the Four Returns.
3. Perhaps the most challenging consideration arose during data collection and is relevant to discuss as it was expected to arise and contributed to my attitude entering into interviews; racism. Some of the interviewees made direct and indirect racist remarks, with one hinting at membership of "an illegal organisation" with racist links. I had decided, where possible not to include any of this in the interview reports, unless it had a direct bearing on the water issue, or I was asked to by the interviewee. Instead, I treated racism as a cultural phenomenon that was so engrained in their culture and far removed from my own, that to understand it fully would be to deviate too far from the core of the research. It should be noted here that racist remarks were iterated by people of different colours.

Chapter 4: Stakeholder Frames on the Water Issue

This chapter presents the various frames discovered through interviewing during the case study. These will be elaborated on in an actor-by-actor structure where relevant, although the results highlight strong similarities in framing by many interviewees, particularly those who position themselves as ‘external’ to the situation and knowledge of it. This allows for these actors to be grouped, with increased focus given to the frames of core stakeholders, being perceived as so by all actors and namely, the farmers, the Koukamma Municipality and the Eastern Cape Dept. of Water and Sanitation Affairs (EC-DWS).

What is firstly necessary, is to understand what is meant by “the water issue”. During the interviews and surrounding discussions with locals, the clear and common interpretation of the water issue is that the institutional arrangement on water provision is failing. This refers to not only the local setup of irrigation boards containing farmers and municipal representatives, but to the wider administration of water provision. Thus, the issue under investigation and the framing of which is outlined below, should be seen in that light.

4.1 Stakeholder Issue Frames on the Water Issue

During the interviews, each interviewee was asked to give their description of the water issue. Phrasing the question in so general a way stimulated them to express the elements that they see as central in their understanding of the situation. The responses signalled a high level of alignment in their interpretation that the institutional arrangement around water management is failing, but there are some significant divergences in how each actor frames the specificities of the issue.

4.1.1 The Farmers and Residents Association: Government Incapacity and Unwillingness

The interviewed farmers, as well as the residents’ association, universally framed the issue as a “mess”, “a disaster”, a “scandal”, and as an “embarrassment”, born out of consistent mismanagement by administrative entities at different levels. On a local level, they perceive the municipality to be completely inept, incapable and unwilling to, 1) fulfil its obligations in relation to managing the water provision infrastructure for the settlements and 2) communicate and collaborate with the farmers as to the proper operation of shared water provision systems. On a provincial level, they accuse the government (DWS, DAFF and DEA) of not engaging in any real manner, of having “no clue” what is happening, of having no concern for their wellbeing and for only “caring about their own jobs”. The same frame is applied to the national government who they view as a “shambles” or

a “joke”. They also perceive massive corruption at all levels and view their current position within the situation on water to highlight their exclusion from political and policy processes due to a perceived Apartheid-related retributive stance from the government.

Their perception on the municipality’s failings is in part derived from interaction and often, the lack thereof, in the irrigation board (IB) meetings, which, as described in the introduction, are the vehicle through which municipal/farmer interaction should take place on current issues, such as infrastructure repairs, water rights and allotments from each tributary. The IBs meet only periodically throughout the year, sometimes as little as once per year , but farmer-to-farmer communication is regular, through text messages, phone-calls and emails. The farmers say the municipality does not attend these meetings, or respond to this contact, referring to both Koukamma and George, and thus take no on-going part in discussing and planning repairs. They say that the municipality is guilty of not fixing broken pipes and of not encouraging the repair of toilet cisterns in the settlements, which wastes water, and of general inefficiency in their approach to water:

The Langkloof isn’t a water scarce area. There should be enough water to go around, but the problem is that they don’t use their water properly; the pipes leak and are not repaired and they don’t fix the leaky toilet cisterns in the settlements, meaning the water literally flows down the toilet. So they come to us looking for more water, which we give, but it’s never enough, and if we say no, they send us fines or take us to court. When pipes break, they can be left unfixed for months, or until we pay to fix them ourselves. A pump broke once and we told them, but nothing happened. We fixed it and they sent us a fine.

The farmers also spoke about the challenge of the alien invasive plants (AIPs), which are heavy users of water. All of their farms have these AIPs on the land, but for some the problem is more severe than others. They express different levels of satisfaction with the Dept. of Environmental Affairs’ Working for Water (WfW) Programme; the public works programme who hire unemployed people to clear the AIPs from public and private land. Some farmers say that WfW do a sufficient job, but are limited by what resources they get from the Department of Environmental Affairs (DEA), but others say that the programme is unacceptable and so poorly designed that it won’t contribute, which results in many of the farmers choosing to clear the AIPs off their own land themselves:

Why would it work? They take people who have no jobs and tell them to clear the land of the Wattle. They don’t train them properly and they sometimes only clear what is beside the road. We tell them that they have to go into the mountains and kill the trees that are there, to stop the seeds running down in the rivers, but they don’t do it. And even when they do clear an area, the follow-up time is too long, and when they come back to check the work, it

has been too long and the trees have grown again. They also don't burn the trees or try to kill the seeds, so we have to do it and we get a weevil, which works somewhat. And the whole thing of using unemployed people won't work; they work too slow and why should they work fast? If they work hard and clear everything, they're out of a job.

The farmers speak of their problems with WfW and the Municipality of being part of a wider problem. They say the water issue is just an example of widespread government malfunctioning across the country. They cite many examples, but most commonly:

- Farmer attacks in the Western Cape which they say happen when ANC officials seeking re-election “whip up” racially-based inequality issues on land ownership and income security
- Huge rises in the minimum wage for farmworkers, which the farmers say threatens their ability to keep people employed
- Consistent power supply problems resulting from both a poorly maintained grid and a load sharing programme so South Africa can meet its contractual obligations to supply neighbouring countries.

Centrally though, they speak of the moratorium on new dam construction as being a major hindrance to the development of water provision in the area. This moratorium is, according to them, designed to ensure enough water flows downstream to Port Elizabeth. They say that the moratorium is unnecessary, and that if more investment was put into the local infrastructure, less wastage would occur and there would be enough for the landscape and for downstream users.

4.1.2 Koukamma Municipality: Limited Resources and Support to Provide Water

This sentiment on the moratorium on dam construction is echoed by the Koukamma Municipality. It is one of the challenges that contributes to their issue frame, one of a lack of resources due to insufficient support from higher administrative levels. Their issue frame revolves around the struggles they have in trying to achieve water security in the settlements; which they say is their key priority. The municipality is responsible for not only potable water provision, but for waste water management and refuse. Electrical supply is no longer their responsibility; that is managed by Eskom, the national electrical provider. In addressing these challenges, they describe the various departments as being involved, but not supportive. They are regularly in contact with different people, but this contact revolves around personal relationships and the municipality calling, and recalling to look for answers on queries. They also state that the waiting times to receive approval for funding are too long. In speaking about their challenge to provide water, they highlight the struggle they have due to government policy and a lack of resources:

We are responsible for providing water to all of the settlements, but the water rights are from a time when the settlements had only 50 or 100 houses. But the Government keep building houses and now many of the settlements have hundreds of houses; Ravinha has over 900 houses for example, but with water rights only for a small part of that. We can just about meet demand, but need more dams and money to fix the pipes. We are trying to train people in the settlements to fix their toilets and use the water properly, but it takes time and support. We want to hire plumbers too and are waiting for the funds from the department (Dep.t of Water and Sanitation, DWS)

While this shows some alignment with the farmers' issue frames, it shows divergence in the responsibility for the current situation. The municipal officials say they are more than willing to work with the farmers, but that the opportunities are not there. The officials say they attend some of the IB meetings, but don't get the chance to talk or farmers don't want to listen. They say that because their focus is on the settlements, they haven't had time to have good contact with the farmers. They know what the farmers think of the municipality, but they disagree, and their view is that although they can understand the farmers' anger that the municipality doesn't perform perfectly, the farmers don't give the support that that they could either. They accuse the farmers of not wanting to address the problems in the settlements, of being unwilling to change, and of not realising that the municipality also has to deal with the natural disasters which plague the area:

Floods in 2006/2007 and droughts have caused problems in the area, for which the municipality have received limited relief funding. The farmers wanted this money, but it was needed to repair the municipal building and infrastructure for the settlements; this caused anger among the farmers we know, but had to be done.

The institutional challenges also see a lack of contact with WfW. Here, the municipal officials see this as a part of the problem; without some sort of institutional linkage, the opportunity to share information and resources is lost. This has apparently been raised by the Municipality for discussion at higher levels of the DEA and DWS, but nothing has come from it.

4.1.3 Eastern Cape Dept. of Water + Sanitation: Rectifying inequalities through farmer behaviour change

In some respects, the EC-DWS align and diverge both the frames of the farmers and the municipal officials. When asked to describe the water issue as they see it, they recognise the institutional arrangements around water are not working. They spoke of the situation in the settlements as being a central issue, but they too see the need for concerted effort to ensure people have sustained

access to water. However, their frame revolves around behavioural change of the farmers, who they perceive as a core element of the problem:

These farmers don't control the water anymore. As the Water Act states, the water is the property of the national government, not theirs anymore. They have been fighting us on everything but they have to realise that things will change. It is our job to start the metering and stop these white men thinking they have all the power.

Their issue frame is strongly related to the implementation and enforcement of legislation, metering systems and the accurate calculation of water rights. For them, it is the farmers' heavy use and perceived lack of willingness to cooperate and compromise which has led to the institutional situation not managing the water system effectively.

They challenge the assertion that they are not performing well enough in the area, of not providing sufficient support and resources. This interview was carried out simultaneously with Living Lands staff present, as LL were trying to organise a dialogue process as part of the Four Returns project. The questions posed by LL were roughly the same as mine; attempting to understand perceptions, objectives, partnering strategies etc. The discussion moved toward a reflection of DWS activities in the Langkloof over the previous years. The DWS were adamant that what they had done in the area was more than sufficient, that great progress had been made and that on reflection, they wouldn't change anything they had done. They recognise the difficulties the Municipality faces, but say that they have provided more than enough support and that just because its work does not meet farmers' expectations, does not mean they are failing.

Naturally perhaps, their issue frame incorporated considerations concerning the situation outside of the Langkloof landscape. They referred directly to the Langkloof as a catchment which supplies water to Port Elizabeth and emphasised the need for the local stakeholders to accept the fact that PE's water needs are a main concern of theirs. Their focus is on creating a system which allows Langkloof and downstream water users to have water security.

4.1.4 Nelson Mandela Bay Municipality: Downstream Water Security Considerations

Also somewhat expectedly, the Nelson Mandela Bay Municipality (NMBM), of which Port Elizabeth is the major constituent, frame the water issue in the Langkloof as one of being a hindrance to water security in PE. They also align their limited understanding of the issue to institutional failure, but do so without blame, and admittedly, without much knowledge. Their own key water issue is on managing water use in PE, of dealing with droughts and pollution and of trying to educate and

regulate inhabitants' water use, through public awareness programmes, sign posts and when necessary, hose-pipe bans. Their issue frame is born out of a lack of interaction with anyone in the Langkloof and is more based on informal knowledge attained through colleagues or networks, not from a structured program or arrangement.

4.1.5 Living Lands/Four Returns: Catchment Cooperation for Wider Water Security

The “trans-landscape” element of these frames aligns to the issue frame of Living Lands and Four Returns staff members. In describing their view of the ‘water issue’ one of the initial elements of response was to incorporate the needs of Port Elizabeth. The Four Returns project is based on three catchments, with the objective to increase water security in Port Elizabeth through addressing local issues which affect water provision in the three catchments. This revolves around the creation of sustainable business cases which might reduce the demand on water in the catchments, freeing up more water to flow downstream:

One idea we have considered is to create a composting plant. The wood from AIPs which have been cut down is left sitting there and not used. If it is collected and mulched, then sold back cheaply to the farmers, it can be used to improve soil quality, reducing the amount of water the farmers need. So the idea would create jobs, help farmers and allow more water to flow down to Port Elizabeth.

Through Living Lands' experience in the Langkloof over the last number of years, they have also built up an understanding of the water issue, which contributes to their issue frame. Their issue frame incorporates many of the individual causes for water becoming a contentious issue, but focuses on the need for institutional re-working as a central issue. Here, their water forum proposal, itself an idea to stimulate institutional improvement, offers some insight:

“While everyone has their own views on these issues, there was considerable common concern about the water supply problems in the local settlements, the leakage and waste of water, the pollution problems and the encroachment of invasive alien plants that is reducing the available water resources. Due to the complex nature of these problems and capacity constraints within the area, the potential to successfully address these issues depends on the ability of everyone to collaborate and find mutually agreeable and innovative solutions.”

4.1.6 Additional Stakeholders: Issue Frame Commonalities Arising from Disconnect

The neutrality of the above understanding is shared among many of the other stakeholders. WfW, Gamtoos Irrigation Board (GIB)¹, South African National Biodiversity Initiative and the Eastern Cape Dept. of Rural Development and Agrarian Reform (DRDAR) together frame the issue as one of institutional failure on water.

Their frames incorporate many of the elements of other actors' issue frames, but do so without blame, and all admit that due to the lack of interaction, they perceive themselves to have a somewhat limited understanding. The most commonly heard points from their descriptions were:

- The biggest concern is water security in the settlements
- There is no cooperation between the water users, being the farmers and municipality
- AIPs, droughts and floods play a role, but in general, water supply is not the issue
- There is a lot of anger and resentment about the water situation
- There is no way currently for people to interact together
- Not enough resources and administrative support are available to solve the problem

4.1.7 Language of the Wilderness Foundation Trust, Irrigation Board Technical Advisor, Dept. of Agriculture rep: Lack of Administrative Capacity

These six elements were echoed by the remaining interviewees who, aside from the farmers and reps. of the resident's association, are the only interviewees who have lived in the landscape for very long times, at least twenty years and for some, their whole lives. These interviewees have extensive knowledge on the area and the water situation and have been part of past efforts to combat the problem, both in the individual support to farmers and through attempts to stimulate water-focused interactive platforms.

They raised the institutional failure element of the current water situation as the key problem. But here, they did give blame. They see the farmers as being well organised, professional and proactive in their approach, but see the municipality and higher level authorities as lacking the capacity to address the problems. Their issue frames are based on experiences with the various departments across levels and they say that the management processes are simply not there so as to encourage good performance, the 'red-tape' is extensive and makes the application for funding impossible, and they allude to corruption and nepotism, citing a recent example of the National Police Commissioner

¹ GIB, although an irrigation board, are a vastly different entity than other irrigation boards. They are a much larger body responsible for the entire Gamtoos area. They have large offices, staff members, and are responsible for large scale dams and projects across the area. The EC govt. hires them as implementation agents for many programmes, not only in the Langkloof

being removed from his position due to corruption allegations, only to be appointed the Deputy Minister of Agriculture, Forestry and Fisheries. They do however stress that the farmers could do more and adopt a better approach to the interaction with the municipality.

In summation then, the issue frames of the various stakeholders show alignment of a recognition that the institutional arrangement is failing and that in their perception and resulting discussion of the 'water issue', this is the key element. Divergence occurs on the reasons for this failure; some blame others within the landscape for a lack of commitment, others blame actors outside of the landscape for a lack of support, the capacity for administrative action is seen as challenged, and in general everyone sees that insufficient interaction is taking place.

4.2 Framing Identities: Enemies, Victims and the Relationships Between "Us and Them"

This lack of interaction naturally raises the question as to why this interaction is not occurring. It is clear that all stakeholders are concerned about the welfare of the inhabitants of the settlements. Further, it is clear that everyone knows the current system is ineffective. But what is also abundantly clear is that the relationships in and around the landscape are extremely challenged, antagonistic and often, non-existent. During the interviews, the interviewees were asked to mention who they work with on the water issue, to describe their relationships to these people/organisations and to explain how these relationships arrived at their present state. What was clear from the responses though, was that their frame on their relationships had a great deal to do with their identities; how they see themselves and further, the identities they assign others.

Diverging momentarily from the actor-by-actor approach, in presenting the identities of self and other, it is worthwhile to first recognise that the majority of stakeholder share a common frame, not only on themselves, but of the key central actors, the Koukamma Municipality and the farmers. Given the similarities, the identity frames of Living Lands and Four Returns, Nelson Mandela Bay Municipality (NMBM), Working for Water (WfW), Gamtoos Irrigation Board (GIB), Language of the Wilderness Foundation Trust (LOWFT) and the Eastern Cape Dept. of Rural Development and Agrarian Reform (DRDAR) will be presented together.

A common feature in how many these stakeholders frame their identities of self sees them position themselves as outsiders. For the NMBM, WfW, GIB and DRDAR, this position comes as a result of the lack of interaction and information as to what exactly is going on. They see themselves as having an interest in the situation, as it naturally affects their own work and priorities, but of having no

structure through which to form relationships, understand different perspectives, etc. The limited picture that they do hold of the situation sees them frame the relationship of the key actors, the Koukamma Municipality and the farmers, as a challenge that needs to be rectified to allow progress on water. It seems that there is wide awareness that this relationship is the key one and that it is currently dysfunctional and a major contributory factor in the current problems. These actors also hold an identity of self of being 'well-meaning societal servants'; each expressed a desire to collaborate and work together to solve a shared problem. They do not seem to hold blame or position responsibility for their 'exclusion' from proceedings; each is busy addressing their own aspect of the water issue, but they hold that amending and building landscape relationships and collaboration is key.

Four Returns, Living Lands and LOWFT also frame themselves as concerned outsiders, but in a different sense. They do have connections to the key actors, and are well aware of their standpoints, but speak of themselves as externals in terms of the relationship between key actors; neutrals trying to stimulate cooperation between and the amelioration of a broken, yet central relationship. Looking to the identities of other that these actors assign to the Municipality and the farmers, there is a shared view:

There's been much tension in the past and this has resulted in people being a bit cagey and of holding grudges. It will take people a while to come out of their shells and realise that they can't just keep doing what they're doing. Some of them need to just let go of the past.

And one view, not commonly mentioned, but useful to consider:

They're being stupid, not thinking at all. They both need to get over their egos and see that neither of them is doing enough and they need to change. They're so stuck in their ways that they don't listen to anyone and just keep going as is.

The reason to include this composite quote is to provide an example of the way in which the interviewed actors generally view the aspect of relationships. While the majority of stakeholders view themselves as outsiders, they all know and hold that the relationship between the Municipality and the farmers is the key nexus around which thoughts on interaction in the landscape should be based.

4.2.1 The Farmers and Residents: Victims of Retributive Policy and Inadequate Administration

During the interviews, the farmers and representative of the residents' association spoke fondly of their connections to the landscape. Many highlight their family histories and Afrikaner legacy in the area, they speak of the Langkloof as home, as the source of their culture. They look at themselves as being positive for the area; mindful of the environment, providing employment, contributing resources to the area and of caring for the area's poorer inhabitants:

In 2012, we went into Ravinha. It was too much to see all the rubbish there, the kids playing in a street full of crap. So we got together and hired a bin truck and went in and we took out 37 tonnes of rubbish. Didn't get any help from the Municipality, we paid for it all. It's not right that these people should live like that

But their identity of self also sees them hold a position of victims. They frequently refer to their perceived exclusion from the political system and of suffering the effects of post-Apartheid stereotyping. This sense of victimisation is drastic and incorporates strong socio-cultural elements:

It's because we're white. Since Apartheid, everyone, even internationally, looks at us and sees rich white farmers as a symbol for what happened before. The ANC targets us to get votes; they whip up anger before elections and tell people that they will get land from us, that we are the enemy and the cause of poverty. All of the policies try to get at us; we have to pay more tax, and for what? We pay for services in the valley, but get nothing. Where does the money go? We try to do what we can and spend our own money on trying to get things working, fixing pumps and pipes, but then they say that we are interfering and trying to control everything. That system isn't for us, they only come to us when they want money. They make up some story that we did something and send us a fine, or try to take us to court.

While this sense of victimisation highlights what they see as the government looking at them as enemies, thus contributing to poor relations, it is also a contributory factor in their relations with not only the administration, but also with each other:

Yes many of us are close. We call each other often and send emails. We're in this together. We talk about things at church too. We try to keep things going and share the costs of what needs to be done. Sometimes one guy will pay for a part for a pump or whatever and other times someone else will. We organise the Blossom Festival ourselves now too, we don't get help from the Municipality, so we have to do it.

In turn, their 'identity of other' which they form and hold for representatives of the administration is clear. They see the Municipality as a physical representation of what is wrong with the system, a system which allows for retributive policy and action:

There used to be a "Road Worthy Centre" here in Joubertina. All work vehicles have to get checked once a year. But the Municipality closed it, saying it was not needed, but all of the farmers and working guys have a lot of vehicles and they need to be checked. Of course they would say it's not needed, only white guys used it, black guys don't have the need. So they realised this and closed it. We said that we'd pay to keep it open, because it would still be cheaper than having to take all of the vehicles down to Humansdorp² to get the check. But they didn't let us and we were threatened with court if we interfered with . I'd love to go to court, but they wouldn't show up, like last time.

These identities of self and other carry through into intermittent, unstructured and often conflict-based relationships, which some farmers go so far as to say are now non-existent; "What relationship?" was spoken on a number of occasions. Some said that they do not know the names of municipal representatives, with others citing the recent election of a Mayor, whose name they did not know. Here, the farmers view themselves as operating in a separate system alongside, but not a part of the municipal structure. Throughout the interviews, this was shown through the phrasings used; frequently termed as "us" and "them".

However, the experience of the farmer-municipality relationship in Koukamma is not matched across the Eastern and Western Cape provincial border. Here, the interviewed farmers described their relationships with George Municipality as mostly positive. They knew the phone numbers of the municipal representatives for their area and described them as supportive and hard working. Many of the same problems exist with water supply on the WC side of the Langkloof; broken pipes and pumps, poor planning, etc., but the interviewees say that that they are understanding of the challenges. When asked why they thought this situation was different, the farmers spoke of the differences in general between the Western Cape (WC) and Eastern Cape (EC) Provincial Governments. It seems as though the WC government is considerably better resourced and capable, with higher investments in infrastructure, research and above all water provision.

4.2.2 Koukamma Municipality: Victims of Circumstance, Trying Their Best

For the municipal officials, the interviews also highlighted a sense of self-victimisation. In reference to the lack of support from higher levels and farmers, they see themselves as victims of circumstance, resulting from the inadequacies of the wider administrative system

² +/- 1 hour

We know that the situation is not ideal, but what more can we do. We ask for more funding, but this is difficult and slow to receive, so we do what we can. It doesn't help that the farmers sometimes to refuse to pay their taxes, this would be money we could invest. But some of the farmers are unhappy, we know, so we can only do so much.

Here, the municipal officials hold an identity of civil servants, making the best of a bad situation and of doing what they can for the social good. During the interviews, they speak with pride, but also of belonging to the landscape; although none of them are from the area, they have grown to be passionate 'caretakers' and their concern for the welfare of the settlements' inhabitants is visible.

Further, they see themselves as implementers of policy originating from higher levels, referring frequently to the actions they have to take as a result of the decisions from the Eastern Cape Dept. of Water and Sanitation:

They are heavily involved in many of the things we try to do here. When we request funding for example, they send consultants to do an assessment and they decide on how much of the requested funds we get. It's never what we ask for, only some and we have to work with what we get. With the moratorium on new dams, they decided to do it and we just have to go by it and try and find other solutions

The identity that the municipal officials hold of the farmers remains ambiguous to an extent. They express that they do not have a working awareness of what the farmers are doing on the water issue or on conservation in general. They see the farmers as operating outside of their system of administration, as distant:

Water conservation is a huge challenge. I'm not sure if the farmers are implementing water conservation systems or if they even assess their water use. We are relatively isolated from them as there's no platform or forum where we can share our visions. We need to admit that we are working separately.

There is though a subtle disquiet to be detected from the officials. Some farmers and residents are currently refusing to pay their municipal taxes due to a perceived lack of service:

One of the biggest challenges is that people are not paying for their services. The people who can pay may be angry about something, so don't pay. This means we don't have as much income as we theoretically should. This limits what we can actually do.

However, in their identity frame of the farmers, although appearing to begrudge a lack of cooperation, they do understand the farmers' position somewhat:

There isn't much communication between the municipality and the farmers. Sometimes I contact them to see about getting more water but they aren't happy about it. One reason is because until recently, we weren't a well-functioning department and nobody was coordinating the contact, but it is has been getting better in the last few years. But still, it isn't as good as it should be and we don't know each other well enough.

4.2.3 Eastern Cape Dept. of Water and Sanitation (EC-DWS): Enforcers of Legislation against Opposing Farmers

The EC-DWS form the identity of themselves as enforcers of legislation, of the key administrative body around which policies on water are generated and implemented. They hold that it is their job to change the behaviour of farmers, to whom they form the 'identity of other' as antagonistic opponents. They frequently refer to the Water and Water Services Acts, which legally constitute the irrigation boards, metering systems and water rights purchasing processes. They hold that the farmers are resentful due to the expropriation of legal ownership of water, as proclaimed in the Water Act of 1997, an expropriation which transferred the ownership of a land's water from the landowner to the national government.

Looking back to their issue frame on the control element of their issue frame, power considerations form a part of their held identities of themselves and the farmers. They perceive the farmers to be unwilling to share or give up power over water, while they perceive themselves as having the authority and power to 'reclaim' this power from the farmers. In holding such an identity, they implicitly hint at their held identity as rectifiers of past social inequalities and as agents of social change.

In summation, the relationship between the farmers and Koukamma Municipality has been shown to be perceived as a key factor in the current situation and a key challenge to address in order to improve the water situation. The relationship is perceived as damaged and distant, antagonistic and based on past experiences with little current understanding of each other's situation. The relationship is based on identities that actors hold of themselves and others, identities which see key actors portray themselves as victims of each other's actions and decisions and as somewhat noble in their own actions. Others see themselves as outsiders, of having no working relationship of note, but as willing to engage in a process that they would hope stimulate the amelioration of a relationship they deem essential to addressing the current situation.

4.3 Framing the Process of Addressing the Water Issue: The Struggle for Efficiency, Cooperation and Water Security

The interviewees were asked to explain what they are working on in relation to the water issue. The goal was to highlight the different processes underway, how they perceive the overall process of addressing the water issue as well as their role in it.

Generally speaking, the results demonstrated that the interactional process involving multi-stakeholder collaboration to address the water issue can be characterised as fractured, and as being perceived as so. There are a number of different endeavours underway by the different stakeholders and each tackles specific elements of the situation; scarcity, AIP clearing; infrastructural maintenance; civil society processes; legislative and licensing processes and communicative and educational processes.

4.3.1 The Farmers: Going It Alone for Efficiency and Protection

The farmers perceive the process on addressing the water issue to be a compilation of individual and 'farmer-to-farmer' collaborative processes to maximise the efficiency in which water is stored and used:

We do many things to save water. We changed over to micro-jet and drip irrigation which is much more efficient. We have to maintain our dams and fix leaks as soon as they happen. Our own farmworkers clear the AIPs when it's off-season, it's better than waiting for WfW. We talk and work with other farmers too; if one guy needs more water than he'll phone and see about opening his sluice a bit wider and together we try to keep the walls of the river free from AIPs or fix the walls if they're damaged in a storm. This stops the river getting blocked and water being wasted. If we see damage somewhere, we let the Municipality know, but they don't do anything, so sometimes we fix it. If there's a leak in the settlements, sometimes we'll fix that to, so that the Municipality don't come looking for more water. We have to be efficient, we only have so much water that we can draw from the system and if we want to increase the number of orchards, then we have to use less per orchard.

Here, it can be seen that the farmers see themselves as being a pro-active contributor to addressing the water situation. Their view on the process is one of "doing it ourselves", a necessary approach to take in light of the lack of pro-activity of the administrative system. They see their efforts to address the water issue as hampered by policy; they are tied to limits of water that they can draw, which limits their development, they cannot build more dams and water rights are becoming more and more expensive.

The farmers also see the process of addressing the water issue as being one of a struggle for cooperation. While they do work and communicate satisfactorily with each other, they express dissatisfaction with the communication and activities of the Municipality and higher levels of government. They say that their frequent contacts to these bodies go unanswered, what they perceive to be generosity in the level of sharing and personal investment they make in the settlements, as going unreciprocated, and of being left to the outside of the formal governmental structure.

Another key element in how they frame the process of addressing the water issue, is in relation to protection from the pressures of external interests. For them, the strengthening of the local level institution to manage water, represents an opportunity to form a 'united front' of stakeholders against provincial level water interests:

This whole water thing is politics. This catchment runs inland, not directly to the sea. So all the guys in the Gamtoos and then further down in PE won't want to see our businesses develop and grow. So just because we had a drought a few years ago, they declare us to be 'water scarce' and bring in these rules, which is bullshit. Our population keeps growing, so we need to provide jobs for people by developing new lands. And we are the source of the water, so why should the people here lose out for them? Our challenge is to not be so fragmented, to find a way to work together. And if we do, we'll benefit a lot. At the moment GIB are running our WfW Programme, but if we get together and stop with the fragmented irrigation boards, we could run it and get the benefit of it here in this area.

4.3.2 The Municipality: The process as a strive for efficiency and support

This strive for efficiency is also a key element in the municipal perception of the approach to water. As was discussed, they invest time and resources in infrastructure maintenance and educating settlement inhabitants on water use:

We go to the schools and talk to the kids. We see the kids as being a good way to save water because what we teach them, they will tell their parents. So we teach them about turning off taps and making sure the handle on the toilet is lifted after they flush. We also teach them to tell someone if they see a puddle from a leaking pipe when they are out playing. It's an easy way to reach a lot of people in the settlements and it overcomes some of the suspicion that their parents might have of us when we go into the settlements.

For them, the process is one of the management of resources, of making decisions about priority deployment of what is available and much like the farmers, but at a different level, a process of requesting action and support from different entities to help address the problem:

Yes we are in contact with the Department (EC DWS). They have to approve the investments we want to make and if we need funding, it comes from them. The same is with droughts. If there is a drought, then we tell them that we need disaster relief funds to provide extra water. And with floods, if there is damage to dams or stream/river walls, it needs to be fixed and we cannot do it quickly all the time, so we ask for more resources. But it's slow and not as good as it should be.

Sometimes we will call the farmers to see about opening the sluices, or sometimes I have to go there. Most of the time, they will help, but they are not happy about it, but we have to do it.

Here too then, we see the same struggle for cooperation as the farmers. However, in reference to the farmers, the municipal officials express that their interactions with farmers are much more reactive than proactive. The municipal officials answers concerning the farmers only detailed contact 'when needs must', further hinting at the strained relationships. In speaking of a farmer's unhappiness to be contacted by the Municipality, they express a somewhat personal feeling of going to the farmers 'cap in hand', of needing help. It can then be derived that they view the process of addressing water shortages in some instances as a personal struggle, as though contacting the farmers is something they do not enjoy.

4.3.3 Civil Society, AIP Clearers and External Actors: The process as a struggle for cooperation for downstream and restoration objectives

When asked what they are doing on the water issue, the civil society actors unanimously point to their objectives of stimulating collaboration. For them, the process of addressing the water situation means uniting the individual efforts under one platform, a water users association or similar entity. They look at some of the individual processes as being competitive and counterproductive

In the past, the farmers have been talking about forming a Langkloof water users' association, but only for the farmers. It would benefit their ability to share resources and information, but it would be more to create a front against the municipality and government. We're slowly starting to show them that the benefits of working with the municipality, of creating a wider association that represents everybody

The sentiment on the process as needing a cooperative focal point is not purely focused on the benefits of the landscape. The multi-landscape and “downstream users” focus of some interviewees is a consideration in their perceptions of the process. The EC DWS, WfW, NBNM, GIB and Four Returns all view the process of addressing the water issue in the Langkloof to be a necessity to provide water security for the Gamtoos³ and Port Elizabeth. Collaboration toward the efficient use and management of water resources in the Langkloof is seen as key to allow more water to flow downstream. Thus their view on the process is one of addressing the institutional arrangement toward providing functional and sustainable management.

The EC DWS add to this, by say the process is also one of enforcement, of people doing what the legislation prescribes; a necessity not just to increase local water supply, but downstream.

We are busy with the verification process, to see how much water is actually being used. It's about collecting information and the farmers have to accept that metering will start. It is already in some areas, but there is some resistance. We have to work together and they will see that if there is more information on what water is actually being used, maybe changes could be made which will benefit them, but they have to be more open to negotiate and see the wider picture. There is a responsibility to manage the water better for everyone.

The references to the wider situation is also a consideration for interviewees in response to the process around addressing water issues as being seen as part of a wider process of landscape restoration. During the interviewees, the interviewees commonly asked as to the nature of the research. Careful not to alienate them through the use of conceptual terminology, the research was generally explained as an attempt to understand perceptions and relationships around the landscape so as to support any restoration endeavours that may take place. Many interviewees see the amelioration of landscape relationships as being a stepping stone to achieving restoration:

Before anything can happen, people need to find a way to work together. Because there's not much communication and interaction, there's no point trying to start off a process of trying to fix the water problem, or deal with the AIP problem. It would result in too many different smaller projects with no linkage and people not feeling part of the solution. Instead, it's much better to bring everyone together and try to build a common platform to try to find solutions which help everybody. It's much more efficient this way.

³ The Gamtoos is an agricultural area fed by Kouga Dam, a large reservoir downstream of the Langkloof which itself is fed by the Kouga River. In turn, this flows towards PE.

This is a commonly held view, but in a 'chicken-and-egg' mentality, many interviewees also look at the restoration process of being the way to amend and develop relationships:

People need something to work on together, to rally around. If you look at the water forum idea of Living Lands for example, this would be a concrete thing that people could see is happening and they might come to it and say "Hey, I didn't know what that guy was doing and struggling with". They could see that other guys have a problem with one thing and they might be able to help and they might also see that people are working harder than they thought.

In summation, the process of addressing the water issue has been shown to be different things for different people. The process is simultaneously a fragmented and individualistic struggle, which sees actors try to achieve their core objectives and protect their interests through individual actions, strained attempts at communication and limited interaction, while also being a process of common struggle to stimulate and receive cooperation and collaboration, both for the advancement of and protection from, wider water-based interests.

The current state of the interactional process is, as discussed, fraught with challenges due to strained relationships and different issue frames. Commonalities in people's perceptions of their roles in the process highlighted their views of themselves as often isolated action-takers, expressing their contribution to and priorities in the process as being somewhat noble and justified in light of the institutional situation. They see their behaviour as proper, as necessitated by the situation, while their view of the behaviour of others in the process is one of antagonism, as detrimental to the achievement of their own interests.

4.4 Framing Solutions and Future Visions

Above, stakeholders discussed what the process of addressing the water issue means for them, detailed their current focus of activities and highlighted the challenges therein. In the interviews, the respondents were asked to express what they think needs to happen to solve the situation. Further, to gain a clear picture of what they would hold as something to strive for, they were asked to describe the situation 10⁴ years from now and explain whether this was something they hoped and was likely to be or not? Together, these questions hoped to identify perceived solutions as well as commonly held entry points for action.

Future Visions

4.4.1 The Farmers: Inclusion and Cooperation for Shared Benefit

From the farmers description of the future situation, their focus is clearly on rectifying the institutional situation to allow them to keep develop their business for everyone's benefit and in their responses, they emphasised their passion and sense of ownership they hold for the well-being of the people in the landscape:

Of course we'd like to see things get better. When I retire, I want my son to take over the farm, but not the problems. The same goes for the workers, it's not good to see them in this state, working long days and going home to a house full of kids and then there's no water. They used to live here, but then the govt. gave them these houses and right away you could see they weren't better off. Now they live in houses that are falling apart, in places where alcoholism is a big problem, where some of them get raped. And from a business point of view it's terrible, they're not as productive, we have breathalysers now to see who's drunk and after payday, many of them don't show up. So if we fix all the problems, they'll be better off and so will we.

They also spoke of their own 'ethnic' situation, which as discussed sees them as feeling marginalised and under attack:

We just want to run our businesses. It's tiring to talk all the time about what might happen and to worry whether the government is going to do what happened in Zimbabwe and just come and tell us that it's not our farm anymore. And it's pointless to hold grudges with people, what's done is done and there's nothing to stop us working together. The whole race

⁴ Some of the interviewees didn't want to look that far into the future; instead they spoke about 5 or so years into the future.

thing will get better; this is just the first stage in the revolution and the anger needs to die down and I think it will.

Clearly, their vision hinges then on the resolution of past cultural issues which have contributed to the current political climate, which they perceive as threatening and creating uncertainty. The resolution of these issues they feel, is necessary to stimulate the cooperation and understanding of each other's situation that is essential to generate policies and actions that create an enabling environment for business to grow and for the benefit of that business to be shared.

The answers highlighted different levels of optimism and pessimism. Among the interviewees, there was a stronger lean towards optimism in looking to the future. Most people mentioned the current climate around water as 'something starting to happen' and spoke with hope that something will come of it

If you look at what's happened in the last few weeks, both LOWFT and Living Lands have proposed some sort of water forum to try and bring people together, so it looks like there's a good understanding of the problem. And look to the guys in George, they used to have some problems like us, but now they're doing much better work with the municipality. And all it took was for a couple of people to call each other and talk about what was going on. And I've heard of what's been happening in the Baviaanskloof too. I don't know much about the detail, but there's a bit of talking about it and what will happen here.

However, this optimism is not universal:

Why would it? We've tried it before and it didn't work, the Municipality just didn't show up. Look, I know you come here and say this and that about relationships or whatever, but instead of looking forward 10 years, look back 10 years, or more. Before 1994, things were fine. Even up until 2000, it wasn't that bad, but it's just been getting worse. Every so often, someone comes along with an idea, most of the time it's one of us (farmer) or someone from Stellenbosch or something and they try and do something, kick things off, but nothing happens. I'm not saying that in 10 years it will be worse, it can't get worse, I'm just saying it won't get better. And why? Because of the government. As long as they use us and Apartheid to get votes and keep giving land to guys who are good farmers, but not good managers, then it won't change. I could show you pictures of farms and BEE farms; they used to be run well, then they were given to black guys, who work hard fair enough, but can't run it and don't get the support. So you see these farms fall apart with poor soil and shit crops so in the end they just lease them to a white guy who farms it and the black guys live of the rent. Where's

the sense in that? There's no thought in the policy, they just can't run it, and until the whole thing changes, nothing will happen.

This view is though, representative of the minority of farmers, but many did express frustration at the way the system of BEE and emerging farms are run and supported.

4.4.2 The Municipality: Progress and better relationships

In many ways, this aligns to that of the municipal officials. In their visions of the future, they too emphasise the well-being of the settlement's inhabitants. As always, their focus is on providing water and suitable living conditions, but they too show the importance of better relationships with the farmers:

10 years from now, I would like to think that the water problem will be much better. I won't say fixed, because I don't think it's realistic, but I'd be happy if we were at least not talking about people not having drinking water anymore. The relationships with the farmers is already getting better I think, so I think in 10 years it won't be the problem. It's good for them if the water problem is worked on with us, it means their workers are better off and maybe we can be good partners on that.

In discussing their future visions, the officials spoke with an air of confidence in the likelihood of achieving this vision. They referred to their current feelings that there has been progress in the relationships with the farmers and that the reorganisation of the departmental structure a few years ago, has already had a positive impact. They see themselves as better able to handle shocks such as droughts and floods, although acknowledging room for improvement, as having overcome difficulties in engaging with settlement inhabitants and also of the current high level of civil society interest in stimulating action.

4.4.3 Other Stakeholders: Motivated Collaboration and General Improvements

Together then, both key groups of stakeholders appear to want the same thing; better relationships, improved well-being of the areas poor, and for action to be underway. Looking to the other interviewees, this is, rather unsurprisingly, the key theme in their visions of the future. Each speaks of collaboration being the focal point. There is a common understanding that on a national level, the water issue is only going to become more critical and challenging; that the uncertainty around climate events will grow, and that now is the time to start working together. In describing their future visions the key common points were:

- Stakeholders will be more in contact and motivated to work together
- The distrust and suspicion will be gone

- Some sort of multi-stakeholder entity, as yet undefined, will be responsible for water on a landscape level
- The AIP problem will have improved greatly
- The focus won't be on people not having drinking water

There is then an expressed unanimous desire and acceptance of the need for, multi-stakeholder collaboration. A sub-question during many of the interviews (if it was not voluntarily mentioned) was whether they saw a benefit of and would be interested in, coming to the table to sit with all stakeholders of all levels. Everybody said yes, and that this was something they hoped would happen and had been waiting for.

Proposed Concrete Solutions to Address the Water Issue

In reference to “what needs to happen” to achieve this positive vision, the interviewees expressed a mix of practical and socio-political activities and strategies and in their answers, appointed responsibilities for these:

- The need for a multi-stakeholder platform is central. Commonly described features see this take the shape of a legal entity which supersedes the irrigation boards, is self-funded, is facilitated by a neutral/ outsider, contains representatives of (white) farmers BEE/emerging farmers, Koukamma and George Municipality and provincial government departments. It would have technical advisors as the IBs do, have links to research and constituents would be legally bound to commit to participation.
- The Municipality and farmers both expressed a desire for the moratorium on dam creation to be lifted. What proved vitally interesting in two interviews though, is that there is confusion over the status of this moratorium. One member of each group explained that the moratorium is effectively gone and that farmers can apply for dams, although there was an acceptance that the application would most likely be refused. This ‘revelation’ is discussed in the coming section on the knowledge scale.
- Different stakeholders, but all from the civil society grouping, expressed the need for the development of the Koukamma Municipality’s functional capacities. There is a common view that the Municipality naturally has a central role to play, but that their ability to effect change is limited due to the lack of training and resources. Here, two actors specifically mentioned Living Lands as having a possible role in this.

- Many stakeholders discussed research, in part as it was a question of the other interviewers present. There is a desire for more research to take place, not just on interaction and communication, but on hydrological systems, rainfall and climate patterns and conservation.
- Changes to the methods of AIP clearing of WfW were also a common theme. Actors highlighted that WfW should improve their management, speed and professionalism of work, complete faster and more regular follow-ups, kill upstream plants to stop seeds washing down into the valley and burn the trees and ground after felling.
- The Koukamma Municipality expressed that they need more support in the form of increased and more efficient access to funds, both on a regular basis, and in the instances of disasters. Here, the focus is on the resolution of the bureaucratic challenges with the EC Govt., in particular the EC DWS.
- It was expressed that the farmers themselves need to adopt a more open behavioural stance, as an example, to allow the placement of water meters on the system as a whole.

In summation, the various ideas and perceptions on how to address the water issue in the Langkloof revolve around actors' perceptions of the core causes of the current situation of stagnation, strained relationships and pressured provision. There is a mix of pessimism and optimism which itself is derived from past interaction and perceptions of other actors' motivation and capacity to effect the necessary change. What is common though, is the vocal will for general improvement, concern for the well-being of vulnerable poor and a structure around which to stimulate action.

The results detailed in this chapter have shown that many different frames exist on different aspects of the current water situation. There is a common understanding that in discussing the “water issue”, what is really under discussion is the failure of the institutional arrangement of water management and provision in the Kouga Catchment within the Langkloof.

There are differing issue frames as to why this has come about and they range from the lack of capacity and resource availability to apathy, external interests and corruption. Many refer to wider and more culturally-bound issues, such as Apartheid-related history, ethnicity and skin colour.

The different issue frames are formed through and contribute to strained relationships across spatial and administrative scales and levels, and the lack of current structured interaction has shown that the relationships that do exist are based on past experiences and perceptions, not on current collaboration and understanding of each other’s situation.

The results show that the process to address the water issue is fragmented and incoherent and while individual processes share a common goal of efficiency of water use, they also highlight a common struggle for cooperation, the achievement of which is shown both to be part of a process of protecting from external threats and interests, and for advancing those external interests.

But the results show commonality in the desire for cooperation, for collaboration and for shared and mutual benefit. There is agreement on the need to expand the capacity of the system, to provide water security for the settlements’ inhabitants and for the need of increased support from higher administrative levels.

Chapter 5: Scaling Stakeholder Frames: Mismatches and Disconnects

Chapter 4's description of the interview results has demonstrated the existence of various frames on the issue, identities and relationships, the current process to address the problem and the wishes and wants for possible solutions. In many of their responses, interviewees have alluded to different levels of different scales, highlighting areas common concern, but also of contention and struggle, perceived responsibilities and blame and bottlenecks. The literature has shown that the situation of actor frames to a particular scale or level can be understood as scale framing (Termeer et al., 2010; van Lieshout et al., 2011b, 2012).

The analysis of the placement of issues at these levels, offers insight into cross-scale and cross-level dynamics, interactions and relationships, allowing learning as to how these relationships, or the perceptions of these relationships, has and will contribute to wider restoration or water issue resolution processes.

5.1 Overview and Explication of Scale Frames

Table 1 below is a representation of the core actor frames situated against the seven scales deemed as necessary to analyse in any analysis of a social-ecological system, which in this thesis, landscapes are presented as being. In the table it is now possible to exclude specific mention of some of the interviewed actors, as their contributions and understandings have already been described sufficiently and have all generally relayed the same information and perspective. This is, DALA, LOWFT, SANBI and NMBM and the irrigation boards' technical advisor This does not exclude them from consideration later on, and for the most part, their considerations are taken into account and in the table aligned to, Living Lands and Four Returns. Rather it allows a more focused approach on the key actors who will be focal points in any upcoming endeavours in the coming years.

The table serves as an overview on which an explication of key scale frames on different scales can be discussed. This in turn allows for an in-depth analysis of central scale frame mismatches which contribute to the current situation of strained relationships and interaction and the stagnation in the process to address the water issue. The different cells in the table relate specifically to the frames held by each actor.

	Spatial	Administrative	Temporal	Institutions	Management	Networks	Knowledge
Farmers and Residents	Langkloof focus: Downstream should not benefit at expense of upstream	IB setup failure, Municipal inaction and wider govt. corruption, retributive policy and lack of capacity	Looks back to generational history with comparisons to pre and post 1994 showing deterioration in water situation	See themselves as excluded from legislative system, resulting in antagonism to rules, in turn stimulating their formation of own system	Water conservation is purposed on increasing availability for own use and business development	Local information sharing and safety net. Wider level sense of belonging and alignment against government.	Local and specific, but connected to wider knowledge sharing processes and networks. Perceive themselves to be excluded from administrative knowledge structures
Municipality	Langkloof settlements focus: the provision of drinking water to inhabitants is central	IB setup failure, insufficient support from higher levels	Perceptions based on time in the area, compares situation to then, showing progress	Perceive themselves as implementers of policy, with little ability to influence. Frequent need to 'break' operating rules.	Water conservation plans result in activities to generate additional water for own use	Somewhat isolated, member of municipal colleague network, no connection to farmer networks. Networks are to influence higher levels	Isolated and unable to share and generate knowledge
Eastern Cape Dept. of Water and Sanitation Affairs	Provincial view with emphasis on PE metropolitan area	Satisfaction with current activities and setup, no criticism of administrative setup	Comparison to pre-1994, goals are to rectify past inequalities, speaks of progress on water.	Pride and focus on constitution, Water and Water Services Act	Env. Management plans result in conservation activities designed to find balance between up and downstream users	Access to national and international policy networks, used to formulate objectives through standards and initiatives	Access to knowledge, limited practice of sharing
LL/4R	Tri-catchment restoration toward Nelson Mandela Bay wide water security	Recognition of IB setup failure, approach to link and integrate multi-level focus	Understanding of 1994 axis, but interpretations mainly hinge on exposure to landscape	Seeks a wider adjustment of institutional arrangements through water forum and multi-level partnerships	Activities focused on wider water security of region, conservation is to match separate needs	Strong connection to international donor and knowledge networks.. Attempting to create networks of sort for business case development	Harnessing general knowledge and transforming it into usable knowledge for local benefit

Table 1: Central frames situated at various levels of the literature- prescribed 7 scales to consider for analysing social-ecological systems

Table 1 above details the core frames perceived to exist between different entities at different levels on different scales. Despite the presence of some commonalities, the overview highlights the existence of mismatches which have been shown through the interviews to have contributed to the current situation. Here, the frames situated on the different scales are elaborated on:

5.1.1 Spatial Scale: Mismatching Frames on the Area of Priority

Table 1 shows a clear mismatch in the focus of the different actors concerning their spatial priorities. The Koukamma Municipality are centrally focused on addressing the challenges in the settlements. Their key current activities all focus on this end and their position that they have insufficient time and resources to proactively pursue better relationships and activities to support farmers follows from this. They see current interaction with the farmers, most often in the form of requesting more water from the system, as the means to further their settlements-focused agenda.

The farmers spatial consideration is positioned at the Langkloof level. Their concerns regarding the welfare of not only their own business, but also the welfare of the workers who live in the settlements, demonstrates that although they align to the Municipality on one concern, they are antagonistic to the Municipality's lack of interest and attention to their own needs.

The other two groups of actors, the provincial/national governments and LL/4R focus not just on the Langkloof, but on the wider area. They see the adaptation and amelioration of the situation in the Langkloof as being one method to enhance the water situation in Port Elizabeth and the surrounding area.

This is something that both the farmers and Municipality are aware of. The Municipality did not directly comment on this, but, as shown, the farmers have demonstrated a certain level of disdain for this position. Their view is that the benefits of water should not be felt downstream at the expense of upstream users. In essence, their position is that the concerns of downstream users can only be taken into consideration once the welfare and water security of the settlements and themselves is sustainably catered for.

Toward this end, they see the formation of an interactive platform as one way to protect their interests, as a central and united front against perceived aggression. In their proposed solutions, they and the municipality also see the moratorium on dams as being an example of the focus of 'external' actors; the moratorium limits development and security in the Langkloof, but provides more water for downstream users.

5.1.2 Administrative Scale: View on the Various Levels of Administration

Looking to the administrative units around the water situation, again there are some clear mismatches.

The farmers and Municipality both hold clear observations that support from the Provincial DWS is insufficient. There is some divergence in this, as the Municipality focus on the bureaucratic challenges and time delays in receiving the necessary support, while the farmers' view holds that corruption, apathy, racism and a general lack of operational capacity is to blame.

Conversely, the DWS are proud of the results they have achieved; they spoke particularly high of their achievements in the verification processes in other areas. In the interview, the question was put to them to reflect on what they had done over the last number of years, would they change anything. The answer was a resounding no. Their view holds that the operations on their level are not to blame, but it is the slow pace of adaptation on lower levels which is responsible for the current situation.

There is a common understanding that the fractured irrigation board setup is not contributing to the resolution of the process. The division of the catchment into bodies formed around smaller tributary streams and rivers is seen as hampering the overall effort. Here then, a 'scale frame match' is found. The formation of a pan-catchment representative body would represent a shift toward a collaborative and inclusive administrative structure.

5.1.3 Temporal Scale: Framing Developments to Differing Histories

In discussing the temporal scale; different viewpoints should be considered. Firstly, temporal considerations are important in relation to the development of the current situation; how interviewees look back and compare the current situation to various points in time. Secondly, perceptions on the pace of progress and the units of time to which actors measure their experiences.

The farmers universally refer to point in time long ago. They are from the area and their families have long histories there. There are multitudes of Kritzingers, Ferrieras and Strydoms and many of the farmers spoke of their family histories and the Afrikaner legacy. They see the area as home and a part of them and their wellbeing is intrinsically linked to the wellbeing of the landscape. They speak of their fathers and grandfathers before them and how their operational environment has evolved over the last number of decades. Their focus revolves around pre- and post-1994, when the election of Nelson Mandela and the ANC completely changed the country they grew up in. For them, the current situation on water has been brought about through government action and inaction since that time, their position in society has been altered due to perceived retributive policy and they

perceive a gradual decline in South African fortunes. Some speak too of a changing natural climate compared to their childhoods, discussing increased events of dramatic flooding, hail and drought, while others discuss the increase in unpredictability. They express that as these changes have taken hold, the centrality of water as a challenge has increased. This comparison contributes to their wider view on water, as not having improved, but as having gradually deteriorated over the course of time.

In contrast, the municipal officials are not from the area. Their temporal perspective is born of the duration of their work in the landscape. They compare the situation to what existed when they arrived in the area and for some, this is only a period of three to five years. Since then, a departmental reorganisation has taken place internally, some successes have been achieved and thus, they look back and say that progress has been made.

The EC DWS also take a longer view approach. Their wider perspective sees them also incorporate reference to the Apartheid era, detailing the attempts to redress the imbalances and inequalities in society. Their impression is that since the advent of democracy, the situation has improved and is continuing to do so.

LL/4R adopt elements of both of these perspectives. In their understanding of the prevailing situation, they are acutely aware of the underlying cultural implications of the Apartheid era and its contribution to the current water situation, but they also incorporate in their responses reflection to their own position in the area. Living Lands have been active in the area for a number of years, most notably through a staff PHD thesis on payment for ecosystem services (PES) and a project to mobilise civil society in 2012. As Four Returns DevCo is so new (2014), their understanding of the situation is based on Living Lands own work, and what information they have retrieved through limited interaction in the last year.

Looking to the gauges of progress, we see the farmers naturally align their views to seasons and natural event. They frequently refer to events such as floods and droughts which impacted particular harvests. In doing so, they create comparisons between these events and build their stories around the causes and results of these. In contrast, the other actors adjudge progress based on the implementation of various projects and policies. The EC DWS speak progress against pre- and –post Water Act or Water Services Act; the Municipality measure progress as being slow or fast in light of the handling of specific issues, such as leaks, mini-projects, dam repairs, etc. Again LL/4R present a mix of these; when discussing progress, they align to specific actors, incorporating the issues which they know these actors hold as central.

5.1.4 Institutional Scale: Framing Legislative Interplay with Local Operations

As discussed, the local institutional system of irrigation boards with farmers and municipal representatives as constituents is a focal axis of the water issue. The farmers, municipal officials and LL/4R share an understanding that at the local level, the institution is dysfunctional and can be adjudged to have failed. The result is a system of operating rules which occur on an ad hoc, reactive basis and which are not inclusive of the needs of all stakeholders. For example, when in need of additional water, the Municipality approaches individual farmers, not the relevant irrigation board. There is no structure for interaction, so normally, any actions are independent, or occur within one's own stakeholder network. Both the farmers and municipal officials acknowledge the damage that this non-concerted action causes; it creates a lack of awareness and suspicion.

Moving to a higher level, the moratorium on new dams has been shown to be a commonly perceived hindrance. The rule is perceived to come from a rule-system not concerned with the wellbeing of the landscape's inhabitants, but for external interests. This shows a perceived lack of institutional linkage.

The farmers take this further by identifying the laws and regulations around water to be retributive in nature, to be an attempt to punish them for Apartheid. They see their behaviour and operational processes as justified in light of the rules of their industry, nationally and internationally. In the interviews, questions from the other interviewers highlighted the regulations they must abide by in their farming and the processes they engage in to meet these regulations. Thus, when it comes to national legislation which they see hinders their ability to meet their required standards sustainably, while also hurting their employees and opportunities for business development, they react negatively. It is clear that their view of the legislative and institutional arrangement is completely negative. They feel that they are removed from it entirely, in the sense that neither they, nor their representatives, have any opportunity to contribute to its formation and operation.

The EC DWS hold a polar viewpoint, in which the operating rules on the ground are derived from fair and just laws aimed at caring for the entire population. They speak with vast pride as to the constitution, framing it as one of the modern, world-leading constitutions that other countries copy and use. They see the moratorium as logical, the water rights and metering processes as vital and the current local level institutional arrangement as being threatened by the resistance behaviour of the farmers.

5.1.5 Management Scale: Divergent Local Activities from Higher Level Strategies

It is clear from the responses that there is a wide disconnect between the wider environmental management plans and the actions and strategies that take place on the ground

On a provincial level, the priorities of addressing wider water security for the PE metropolitan area see the strategy in the Langkloof take the shape of water conservation; reducing the amount of water drawn from the system so as to free more up for downstream users. This does carry through to specific actions in the landscape; farmers' water efficiency actions in the form of new irrigation for example, or the municipal efforts to repair toilet cisterns. But there is a divergence and mismatch in the purpose of these actions, as local actors seek to increase the amount of water available for their own use. The farmers actions to increase efficiency are part of a strategy to develop their businesses, to be able to farm more lands and grow more orchards, while the municipal actions are designed to provide more water to ever-growing settlements.

This multi-level view on the management approach taken by actors is also central for the Four Returns Project. Here, their overall plan is to increase wider water security in the region, and this will see them form strategic partnerships with large-scale actors. Together, they will formulate strategies to address specific aspects of concern in each of the three catchments. In light of the farmers' concern around the sacrifice of their objectives for those of downstream beneficiaries, the proposed activities will likely have to adopt a strategy of reassurance that proposed business cases, will centrally be of benefit to them, with external benefits being of secondary consideration.

5.1.6 Network Scale: Connections To and Role of Networks Across Levels

The presence and lack of networks in and around the landscape play a major role in the relationships and perspectives of the different.

The farmers together feel part of their own network; they speak informally at church, on the phone and via email, they speak formally through the farmers' associations and irrigation boards and many are part of cultural networks such as AfriForum which advocate for Afrikaner causes and provide legal support. They refer often to brothers, fathers and sons and of the information sharing, not just in the family, but with these informal and formal farmer networks. These networks provide information on events inside and outside of the landscape, and due to the lack of structured interaction with the Municipality of higher levels of government, this information is adopted into their perspectives on the situation. During the interviews, this was very clear; many of the farmers gave examples of things that were happening or had happened to other farmers as rationale for their mistrust of the municipality. On a wider level, their connection to the AfriForum network informs them about on-going legal cases against the government, notices on corrupt officials who move

between positions and municipalities and information on farmer attacks in different provinces. A quick scan of the AfriForum website shows that most of the news is negative, with the positive news mostly concerning successful legal actions in defence of farmers, thus hinting that network participation is an important factor in the creation of resentment to local authority. Looking to this nature of networks, it is derived that their participation in some networks, particularly AfriForum, is related to their identity. Seeing themselves as victims, they seek to align themselves with others perceived to be facing the same situation, for protection, belonging and for assistance. For the farmers then, many of their networks are reactionary to the situation, contributory to their stance on the issue and lacking any involvement of actors 'from the other side'.

For the Municipal officials, there was limited talk of networks. They do meet colleagues from other municipal departments in the EC and so their networks are provincially levelled and professional in nature. The networks serve to share information, pool resources where applicable and provide ideas for higher level consideration. In contrast to the farmers though, this was the only type of network mentioned. It appears to be part of their job description, involuntary and due to the lack of interaction with the farmers or other actors, void of any of the involvement of other perspectives. It too can then be said to be a contributory factor to the current water situation; the lack of farmer representation in this network or its discussion, excludes farmers' perspectives from governmental discussions on water.

National and international networks do and will have an impact on the local situation in the Langkloof. The participants and objectives of these networks will have an impact on the inhabitants of the landscape. Bringing in the responses of the interviewees from SANBI shows that their attendance in regional and global biodiversity and conservation networks, sees them advising Government participation and agreement to international standards and commitments, which in turn affect lower level processes. The Four Returns Project will see the utilisation of this networks. The project originates from the Commonland organisation itself endeavouring to participate and use influential international networks of public and private actors to stimulate large-scale restoration-focused enterprises. It promotes the create of partnerships and networks of motivated actors toward restoration and results in the sharing of information and resources as well as the inherent compromise of objectives.

The mismatches in terms of networks appear not in looking at which networks are most influential, but rather how different actors employ networks at different levels. The results have shown that at a local level, farmers utilise networks for the pooling of information and resources. On a higher level, networks inform as to current situations, often against, the wider government structure, but offer a

sense of belonging to a greater struggle. For the administrative bodies, networks are vehicles to share knowledge and generate policy changes and for civil society, networks represent the sources of knowledge, cooperation and funding which guide their restoration work.

A clear result in looking at networks is the lack of integration across the various sectors; an observation which again ties into the call for a multi-stakeholder platform. Such a platform would allow for increased and assumedly less exclusive knowledge sharing, the formation of personal relationships and overall more effective networks as tools to effect change.

5.1.7 Knowledge Scale: Cross-Level Disconnect in Knowledge Sharing

Through their networks actors share and generate knowledge for use in not only water issues, but in their wider practices. There is no specific mismatch found in reference to the scaling of knowledge, rather though, that the results show that knowledge flow between actors is dependent on their sector and at what level they operate.

On a farmer association level, there is surprisingly an awareness that the moratorium on dam construction is no longer in place. This is also known at the EC DWS, which implies some level of knowledge sharing that does not feed to either the farmers or the Municipality. However, even though the moratorium is lifted, it is still adjudged to be next near impossible for farmers to receive permission to build a dam given the priority of EC DWS to provide water for the PE metropolitan area.

There also appears to be a strong disconnect in knowledge sharing and generation between local actors and higher administrative entities as the EC DWS hold, or at least voice the situation on the ground as being better than the local actors would hold. This though could be a strategic position they hold; emphasising their perspective defers blame on the situation away from themselves.

In reference to knowledge, it is clear from observations during the interviews, that the Municipality is particularly isolated. Their lack of connection to the farmers means they are outside of knowledge sharing processes on the agricultural system which of course plays a role in the availability of water. Their perceived lack of support from higher levels of administration is also demonstrated due to their shown lack of knowledge on the situation in Port Elizabeth. There is no linkage between them and the NMBM for example, demonstrated in their empty response as to what NMBM are doing to address the water issue in PE. The NMBM themselves show themselves to be somewhat isolated as well; they are part of many interdepartmental networks, but have no structured connection, knowledge or understanding of the processes underway in the three catchments.

Working for Water prove to be a useful example of the lack of cross-level knowledge sharing. They are in possession of much of the technical knowledge regarding AIPs, and their strategies are based on such. However, the processes they are engaged in are at odds as to what the farmers themselves hold as necessary to do to remove the AIPs in an effective manner. The farmers experience has seen them introduce weevils to combat the AIPs, something WfW have not engaged in. Further, the farmers advocate a focus on upstream clearing, but for WfW, this is not a major consideration. It is of course recognised here that the differing and contested core purpose of WfW as either a public works or restoration initiative may play a factor in their modes of operation.

In reference to LL/4R, knowledge is of course a major component. Their scientific, administrative and business connections enable access to general knowledge which is transformed into context specific usable knowledge. Knowledge is garnered through interviewing in the area, stimulating interaction, but the methods of distributing knowledge appear to be lacking. The construction of multi-stakeholder platforms and strategic partnerships in the Four Returns Project, is seen as essential to create a flow and generation of knowledge towards desired outcomes.

The previous pieces have highlighted the existence of different scale frames and disconnects across scales and levels. Some of these are not necessarily problematic; for example, it is not contentious to think that some actors have increased access to international knowledge networks than other actors. Nor is it directly problematic that some actors have different spatial priorities, but it is the uncertainty and impact of these different spatial priorities that causes concern for some actors. Enforced through and perhaps contributing to, disconnects in knowledge, networks and interaction, actors formulate mismatching scale frames which demonstrate and contribute to strained relationships and communication.

5.2 Mismatching Scale Frames Contributing to Miscommunication and Strained Relationships

Differing scale frames do not inherently lead to interactional problems, rather they are merely different expressions of priorities and perspectives which allow for the enrichment of debate and understanding of the different landscape experiences. Scale frame mismatches on the other hand imply difficulties, disagreement and conflict, which in turn lead to communication challenges and stagnation in the interactive process to address the issue (Lieshout, 2014). Thus, these scale frame mismatches are essential to analyse in attempting to understand the scale dynamics of the landscape and how they contribute to the current situation on water. In discussing scale frame mismatches, this incorporates the three separate typologies; framing the issue using conflicting scale frames; framing the issue on different levels of the same scale and framing the issue on different scales (Maartje van Lieshout, Art Dewulf, Noelle Aarts, & CJAM Termeer, 2011a).

5.2.1 Spatial Priority and Administrative Level Mismatches

The first and clearest mismatch is one in terms of the spatial and administrative scale. Farmers almost unanimously framing their stories on the Langkloof level of the spatial scale. In their responses, they do not speak of “the Kouga”, or of the “Kou-Kamma” region. They speak of the Langkloof’s challenges, the Langkloof’s water and the Langkloof’s welfare. In contrast, the current administrative setup is not aligned to the Langkloof. At a town level, the Irrigation boards (IBs) are small and informal, with little interaction between boards. Higher up, the area is split between two municipalities, Koukamma and George, and higher again, between two provinces, the Eastern and Western Capes. The EC-DWS and Municipality naturally speak of the Koukamma region, or area of control. Add to this the framing of the situation by LL/4R as being one of “The Kouga” and it is clear that different people are looking at different levels of the landscape. What this means, for the farmers at least, is that in their Langkloof-focused approach to the situation, they do not find parity in the administrative system. Instead, they have to deal with a plurality of different administrative bodies, with different experiences with each used to form opinions, expectations and comparisons with other bodies. Experiences with George Municipality for example appear to run smoother than with Koukamma, raise expectations and increase frustration when these expectations are not met. It appears that many of the stakeholders are aware of this mismatch as this research has shown common desire for a cross-level multi-stakeholder platform focused on the Langkloof as a whole. This would then warrant the incorporation of administrative actors from the different Municipalities and Provinces, allowing an administrative parity to the farmers’ spatial area of interest.

5.2.2 Spatial Mismatch on the Area of Priority

Further scale frame mismatches on the spatial scale see the farmers and municipality as framing the issue and solution on different but closer levels compared to the other actors, whose frame on the water situation is held at provincial level. NMBM, GIB, WfW, EC-DWS, SANBI, 4R and LL all incorporate the needs of Port Elizabeth and the wider Nelson Mandela Bay into their thinking on the Langkloof's water situation, viewing the resolution of which as necessary to increase wider water security. The farmers and municipality recognise this interest and perceive it to be contrary to their own interests within their spatial frame of the situation, a threat to their priorities of business development and water provision for the settlements respectively. The identification of this mismatch goes some way to explaining the relationships between the farmers and external actors. They want the benefit of the water to remain in their area and they see the administrative structure at provincial and national levels as a threat to that, a perception represented in their antagonism toward the dam moratorium and their view on one purpose of the multi-stakeholder platform, a being a vehicle for protection from external interests. In contrast, the EC-DWS view multi-stakeholder engagement as a way to promote the adherence to policies and enforcement of regulations, necessary to combat what they perceive to be farmer antagonism to the relinquishing of control. Each are somewhat aware of the others standpoint and this creates feelings of resentment toward each other.

5.2.3 Mismatching Scale Frames on Progress Over time

The held resentment between actors is also enforced due to temporal scale frame mismatches. The farmers look deep into the past in their framing of the water issue, to a time when water was not a primary concern and they frame the current institutional failure situation as originating from the shifted political environment post-Apartheid, since 1994. They see the advent of a perceived incapable government as leading progressively to a worse situation for not just them, but also for the valley's general inhabitants. Highlighting the cultural nature of these temporal frames, EC-DWS also look to 1994 and adjudge the situation to be improving, but their indicators for this improvement lie not in the same vein of the farmers, but in the addressing of inequalities of water security and access, themselves key components in post-1994 water-related legislation. Between these conflicting scale frames, the Koukamma Municipality finds itself somewhat isolated. Its officials are not from the landscape and make no reference to the historical situation, instead framing their temporal understanding to the duration of their involvement in the landscape, enabling them to form an understanding that the water situation is improving. The rating of the situation as improving/deteriorating is seen to be related to the core focus of each actor; for the farmers, it is the security and stability of their living and business environments, while for the municipal officials, it is

the welfare of the settlements' inhabitants. This is not to say that the farmers don't care for the inhabitants, they have clearly shown concern for these people, not only as they are farm workers, but as they are 'tired' of the water security topic, of seeing people suffer and resentful of the perceived causes of this suffering.

The consequences of this mismatch are such that different actors use their reflection to the past to form judgements on progress; where some highlight recent progress others lament longer term decline. In the next chapter, this will be shown to be relevant for the design of restoration activities, where the success of which will be adjudged according to the situation and point in time certain actors seek to restore.

5.2.4 Mismatches on Administrative Functioning

Conflicting scale frames on the functioning of various administrative levels were identified. Looking to the local municipal level, the farmers perceive the Municipality to be unable and unwilling to adapt their behaviour and looking to higher-level administrative entities, they say the same but add elements of corruption to their frame. The Municipality also expresses some negativity to the higher administrative levels, but their frame is one of insufficient support and the presence on hindering bureaucracy. This is opposed entirely by provincial officials who stand firm in their pride of work and achievement. Their scale frame again sees them defer accountability away from administrative responsibilities to a focus on local actors not aligning to the prevailing regulatory system. What this implies, is different expressions exist in relation to trust and motivation, allowing for the identification of a new scale outside of the literature-prescribed seven scales.

5.2.5 Mismatches on the Framing of Control

The EC-DWS spoke of themselves as having the power and mandate to wrestle control of the water from the farmers. Here, their frame holds that the local farmers believe they have all of the power over the water. This is a total mismatch to what the local farmers hold. Their frame on power holds that they are excluded from the administrative and legislative system, with no power to influence policy and no control over what happens to their farm; a position highlighted in their fear of a "Zimbabwe style" land repossession.

The damage that this mismatch causes is that the EC-DWS may/will enter into discussion with that mind-set, that they are there to rectify power disparities by decreasing the power of local farmers, whereas the farmers may/will enter into discussion seeking to increase their power over the local situation. Before any interaction will take place, both are aligned to conflict.

5.2.6 Scale 8 and the Differences Therein: Suspicion and Trust

The previous pieces and chapters have shown that multi-stakeholder collaboration, communication and interaction is limited and intermittent, and fraught with resentment due to not only the water issue, but to other issues such as Apartheid-related cultural aspects, property, land and municipal taxes, and the closure of the 'road worthy centre'. This lack of current interaction means that perceptions, hearsay and rumour guide many of the stakeholders' interpretations of each other.

It has been shown that in relation to some actors, different levels of resentment and suspicion exist, especially concerning the farmer-administration relationship. During the interviews it was clear that different actors hold different levels of these feelings for others; some farmers are more distrusting than others of the Municipality as some relate them to higher-level corruption while others stress that they do at least try, but are too limited in capacity to do anything. In turn, different municipal officials expressed higher degrees of satisfaction with the support from farmers; one was more explicit in their resentment of the farmers' refusal to pay municipal taxes than the others. Also, the municipal officials, while lamenting the lack of higher-level support, see this as a capacity restriction, not as a direct attempt to hamper their efforts, thus implying lower levels of distrust and resentment. For the EC-DWS, their distrust and resentment of the farmers is clear.

When these considerations are compared to the shared visions outlined in Chapter 4, visions which almost unanimously express a desire for better relationships, we begin to see a new scale emerge, a scale which sees suspicion and resentment at one end, and trust, respect and appreciation at the other. Figure 1 outlines this scale.

When looking at the expressions of trust, suspicion, resentment etc. in a scalar light, stakeholders' expressions on trusting or resenting each other can then be interpreted as scale frames; they frame other actors as someone who can or cannot be trusted. Thus, the different expressions of the farmers and municipal officials on higher-level administration for example, can then be seen as scale frame differences which themselves affect relationships; the higher the level of distrust and resentment, the less likely communications and interactions will be positive. Although not scale frame mismatches, these differing scale frames are useful to consider.



**Figure 2 - Scale 8:
Low-to-high levels of trust.**

“Scale 8” implies a relationship between this scale and the previously discussed seven scales essential to consider in an analysis of an SES. However, the act of scaling the issue of trust is designed to show the differences in levels of trust not only between stakeholders at one point in time, but to allow comparison via changes in the expressed levels of trust over time. In this sense, stakeholders’ situation of feelings of others on different levels of the trust scale becomes an indicator, whereas in relation to the other seven scales it is the changing dynamic scalar interactions and stakeholders’ perceptions of these, which serve as indicators.

Incorporating this scale becomes useful in looking to the future. As stated, a common future vision is for better relationships, to move away from the current situation of antagonism toward cooperation. But this will not happen overnight; there will need to be initial steps and gradual progress.

From the farmers’ perspective, this will first mean being open to actively collaborate with higher levels of government and their policies, something which they are perceived of not being willing to do, and self-admittedly, many do not pay their taxes. They will need to accept the limitations of the Municipality, but be open to accept their motivation, and rid themselves of their view that that the Municipality is apathetic. Only then can sustained cooperation occur and lead to the development of trust and appreciation.

From the administrative standpoint, the same logic applies; they too are currently somewhat suspicious of the farmers, particularly at the provincial level. They look at the farmers as combative to metering policy, antagonistic to legislation and of being unwilling to relinquish the power they say farmers perceive themselves as having. They will need to progress to an openness to the farmers’ view that they have no power or inclusion, and accept the farmers’ motivation to work towards collaboration.

Situating the various frames retrieved from the interviews at the various levels of the given scales has allowed a clearer picture of the cross-scale, cross-level relationship dynamics to emerge. This has shown that perceptions of higher administrative levels are dependent on an actor’s position in the landscape; municipal officials have regular contact, but express that they do not receive enough support, while farmers view these higher administrative levels to be antagonistic, incompetent and corrupt. In contrast, provincial levels of administration view the current situation as being the result of local farmer antagonism and refusal to cooperate as well as to abide by legislation. Great differences exist among actors when looking to the spatial scale; those part of wider processes of addressing water issues and restoration hold views of the situation in the Langkloof being a

contributory factor in regional water shortages and thus needing addressing for downstream benefits. This spatial viewpoint in turn is seen as a threat by locals whose spatial concerns focus on what they see and work with every day; their farms and the local settlements. These spatial concerns are reflected in management plans which although advocating common efficiency, serve different purposes; for some it is to benefit their own situation, while for others efficiency and maximisation is a method to increase water flow out of the valley. The contrasting and conflicting views and activities result in feelings of isolation and resentment, feelings shared in cultural networks which serve as rallying points and reassurance. Such networks allow for the generation of and sharing of knowledge, often creating feedback loops which see local events highlighted on a national level, aligned to discourse and used to shape local perceptions and boundaries between actors. The different perceptions on the water issue have also been shown to be related to the length of time one is involved in the landscape and on which sector they are situated. Farmers who have witnessed the issue develop throughout their lives, posit that it has deteriorated dramatically, while those who have a limited time of exposure hold that the situation is improving. But in looking to the past, their retrospective perspectives are intrinsically linked to culture and position during Apartheid. In looking to the future though, there is a common desire to be rid of the topic of water scarcity, for everyone to have enough to drink and for better and open relationships.

Key scale frame mismatches see the lack of parity in spatial considerations and the administrative setup, different areas of focus, different judgements on progress, the satisfaction of administrative functioning, perceptions of power and issues of trust contribute to strained interaction and communication which are causes and effects of disconnection in knowledge sharing and networking between different types of actors. Participation in exclusive networks allows for the sharing of experiences, enabling learning and the feeling of belonging and protection, but forms boundaries and distance between other actors, which in turn leads to conflict-based, strained interaction and relationships.

Chapter 6: Conclusions on Scale Frame Analysis for Understanding Actor Perspectives and Scale Dynamics

Chapter 4 presented the resulting stakeholder frames from the interviews completed during the case study. The results highlighted different and conflicting interpretations and standpoints on the root issue of the current water situation, the identities and relationships that stakeholders form and are constituents of, showed that for different people, the process to address the water situation has different meanings, and highlighted the situation people strive to achieve, as well as detailing the proposed solutions to get there. Chapter 5 saw the various frames situated against relevant scales and levels. This allowed for the identification and analysis of scale frame mismatches, providing insight into the scale dynamics at work in and around the landscape. The purpose of this chapter is to use these results towards answering the specific research questions.

What has not been discussed as yet is how currently, landscape restoration practitioners seek to understand actor perspectives and scale dynamics, SRQ 2. After the answering of SRQ 2, the usefulness of scale frame analysis to understand scale dynamics and the derived benefits for landscape restoration processes, SRQ 1, will be presented.

SRQ 2 is answered first so as to further highlight the asserted usefulness of scale frame analysis for landscape practitioners in relation to their current methods.

6.1 Current Practitioner Approaches to Actor Frames and Scale Dynamics: SRQ 2

This section represents the answering of the second specific research question “How do landscape restoration practitioners currently seek to understand actor perspectives and scale dynamics in a landscape restoration process?”.

The 10Ps advocate the recognition and incorporation of various actor perspectives as well as scales and levels relevant to processes in and around the landscape (Sayer et al., 2013). It should follow then, that practitioners should undertake efforts to determine these, so as to contribute to the design of an intervention or process that is sustainable, contributes to the enhancement of a certain aspect of the situation and has balanced benefit for the parties involved. Such an approach is necessary to prevent the collapse of the SES (Ostrom, 2009b).

During this research, an attempt was made to gain insight into how practitioners undertook to gain this understanding in their work. This was a component of the interviews with Four Returns DevCo (4R) and Living Lands (LL) staff during the case study. It was also a key component of the ill-fated

online discussion, the challenges of which limited its usefulness here. Looking first to this online discussion, although it can only be adjudged to have failed in its overall objective, it did shed some light on the lack of awareness of the few participants who did respond, about framing theories. The replies that were received asked for clearer information on the concept of framing, with one participant expressing that “he had no idea what I was talking about”. This of course raises the possibility that the topic was not clearly explained to the participants in the first place. This cannot be discounted, but as the kick-off paper was pre-approved by the managers of the GPFLR Learning Network, who are accustomed to the level and language normally present in network activities, it is assumed that the clarity of the explanation was sufficient, especially after further clarification was provided. In contrast, the contributory responses displayed a great deal of knowledge about the topic of scale. Different, although few, expressions of what scale was understood to refer to, highlighted that scale issues are indeed present in landscape restoration thinking. Overall though, despite showing a lack of awareness on the given topic, the results of the online discussion cannot be considered concrete; the discussion never took off and any observations or interpretations made by me, can only be such, and not contribute to the formulation of conclusions.

The interviews with LL and 4R on the other hand, highlighted much in relation to the approaches they employ to determine stakeholder perspectives and scale dynamics. The general finding was that the primary method of understanding these topics is through one-to-one interviewing. There are some collaborative Learning Journeys, but these are rare. In terms of explicit framing analysis and theories, there is no incorporation in their work. Also, a common recognition was that there was room to improve their attempts to understand scalar relationships and interactions. It was expressed that the conduction of this research is a means to this end.

Learning Journeys involve an interactive walk through a specific area and a number of discussions and workshops on a given topic. Invitees are normally a collection of farmers and governmental and civil society representatives. These are rare instances though, with none having taken place in the Kouga part of the Langkloof in the last number of years. During the duration of the field work for this research, a Learning Journey was held in the Kromme section of the Langkloof. Invited were representatives of government, civil society and private sector; its aim was to support the initiation of a public-private partnership for the 4R project. It is during these events, that LL in particular appear to garner most of their observational information about landscape-focused information from actors outside of the landscape.

6.1.1 In addition: Theory U

There was perhaps one interesting point to elaborate on; a common answer referred directly to Theory U and the U-Process. Theory U is a central theme in their work and the Living Lands founder is a member of the PRESENCING Institute⁵. Theory U promotes ‘listening to yourself and others’ as a core principle. Theory U appears to guide their identification of stakeholders for interviewing:

“At the beginning of each project, one or a few key individuals gather together with the intention of making a difference in a situation that really matters to them and to their communities” (Scharmer, 2009).

At the beginning of the research, when it had become clear as to the lack of involvement of emerging and BEE farmers in the discussion and activities underway in the Langkloof, the staff were asked why this was. Different responses mixed between the physical challenges of reaching these people, a challenge to which impacted this research, and the approach that, for example, the composting concept of the Four Returns Project will investigate. The notion is to firstly target those with investment capacity, stimulate the development of the composting facility and then create a system which will allow the benefits of composting to trickle down to the emerging farmers. This then follows the Theory U approach of identifying and contacting key individuals. Currently LL/4R are in contact with many key actors and decision-makers, with plans to expand this network and forge partnerships with multi-national businesses and international development organisations.

They are not however in contact with any representatives of the over 20 emerging farmers, nor are they in contact with any members of the BEE Programme. This is not to criticise either 4R or LL. What is attempted here is to highlight a perceived flaw in the expression of Theory U and align this to a gap in knowledge about how scale frame analysis may rectify this flaw.

Theory U does not address power issues in stakeholder identification, nor does it propose to. Its more human and emotive focus calls adherents to question traditional developmental and societal change methodologies. In this instance though, it is posited that scale frame analysis, as a recent adaptation to general framing analysis, allows for the early identification of stakeholders and their levels. Responses from initial interviewees in this case study, immediately pointed to the emerging farmers and the DALA as their administrative focal point. This opened up a whole new possibility for research, which unfortunately didn’t happen to the desired extent, but nonetheless served to highlight their existence and the likelihood of different perspectives, necessary to incorporate in a comprehensive understanding of the landscape situation. Without this, neither LL/4R can claim to

⁵ The PLV, where students stay, is the PRESENCE Learning Village

have this understanding, and any proposed interventions or derived knowledge excludes consideration of these stakeholders actual needs.

It is clear and somewhat obvious that practitioners engage in a variety of measures to understand actor perspectives. The case study has shown that semi-structured interviewing remains a central method to identify perspectives, objectives, priorities etc. Further, interactive Learning Journeys allow for some level of elaboration through observation, but the inviting process to these events is somewhat loaded with power issues. What is shown, and somewhat supported by the very limited contribution from the online discussion, that there is an evident lack of incorporation for theories related to strategic communication, framing and above all, scalar interactions and scale dynamics, which no interviewee said they incorporated into their work.

Although not an empirical answer due to the tiny size of the research population, and thus why the research question is adjudged to be only partly answered, little to no attention to strategic communications and scalar relationship thinking in landscape restoration literature. A cursory literature search supported this conclusion and highlighted little or no explicit incorporation of framing theories into restoration materials and literature.

Further, although the literature employed in this study advocates the determination of scale dynamics, this is in relation to SESs or human-environment relationships, not specifically in relation to landscape approaches. There is also actually only minimal information on how to actually do this. One such example exists, as of 2014 (J. Vervoort et al., 2014) and was originally intended to be investigated as part of this work. Instead, it will form a component in the discussion on opportunities for further research. What was commonly expressed during the interviews is an interest in the possibilities of understanding and applying scale frame analysis in their work. Based on the research proposal created for this thesis, the interviewees appeared to value the proposed role of scale framing.

6.2 Scale Framing Analysis to Understand Scale Dynamics for Landscape Restoration Processes: SRQ 1

Here, SRQ 1, “How does the analysis of scale frames toward understanding scale dynamics contribute to a landscape restoration process?” will be answered.

The landscape restoration process under investigation during the case study is in its initial stages. Currently Living Lands and the Four Returns DevCo are examining the situation around water security in the Langkloof and in 2015 will be attempting to stimulate cooperation on sustainable business cases which enhance this water security. This research was positioned at the very beginning of this process, as attempting to highlight the scalar relationships and communication and interaction challenges contributing to and resulting from these relationships around the landscape. To achieve this understanding, a scale frame analysis approach was employed. This warranted the stimulation of interviewees to elicit their various frames on the issue, its causes, constituent relationships and processes as well as possible solutions and further, to identify at which levels and on which scales, interviewees situated these perspectives.

6.2.1 Scale Frame Analysis to Understand Langkloof Scale Dynamics

This thesis has posited that scale frame analysis could be useful to understand scale dynamics and this has been the thesis’ core element. Chapter 4 detailed the various frames of the interviewees. Chapter 5 situated these at various levels of various scales and showed how these scale frames and the arising mismatches contribute to a lack of communication and interaction, feelings of resentment and suspicion and strained relationships. But before drawing conclusions on how useful scale frame analysis is for understanding scale dynamics, it is first beneficial to describe some specific contributions scale frame analysis has made to this understanding:

Identification of Actors, Scales and Levels Important to Incorporate

Determining and analysing the scale frames has firstly been of use to identify the actors, scales and levels which are considered by stakeholders to be of relevance to the water issue. This has been achieved through asking interviewees with which persons and entities they work and communicate with on the water issue as well as with which actors they would like to work with and by gaining insight into their interpretations as to the cause of the problem. When looking to the results of these questions, the interviewees commonly refer to each other; after the initial interviews, no new bodies or persons operating at different levels were identified. This allowed for an interpretation of the issue in spatial terms to be based on local/municipal level, Langkloof level, provincial level and national level. This also allowed for the concrete identification of relevant actors being Koukamma

Municipality, George Municipality, Dept. of Water and Sanitation Affairs (DWS), Eastern Cape Dept. of Agriculture and Land Affairs (DALA), Dept. of Agriculture, Forestry and Fisheries, Nelson Mandela Bay Municipality (NMBM), large-scale fruit farmers, BEE farms, small-scale emerging farmers, residents association, local and national civil society in the form of Language of the Wilderness Foundation Trust (LOWFT) and the South African National Biodiversity Initiative (SANBI) as well as Working for Water (WfW) and Gamtoos Irrigation Board (GIB). All of these actors were described multiple times in interviews as having a role to play on addressing the water issue in the Langkloof. As will be discussed in the “Limitations” chapter, certain difficulties existed in reaching some of these actors and they were unable to contribute to the research.

In reference to the identification of scales and levels, scale frame analysis was not only useful to identify spatial and administrative levels around which to understand the water issue, but also to identify temporal aspects of interviewees issues and further, the importance of the temporal scale itself. This allowed for the wider appreciation of different perspectives on historical comparisons, cultural issues and actors’ judgements on the current situation in relation to past events, which in turn impact future-oriented viewpoints. The analysis of temporal scale frames was essential to understand the farmers’ relationship with higher-levels of administration in particular. Both of these actors look far into the past in their framing of the water issue and in doing so, incorporate strong links to the Apartheid era. The farmers view the situation from a pre- and post- Apartheid perspective, highlighting what they see as a steep decline in Govt. service since 1994’s advent of democracy. They centrally blame this decline for their current water challenges, as well as a host of other issues. On a polar opposite, the Eastern Cape Dept. of Water and Sanitation (EC-DWS) adjudge great progress since 1994. They look back to Apartheid from a completely different perspective, as previous victims now addressing inequalities and enforcing change; change which they say they are achieving. Incorporating temporal considerations then, shows that Apartheid continues to play a role in socio-political issues, although any look to South Africa will give that impression.

Other temporal issues hold sway too; the municipal officials are not from the area and their considerations are based on their time in the job, during which they have seen improvement. But the farmers are from the area, look at it as home, view the municipal officials as somewhat of outsiders whose presence is dependent on a job and who have no passion for the area. Heritage it seems creates an “us and them” mentality by itself.

Allowed an Understanding “the water issue” as Institutional Failure

The analysis of scale framing was instrumental in the formulation of a working understanding of what is meant by “the water issue”. In the interviews, when interviewees were asked to give their

descriptions on the situation, the resulting scale frames showed that for all, the Langkloof level institutional arrangement, focused on irrigation boards, was failing to meet its needs. Others went further up the administrative ladder with this frame, stating that the wider institutional arrangement was not conducive to addressing the prevailing challenges. While representing a different scalar aspect, this does still align to the overall view of institutional failure, around which different actors form often divergent scale frames.

Achieving this definition of the water issue was extremely important. It gave the research a focal point around which the different frames could be interpreted. Without such a focal point, the 'water issue' could be interpreted as anything, ranging from pollution to scarcity to irrigation, to financial considerations, to AIP clearing, etc. Although these in themselves are relevant considerations and important issues, they are not, in the eyes of the interviewees, the core issue.

Showed that Scalar Relationships are Impacted by Non-Water Issues

The situation on water, as being a topic of pressure and concern, is not the only issue at play in the Langkloof. Many other issues exist that impact progress and stagnation on the water issue. These have been discovered through eliciting and analysing scale frames:

- Temporal scale frames have been shown to incorporate Apartheid-related, cultural feelings, which see resentment for past inequalities on one side and anger at perceived retributive action on the other. Here, power also plays a role; as shown in Chapter 5, the farmers and provincial government will both likely enter into collaboration with the goal of wresting power from each other; with one feeling excluded from the current system, and the other feeling they are rectifying past exclusion.
- Eliciting scale frames also highlighted major farmer and resident anger at the Municipality over what they feel are extortionate increases in assigned property value, thus warranting far higher property taxes to be paid.
- Further farmer/resident anger at the Municipality lingers on due to the closure of the 'road worthy centre' in Joubertina. The closure was taken by them to be retributive in nature and only happening because no black people own the vehicles which the centre would test.
- Allegations of corruption in government are widespread and form a central national discourse.

These issues are prominent in the minds of stakeholders and are frequent reference points in interviews. They are taken with actors in their framing process of other actors and on which 'identities of other', expectations, proposed solutions and hopes are based. It is of course not

expectable for landscape restoration practitioners, in this case Living Lands/Four Returns, to address these issues, but they are very useful to be aware of when trying to understand why some actors feel the way they do about other actors.

Highlighted Areas of Common Concern and Possible Solutions

Chapter 5, while describing alignments in some scale frames, focused on scale frame mismatches so as to allow learning on why scalar communication and relationships are currently strained. But scale frame analysis has also highlighted areas of common concern as well as commonly held proposed solutions.

Areas of Common Concern: Welfare of Settlement Inhabitants and Moratorium on New Dams

Principle 3 of the 10Ps holds that finding an area of common concern is seen as important to stimulate stakeholders to engage with each other, while that engagement should be based on a shared benefit (Sayer et al., 2013). Areas of common concern act as rallying points for people to collaborate on, as bridge building notions that show that some problems are commonly perceived and felt.

Although there are scale frame mismatches in which some actors frame the water issue on a higher spatial level which details their areas of focus, here, all of the stakeholders express a core interest in the welfare and water security of the settlements' inhabitants. Analysing the scale frames of the Municipality shows that this is their main priority, while the farmers hold that they too have serious concerns for these people, not just on humanitarian grounds, but as their welfare affects their ability to work on the farms. Living Lands and Four Returns DevCo are aware of this and incorporate it as a central element in their water forum proposal and plans for the Four Returns Project. And the EC-DWS in their reference to legislation, see their role as rectifying past inequalities that these people have suffered, resulting in their current condition.

There is common concern on the local level over the limitations placed on the system by the moratorium on new dam construction. Both the Municipality and farmers wish for it to be removed, so as to increase their ability to provide not only potable water for the settlements, but to allow for business development in the form of new orchards, which would enable farmers to hire more of the local unemployed.

Possible Solutions: Multi-Stakeholder Platform and Capacity Development

The key solution proposed by all stakeholders is the creation of an interactive, multi-stakeholder platform, which many refer to as a 'water forum'. This is seen as essential, not only to collaboratively address the water issue, but to replace the perceived-to-be broken current system of irrigation

boards. Further, this water forum is seen as a way to strengthen the Langkloof's local stakeholders' position against the encroachment of external, downstream priorities of other actors. Other proposed solutions concern the changing of behaviour, of management and implementation strategies concerning infrastructural maintenance are all issues to be discussed within the forum, not to be treated as separate; only so in the lack of a forum.

A commonly held idea to help address the situation is to invest in the capacity development of the Municipality. They themselves admit shortcomings in their abilities and relationships, but relate much of this to the lack of support they receive, which reduces their capacity to effect change. Here, Living Lands are seen as having a role to play; they are accepted neutrals for the most part, they have access to relevant knowledge and resources and will be present in the area in the coming future. This solution too is related to the water forum concept. The forum would see increased linkage to key actors, enabling better information exchange and decision making and the development, assumedly of trust and personal relationships which enhance cooperation in times of need.

The water forum concept, being the centrally held solution to the current situation of strained and distant relationships, also aligns to theory. The water forum, or whatever identity and format it may take, would represent a co-management structure (Cash et al., 2006) that seeks to incorporate entities of different levels that engage in cross-scale/level activities. Such a management structure would allow for negotiation, knowledge co-production and mediation across scale-related boundaries.

Allowed an Understanding The Politics of Scale at Work in the Langkloof

The concept of the politics of scale is frequently discussed in relation to water management (Brenner, 2001; Lebel, Garden, & Imamura, 2005; Norman, Bakker, & Cook, 2012). The concept holds that scales are socially constructed and the placement of an argument or reference to a particular scale or level is politically or strategically motivated (Swyngedouw, 2004; van Lieshout et al., 2012). This aligns to the strategic nature of scale framing which can be seen as a discursive tool to promote one's own position, exclude or reduce that of others and guide an interactive process toward a preferred priority (Aarts & Van Woerkum, 2006; Dewulf et al., 2009; Lieshout, 2014).

Rather than an in-depth analysis of the strategic and political nature of scale framing, some key examples which have been discovered through scale frame analysis and have the largest impact on proceedings in relation to water in the Langkloof will be presented:

- The farmers temporal scale frame sees them relate the current situation to that pre-1994. This is in itself a highly political standpoint to adopt as it directs accountability to the new governmental structure of South Africa. There are most likely racial connotations to this, but this thesis does not explore those purposefully. At the same time as the farmers, the EC-DWS' temporal scale frame is also highly political. By framing the issue as progress since 1994, they too are shifting accountability and responsibility to the farmers for the current situation, portraying it as the result of past inequalities which they are trying to address.
- The politics of scale are also visible in the framing of the water issue as a provincial concern. By doing so, the EC-DWS for example, somewhat relegate the needs of the Langkloof farmers and apply implicit and explicit pressure on them to adhere to legislation and a system which seeks to provide more water for downstream users. To a certain extent, this is also true of the framing of the issue by the Four Returns Project. In looking at the issue from a Nelson Mandela Bay perspective, they are inviting contact and involvement with powerful public and private stakeholders whose primary concerns will be water security in Port Elizabeth, not in the three catchments. This is of course completely justified and somewhat necessary; there are tens, if not hundreds, of thousands of people in Port Elizabeth facing water insecurity and action needs to be taken, but as the Langkloof stakeholders say, it should not be at their expense.
- The politics of scale were also at work in the farmers comments on the proposed multi-stakeholder platform. In the interviews, they spoke of how such a platform is needed, what benefits it would have and how it would be better able to handle the water issue. This was very positive news, that they were willing to engage in collaboration at that level; but simultaneously it turned out, some were considering in engaging in a water forum with only Langkloof farmers present. Here then, expressing the need for collaboration at a level which would see municipal involvement, is seen as a strategic positioning of themselves as motivated 'do-gooders' . It should be noted that it is not known which or how many farmers were considering this alternative, but what is known, is that it will most likely not proceed.

These are but three examples of the strategic and political nature of stakeholder scale frames. What they show is the use of scale to shift accountability and to position oneself in a good light. This was a common feature in the interviewing process, one which sought to not only highlight perceived contentious issues, but to direct attention to specific actors as the cause of any problem. In some respects, this had been effective; this thesis details the common thought that the capacities of Koukamma Municipality are insufficient. Such a thought is not held by the researcher, but by the interviewees, but it is held to such a high degree by many varied actors, that it sways the belief of the researcher towards it.

6.2.2 Conclusion: Contribution of Understanding Scale Dynamics to Landscape Restoration Processes

This work has defined landscape restoration to be the amelioration of a landscape's capacity to a level where it can again sustainably meet the productive and environmental needs of its internal and external dependents and constituents. The analysis of scale frames in Chapter 5 has been useful to shed light on the prevailing scale dynamics in the Langkloof, which in turn have highlighted the needs of many of its internal and external dependents and constituents namely, inclusion in administrative processes, protection from perceived threats, increased support, better relationships and above all, mutually beneficial water security.

The 10Ps of a landscape approach have advocated an incorporation of multiple stakeholders and their frames (P5), multiple scales and levels (P3) and the identification of common concern entry points. Scale frame analysis is adjudged to have contributed to all of these aspects, by identifying and incorporating multiple stakeholders and their perspectives, identifying and analysing the scales and levels perceived by stakeholders to be important and sometimes contentious and by identifying common concern over inhabitants' welfare and perceived restrictive legislation in the form of the dam moratorium.

Taken together with the contents of Chapter 5, the above learnings derived from scale frame analysis should provide Living Lands and the Four Returns Project with a relevant understanding of the situation, according to key stakeholders in the area. This understanding holds that:

1. Cross-level and cross-scale landscape relationships are damaged by the holding of a multitude of mismatching and often conflicting scale frames on the water issue;
2. Landscape relationships are strained by resentment on a host of non-water-related issues;

3. The lack of current structured interaction means that views on other stakeholders are based on past experiences;
4. Despite the prevalence of strained relationships, miscommunication and resentment, there is a shared desire for increased interaction and an improvement in relationships.

With this knowledge, Living Lands and Four Returns should be better able to understand the needs and concerns of stakeholders, be justified in moving forward with plans to stimulate an interactive 'water forum' type platform which supersedes the irrigation boards, position initial discussions as attempting to improve the situation in the settlements; a key concern for everyone, and be informed as to who each stakeholder considers as important to 'take a chair' at the negotiation table. Further, addressing ambiguity over the moratorium on dams would allow farmers and municipal officials to see that they both share a concern in the limitation that this places on their efforts.

Looking to the answering of SRQ 2 which showed the limited employment of frame discovery and analysis and attempts to understand scale dynamics, the benefits for landscape restoration processes of using scale frame analysis to understand scale dynamics go further:

Temporally-Related Expectations

Scale frame analysis has highlighted temporal scale mismatches which see different stakeholders frame the issue according to different histories and lengths of time in the landscape. These histories are used to formulate judgements on progress, which have been shown to differ. These temporal mismatches could provide insight into why some stakeholders will view restoration proposals more favourably than others. A hypothetical example might be:

1. Farm production values are currently = 50
2. Restoration proposes a process which could assist in achieving a production value = 80
3. Some stakeholders look to the current/recent situation and focus on a value increase = 30
4. Other stakeholders lament that the value of 80 is not as high as when they were younger, further in the past, when production values = 120

This is of course a very simplistic example. But it aims to show that progress is different things for different people and that through understanding temporal scale dynamics, practitioners will have an increased awareness of current expectations, past experiences and future visions.

Scale Framing for Monitoring and Evaluation

Scale dynamics are not, by definition, static. They will change over time as cross-scale and cross-level interactions continue. Since it has been shown that the analysis of scale dynamics are useful for a landscape restoration process, it only logical to deduce that the changing nature of scalar interactions over time will continue to provide useful insight during and after the restoration process. This would be useful information so as to support adaptive management, as prescribed by the 10Ps (P1 to be precise), redirect attention to particularly and continually strained relationships, highlight new areas of common concern and also to highlight progress and successfully ameliorated relationships.

Semi-structured interviews were the vehicle through which scale dynamics were determined in this research. These took place at the initial stages of the restoration process in the Langkloof. It is assumed that if the same interviews were to take place in one year, a year which will see the wider initiation of the Four Returns Project, at least some of the responses would be different. These changes would serve to show any impacts of the project and highlight new avenues to consider. It is accepted though that semi-structured interviewing is rarely a suitable form of monitoring and evaluation and thus why this element is touched upon later as an opportunity for further research.

To conclude, scale frame analysis has provided useful, in-depth understanding of the Langkloof's water situation and the scale dynamics around that situation. This understanding is adjudged to be more than appropriate, correct and relevant, with this judgement being justified through the acceptance of actors including Living Lands of my spoken interpretation of the situation during the research and the fact that in many respects, what is presented in this and previous chapters in relation to the results and conclusions is, although vastly expanded upon, similar in nature to the water forum proposal of Living Lands in that it recognises the key strained relationships, different priorities, yet also common concerns and need for a collaborative platform. This alignment confirms the approach's relevance, but goes further by highlighting temporal, spatial and administrative scale frame mismatches, scalar disconnects as well as additional issues which impact scalar relationships which Living Lands express they have not yet encountered or considered in their work in the area.

Chapter 7: Discussion

The previous chapter has seen the specific research questions answered. This chapter will discuss what has been learned about the concepts of scale framing and scale dynamics. It will also reflect on impact of decisions made regarding the use of literature, the overall design of the research, the employed methods of data collection and analysis and the validity and limitations of this work. These are useful topics to consider in light of the general conclusions presented toward the end of the thesis, conclusions which see the general research question answered and discussed.

This chapter will see a shift in language. Until now, the language has been objective, whereas now, as this work is completed under the guise of an MSc thesis, it will become somewhat subjective, as I, as researcher and student, should consider and demonstrate what I have learned from the experience.

7.1 Reflection on Key Concepts of Scale Framing and Scale Dynamics

My motivation to work with the topic of scale framing came not from current work on landscapes or for that matter from any environmental consideration. In fact, it was the conflict in Ukraine. This was in March of 2014 and pro-Russian troops had recently seized control of Crimea, a small peninsula in the Black Sea. The ensuing political speeches on this action saw a multitude of frames emerge which highlighted the issue as a rectification of a past injustice which saw Crimea change ‘ownership’ from Russia to Ukraine during the Soviet era, an illegal aggression against a European neighbour, an international outrage which jeopardised global security and a defensive act from a perceived fascist government and agenda. It was fascinating to witness how geo-political interests on a global level manifested themselves into events on this small jetty and led to “the worst East-West crisis since the end of the Cold War”.

7.1.1 Scale Framing: Lessons Learned

In comparison to academic work on framing theories, the specific topic of scale framing is relatively new. At the beginning of this thesis project, an initial literature search using the key-words “scale framing”, showed a limited number of results, with the PhD work of Maartje van Lieshout appearing prominently on the lists. Maartje’s (and colleagues) work form a central element in my understanding of scale framing and much of the concept’s use in this work refers to her work.

In this work, scale framing is defined:

“the process of framing an issue using a certain scale and/or level” (Lieshout, 2014) (p.21)

This definition will form the starting point for two of the key learnings made from my experience with scale framing. Firstly, the definition focuses on issue framing. I have shown in Chapter 4 that different actors situate different types of frames, namely identity, relationship, process, solution and issue frames at different scales and levels. Admittedly, these types of frames are components of issue frames, but nonetheless, there is value to not simply defining scale framing as being scale-situated issue framing. This is because different actors may hold different frames on an aspect of an issue and these might well be situated at different levels of different scales. In essence, scale frames are not 'new type of frame' but rather, scaled versions of various different types of frames.

Secondly, in footnote to the given description in the PhD work of Maartje van Lieshout, the following comment is made:

"It may be more correct to use the phrase 'framing scales,' rather than 'scale framing,' since how scales are framed is the object of study, and not how frames are scaled. However, scale framing is preferred since it sounds right".

This footnote is directly linked to the given definition of scale framing. I find this to be a somewhat questionable stance, as the definition clearly expresses the scaling a frame, not of framing a scale. In this thesis, I have explored scale framing as the situation of an issue frame at a particular scale or level, not the framing of a particular scale or level. There is an important distinction to be made between the two; my own definition and approach used in the thesis focuses on the role of entities at different scales or levels in contributing to an actor's frame, not the 'politics of scale' consideration in how scales and levels are strategically framed by actors. This is of course included in the thesis in Chapter 6, but it is a sub-consideration.

Looking to scale frame mismatches which have been analysed to show how relationships in the landscape are strained and damaged, an implicit, yet strategic choice was also made. Scale frames may not necessarily be mismatching, they may simply be different. But different scale frames do not inherently cause conflict or disagreement; rather their existence and recognition can simply add depth to an understanding or debate. I had chosen to focus the analysis on scale frame mismatches, due primarily to the need to understand why relationships were strained, why resentment existed and why action was not being taken in the Langkloof. The concept of scale frame mismatches offers this opportunity, as it explores issues of conflicting blame and accountability across different levels of, in particular, temporal, spatial, administrative and institutional scales, which are impacted by and contribute to disconnects in management, network and knowledge scales.

Following my realisation that scale frames are not necessarily an independent type of frame, but more scaled versions of different types of frames, I began to wonder if there were in fact any frames discovered during the research which did not contain an element of scale. The answer was no. This raises the question as to what scales should be considered when attempting to 'scale a frame', and is discussed in the coming reflection on scale dynamics.

Finally, I have to ask as to what would I have learnt about the Langkloof scale dynamics if I had not employed a scale frame analytical approach. Of course, this remains somewhat ambiguous and impossible to fully realise, but I assume that the following holds true:

- I could have analysed the institutional arrangements around water from an organisational perspective, employing configuration theory (Greenwood) to understand the challenges to organisation effectiveness;
- or, I could have analysed the situation from a policy process perspective to show inclusion/exclusion and policy creation bottlenecks;
- or, I could have analysed the situation from a social capital perspective to show how different positions in networks have contributed to the situation.

However, I feel that none of these approaches would have given a sufficient depth and mix of, personal, temporal, cultural and generally scalar understandings achieved here. Scale frame analysis has served to enable me to tell the story, as experienced by actors across scales/levels, that other approaches would miss out on.

7.1.2 Scale Dynamics: Lessons Learned

In relation to the concept of scale dynamics, I feel that I have learned little outside of the literature. This is not necessarily a problem as the concept is quite simple; interactions of entities across scales and levels have an impact on complex processes, as these interactions are impacted by and are determinants of scalar stakeholder relationships, objectives, priorities, frames and other factors which affect the process in question (adapted from(Cash et al., 2006; Ostrom, 2009; Sayer et al., 2013; Vervoort et al., 2014)

But what I have learnt, is that on a practical level, the existence of the seven scales prescribed by (Cash et al., 2006) have been very useful to limit the incorporation of scales into analysis. During the research, the strive to understand scale dynamics warranted the identification of relevant scales. But this raises the question as to what is relevant and in whose eyes? I began to see scales everywhere in responses; scales of happiness, satisfaction, trust, suspicion, anger, hope, belief in the likelihood that

progress or change will come, farm size, financial aspects, water use, etc. However, I decided not to include each of these as a separate scale, to do so would only be too complicated and the benefit of such would not be known, although I do hypothesise that if I were to include such a detailed level of analysis, I could generate some conclusion on for example, how farmers with a different level of anger toward the government frame the water issue differently. Instead, in Chapter 5, I introduce, “Scale 8: Suspicion to Trust”, as an important scale to consider, as differences in the level actors trust each other have a large impact on proceedings.

Another observation, not necessarily a ‘lesson learned’ is that it appears a common recommendation for addressing problematic scale dynamics is the creation of adaptive, cross-scale, co-management or governance mechanisms (Cash et al., 2006; Lebel, Garden, & Imamura, 2005; Sayer et al., 2013; Vervoort et al., 2014). This is quite reassuring in that a key result, conclusion and recommendation of this thesis is to proceed and promote such a structure in the Langkloof, one which is apparently valued and sought after by the stakeholders. But it raises the question, unanswered here as to whether then the issue and concept of scale dynamics is ‘solved’, and whether the approach of creating such a structure captures the complexity of scalar interactions, the politics of scale?

7.2 Reflection on use of theory and the Ten Principles of a Landscape Approach

Here, I want to briefly reflect on how I have used on the role of literature-sourced theory throughout the thesis project as well as reflect on how the Ten Principles of a Landscape Approach have been employed and what this has contributed:

Use of Literature

The literature has been used in this thesis to justify my definitions and assertions on four separate topics; landscape restoration, scale framing, scale dynamics and the research methods.

In reference to landscape restoration, the referenced literature provided a workable definition of landscapes, incorporating the social-ecological aspects deemed essential to consider, but it failed to provide a suitable definition of restoration. Thus, I formulated my own definition (Chapter 2) which was justified through the 10Ps and their adoption into the work of mainstream restoration organisations. What this shows, is a need for a clear definition of restoration going forward, if it is to hold a place in discourses on landscapes and landscape approaches.

In reference to scale framing, as discussed there is not a huge amount of available literature specifically in relation to the 'scale' aspect of framing and much of it is Wageningen-based. This is of course no problem; it just means the pool of literature is somewhat smaller from which to derive an understanding and references. Above I detail a contrast to the PhD work of Van Lieshout which focused on 'framing scales' rather than 'scaling frames'. In some ways I hope to have added to the discourse on scale framing by explicitly showing scale frame analysis to understand scale dynamics.

In reference to scale dynamics, much of the understanding on this concept is derived from a very small pool of references. There are many papers available which address scale issues, but in particular, three papers were extremely useful: (Cash et al., 2006; Ostrom, 2009; Vervoort et al., 2014) as they directly address scale dynamics in a social-ecological system, of which landscapes are treated as being. The paper of Cash is an introductory overview of an issue containing many papers related to scale dynamics. This paper is widely cited in the literature and thus deemed as an excellent source of current thinking. The use of the prescribed seven scales has been instrumental in this thesis; it has provided the framework around which frames and mismatches have been situated and analysed. The paper of Vervoort is directly focused on using participatory methods to determine stakeholder perspectives toward understanding scale dynamics, strongly related to the content of this thesis in that I am presenting stakeholder scale frames to understand scale dynamics.

Looking to literature use in relation to the research methods, a great deal of knowledge exists on qualitative research, semi-structured interviewing, sampling and qualitative data analysis. There is in fact almost an overload and much of this is replicate material. The literature I elected to include is widely cited and comes from published books, rather than individual articles. In reference to the online discussion, there is a gap in available academic literature, highlighting perhaps the un-academic, more professionally-oriented, nature of online discussions, or possibly due to the lack of time that these discussions have been directly used as a research method.

The 10 Principles of a Landscape Approach

The "10Ps" of (Sayer et al., 2013) have been used intermittently throughout the thesis. They have not been employed as a theoretical underpinning, as they are more of a set of normative standards, which the authors advocate considering in any landscape focused intervention. They are themselves the result of a vast literature review and interactive process of leading practitioners and organisations.

The 10Ps have firstly been used to justify the examination of scales and scale issues (P3), the incorporation of a wide array as possible of stakeholders and their perspectives and frames (P5), the

determination of a common concern entry point (P2) around which motivation and negotiation can take place and a transparent change logic (P6) to determine what people think needs to happen and should happen.

In some respects, the 10Ps also validate or show a logic to some of the results of this thesis; P1 calls for adaptive management, sought after by Langkloof stakeholders who advocate an interactive platform to manage the water system, P7 calls for the clarification of rights and responsibilities, implicitly yearned for by stakeholders who seem ambiguous as to what each other should be doing, P4 concerns multi-functionality, a key issue in consideration of the internal/external interests of stakeholders in the 'upstream v. downstream benefits' argument and P10, which calls for strengthened stakeholder capacity, capacity which the farmers they want to have to influence the political and administrative processes around them and the common expression that Koukamma are in need of capacity development, in part through increased support to achieve their objectives.

To conclude, I have noticed that in relation to other theses, there is a smaller pool of references employed here, however this is not adjudged to be problematic, as the literature used are mainly composites and representations of many works. The literature employed here has guided the research and structured the results to a point which the new knowledge generated here can be considered valid and useful.

7.3 Reflection on research design and methods

7.3.1 Design

The core design of the research focused on qualitative methods and saw the completion of a case study and the attempt at an online discussion. The research took on a qualitative nature rather naturally; framing is about how people give meaning and make sense of their experiences on an situation or issue, and qualitative research inherently concerns studying the meaning of people's lives under real-world conditions; representing the views and perspectives of participants; covering the contextual conditions in which they live (Yin, 2011)

The selection for studying scale framing in a landscape restoration project is also deemed to have been the correct choice. Case studies are a highly suitable qualitative research method and relevant for this research, as they analyse a phenomenon in a real-world context (Yin, 2011), and this was the goal of the specific assignment; to understand the phenomenon of strained relationships, interaction and communication on the water issue in the Langkloof. Having a fixed case to study provided boundaries on which conclusions could be drawn on the role of scale framing in the identification of

actors, scales and levels and further, concrete existing and relevant scales and levels around which conclusions could be drawn on the nature of scale framing to understand scale dynamics.

In regards to the online discussion though, it is felt that although such a trajectory is suitable to stimulate discussion, sharing and interactive learning, it has some shortcomings. Online discussions call for people's motivation to offer up experiences, complete somewhat large reflections on their past experiences and to keep track of and read the contributions of other participants. The increased load of work could be one reason why participation in the discussion was lacking. Instead, the possibility exists that a more quantitative survey style exploration would have provided a tighter framework around which respondents could have given details on their experiences. The level of detail and sharing would of course be impacted greatly, but it is my assumption that more responses would have been garnered.

To conclude, I feel that the design of the research, particularly in reference to the case study has been more than satisfactory, as it has allowed for the formulation of an understanding and representation of the situation in the Langkloof and its stakeholders' views, on which much has been learned and shown as to the role of scale framing for a landscape restoration process.

7.3.2 Reflection on methods of data collection

Looking to the design and completion of the semi-structured interviews which have provided the vast majority of content for this thesis, I feel that the employed "three interviews" approach (Seidman, 2012) was very suitable and useful. The approach warrants three separate interviews to be conducted with each actor; something which given the time frame and busyness of the interviewees was not possible. Instead the adaptation of the approach into one, three-part interview, allowed for the context of the situation and that person's relation and experience to it, their specific insights into the causes, impacts and key aspects of the situation and the meaning of that situation on their personal situation now and in the future, to be explored. This aligned very well to the determination of different types of frames on different aspects of the water issue, namely, the core issue frames, identity and relationship frames, process frames and solution frames toward future visions.

The interview guides presented in the appendix will show that for the interviews (except for Living Lands and Four Returns) that questions were kept to a minimum and very general in nature. This was to stimulate the interviewees to provide wider answers and to volunteer aspects of the situation, rather than to be over-guided toward presenting answers which I sought or needed. Such an

approach aligned to the desire to show a benefit of scale frame analysis being the identification of actors, scales and levels considered relevant.

Looking to the sampling, an interesting alignment was found between the method of snowball sampling and scale frame analysis for understanding scale dynamics. If I am to posit that scale frame analysis allows for the identification of relevant actors at different levels and different scales, what I am also saying is that analysing actor scale frames also allows for the identification of possible interviewees on different levels and scales who are deemed to be worthy to discuss/incorporate into the analysis of the situation, essentially what snowball sampling is, using the connections and answers of one interviewee to identify and connect to other interviewees.

I also think it useful to reflect on the fact that some of the interviews were conducted by Skype, rather than in person. In the main, these interviews were with 'non-central' actors, i.e. these actors are not deemed by themselves or others to be key to the resolution of the situation, but do have some role to play or will be impacted by Langkloof events. Whether it is by coincidence or due to their position outside of the Langkloof, none of these interviewees had strong feelings about the causes of the situation. In general, they were more neutral or diplomatic, and many held the same interpretations of the Langkloof issue being part of a wider issue. It is felt however, that conducting the interviews over Skype removed the opportunity to learn a bit more about these people's operating environment, useful for understanding their histories and thus as an entry point to gain an understanding of their thoughts on the sociocultural elements of the situation which have been shown play a major role in the area.

During the face-to-face interviews, this aspect was much easier. Pictures and family crests on the walls of people's offices, as well as certificates of achievements and quality certifications were used to stimulate discussion on their pasts, connections to networks and external organisations, etc. I feel that this helped to enrich the discussion and highlight social, networking and knowledge elements of their situation, in turn allowing for the identification of temporal mismatches and network and knowledge scale disconnects.

Looking to the online discussion, the method to initiate the discussion was through a "kick-off" paper of 6 pages (see appendix). I have used this idea before with success, but on reflection, these instances had directly invited participants, who had agreed to participate. In the case of this online discussion though, I was asked to post publically, and not exclude anyone. Here then, there had been no commitment from anyone to participate and perhaps people were resistant to read a paper. On reflection, I should have used a more user-friendly method to initiate the discussion and stimulate interest in it. If I was to do it again, I would most likely create a video presentation, in which I would

voice over a progression of slides to introduce the topic. This could of course be supplemented with a smaller, more visual kick-off paper. What I also realised, is that my case study did not really form a strong basis of the online discussion, it was discussed only in the initial notice of the online discussion. Instead, I should have incorporated this more, as a live case is always more interesting than a theoretical document.

To conclude, I am more than happy with the methods of data collection employed during the case study. As will be discussed in the “limitations” section of this chapter, I was not able to conduct participant observation during an interactive event which would have been very useful, but given this limitation, I feel semi-structured interviews, carried out in the manner they were, provided me with a very useful, in-depth, relevant and accurate representation of the situation, around which much has been learned. Of course, the online discussion could have gone better, but what has been learned here is to stimulate participation through easier to access and interact with methods, making use of online/digital tools during an online/digital interaction.

7.3.3 Reflection on methods of data analysis

As discussed, data analysis took place in two phases in the course of the thesis project:

Phase 1: Post-interview and informal discussions

As discussed, after more or less every interview, the resulting data was discussed amongst the three of us in the car and during lunch. This was invaluable, as it helped to jog the memory of key points or little details that might otherwise have been missed. It was also useful as some of the accents of the interviewees were quite strong, although as a native English speaker, this saw my interpretation of the answer generally hold sway compared to the other interviewees (German and Chilean). The informal chats about what had been discussed helped in the formulation of notes, the comparisons between different interviews and to understand that what one interviewer thought was more important to the interviewee, might not be thought of as such by another interviewer. For example, one of my colleague’s research is of a much more environmental nature than mine and his interpretation of some answers seemed to see floods and droughts as being the biggest issue, whereas my communications focus, saw this as different. The little chats in the car helped us to tame both of our interpretations toward a more balanced understanding.

Back at the PRESENCE Learning Village, informal discussion on the work of other students and indeed with Living Lands’ own experiences, really helped to put some of the data in context. We were able to determine early on that what we were hearing in interviews matched that of other people and

what Living Lands already knew. This was useful firstly to know we were gaining an appropriate interpretation, but also to let us know that based on that interpretation, there was scope to try and elicit new information, to expand upon what was already known. In this regard, the process and solution frames determined in this thesis should be particularly new and insightful.

Phase 2: Notes, transcriptions and codebook

As discussed, when interviews were conducted with the other two WU students, they completed the transcriptions and I added to them where necessary. This was more than satisfactory as their transcriptions were exceptionally detailed, far more than I would consider necessary. This is in part due to the technical and detailed nature of their studies, but also to their personal attributes. Where I did notice a problem and where I added much, was in relation to the rather emotive elements of interviewees' responses; how they expressed anger, resentment and hope; how their body language shifted dependent on the topic; and what different examples given during interviews actually referred to. For example, when we heard about the closure of the 'road worthy centre' in Joubertina, the transcription made no link to cultural/racial perceptions, whereas my addition did, as this was what the example hoped to show.

When not with the other researchers, my own recording of the interview data saw the creation of far shorter interview reports, based on notes. These were more narratives, attempts to tell the story of the interviewee. For qualitative research, this is adjudged to be a much more relevant method of recording the data for analysis as it does not 'break down' the data into categories, but presents their experience of the situation, closer to how they have told it. I had decided to compile the data into one document, enter it as a 'project' into Atlas.ti for coding and analysis. This was not something I had done before and if I'm honest something I would probably do again. I do see the benefit of using the programme if there are huge data sets, but when there is only circa 30 interviews to analyse, I found it much more beneficial to print all of the documents, compile into a folder and go through them 'the old fashioned' way. This is of course a personal choice, but it gives separation from other things that might be happening online,; work, email, etc. and allows the focus that analysing the interviews needs.

Looking to the codebook that I had generated, it did of course centre on the different frames and types of frames discovered (issue, identity of self/other, relationships, process, solution and vision), differing/mismatching frames, the seven scales and constituent levels prescribed as important to consider for analysing an SES (Cash et al., 2006), 'positive/neutral/negative' perceptions of interviewees, events and entities, areas of common concern. As well as key terms, phrases and events noticed during the interviews themselves. Applying the codes to the data was useful for the

verification of the situation of frames on the seven scales, presented in Chapter 5. This process confirmed the mismatches on which much of my conclusions on Langkloof scale dynamics are based. But on reflection, again in reference to the fact that there were only 30 interviews and in which much of the data was of a similar nature, I find myself questioning just how useful the process was. If I had not done this step, I am fairly confident that the thesis would read more or less the same.

Thus, I can conclude that during this experience, the most valuable method of data analysis were the post-interview discussions and informal discussions with students and staff during the stay in the PLV. Codebooks do have their uses, but this becomes more pronounced with larger and more complex data sets. When the interviews are general in nature, more conversational and when there are less of them, I deem it satisfactory to simply read and re-read and if necessary re-read the notes, reports and transcriptions as the researcher sees fit; but of course, I am a student, not an examiner.

7.4 Validity and Limitations of This Research

The validity of qualitative research concerns the level of accuracy and dependability the results and conclusions can be considered to possess in comparison to reality. Internal validity is the extent to which the results and conclusions can be considered as correct within the research sample population. External validity is the extent to which the results and conclusions can be considered as correct outside the research sample population. In this section, the validity of research conducted in the case study will be analysed so as to strengthen the arguments made in the conclusions, but also to highlight the limitations of the work, where perceived gaps have contributed to limit the relevance of the research in future undertakings in the Langkloof.

Internal Validity

The internal validity of this research is adjudged to be strong. This judgement is firstly justified in light of the fact that during the interviews, it became clear that actors were telling the same stories: the farmers frames were generally the same; they highlighted the same issues repeatedly, has the same thoughts on different actors etc. This occurred to the point where some of the final interviews served only to reinforce what we already knew. The same can be said for administrative and other actors interviewed; the municipal officials generally frame things in a similar vein, the civil society actors all view the situation in the same light as each other and the local independent interviewees all hold the same views, but perhaps with different emotive responses.

Secondly, many of the interviewees were curious to see what we thought of the situation, having been in the area for a while and as having interviewed different actors. Some of them, particularly farmers asked us why we thought the problem was there. Try to remain somewhat objective, we gave very neutral answers. These answers and summaries were very well received, showing that in their eyes, the research subjects thought we had a good grip on the situation; although one or two were amused by our lack of willingness to appoint blame.

Thirdly, and as mentioned, the general outline of the relationships and frames presented in this thesis is very similar to the water forum proposal of Living Lands. However, this thesis goes further in that it includes the elements of scale that their proposal does not. Further, my own position as an external to the landscape, give an element of freedom to display different composite quotes, some of which are quite contentious. In essence then, I have more freedom to explicitly address some of the cultural issues that Living Lands would be better to not explicitly include in documentation.

As discussed, staying at the PRESENCE Learning Village and working with other students allows for a constant sharing of experiences and views on the situation. After the interviews, discussions were commonplace with the other interviewees, as well as informally with other students and Living Lands staff, who have a great knowledge on the area. This served to reinforce the understanding of the situation presented in this thesis.

Finally, the fact that I will be sending this thesis to many of the interviewees, has been in itself a validity check; it has enforced my desire to be accurate, neutral and representative in my presentation of the results. Time will tell on the success of this.

External Validity and Limitations of this Research

In general, I feel the research makes a contribution to the understanding of the situation in the Langkloof, and that it adds to the understanding of scale framing for a landscape restoration process. However, some shortcomings see that assertion as limited.

With SRQ 2, I attempted to highlight current landscape restoration practitioner activities in relation to the determination of actor perspectives and scale issues. This was attempted through cursory literature searches and the online discussion. I cannot adjudge this to have been successful outside of what Living Lands and Four Returns staff currently do in their work. Thus, it remains somewhat ambiguous to me as to the level of scalar relationship and actor perspective identification currently undertaken in landscape restoration work. This implies that the output of this research is relatively limited in relation the wider population of landscape restoration practitioners.

Within the Langkloof, but outside of the research population, exist many farmers. These are BEE and emerging farmers, all of whom are black. Logistical reasons have been discussed in this thesis as to why it was not possible to reach these people. This is the key and central limitation of the research. It is assumed that these people have vastly different frames and experiences on the water issue and that these frames would likely alter the research results and derived conclusions. Thus, this research cannot be considered as a valid representation of their perspective. This is a somewhat serious limitation of the research, but it is in part counteracted through the interviewing of the Eastern Cape Dept. of Rural Development and Agrarian Reform, who all interviewed stakeholders know is the primary administrative contact for the emerging farmers. His knowledge of their situation enables an understanding that at least some elements of their situation are generally similar in nature to the more commercial white farmers.

The same issue holds true for representatives of George Municipality. Despite best efforts and a great deal of time to arrange interviews with these people, none were conducted. With this thesis, I present the relationship between Koukamma Municipality and the farmers as being a key factor to address, but I have also shown that farmers who fall under the administration of George Municipality say that their relationships are much better. Not being able to include interviews with George means that I have lost the opportunity to understand why this is and what this implies for the situation in Koukamma.

I have presented my interpretations and learnings on scale framing purely on the basis of semi-structured interviews. It was originally envisaged that participant observation would be possible, during an interactive event of some sort, but due to the busy time of year for all concerned; harvesting time; Four Returns events in other catchments; and a visit of the Minister to the provincial government, no events were possible in which this could take place. Thus, any conclusions on scale framing exclude the processes of re-scale-framing (Lieshout, 2014), which holds that scale frames emerge, adapt and are reformed on the basis of interaction. This is adjudged to be a serious limitation. Not seeing scale framing and processes of re-scale-framing in an interactive event excludes the opportunity to see in practice how perceived power and access disparities, temporally related resentment and concerns over external interests affect and guide the interaction and thus shape outputs.

7.5 Opportunities for Further Research

7.5.1 Scale framing in practice and through interaction

This thesis has shown that it is beneficial for landscape restoration practitioners to investigate cross-scale dynamics in their restoration endeavours. Further, it suggests scale frame analysis as being an appropriate approach to achieve this understanding. However, no recommendations are given here on how to do this in practice. This is as a result of the fact that only one-on-one interviews were completed; scale frames and possible scale frame evolution were not observed or stimulated in an interactive event. Thus the opportunity exists to investigate a practical method of stimulating the expression, interaction and evolution of scale frames for the practical benefit of determining scale frames. (Vervoort et al., 2014) provide a practical tool for doing just that. “Scale Perspectives” is prescribed as a simple tool for use in multi-stakeholder interaction to directly address scale dynamics with together with stakeholders. The visual tool stimulates participants to note down their key perspectives on issues around a social-ecological system and place these on a chart which has spatial and temporal scales as axes, with a view to stimulating discussion on which issues should be addressed as priority (temporal scale) and at which spatial level the issue has most impact. It is my assumption that this tool would be of use in practice.

7.5.2 Scale framing for monitoring and evaluation during complex processes

Chapter 6 posited that scale framing, or more specifically, the analysis of changing scale frames at various points in a landscape restoration process would enable learning as to the impact of the process and its effects, particularly in reference to the Langkloof situation, on landscape scale dynamics and relationships.

But just how this would be done is not known. Thus the opportunity exists to investigate the formulation of model, process or practical plan through which scale frames could be efficiently discovered and presented so as to enable effective comparisons of changing scale frames over time.

One suggested method is to hold a plurality of workshops which use the aforementioned Scale Perspectives tool, but this in itself would require preliminary exploration with practitioners.

Chapter 8: Final Conclusion

This conclusion represents the answering of the general research question, “What is the role of scale framing in a landscape restoration process?”.

Scale framing has been shown in the literature and in this thesis to be the process of situating a frame at specific scale or level. Through the process of framing, actors highlight different aspects of a situation as relevant, problematic, or urgent, and by doing so situate issues on different levels and scales (Aarts & Van Woerkum, 2006; Dewulf et al., 2009; Lieshout, 2014; Termeer, Dewulf, & van Lieshout, 2010; van Lieshout, Dewulf, Aarts, & Termeer, 2011). Scale frames have been shown to be discursive devices which attempt to set the agenda for interaction and discussion on a problem or issue, strengthen one’s own position relative to others, inflate or deflate the problem, shift accountability and consciously or unconsciously exclude or demote the perspectives and presence of other actors from the interactional process (Lieshout, 2014).

But these are not the only roles of scale framing and scale frames in a complex interactive process such as landscape restoration. In this thesis, I have posited another role, which holds that an awareness of the above roles of scale framing enables scale frame analysis to be a useful analytical approach to understand scale dynamics, which are dynamic interactions of entities at different levels of different scales and which are affected by and contribute to landscape relationships, communication and interaction and thus, processes of landscape restoration.

To validate this position, I have employed a scale frame analytical approach in an attempt to understand the communication and interaction challenges and opportunities around the water issue in the Langkloof, South Africa.

Here scale frame analysis has been useful to show that cross-level and cross-scale landscape relationships are damaged by the holding of a multitude of mismatching and often conflicting scale frames on the water issue; landscape relationships are strained by resentment on a host of temporally related, but non-water focused issues; the lack of current structured interaction means that views on other stakeholders are based on past experiences; and despite the prevalence of strained relationships, miscommunication and resentment, there is a shared desire for increased interaction and an improvement in relationships.

The information derived through this analysis of stakeholder scale frames will be of use in the design and planning of the Four Returns Project and related activities as it highlights; 1) areas of common concern to use as entry points for interaction; 2) shared visions on the future of the area and concrete ideas held by stakeholders on how to address the water issue and achieve that vision; 3)

key central misperceptions on the power disparities among actors; 4) shared concerns on the spatial priorities of other actors which leads to worry over external vs. internal interests and finally; 5) cultural issues which appear to centre around lingering post-Apartheid resentment. The resolution of these issues are essential and there is a need for the development of trust and negotiation. Here, engaging in joint research or fact finding has been shown to be beneficial in discovering commonly agreed-upon insights, reducing uncertainty and facilitating the development of trust between stakeholders (Leeuwis, 2004: p.315). Only after such activities have stimulated the initial climb up the levels of trust, can meaningful dialogue and negotiation on core issues take place.

Thus, I can conclude that scale frame analysis is in fact a useful approach to consider for landscape restoration processes and practitioners. Adopting a scale frame analysis approach allows for the determination of the multiple stakeholders, scales and levels considered essential to include in negotiation, the multitude of frames which highlight the different needs and priorities of stakeholders, as well as the interdependencies, conflicts and relationships of stakeholders, all of which have an impact on the landscape's capacity to sustainably provide for the productive and environmental need of its inhabitants and internal and external dependents and beneficiaries.

Chapter 9: Recommendations

During the interviews with Living Lands/Four Returns staff, they were asked what they would like to receive from this research; how could it benefit them. Aside from the general content of the research, they requested that recommendations, based on my situational knowledge acquired during the research, be formulated as to what should be undertaken in the next six months in the Langkloof:

1. Just as this research cannot claim to incorporate the perspectives of the emerging and BEE farmers in the Langkloof, neither can Living Lands' understanding of the water issue. It is highly necessary to overcome any challenges in reaching these people. Making contact and learning about their situation will highlight different experiences on the water issue, as well as other topics which affect their wellbeing and functions. This is also a necessity for the Four Returns Project, as any sustainable business case that is designed to benefit these farmers, should have an understanding of the problems they hold key. Although they are hard to reach, the local DRDAR office in Joubertina has contact details for these farmers and can advise on the best way to go about reaching them.
2. Just as above, the same logic is applied to contact with George Municipality. The Langkloof crosses into the Western Cape, and from the interviews, the situation with regards to Municipal relationships is somewhat different. It would be highly beneficial to make structured contact with George, despite the proven difficulties in reaching them.
3. None of the farmers refer to the area as "The Kouga". Instead they refer to the "Langkloof". The Municipality refers to the area mainly as "Koukamma", but also to a lesser extent as the Langkloof. It is important to 'speak the language' of the stakeholders in the area and it is my recommendation that Living Lands and the Four Returns incorporate this small change into their interaction with the farmers. As this research has shown, there is demand for a Langkloof-wide interactive platform, not a Kouga Catchment platform. It is understood that because the situations between the Kouga and Kromme Catchments are vastly different, this warrants a sub-division, but this does not mean that in discussion with the farmers, the "Langkloof" cannot be the topic of discussion.
4. Given that the water issue is so contentious and complex, it may be beneficial to first stimulate interaction on a smaller topic which is easier to engage on. My first thoughts on this lead to me to suggest the creation of a periodic newsletter in which different actors take turns to introduce themselves, their work and their hopes/objectives. This would allow for

the initial creation of awareness as to who is involved in the area and hopefully stimulate personal connections. It would also create an awareness of the Four Returns Project's existence and progress.

5. In mid-January, I learnt that the impetus behind the water forum will be dropped and instead the focus will be on sustainable business cases for the Four Returns Project. This is understandable given the farmers' perspectives and the presence of LOWFT's alternative idea, but this research has concretely shown the common motivation for an interactive platform on water. It is my recommendation that any Four Returns business case or research toward a case try to incorporate and sustain an interactive platform, as the desire for such, at least spoken desire, is omnipresent.

6. It was discovered that although many farmers think the moratorium on dams is still in effect, it is in fact, not. There is some remaining ambiguity to the exact situation and I recommend that, since the issue is of common concern for many stakeholders, Living Lands would be providing a useful service to all if a clear understanding of the situation was formulated and distributed.

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- Oregon University Teaching Effectiveness Program) Generating and Facilitating Engaging and Effective Online Discussions:
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- IUCN website: <http://www.iucn.org/>
- GPFLR Website: <http://www.forestlandscaperestoration.org/>
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- Four Returns Background Document, 2014: <http://fourreturns.co.za/port-elizabeth-catchment-area/>

Appendix

Annex 1 : Interview Guides

1.1 Standard interview template (farmers/Munic)

NB – The questions are asked, the others are just points to remember for further sub-questions if not volunteered

- Can you tell me about yourself, your role and what keeps you busy?
 - a. In charge of? / Who do they report to? / what do they actually do?
 - b. History/family?
 - c. From the area? / How long here? / Where from then?

- Are there major challenges you find yourself dealing with?
 - a. Day-to-day??
 - b. On-going?
 - c. How major – how much impact / time spent?

- Are there people and groups you work with on a regular basis?
 - a. Networks?
 - b. Other actors / groups
 - c. On what?
 - d. Work with or against?

- How would you describe the water issue in the Kouga?
 - a. Scarce
 - b. Price
 - c. Competition
 - d. Conflict
 - e. Politics

- Can you tell me about how this impacts you and how do you try to address this?
 - a. Personal
 - b. Business
 - c. Work
 - d. Actions?
 - e. Talking?
 - f. Alone?

- Who do you work with in trying to address the problem? Who would you like to work with?
 - a. Farmers?
 - b. BEE/Emerging
 - c. Munic.
 - d. Tech advisors
 - e. Govt.
 - f. AfriForum / other
 - g. Networks – prof/personal
 - h. Consultants?
 - i. NGO/Civil
 - j. Research/Unis

- How would you describe your relationship with these people?
 - a. Examples?
 - b. Why?
 - c. Getting better or worse?

- Why do you think these challenges exist?

- Can you tell me what you want and think needs to happen to solve these challenges?
 - a. Concrete
 - b. Done by who?
 - c. What will you do?

- If you look 10 years into the future, what do you think the situation will be and why? Is that the situation you want and how likely is it to happen and why?

- We have come here to talk about among other things, the water issue. But there may be other issues which you think are equally or more important to talk about. Are there?

- Any more questions?

1.2 South African National Biodiversity Initiative (Skype Interview)

Rather than present the interview guide (more or less the same as others) SANBI were an example of an actor who wanted some questions around which to prepare in advance of the interview:

1. What initiatives are SANBI working on in relation to water provision and management in South Africa?
2. Are there current and/or future initiatives specifically in relation to the Kouga Catchment? What are these initiatives and who is involved?
3. Who are the people and groups that SANBI currently and would like to collaborate with on the water issue? How would you describe the relationships with these entities?
4. What are the key challenges faced in relation to achieving your objectives in the area? What support is needed to address these challenges?
5. What are your hopes and vision for the future of water provision and management and the wider Langkloof area?

1.3 Living Lands and 4 Returns Staff Interviews

Part 1 – About them and 4 Returns

1. What is his/her role within Living Lands / 4 Returns
2. What is connection between LL, 4R and Commonland
3. What is the primary objective of 4 Returns Project
4. How do they hope to achieve this objective?
5. What does 4R mean with building partnerships?
6. How do these partnerships organise activities?
7. Are they connected to any networks?
8. Who are the people they do and hope to partner with? And why these?
9. What are the tools/methods/approaches used in:
 - a. Creating partnerships
 - b. Defining shared goals
 - c. Identifying relevant cases and activities
10. Are there any time frames they operate in?
11. What sources of knowledge do they draw on?
12. What are the challenges they face currently?
13. How do they hope to overcome these?
14. What challenges do they foresee in the future?

Part 2 – About the Kouga Catchment

1. Describe water situation in Kouga?
2. Describe communication and interaction / relationships in Kouga
3. How have they formulated the opinions outlined in 1 and 2?
4. Why do 4R / LL want to be involved in the area?
5. What are 4R objectives in Kouga?
6. What do they think they bring to the party?
7. What are the planned activities / ideas they want to work on?
8. What are the challenges they do and expect to face?
9. How to overcome these?
10. Who are the people and groups they have been in touch with in and around Kouga? Why these people?
11. How would they describe this interaction?
12. What could be better and how to achieve this?
13. What are the tools/approaches/methods planned to employ there?

Part 3 – Scale dynamics and scale framing

1. What is their definition of scale?
2. How do they understand scale dynamics?
3. Does and how do they seek to understand scale issues in her work?
4. Does and how do they seek to understand the (frames) perspectives and priorities of relevant actors in her work? (Tools/Methods/Frameworks/Theory).
5. What do they understand by the term scale framing?
6. Does she find it useful to consider?
7. What are the findings they would like me to generate?
8. What is an appropriate output from my work?

1.4 Governmental Interviews

1. Background of person and description of main activities

- a. Key current activities in Baviaans, Kromme and Kouga and what do you hope to achieve with these initiatives?
- b. What are the past initiatives that the Dept. has engaged in these areas? What was the outcome, and how did this come about? What was learnt?
- c. Are there specific plans for the future; upcoming initiatives? Upcoming discussions? Future ideas?

2. Challenges

- a. What are the key challenges faced by the Dept. in these areas and what is being done to address these challenges?
- b. Situation improving or not?
- c. Foresee upcoming challenges in the next 3-5 years?
- d. What could support the addressing of these challenges? Internal and External of the dept.? What help is needed? What could you do different?

3. Partnerships and networking:

- a. Who are the people and groups you work with? How does that interaction go? Are there specific challenges in these partnerships? Do these partnerships create opportunities?
- b. Are there people or groups you would like to increase your collaboration with? Why?
- c. Who would you advise to be part of the (Four Returns) dialogue process?
- d. Do you think increased collaboration with other Govt. departments might assist in reaching your objectives in these areas? How? Have you tried to stimulate this?
- e. What benefits would you hope to get from working with prospective partners?
- f. What are the strong points of your Dept. that you think others would benefit from?
- g. Five years from now, what changes would you like to see in the areas?

Annex 2: Kick-off paper for online discussion

Kick-off Paper: E-Discussion on Scale Dynamics and Scale Framing in Landscape Restoration Processes

Introduction

(Paper was styled differently when uploaded to the network)

As part of the MSc programme International Development Studies of Wageningen University, I am conducting research into the role of scale framing in landscape restoration processes. As a student focussed on strategic communication, I am interested to understand whether and how landscape restoration practitioners identify and incorporate scale dynamics into their restoration processes. In the background chapter of this kick-off paper, I present findings from the literature that shows the consideration of cross-scale, cross-level dynamics is essential to ensure a positive process/interaction outcome. It is my hypothesis, that the analysis of scale frames (actors situating their issue frames at specific scales and levels) is one method of identifying scale dynamics, thereby leading to informed decision making by responsible practitioners.

My MSc research involves a case study in South Africa, during which I will analyse scale considerations during the Four Returns Project in the Eastern Cape. However, to assist in the placing of the findings of this case study in the wider context, I am also hoping to learn from the experiences and opinions of the participants of the GPFLR Learning Network.

Having supported CDI's GPFLR online portal for the last number of years, I have had an opportunity to see the value of the Learning Network and I am very appreciative of the opportunity to discuss my research within a forum of experienced practitioners who share experiences from their work around the world.

During the E-Discussion I would welcome your input as to whether and how you address scale issues in your restoration activities, whether and how you address actor issue frames and if possible, what your initial thoughts are on scale frames. Toward the end of this document, I present some guiding questions. These questions are purely to stimulate thought and can be ignored if desired.

Rather than to be treated as a survey, this E-Discussion hopes to stimulate comments and feedback on the contributions of other participants. As always, please be respectful to the opinions of other contributors.

Background to the topic

“Landscape approaches” seek to provide tools and concepts for 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).

Landscape restoration seeks to restore the capacities of degraded landscapes to contribute to biodiversity, carbon capture, water and food security and other, often competing land uses. Restoration processes involve multiple actors, who operate in differing sectors, different and multiple scales and levels and who hold vastly different perspectives, objectives and priorities. Successful landscape approaches therefore need to examine and often incorporate this multitude of actor perspectives in order to achieve a balanced, sustainable outcome.

Further, Sayer et al, (2013) posit that no successful landscape approach or effort can be successful without a recognition and incorporation of the [Ten Principles for a Landscape Approach](#). Principle Three specifically describes the importance of recognising the causal relationships and interdependencies between scales and levels, stating that an awareness of the feedbacks, synergies and interactions of these levels/scales is crucial to achieve a balanced and sustainable positive outcome.

Cash et al, (2006) and Vervoort et al (2014) elaborate on this stating that in-depth understanding of the cross-scale, cross-level dynamics of human-environment relationships, or social-ecological systems (SES) (Folke, 2006), is essential to prevent a collapse of the interactional system.

Again, Ostrom (2009) demonstrates the important role of scale dynamics in the design, implementations, monitoring and outcome of SES governance structures, implying the necessity to discover and incorporate stakeholder perspectives on scalar relations from the beginning of a human-environment interactive process.

Linked to the above, we then see a justification for the exploration of actor frames, in particular scale frames, the analysis of which should demonstrate the aforementioned perspectives on scale-related actor relations.

Scale Framing

Framing refers to the process of how people construct and represent, through interaction with other actors, their interpretation of the outside world (Gray 2003). This cognitive, sense-making process, which is also affected by personal characteristics and existing relations with the other actors and issues, result in a set issue frame, or a personal definition of what the conflict/issue is about, or what has caused it (adapted from Aarts and Van Woerkum 2006). Understanding processes of framing is of critical importance in complex interactive processes as issue frames are employed to strengthen an actor's position and to set the agenda and priorities of a process or project.

For this research, in which landscapes are treated as a set spatial area which incorporates the many different actors, industries and connections to other scalar levels, one particular type of framing is highly relevant; scale framing. Through the process of framing, actors highlight different aspects of a situation as relevant, problematic, or urgent, and by doing so situate issues on different levels and scales (van Lieshout, 2014). Scale framing is an emergent body of knowledge which seeks to highlight how framing issues according to certain levels and scales has the ability to not only set agendas and priorities, but based on that agenda, to consciously and unconsciously legitimise the inclusion or exclusion specific actors who operate at different levels in the interactive process, thus strengthening one's own position (van Lieshout, 2014 p.166).

This internal process of scale framing results in a set verbalised understanding of the situation, a scale frame. It is the interactions of this fixed and verbalised understanding, rather than its formation process, which forms the core of this research.

The interactive nature of complex processes, such as landscape restoration, allows the opportunity for actor scale frames to shape and redefine other scale frames of other actors, creating a situation where the dominant scale frame steers the process and its outcomes.

Scale frames have been described as discursive tools to strengthen one's position and direct an interactive process in a desired direction, but it is my understanding that scale frames have more to offer. For practitioners, analysing scale frames in the beginning of a restoration process should highlight scale issues and should help to design a more appropriate process. During the process, periodic analysis of scale frames should act as an indicator for success, failure or as an opportunity to address new or parallel issues, dependent on the shift in actor perspectives and priorities.

Relevant Scales for Landscape Restoration

Cash et al (2006) present an overview of the scales which are essential to consider in examining a human-environment interaction such as a landscape restoration process:

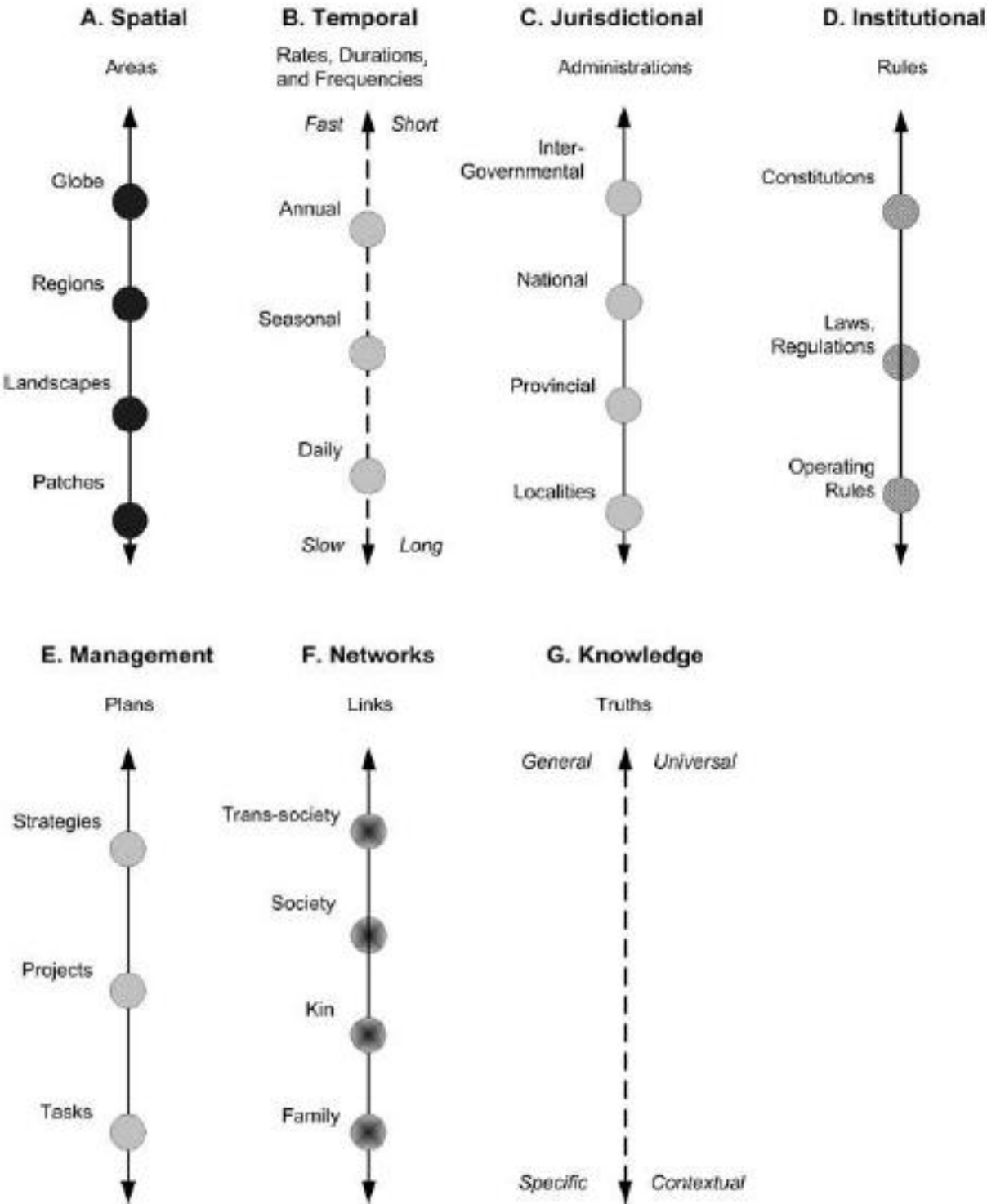


Figure 3 – (Cash et al, 2006) - Essential scales to analyse in a human-environment interaction

Explicating the figure presented above, we see that each of these seven scales holds a relevance for research in a landscape restoration process:

1. Analysing the spatial scale could indicate whether stakeholders have a priority purely for their own direct environment/farm/company, or whether their concerns focus more on their wider area. Further, do stakeholders recognise and consider issues, and their contribution to the wider, national situation.
2. Analysing the temporal scale will allow learning as to whether the stakeholders compare their current situation to the past, how they view their future prospects and whether they consider the process to align to their priorities (does the project/process address their short term concerns or purely their longer term targets or wishes).
3. In reference to the jurisdictional scale, how do stakeholders view the causes and solutions to their situation; are any problems at a national level or should local government have a stronger focus.
4. Institutionally, does national legislation play a role in their situation; or are local rules, norms and customs a more major contributory or dominant factor.
5. In terms of management, how do restoration strategies of the wider strategies result in useful and relevant tasks and activities.
6. How do stakeholders relate to personal and wider societal networks and what role or impact does this have.
7. In terms of knowledge, do stakeholders express anything in regards to the specificity of knowledge in relation to their situation. Are there linkages and explication of knowledge so that specific, local and contextual knowledge informs and shapes knowledge at a general, higher level.

Share Your Experiences and Views in the E-Discussion!

This E-Discussion seeks to explore the potential of scale frames to assist in the design and implementation of landscape restoration processes. This will be explored by gathering your experiences and views and compiling them into a report to be published on the Ning of the Learning Network in January.

Some guiding questions on which to focus your contributions could be:

From your experience....

1. Are there examples from your work on examining cross-scale/level issues?
 - Why were these scalar issues identified and examined?
 - What tools/methods/approaches were used?
 - What was learned from the process?
2. How are actor perspectives and priorities identified and incorporated into your restoration activities?
 - Do you relate this to framing theories; do you use framing theories?
 - Do you periodically recheck your understanding of actor priorities?

In your opinion....

1. How relevant are the seven scales presented above in your work? Can you identify them in your own approaches and activities?
2. What are your initial thoughts on scale frames? Do you see a benefit to the analysis of scale frames? What would be needed to make scale framing more relevant for you?