The booming illegal abalone fishery in Hangberg: Tough lessons for small-scale fisheries governance in South Africa

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Abstract

Marine capture fisheries around the world are widely perceived to be in a state of crisis, with growing recognition that conventional resource-centred management strategies are insufficient to counter ongoing problems of overexploitation. This is considered particularly true in the small-scale sector, which employs the overwhelming majority of the world's fishers but has historically been overlooked. To manage marine resources more sustainably, new approaches to fisheries governance have been sought that recognise the complex nature of fisheries systems, paying attention to the social dimensions of fisheries management *in addition* to important ecological processes.

In South Africa, many of these new approaches have been embraced in a recently adopted policy for the small-scale sector. Attempts to reform marine fisheries have been ongoing in the country since the end of apartheid (a system of legislated racial segregation and white supremacy that ruled for almost 50 years) but have largely failed to bring meaningful change to impoverished fishing communities. Frustration at ineffective reform has contributed to widespread non-compliance—most notably in the abalone fishery, which has collapsed in the face of rampant poaching driven by a lucrative illegal export market to the Far East. Although the new small-scale fisheries (SSF) policy has been hailed as a progressive shift in thinking, questions remain about how it is to be implemented. One major challenge will be dealing with illegal fishing.

The purpose of this study was to profile the human dimensions of abalone poaching in the Cape Town fishing community of Hangberg, and to draw lessons for implementing the new SSF policy. A qualitative, multi-method research approach, based mainly on unstructured interviews and participant observation, was used to access the clandestine fishery and investigate its historical development, current structure, scale, and methods of operation, and main socio-economic drivers and impacts.

It was found that abalone poaching has become deeply embedded in Hangberg, having evolved into a highly organized boat-based fishery in a period of less than 15 years. At least five local poaching groups—representing some 250 individuals in total—currently use dedicated high-powered vessels to access reefs around the Cape Peninsula. Profits earned from poaching are substantial but vary, with poachers operating according to a loose hierarchy and performing a range of different tasks in the fishery. This variation notwithstanding, the illegal fishery appears to have become a mainstay of the impoverished local economy, funding poachers' expensive lifestyles in addition to contributing more meaningfully to the livelihoods of an estimated 1000 residents. The socio-economic impacts of abalone poaching have thus been mixed, contributing to reduced social cohesion and a perceived loss of values on the one hand, but to positive local development and the provision of important services on the other.

The key finding of this research was that abalone poaching appears to constitute a functional alternative to the formal fishery system in Hangberg, apparently filling a vacuum left by ineffective reform efforts by the state. Implementation strategies for the SSF policy must take this into account, and recognise that the criminal economy has become a powerful rival actor in issues of fisheries governance. Future fisheries and conservation measures must be accompanied by integrated, sector-wide development in fishing communities to address the root causes that allow illegal fishing to take hold.

Declaration

I know the meaning of plagiarism and declare that all of the work in the dissertation, save for that which is properly acknowledged, is my own.

Kimon de Greef, February 2013

This photograph by Steve Benjamin; all other photographs taken by the author

(The abalone pictured was returned to the seafloor)

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Acknowledgements

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This dissertation is dedicated to the poachers of Hangberg and to my family

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List of Acronyms and Abbreviations

CITES	Convention on the International Trade in Endangered Species of Fauna and Flora
DAFF	Department of Agriculture, Forestry, and Fisheries
DEAT	Department of Environmental Affairs and Tourism
EEU	Environmental Evaluation Unit, University of Cape Town
MCM	Marine and Coastal Management
MCS	Monitoring, Control, and Surveillance
MLRA	Marine Living Resources Act, 1998
MPA	Marine Protected Area
PE	Port Elizabeth
SAMSA	South African Marine Safety Authority
SANParks	South African National Parks
SAPS	South African Police Service
SSF policy	*Policy for the Small-Scale Fisheries Sector in South Africa*
SFTG	Subsistence Fishers Task Group
TAC	Total Allowable Catch
TURF	Territorial User Rights Fishery
UCT	University of Cape Town
WCRL	West Coast Rock Lobster (*Jasus lalandii*)

Glossary of Colloquial and *Afrikaans* Terms

Boere	Police
Bootsman	Skipper's assistant on board abalone poaching vessel
Broe	Brother, friend
Duik	Dive
Entjies	Cigarettes
Gevaarlike	Dangerous, impressive
Ja	Yes
Kak	Bad, undesirable (literally "shit")
Kreef	West Coast Rock Lobster (*Jasus lalandii*) / crayfish
Larges	Shucked abalone weighing more than 140 g
Mediums	Shucked abalone weighing 110 – 115 g
Nuggets	Shucked abalone weighing less than 110 g
Peimp	To tip off
Perlemoen	Abalone (*Haliotis midae*)
Perly	See above
Pollsmoor	Notorious prison in Cape Town
Shuck	Prise abalone flesh from its shell using a flat blade
Steek	The act of prising abalone off the rocks (literally "stab")
Superduck	Large (> 6.5 m) semi-inflatable rubber duck fitted with twin high-powered outboard engines. The name is derived from 'Supaduck', a proprietary brand name, but applies widely to other makes now
Tik	Crystal methamphetamine, a highly addictive drug widely abused in the Western Cape

CHAPTER 1: INTRODUCTION

1.1 The complexities of small-scale fisheries governance

In the face of mounting pressure from human activities, global biodiversity is in a state of general and steady decline (Butchart *et al.* 2010). Whether or not this is problematic in its own right (Rolston 1985), biodiversity loss represents a growing threat to our own species, which like all other living things fundamentally depends on ecosystem goods and services to survive. In the marine environment, pressure from overfishing alone continues to seriously threaten fish stocks and undermine ecosystem functioning, contributing to "serious food security issues" and dispelling the historical myth that "unfathomable" oceans are immune to depletion (Pauly *et al.* 2005; p. 5). Managing marine capture fisheries more responsibly, to ensure sustainability and avoid further collapse, has thus been identified as a priority concern on the international policy agenda (Butchart *et al.* 2010; FAO 2011).

The ongoing overexploitation of marine resources is often understood in terms of Hardin's "Tragedy of the Commons" (1968), which argues that individuals are *compelled* to harvest shared resources unsustainably, motivated entirely by economic self interest. According to Hardin, this is because the costs of overharvesting are shared between all the users of a system, while the benefits are not (Hardin 1968). This asymmetry means that individual users cannot be expected to conserve shared resources voluntarily, and that some form of external, institutional regulation is required instead (Dietz *et al.* 2003).

In the marine environment, like most other shared resource systems, regulating use of the commons has largely been perceived as the role of state governments, who set and enforce limits on what they determine to be optimum, yet sustainable, levels of harvest (Allison 2001; Kuperan & Sutinen 1998). These levels are usually considerably lower than what individual fishers would choose for themselves, however, and strong incentives for overharvesting remain (Kuperan & Sutinen 1998). For most of the last century, strong and effective management strategies by state institutions have been considered essential for countering these temptations (Allison

2001; Kooiman & Bavinck 2005). More recently, however, it has been recognized that a range of other actors—including markets, communities, and civil society—are *also* responsible for governing the exploitation of marine resources and ensuring compliance (Kooiman *et al.* 2008; Kooiman & Bavinck 2005). There have thus been calls for a shift from centralized management to interactive, more holistic forms of governance (FAO 2008; Kooiman & Bavinck 2005).

New approaches for the small-scale sector

For most of the 20th century, global fisheries management has mostly followed a model of "expensive enforcement capabilities and scientific advice" (Allison 2001; p. 940). This approach has been rooted in 'rationalist' theories of compliance, which understand compliance behaviour primarily in terms of economic costs and benefits (Becker 1974). Attempts to improve fisheries compliance have thus largely focused on deterring illegal activity by investing in law enforcement, and thereby increasing penalties for would-be offenders (Kuperan & Sutinen 1998). Originally developed to control industrial fishing fleets in the northern hemisphere, this approach has been widely exported to the developing world, where similar deterrence-based strategies have been put in place to manage small-scale fisheries (Allison 2001; Berkes 2003). In recent decades, however, these strategies have been increasingly criticised as being inappropriate for the small-scale sector, which differs from the industrial fleet in a number of important ways, and thus requires alternative forms of management (Allison & Ellis 2001; Berkes 2003; Kuperan & Sutinen 1998).

While a single definition of small-scale fishers has not been agreed upon, there is general consensus that the term refers to fishers who operate from or near the shore, using relatively inexpensive gear and technology (FAO 2005). The term thus encompasses a wide spectrum of fishing activities, from subsistence harvesting to running small commercial ventures, which all differ markedly from industrialized modern fisheries operations (Berkes 2003; FAO 2008). Most small-scale fishers around the world are considered poor and marginalized, relying on fishing as a core livelihood strategy (Allison & Ellis 2001; Béné 2003; FAO 2005). This reliance means that social and ecological processes are more closely intertwined in the small-scale

sector[1] than in commercial fisheries, and thus that governing it effectively requires understanding fishers' behaviour *in addition* to important biological aspects like breeding behaviour and population dynamics, which have historically received much greater attention (Charles 1995). Furthermore, small-scale fishers typically target a range of near-shore resources instead of focusing on just one species, making it more difficult to limit overharvesting with catch limits, access controls, and other standard measures applied to regulate large, single-stock commercial fisheries (FAO 2005, 2008; see Table 1). Being both socially and ecologically complex, small-scale fishery systems thus pose challenges to older, more rigid management strategies that have perceived fisheries as "precise, predictable and permanent," or running like "clockwork" (Garcia and Charles 2008; p. 505).

Back to the drawing board

While modern-day fisheries regulations have largely overlooked the social and ecological complexities of the small-scale sector, fishing communities around the world have historically developed management practices of their own to curb overexploitation (Berkes *et al.* 2000; Johannes *et al.* 2000). In contrast to top-down systems of control, these traditional or customary governance strategies evolved within the very fishery systems they sought to manage, frequently imbuing them with greater sensitivity to local dynamics—both with regards to fishers and marine resources—than centralized science-based management is currently capable of (Berkes 2003; Johannes *et al.* 2000). Customary practices are also often perceived as being more legitimate than state rules among small-scale fishers, which influences their compliance behaviour in important ways (Gezelius & Hauck 2011; Kuperan & Sutinen 1998). This is because compliance decisions are motivated by "norms, morality, legitimacy, and social and cultural influences," in addition to rational cost-benefit analyses (Hauck 2008; p. 636). As such, governance strategies developed *in situ*, with input from fishers themselves, are more likely to attract normative support than those imposed from outside (Hatcher *et al.* 2000; Kuperan & Sutinen 1998).

The majority of these customary practices have been eroded or lost over the last century, replaced instead by centralized systems of scientific stock assessment, single-species quotas, and enforcement through monitoring, control, and surveillance

[1] The terms "small-scale sector" and "small scale fisheries" are used interchangeably in this dissertation and can be taken to mean the same thing.

(MCS) (Berkes 2003; Kuperan & Sutinen 1998; Sowman 2011). However, there is growing recognition that conventional strategies are ill equipped to solve persistent 'crises' in global capture fisheries—particularly in the small-scale sector (FAO 2008; Kooiman & Bavinck 2005). New approaches to fisheries governance, which incorporate some of the nuance and flexibility of customary practices alongside newer experiments with interactive, participatory forms of management, are thus being sought (Berkes 2003; Kooiman & Bavinck 2005). These approaches all emphasize the importance of human rights and social justice objectives when dealing with small-scale fisheries, and seek to address historical imbalances that prioritized industrial fishing at their expense (Allison 2001; FAO 2008). Broadening the scope of fisheries science to include input from previously overlooked actors and disciplines, they also stress the importance of dialogue, inclusiveness, and adaptability in decision making, recognizing that governments—and, by implication, fisheries scientists—are not the only actors capable of attending to problems and opportunities in society (Kooiman & Bavinck 2005).

Small-scale fisheries governance in South Africa: A new tune?

In June 2012, the South African government adopted a brand new policy for managing the country's small-scale fishing sector (DAFF 2012a). The product of a prolonged and difficult consultation process, the policy is the latest attempt of many to bring equity to marine capture fisheries in South Africa, which were managed exclusively for the benefit of white people during apartheid (van Sittert *et al.* 2006). Ever since the demise of that inimical system of white supremacy, concerted transformation efforts—aimed at addressing the apartheid legacy of stark inequality—have been ongoing in the fisheries sector (Isaacs 2011; van Sittert *et al.* 2006). Despite being successful in certain regards, however, these efforts have largely failed to bring meaningful change to marginalized fishing communities (Isaacs 2006). In part, this has been considered to reflect a continued adherence to conventional management strategies by the national fisheries authority (Isaacs 2011; Raemaekers 2009; Sowman *et al.* 2011a). To this end, the new small-scale fisheries policy (henceforth 'the SSF policy')—premised on ideals of participatory governance, preferential access to marine resources for small-scale fishers, human rights, social justice, and sustainability—has been hailed as an important, albeit long overdue, shift in thinking (Sowman 2011).

However, despite the progressive aims of the SSF policy—reviewed in more detail in the following section—important questions remain about how it is to be implemented (DAFF 2012b). Among other challenges, it faces the spectre of rampant illegal harvesting in coastal communities, which has proliferated in the last two decades as transformation efforts have stumbled (Hauck & Kroese 2006; Raemaekers *et al.* 2011). Curbing poaching[2] is a key objective of the SSF policy, which seeks to instil a sense of resource custodianship in fishing communities to gain assistance with state compliance efforts, which have largely failed thus far (DAFF 2012b; Hauck & Kroese 2006). Yet poaching, particularly of high-value species like west coast rock lobster (*Jasus lalandii*) and abalone, has assumed important social and economic roles in the very communities in which the SSF Policy will be implemented, and removing its influence is not likely to be straightforward.

Making this point this is a main aim of this dissertation, which seeks to illustrate the added complexity that entrenched illegal fishing activities pose to both implementing the SSF policy *and* reigning in overexploitation. This is based on an in-depth case study of abalone poaching in the Cape Town fishing community of Hangberg, in Hout Bay. Before proceeding, however, it is necessary to expand on the historical and theoretical background to this study. The literature review that follows explores themes pertaining to small-scale fisheries governance, many of which have been touched on already; fisheries transformation in South Africa; and the evolution of the country's powerful, highly organized illegal abalone fishery over the last two decades. This will set the scene for the aims and objectives of this research project, and the introduction of the case study itself.

[2] The words "illegal fishing" and "poaching" are used interchangeably in this dissertation yet have subtly different definitions. Strictly speaking, "illegal fishing" refers to Illegal, Unregulated and Unreported (IUU) fishing, a catch-all phrase originally developed to describe illegal fishing on the high seas. "Poaching" usually refers to illegal fishing in inshore waters—including harvesting without a permit, taking undersized individuals, harvesting out of season, and exceeding quotas—and is often perceived as being more closely linked to poverty (Hauck 2009b). Nevertheless, poaching *is* a form of illegal fishing and is referred to as such throughout this work.

1.2 Literature review

1.2.1 Paradigm shifts in fisheries management

The importance and neglect of small-scale fisheries

An estimated 90% of the world's 38 million fishers and fish farmers are classified as 'small-scale', contributing to the employment of at least a further 100 million people in secondary occupations like processing and trade (FAO 2005). Small-scale fisheries contribute crucially towards food security and poverty alleviation in developing countries around the world (Béné 2003; FAO 2005). As a core livelihood strategy, fishing can help poor communities better withstand crises like diseases, natural disasters, and economic recessions, reducing their vulnerability to external shocks (Allison & Ellis 2001). The small-scale sector also plays an indispensable role supplying fish for human consumption, the total volume of which has more than doubled globally since 1973 (FAO 2005).

Despite its importance, though, the small-scale fisheries sector has been systematically overlooked by resource managers, who have tended to focus on the commercial sector and its development instead (Allison & Ellis 2001; Berkes 2003). This has led to inappropriate management techniques, developed to control large single-stock fisheries in the northern hemisphere, being applied to smaller, more complex fisheries in the developing world (Allison 2001; Berkes 2003). These techniques are usually classified into three broad categories: *input controls*, aimed at curbing total fishing effort by limiting access to marine resources; *output controls*, aimed at limiting harvests; and *technical controls*, aimed at regulating fishing behaviour to account to account for important biological characteristics of different target species, for example seasonal spawning patterns (Table 1). Small-scale fisheries, however, are considered more socially and ecologically complex than the commercial sector, and thus ill-suited for the application of many of these resource-centred, top-down, regulatory approaches (Berkes 2003; Sowman 2011).

Moving beyond management to governance

It is increasingly being argued that the small-scale sector—and indeed fisheries in general—cannot be managed by state fisheries departments alone (Kooiman & Bavinck 2005). Instead, there have been calls for more integrated governance

strategies that include other key actors and institutions, for example fishing communities themselves (Allison 2001). This shift marks a more general trend in the fields of social science and policymaking, where governance has become something of a buzzword in recent decades (Kooiman & Bavinck 2005). Conceptually, 'governance' is considered to be much broader than 'management', which is perceived to have a narrower, more immediate, problem-solving focus (Borrini-Feyerabend 2008). By comparison, governance has been described as "taking a step back," moving beyond the pursuit of reactive, technical solutions to "considering longer-term societal trends and needs" and creatively seeking "opportunities" for positive change (Kooiman & Bavinck 2005). Including diverse voices in decision-making is considered key to this process (Kooiman *et al.* 2008).

Table 1: Conventional controls used to limit over-exploitation in marine capture fisheries

Input controls (effort)	**Output controls (catch)**	**Technical controls**
Total Allowable Effort (TAE)	Total Allowable Catch (TAC)	Closed areas
Boat licences	Individual quotas	Closed seasons
Fishing rights	Bycatch limits	Gear restrictions
Vessel capacity	Bag limits	Size limits

Accompanying this new focus on fisheries governance has been a critical assessment of the norms and principles *underlying* marine resource management, which in the past went largely unquestioned (Bavinck & Chuenpagdee 2005). This has led to increased emphasis being placed on ensuring social justice and respect for human rights, as well on recognizing the vital contributions marine resources make towards food security and coastal livelihoods (Allison & Ellis 2001; FAO 2005). While these changes have had a strong normative component, motivated by broader humanistic ideals like tackling poverty and facilitating socio-economic development, they have also been considered intrinsically practical: without paying attention to the struggles

of impoverished small-scale fishers, it is argued, attempts to manage fisheries sustainably are unlikely to attract support from fishers, ultimately making these efforts less likely to succeed (Gezelius & Hauck 2011; Kuperan & Sutinen 1998).

Compliance failures

For the most part, conventional fisheries management has turned a blind eye to the social dimensions of the small-scale sector, treating it as a simple system of rational, law-abiding citizens and largely ignoring important questions of socio-economic, cultural, political, and historical context (Berkes 2003; Garcia & Charles 2008). This has contributed to a range of problems, particularly with regards to compliance (Gezelius & Hauck 2011; Kuperan & Sutinen 1998). In the past, external factors—mainly relating to the risk of being caught and the severity of punishment—were considered the most important determinants of compliance in general, premised on the assumption that individuals choose to comply based on personal cost-benefit assessments (Becker 1974; Schlager 2002). This 'instrumentalist' approach, which emphasises the role of deterrence in protecting resources from overexploitation, has played a dominant role shaping fisheries management in the 20th century (Kuperan & Sutinen 1998).

There are other important factors that influence compliance behaviour, however, which narrow, deterrence-based strategies frequently overlook. These include social norms and moral standards, as well as the perceived legitimacy of regulatory institutions (Kuperan & Sutinen 1998). If fishers feel that regulations are unfair, or if they do not respect the state's authority to impose them, then they are unlikely to engage in compliant behaviour (Gezelius & Hauck 2011). This in turn places a greater burden on law enforcement and deterrence measures, which are forced to compensate for the lack of voluntary or normative support from fishers (Kuperan & Sutinen 1998). Yet this can have negative consequences: enforcing regulations in the absence of normative support can erode relationships between fishers and the state even further, and can set in motion cycles of rule breaking and punishment that are difficult to break (Hauck 2008; Hauck & Kroese 2006).

Conflicting actors and plural legal systems

The recognition that non-state actors can influence the outcomes of resource governance strategies has also been used to understand fisheries conflict and non-

compliance (Kooiman & Bavinck 2005). When governance is conceptualized as the product of *interactions* between different actors, rather than the responsibility of a singular, centralized authority, the reasons for this become clear. "Just as in a game of football," Kooiman & Bavinck (2005) argue, "the interactions between players determine what actually happens, whether it is a goal, a fierce competition, or a boring match." In other words, individuals, groups, or institutions that are at odds with one another can contribute to disharmony in fisheries management, potentially negating the pursuit of goals like resource sustainability and economic stability (Allison 2001; Kooiman *et al.* 2008). For example, criminal groups can completely undermine state management efforts by paying fishers lucratively to break the law (Hauck and Sweijd 1999; Raemaekers *et al.* 2011). This point will be returned to later in this review.

One key issue rival actors can disagree about is their conception of law itself, which is usually the ultimate arbitrator of fisheries disputes (Hauck 2009a). While statutory law officially prevails in the modern world, many authors argue that 'alternative' legal systems and normative codes of practice continue to permeate most realms of society, despite their supposed 'informal' status (von Benda-Beckmann 2002). As examples, Vanderlinden (1989; p. 151) lists "grammar, politeness, the measurement of time, morality (and) fashion," arguing that *all* these factors regulate social behaviour, thereby performing a primary function of the formal legal system. Debates about whether these codes can legitimately be considered 'law' continue: but the fact that they influence people's behaviour in important ways cannot be disputed (Von Benda-Beckmann 2002). Legal pluralism, or the recognition that multiple legal or quasi-legal systems can be applied to a single situation or event, has been accordingly adopted as a framework for understanding fisheries conflicts in the developing world, where local or customary practices do not always match top-down regulations from the northern hemisphere (Bavinck 2007; Vanderlinden 1989). Research in this field has revealed that small-scale fishers may subscribe to completely different sea tenure systems to those advocated by the state, for example, contributing to discord between different fisheries actors and ongoing problems of non-compliance (Bavinck 2007).

New approaches to fisheries governance

To overcome these deep tensions and divides between fishers and the state, proponents of a fresh approach to fisheries management advocate flexible, participatory governance strategies premised on sound democratic principles (Bavinck & Chuenpagdee 2005; FAO 2008). Co-management—or the direct involvement of resource users in key decision-making and regulatory processes, as well as implementation strategies and compliance—is a cornerstone of this approach (Berkes 2003; Jentoft *et al.* 1998). According to Jentoft *et al.* (1998), co-management is usually supported by two main arguments: first that fishers can contribute valuable context-specific information that science cannot (Berkes *et al.* 2000; Johannes *et al.* 2000); and second that including input from fishers can improve the perceived legitimacy of regulations, with positive implications for compliance (Gezelius & Hauck 2011; Kuperan & Sutinen 1998).

A second cornerstone of proposed new governance strategies is taking an ecosystem-based approach to fisheries management (EAF), moving beyond the narrow 20th century paradigm of maximising catches of individual target species (Garcia and Cochrane 2005; Pikitch *et al.* 2004). Instead, an EAF aims *first* to sustain healthy marine ecosystems and *second* to support individual capture fisheries (Pikitch *et al.* 2004). Fishing practices that degrade ecosystems or impact negatively on ecological processes—as many industrial fisheries currently do today—are therefore strongly discouraged (Garcia and Cochrane 2005).

Through taking a broader view of conservation and fisheries management, EAF strategies have helped weaken longstanding interdisciplinary barriers between fisheries biologists, marine ecologists and social scientists (Hughes *et al.* 2005) and "put humans back into the ecosystem" (Berkes 2012; p. 467). Human behaviour—and, in aggregate, that of societies—plays a fundamental role in determining the status of marine resources and cannot be excluded from EAF planning (Hughes *et al.* 2005; Berkes 2012). This is true, of course, of ecosystem-based management in general: human activity has become *the* primary driver of ecological processes on planet earth (Steffen *et al.* 2011) and thus needs to be considered when designing conservation or natural resource management strategies of any sort (Berkes 2012).

Fisheries as complex systems

A third, and closely linked, key element of modern-day governance approaches is treating fisheries as complex systems and paying attention to the social, cultural, economic, political, and institutional webs in which they are embedded (Charles 1995; Mahon *et al.* 2008). The behaviour of complex systems is influenced by interactions between their constituent components, enabling them to dynamically change course without outside influence (Mahon *et al.* 2008). This ability, writes Berkes (2003; p. 10), gives rise to "attributes not observed in simple systems, including nonlinearity, uncertainty, emergence … and self-organization". These attributes represent a challenge to conventional fisheries management, which tends to isolate the biological and economic aspects of individual fish stocks from the broader fishery system within which they exist and treat them as predictable and amenable to control (Berkes 2003; Garcia and Charles 2008). Yet linkages exist between all the components of modern capture fisheries, which range from the behaviour of individual fishers, to developments in fishing gear and technology, to the adoption of new management and enforcement strategies, to macroeconomic trends that influence globalized fish markets (Berkes 2003; Garcia and Charles 2008). Incorporating this interconnectedness into fisheries models, without rendering them too complex to be useful, has been identified as a future priority for fisheries management (Charles 1995; Garcia and Charles 2008).

While certain aspects of systems thinking remain too abstract to be of practical use, at least at present, its core message remains essential for understanding the complex human-in-nature dynamics of fisheries, particularly in the small-scale sector (Berkes 2003; Charles 1995). "All fishery systems are part of higher-level natural and human systems," argue Garcia & Charles (2008; p. 505); managing them as if they are not is a recipe for trouble. For the purposes of this study, which seeks to understand the drivers behind a booming illegal fishery in a South African coastal community, a systems thinking approach has thus been adopted as a core research framework. Hilborn & Walters, quoted in Charles (1995; p. 237), distil the rationale behind this decision to a single sentence:

"It is foolish to study only the prey in the predator-prey system that is a developing fishery; it is equally important to monitor and understand basic processes that determine the dynamics of the predator—the fishermen".

Flexibility and adaptive governance

Recognising the complex dynamics of fisheries systems, leaders in the fisheries governance field have stressed the importance of developing 'flexible' mechanisms that can adapt to uncertainty and change (Folke *et al.* 2005; Garcia and Charles 2007; Mahon *et al.* 2008). Advocates of this "radically different approach" (Mahon *et al.* 2008; p. 104) emphasize the need to move beyond old paradigms of centralized control to embrace concepts of learning and self-organization, arguing that fisheries systems are far too unpredictable for the imposition of stable, rigid management strategies. Their recommendations of decentralising management responsibilities, empowering stakeholders, and developing coordinated, inter-sector approaches all link back to key themes in the governance literature, such as fostering co-management and increased participation between diverse actors (Garcia and Charles 2007). These broad themes will be returned to in the next section of this review, which traces the history of small-scale fisheries management in South Africa and highlights recent attempts to move towards more holistic and inclusive forms of governance.

1.2.2 Post-apartheid fisheries reform in South Africa

Global themes in small-scale fisheries governance have been vividly illustrated in South Africa, where approximately 110 geographically distinct fishing communities have been identified, thought to correspond to more than 100 000 individuals (Sowman *et al.* 2011b). Their activities range from harvesting for consumption to running limited commercial ventures (Clark *et al.* 2002). In keeping with the global picture, the majority of these fishers are poor: just half are thought to have access to wage employment of any kind, with a similar proportion considered food-insecure (Clark *et al.* 2002). What sets them apart is their unique historical context, which saw the creation of an entire class of marginalized fishers along racial lines during, and indeed before, the years of apartheid.

Historical injustice and transformation

Small-scale fishers have been marginalized for centuries in South Africa. The onset of industrial fishing at the turn of the 20th century had negative consequences for traditional fishers in the Western Cape[3], who began competing with emerging export fisheries for resources and labour (van Sittert 2003). This led to so-called 'coloured' fishers[4], who had previously played a dominant role in the sector, being increasingly excluded from marine resources (Isaacs 2011). Discriminatory apartheid legislation from the 1940s onwards made matters worse for fishers classified as 'non-white' under apartheid, systematically eroding their rights to own land and property, denying them access to marine resources, and effectively reducing their role to one of providing cheap labour for white-owned fishing companies (Sowman *et al.* 2011a).

Apartheid ended in 1994, when Nelson Mandela took office as South Africa's first democratically elected president. The fisheries sector, after decades of racial inequality, was targeted for urgent reform. Also known as 'transformation', this process entailed broadening access to marine resources, opening the commercial sector to those whom apartheid excluded, and addressing past injustices (van Sittert

[3] Formerly the Cape Province, the epicenter of South Africa's early marine capture fisheries.

[4] In South Africa, the term 'coloured' refers to a diverse group of people—descended largely from slaves, indigenous Khoisan groups, and a wide range of other African peoples—who were assimilated into colonial society by the end of the nineteenth century. Being also partly descended from European settlers, coloureds are popularly regarded as being of 'mixed' race, and occupied an indeterminate status in the South African racial hierarchy during apartheid, distinct from the historically dominant 'white' or European minority, 'Indians', and the numerically predominant 'black' African population (adapted from van Sittert *et al*. 2006).

et al. 2006). In 1998 the Marine Living Resources Act (MLRA) was passed, becoming the central piece of legislation controlling fisheries management in South Africa. The MLRA attempted a delicate balancing act, prioritizing transformation and equity yet emphasising the need to protect resources and maintain economic stability (Isaacs 2012; van Sittert *et al.* 2006). The practical difficulty of achieving these three objectives in tandem has remained a central theme in South African fisheries and conservation management ever since.

Transformation of the commercial sector under the MLRA took place in two ways: externally, by reallocating fishing rights to formerly excluded racial groups, and internally, by restructuring large fishing companies to ensure their representation in senior management positions (van Sittert *et al.* 2006). The rate of reform was rapid: between 1994 and 2004 the number of commercial rights holders exploded from 300 to more than 5 800, with the proportion of ownership by historically disadvantaged individuals swelling from almost nothing to around 62% (Branch and Clark 2006). In addition, the MLRA led to the creation of a new subsistence sector, which acknowledged the historical rights of this group of fishers for the first time (Sowman 2006).

A troubled transformation process

Despite looking impressive on paper, however, fisheries reform in South Africa was fraught with difficulties. Flaws in the rights allocation process meant that many newcomers to the fishing industry received permits at the expense of legitimate fishers, creating a new black fishing elite without addressing original problems of exclusion (Isaacs 2006). The issuing of short-term quotas, valid for just one year at a time, also discouraged investment by new rights holders, and many simply sold their rights back to white-owned companies for lucrative pay-outs (Kleinschmidt *et al.* 2003). This made a small number of 'paper quota' holders very wealthy, but entirely negated the government's broader goal of transformation (Isaacs *et al.* 2007). Meanwhile, the fisheries authority was overwhelmed by applications and unable to process them effectively. This led to prolonged delays and a series of legal disputes, plunging the sector into a state of crisis (Kleinschmidt *et al.* 2003). Fishers dependent on the sea for food and income suffered reduced catches and increased hardships as a result (Isaacs 2006).

Further problems were encountered in the subsistence sector. Shortly after its inception, the new democratic South African government appointed a specialist task team, the Subsistence Fisheries Task Group (STFG), to advise on the sector's future management (Harris *et al.* 2002). The SFTG's job included defining 'subsistence fishing' and recommending a list of species suitable for the newly created sector. The definition they produced was highly restrictive, though, and effectively meant that only poor, vulnerable, and food-insecure fishers could qualify for subsistence permits (Isaacs 2011). Their selection of suitable resources, meanwhile, was constrained by conservation and economic objectives, resulting in a list that omitted historically important, commercially valuable species like abalone and rock lobster (Isaacs 2011). This would prove to have profound consequences for fisheries management in South Africa later on.

Recognising that many small-scale fishers were not eligible for subsistence permits, the SFTG also called for the creation of a new 'limited commercial' sector, to accommodate fishers at the lower end of the commercial spectrum (Harris *et al.* 2002). This was done in 2002, when the fisheries department opened a new application process for medium-term fishing rights (Sowman *et al.* 2011a). In contrast to the subsistence sector, limited commercial permits were primarily seen as a tool for economic upliftment, aimed at giving small-scale fishers access to valuable export markets (Isaacs 2006). In practice this caused confusion, however, as communities that had been gearing up to receive subsistence permits had to shift focus and establish commercial businesses instead (Isaacs 2006). The small size of the quotas awarded, meanwhile, made them economically unviable in many cases, leading once again to many being sold back to large, established companies for lucrative sums (Sowman 2006). At the same time, concerns about the depleted status of key linefish stocks—historically and culturally the most important sub-sector of small-scale fisheries in South Africa—meant that far fewer rights were allocated than had initially been expected (Kleinschmidt *et al.* 2003).

Illegal fishing on the rise

South Africa's slow and troubled reform process caused widespread frustration among small-scale fishers, many of whom expected to receive fishing rights shortly after the fall of apartheid (Isaacs 2011). The fisheries authority was unable to effect

this change, however, caught between the conflicting objectives of broadening access, protecting resources, and meeting the demands of a powerful export-orientated fishing industry (van Sittert *et al.* 2006). A sheer lack of institutional capacity compounded the problem, contributing to crippling delays in processing applications and issuing rights (Kleinschmidt *et al.* 2003). The state's failure to translate the progressive goals of the MLRA into action weakened its legitimacy in the eyes of many fishers, and 'protest fishing'—or openly fishing without valid permits as a form of political action—flourished as a result (Hauck & Kroese 2006).

In response to rising levels of illegal fishing the South African government invested heavily in law enforcement, seeking to improve compliance by punishing offenders more thoroughly (Hauck & Kroese 2006). It has been argued that this approach may have had the opposite effect, however, fuelling resentment in fishing communities and deepening the divide between resource users and managers (Hauck 2008). Fishers continue to question the state's authority to enforce regulations that they do not agree with, and they generally feel little moral obligation, or indeed social pressure, to comply with rules (Hauck 2008; Hauck & Kroese 2006). This has contributed to cycles of non-compliance and punishment that continue to this day.

The progressive new small-scale fisheries policy

Growing dissatisfaction among excluded fishers also led to increasingly vocal protests and strong lobbying, culminating in a highly publicized class-action suit against the Minister of the Department of Environmental Affairs and Tourism (DEAT) in 2004 (Isaacs 2011). The Equality Court, which arbitrated the case, ruled in favour of the fishers, demanding that the South African government draft a new policy for managing the small-scale fishing sector—and that a system of interim relief measures, granting fishers temporary access to marine resources, be put in place until the policy was finalized (Sowman 2011).

The new policy was formally adopted in June 2012, following a long and difficult consultation process involving a wide range of stakeholders (DAFF 2012a). Hailed as an important "shift in perspective" for the small-scale sector, the policy embodies many key principles from the emerging governance literature (Sowman 2011; p. 303). It also squarely emphasises the importance of addressing historical imbalances

in South African fisheries sector, prioritizing the unique needs of small-scale fishers for the first time (DAFF 2012a).

A key guiding principle of the new SSF policy (DAFF 2012a) is to "adopt an integrated and holistic approach … based on human rights principles" (p. 23). This approach is underlined by a need to contribute to "alleviation of poverty, food security, and local socio-economic development," recognising the central role of small-scale fisheries in supporting coastal livelihoods (p. 23). The policy thus has a strong focus on social justice, linked to fulfilling imperatives embodied in South Africa's progressive, humanistic Constitution (Isaacs 2011)

Drawing lessons from the co-management literature, the policy is premised on promoting "effective participation in policy development, management, and decision-making" (p. 15). Acknowledging the complex nature of fisheries systems, it emphasises the "interdependency" of social, cultural, economic, and ecological factors (p. 15). The policy adopts a similarly holistic view of marine resources, stating that an ecosystem-based approach is "central" to fisheries management (p. 4). There are traces of legal pluralism, meanwhile, in the demand for the state to "recognise rights guaranteed by custom and law" (p. 14) (all DAFF 2012a). The policy is thus remarkably in tune with recent developments in the global fisheries governance literature, providing an important opportunity to put many of its core principles into practice in South Africa (Sowman *et al.* 2011b).

Cognisant of the specific demands of managing fisheries in a South African context, where previous post-apartheid transformation efforts have overlooked *bona fide* small-scale fishers, the policy pays particular attention to developing mechanisms to identify legitimate fishers and fishing communities (DAFF 2012a). Linked to this an emphasis on allocating community quotas, granting communities *themselves* shared responsibility for issuing access rights (Sowman 2011). Finally—and crucially—the policy seeks to bring the historic marginalisation of small-scale fishers to an end by prioritising their interests within the fisheries sector as a whole, granting them *preferential access* to nearshore resources in strategic areas (DAFF 2012a).

Despite its highly progressive wording, however, the new policy is yet to be tested, and many questions remain about its implementation (Sowman 2011). An official plain-language summary is frank about some of the "practical challenges" involved

with translating the policy into action: capacity constraints, developing support structures for co-management, agreeing on selection criteria for the identification of legitimate small-scale fishers, and implementing multi-species quotas without compromising existing single-species management protocols (DAFF 2012b; p. 3). A final key challenge identified in the document is "enforcing compliance" (DAFF 2012b; p. 3). Understanding the practical challenges involved with implementing the new SSF policy in the light of these constraints is a core focus of this dissertation. As the following section of this review will illustrate, South Africa's ongoing and rampant abalone poaching problem is likely to present one significant obstacle.

1.2.3 Abalone poaching in the Western Cape

Background

Of the five abalone species found in South African waters, just one, the endemic *Haliotis midae*, is commercially exploited (Steinberg 2005). A large, slow-moving grazing mollusc, *H. midae* reaches sexual maturity after seven years[5]. It occupies shallow inshore waters from Cape Columbine on the country's west coast as far as Port St Johns in the Eastern Cape (Figure 1), with greatest densities occurring in waters less than five meters deep. Taken together, these two biological characteristics—slow growth and relative ease of access—render *H. midae* particularly vulnerable to over-exploitation, a threat compounded by the extraordinarily high value of abalone products in the Far East.

South Africa's commercial abalone fishery began near Gansbaai, on the south coast of the Western Cape, in the late 1940s (Hauck 2009b). It was initially run on an open-access basis, with teams of divers working from small boats fitted with surface-air 'hookah' equipment (Sauer *et al.* 2003). Shore-based harvesting also took place at low tide, as indeed it had for centuries throughout the biogeographic range of the abalone resource (Hauck 1997). Licenses were required from 1954 onwards, but other than size limits no harvest restrictions applied. This lack of regulation, coupled with booming demand in key importer countries like Japan, allowed catches to rise to unsustainable levels, peaking at 2 800 tons in 1965 before falling into rapid decline (Sauer *et al.* 2003).

Alarmed at the prospect of resource depletion, fisheries managers imposed catch regulations for the first time in 1968 (see Table 2 for a timeline). The total quota was steadily reduced until the early 1970s, when annual catches stabilized around 700 tons. In the early 1980s this figure decreased slightly, to around 615 tons, yet there were no indications of significant long-term declines (Raemaekers *et al.* 2011). From 1986 onwards the commercial fishery was subdivided into seven fishing zones, with each allocated its own Total Allowable Catch (TAC) based on stock assessments and previous yields (Tarr 2000; see Figure 1).

[5] This figure applies to the western parts of the country, where the water is colder and abalone is most abundant. In the warmer waters of the Eastern Cape, however, it is believed that abalone mature earlier (Wood & Buxton 1996).

Until the early 1990s, in a long period of relative stability, these management interventions appeared to be working well. Harvests were steady and divers were reporting improved catch-per-unit-effort, with the prospect of increased TACs in the future attracting new entrants to the fishery (Tarr 2000). Co-operation between resource managers and a responsible core of rights holders, in other words, was seen to have put the abalone fishery back on track.

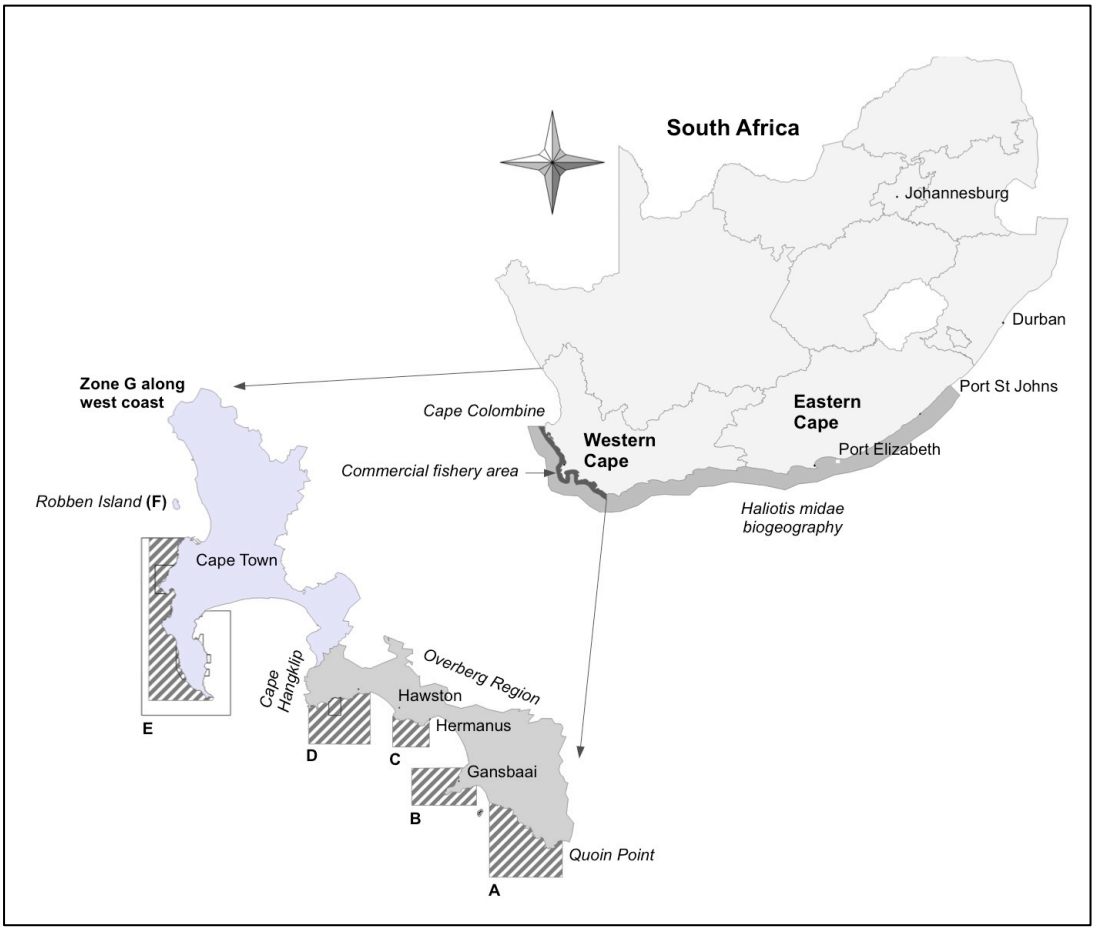

Figure 1: Map of South Africa and the Western Cape, showing the biogeographic range of abalone (*Haliotis midae*) and the extent of the commercial abalone fishery. Since 1986 the commercial fishery has been managed in seven separate zones (A – G on map).

The other side of the coin

Although tighter control brought a sense of optimism to the abalone fishery, its benefits were not shared equally among different resource users. Of the 14 abalone processing factories operating in 1968, just six—the largest—were awarded permits when catch regulations were first put in place (Sauer *et al.* 2003). This meant that many smaller operators were excluded from the most profitable sector of the fishery, and had to settle for low-paying diving and processing jobs with other companies instead. In 1982 the Abalone Divers Association was formed, and divers began receiving their own small percentage of the annual TAC (Sauer *et al.* 2003). Nevertheless, they were legally required to deliver abalone to specified processing factories, and thus unable to process and market their catch for greater profits themselves (Sauer *et al.* 2003).

In the early 1990s, five white-owned companies held commercial abalone rights, with 52 divers—mostly coloured individuals—employed on a seasonal basis (Sauer *et al.* 2003). Fishing communities living immediately adjacent to the resource, for example in Hawston, Hermanus, and Gansbaai, were thus granted minimal formal access to abalone, despite their long history of dependency on, and exploitation of, near-shore marine resources. Transformation of the abalone fishery began in 1998, when 236 traditional abalone fishers received subsistence quotas representing 10% of the TAC (Raemaekers *et al.* 2011). This followed the formal recognition, for the first time, of the traditional rights of subsistence fishers by the Marine Living Resources Act (Isaacs 2011). The high value of abalone made it an anomaly in the subsistence sector, which was primarily based on low-value species (Harris *et al.* 2002). The subsistence abalone fishery proved difficult to manage and was closed in 2001 (Raemaekers *et al.* 2011). It was replaced by a system of limited commercial rights in the 2001/2002 season, with 232 previously disadvantaged divers allocated a shared quota of nearly 75 tons (DEAT 2002).

Like in other fisheries sectors, transformation of the abalone industry was fraught with difficulties. Established rights holders resisted efforts to broaden access, as no corresponding increases in TAC had been made: this meant, inevitably, that the size of individual quota allocations would shrink (Sauer *et al.* 2003). To make matters worse, the TAC began to plummet from the mid-1990s onwards, in response to increased

Table 2: Key events in the evolution of South Africa's legal and illegal abalone fisheries

	Date	Event
Early days	***1949****	Commercial abalone fishery begins near Hermanus
	1954	First commercial licences established; no catch limits
	1965	Annual commercial harvest peaks at 2800 tons
	1968	First commercial catch limits established
	1972	Annual commercial harvest stabilizes at 700 tons
	1983	Recreational licenses established
	1986	Commercial fishery zones (A - F) established
Abalone poaching takes off	**1990***	Southward migration of WCRL into Zones A & B; abalone recruitment failure
	1994	Annual recreational harvest peaks at 750 tons
	1994	Apartheid ends
	1994*	The 'Abalone Wars' begin on Overberg coast
	1998	Marine Living Resources Act adopted
		First subsistence quota allocated, representing 10% of TAC
Crisis management	**1999**	Start of Operation Neptune
	2001	Subsistence rights replaced with 'limited commercial' rights
	2003	Environmental Court established in Hermanus
		'Limited commercial' sector merged with commercial sector
		Long-term abalone commercial rights granted
		MARINES established by Overberg Municipality
		New *Abalone Policy* adopted
		Overberg Municipality takes over compliance responsibility from MCM
		Closure of recreational fishery
	2004	*Abalone Protection Plan* adopted
		Start of Operation Trident
		Table Mountain National Park proclaimed
	2005	Operation Neptune ends
		Operation Trident ends
	2006	Environmental Court closes
		MARINES disband
	2007	*H. midae* listed on CITES Appendix III
	2008	Commercial fishery closed in October; partially re-opened in November
	2010	*H. midae* withdrawn from CITES Appendix III
	2011	Experimental commercial fishery opened in False Bay
	2012	New *Policy for the Small Scale Fisheries Sector* adopted by DAFF
	2013	First long-term commercial abalone rights due to expire

* ***Approximate dates***

poaching and the southward intrusion of rock lobsters into the highly productive fishery zones C and D, which caused widespread recruitment failure[6] (Tarr 2000). Fewer abalone were thus being shared between more and more rights holders, a problem which rapidly worsened over time. To illustrate, the average size of a commercial quota allocation was cut from 120 tons to just 5.2 tons when limited commercial permits were introduced in 2002. By 2007, immediately before the closure of the commercial fishery, the size of this average individual allocation was less than 250 kg; it has not been increased since (Raemaekers *et al.* 2011).

In a harsh microcosm of the broader transformation picture, fisheries authorities were thus faced with the conundrum of broadening access to the abalone fishery while stocks were in rapid decline (Raemaekers *et al.* 2011). One consequence was that not everybody who applied for permits received them, stoking anger among small-scale fishers who felt they had historic claims to the resource (Hauck and Sweijd 1999). This was exacerbated by a cumbersome rights allocation process that frequently benefited community elites at the expense of legitimate fishermen (Isaacs 2006). When the price of abalone increased and international criminal syndicates began offering lucrative prices for illegal harvests, many coastal residents—particularly in the region between Kleinmond and Gansbaai on the south coast—turned to poaching as a form of income (Steinberg 2005). The reform process was crippled, henceforth, by the evolution of a powerful criminal economy that continues to operate to this day.

The rise of syndicated poaching

The long period of stability in the commercial abalone fishery came to an end in the early 1990s, when a dramatic upsurge in illegal harvesting began negatively impacting legal catches for the first time (Tarr 2000). Whilst abalone poaching was not a new phenomenon—it had been taking place, informally and at a low level, since quotas were first established—the start of the decade witnessed its emergence on a far bigger scale than before. According to Steinberg (2005), this shift could be attributed to four main factors.

[6] Rock lobsters began decimating sea urchin populations, which juvenile abalone formerly relied on for shelter. The breakdown of this commensal relationship made abalone recruits much more vulnerable to predation (Tarr 2000)

First, the South African rand depreciated in value, falling steadily from three units to the US dollar in 1992 to 13 units nine years later. This benefitted local abalone exporters, both legal and illegal, who were able to earn proportionally more for their product in rand terms. At the same time, economic growth in China and other importing countries like Taiwan boosted demand, causing prices to rise. By the mid-1990s, abalone was reported to fetch more than US$65 / kg on the Chinese black market, equivalent to approximately R300 / kg at the time[7].

Second, a sophisticated network of Chinese criminal syndicates, collectively known as Triad gangs, was already in existence in South Africa (Gastrow 2001). Engaging in a range of illicit activities from drug smuggling to human trafficking, they played a key role in organizing the illegal abalone trade when the street value of the abalone resource increased (Steinberg 2005).

Third, the lifting of economic sanctions after the end of apartheid, and the reinsertion of South Africa into the global economy, made it easier for criminal groups to conduct operations in the country; more lenient border controls also made it easier for poached abalone to leave South Africa. At the same time, greater volumes of contraband were able to enter the country—including the drugs methaqualone ('mandrax') and crystal methamphetamine ('*tik*'), which Triad groups are understood to have bartered for abalone with local gangs from the Cape Flats[8] (Steinberg 2005).

Finally, and crucially, frustration and disappointment at the slow pace of fisheries reform, coupled with a more general sense of political disillusionment, led to coloured fishing communities in the Western Cape responded positively to the arrival of foreign abalone syndicates, who simultaneously offered money *and* an opportunity to defy the government (Hauck and Sweijd 1999; Steinberg 2005). Together these

[7] This figure has not been adjusted for inflation. In today's terms, with an average annual inflation rate of 5.9% since 1995, it represents approximately R840 / kg.

[8] During Apartheid, coloured people where forcibly removed from inner Cape Town suburbs in their thousands, and relocated to a vast, barren expanse of land to the east of the city, which became known as the Cape Flats. This was to enforce the Group Areas Act, a piece of legislation that forbade the existence of racially mixed neighbourhoods. One consequence of these forced removals was the emergence of thousands of small street gangs in newly established coloured suburbs like Hanover Park and Manenberg, partly in response to the breakdown of social or kinship bonds that had previously existed in coloured communities. Over time, and particularly with the markedly increased influx of the global drug trade in the 1990s, many of these gangs coalesced to form powerful criminal groups. They continue to play a central role in the criminal economy of the Western Cape (taken from Steinberg 2004).

factors constituted a 'perfect storm', and abalone poaching took off on a scale never witnessed before.

Crisis management

Rampant poaching by large teams of divers, working from the shore or off inflatable rubber ducks, began rapidly depleting the abalone resource on the Overberg coast, where it had formerly been most abundant (Hauck and Sweijd 1999). The problem was exacerbated by the 'lobster effect' in Zones C and D, which caused comprehensive recruitment failure (Tarr 2000). Fearing stock collapse, fisheries authorities did a number of things. The first was aggressively curbing legal fishing, trimming the commercial TAC by more than 85% between 1995 and 2006, and closing the recreational fishery in 2003 (Raemaekers *et al.* 2011). Having failed to halt the decline, they then took the highly controversial decision to shut down the entire commercial fishery in 2007, arguing that abalone were on the brink of commercial extinction. Rights holders were infuriated, claiming they had been unfairly punished for the behaviour of criminals. The ban was effectively withdrawn one season later, but with a much smaller TAC of about 150 tons—representing an average individual quota of just 250 kg—in place (Raemaekers *et al.* 2011).

In parallel, a number of strategies were developed to combat poaching by improving law enforcement (Hauck & Kroese 2006). In 1999 Marine and Coastal Management (MCM), the national fisheries authority[9], established Operation Neptune, a joint venture with the South African Police Service (SAPS), on the Overberg coast (for a list of the enforcement bodies responsible for tackling abalone poaching see Table 3). Its main focus was preventing poachers from entering the water; efforts were also made to arrest and prosecute known offenders (Hauck 2009b). Operation Neptune ran intermittently until 2005, when it was absorbed back into MCM.

In 2003 the Overstrand Municipality took over responsibility for enforcing compliance in its waters—where abalone poaching was most serious—from MCM. Their first project was establishing a special task force called the MARINEs (Management Action for Resources of Inshore and Nearshore Environments) which

[9] Marine and Coastal Management, responsible for managing fisheries and the marine environment, was formerly a branch of the Department of Environmental Affairs and Tourism (DEAT). In 2009 it was transferred to the Department of Agriculture, Forestry, and Fisheries (DAFF), where it is now known simply as the Fisheries Branch. Many fishers continue to refer to the fisheries authority as MCM.

among other activities conducted 24-hour patrols, monitored slipways, liaised with local schools and communities, and co-operated with other anti-poaching groups (Hauck 2009b).

In the same year a dedicated environmental court was set up in Hermanus to handle poaching cases, which the mainstream justice system had struggled to deal with effectively (Snijman 2005). In its first 18 months of operation the court processed a long backlog of cases, achieving a prosecution rate of 75% (Hauck 2009b). By comparison, the prosecution rate in mainstream courts was estimated at 10% (Snijman 2005). Despite its clear successes, however, the Department of Justice closed the environmental court in 2006, citing budgetary constraints.

Table 3: Institutions responsible for tackling abalone poaching on the Cape Peninsula

Acronym in text	Full Title
DAFF	Fisheries Branch: Department of Agriculture, Forestry & Fisheries
MCM	Marine and Coastal Management: Department of Environmental Affairs & Tourism
SANParks	South African National Parks Board
SAPS	Water Wing: South African Police Service

A further attempt to strengthen law enforcement was the launch of Operation Trident in 2004, which formed part of a broader 'Abalone Protection Plan'. One spin-off of this project was securing substantial funding for the MARINES; however they were disbanded two years later, and amalgamated back into MCM (Hauck 2009b). This also saw the end of Operation Trident.

Besides policing the abalone resource, authorities also made efforts to address the root causes of poaching with a new abalone policy, adopted in 2003 (DEAT 2003). This policy established parameters for the allocation of long-term (10 year) fishing rights, and proposed a new management plan for curbing overfishing. This included setting up co-management structures and establishing a Territorial User Rights Fishery (TURF) for rights holders, aimed at encouraging custodianship in the fishery

and thus improving its long-term viability. The recreational fishery was also suspended, in order to reserve abalone exclusively for the commercial sector.

Despite these progressive measures, the new policy proved difficult to implement. Problems included an ineffective TURF system, which allowed rights holders to fish in zones other than their own and thereby undermined resource custodianship; a flawed co-management process, with limited opportunities for stakeholders to participate in decision making; and notably the unilateral decision by MCM to close the commercial fishery in 2007, which completely alienated rights holders (Hauck 2009b). Rights holders were also not equipped to deter armed poaching syndicates, who continued to act with impunity (Raemaekers *et al.* 2011). Individual quotas for rights holders remained small, prompting anger at the government and further co-operation with poaching syndicates (Hauck 2009b). Finally, and perhaps most importantly, the underlying conditions of poverty and unemployment in coastal fishing communities had not been adequately addressed, meaning strong economic incentives for poaching remained (Hauck & Sweijd 1999; Hauck & Kroese 2006; Isaacs 2011). What had been initially been lauded as a bold step towards tackling abalone poaching holistically thus resulted, ultimately, in little change, with little link-through between policy interventions at government level and compliance behaviour on the ground.

At the same time, the illegal abalone fishery continued evolving from its informal, politically motivated roots into "a highly organised fishery dominated by a lucrative illicit international trade" (Hauck 2009b; p. 133). With the root socio-economic drivers of poaching remaining intact, the fishery expanded as organized criminal groups continued exploiting the opportunity to supply the booming abalone black market (Steinberg 2005; Hauck 2009). Commenting on this, Hauck (2009) described a sense of a "missed opportunity" among participants in her study, who felt that the chance to put the abalone fishery on a "radically different path" had passed (p. 134).

Having met with little success in its war on abalone poaching, fisheries authorities made two final attempts to protect the resource. The first was establishing new Marine Protected Areas (MPAs) on the Cape Peninsula and on Bird Island in Port Elizabeth, where illegal harvesting was rampant. Dyer Island, near Gaansbaai, was also closed to commercial fishing. Law enforcement in these areas remained poor,

though, severely hampering the effectiveness of these measures (Raemaekers *et al.* 2011). The second strategy was listing *H. midae* on Appendix III of CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora), a voluntary international agreement aimed at restricting the trade of rare or threatened species. This required all legal abalone exports leaving South Africa to be accompanied by a CITES permit (Raemaekers *et al.* 2011). It was hoped that regulatory controls in importer countries, as well as in neighbouring Southern African states through which abalone was known to be smuggled, would tighten as a result. This didn't happen, though: after encountering a series of logistical obstacles the CITES listing was withdrawn in May 2010 (Raemaekers *et al.* 2011). Yet again, in other words, real-world difficulties impeded the successful implementation of well-intentioned rescue plans for the threatened abalone resource.

Current state of affairs

Since 2010, little has changed in South Africa's abalone fishery from a management perspective. An annual quota of 150 tons continues to be issued, shared between Zones A, B, E, F, and G (Figure 1). Zones C and D have been closed to commercial fishing since 2006, although poaching has continued on a prolific scale. Rights holders from these areas—situated adjacent to the towns of Hermanus and Hawston respectfully—have permission to harvest in zones that have remained open (Serge Raemaekers, *pers. com.*). In 2011, DAFF opened an experimental abalone fishery in False Bay, expanding the geographic range of Zone E to compensate for quota reductions elsewhere (Angus McKenzie, DAFF; *pers. com.*). Zones E–G, which were formerly considered peripheral to the abalone fishery, now contribute one third of the total TAC (Angus McKenzie, DAFF; *pers. com.*).

In parallel to the westwards shift in legal fishing effort, poaching activity in these zones has also increased. Poaching groups from South Africa's south and east coasts have started targeting reefs surrounding the Cape Peninsula; local poachers have reportedly become more organized and begun operating on a bigger scale as well (Serge Raemaekers, *pers. com.*). It is alleged that the fishing community of Hangberg, situated in Hout Bay, has become a 'hub' for abalone poaching operations by both foreign and local groups.

1.3 Research aims and objectives

1.3.1 Aims

This study aims to profile the human dimensions of abalone poaching in Hangberg, about which very little is currently known[10]. By revealing the scale and extent of current poaching activities in the community; exploring its socio-economic drivers and impacts; and investigating relationships between different components of the illegal fishery system, it is hoped that this work will contribute to better understanding of what is simultaneously a pressing conservation and fisheries management issue.

According to systems thinking, abalone poaching in Hangberg cannot be understood in isolation from its broader socio-economic, cultural, political, and institutional contexts (Charles 1995). A systems approach thus constitutes the core research framework of this study, which aims to profile the illegal fishery holistically—and from multiple perspectives—by using a broad range of research methods. It is hoped that this will result in a comprehensive picture of a highly complex governance problem, and thus aid the development of more appropriate and effective management strategies in the future.

It is important to note, however, that this research does not aim to present novel solutions to syndicated abalone poaching in South Africa, which more than a decade of compliance initiatives have failed to bring to an end. Rather, it seeks to draw lessons from a case study of the abalone fishery to inform efforts to govern small-scale fisheries—as well as other shared natural resources—more successfully in the future. Abalone poaching in Hangberg is thus a lens with which to investigate broader themes in fisheries and conservation management.

Time constraints—this entire research project is limited to just six months—mean that *fully* characterizing the different facets of the illegal abalone fishery is not possible. Instead, this study presents a general overview of the human dimensions of

[10] The illegal rock lobster fishery in Hangberg has been studied in depth (Hauck 2009b) and abalone poaching has received attention elsewhere in South Africa (Hauck and Sweijd 1999; Raemaekers 2009; Raemaekers and Britz 2009). This research is thus entirely new. Previous work has been drawn on for verification and context.

the fishery system, bringing its key features to attention and highlighting important themes for further research and discussion.

Besides profiling the illegal fishery in Hangberg, this research project has a secondary aim. The new SSF policy, officially adopted in June 2012, is yet to be implemented, and questions remain about how to translate its noble objectives into meaningful action. By revealing some of the challenges abalone poaching will pose to the implementation of *any* community-oriented fisheries policy, this study aims to offer the process a much-needed reality check: not to dismiss its validity, but to try and ensure that its implementation strategies are grounded in reality. Unless the real-world complexities of small-scale fishing communities are properly understood, attempts to bring about lasting change are likely to fail. Small-scale fisheries governance, specifically relating to implementing the new SSF policy in South Africa, is thus the framework of analysis with which the profile of Hangberg's illegal abalone fishery will be interpreted.

1.3.2 Objectives

The aims of this dissertation are to profile the human dimensions of abalone poaching in Hangberg, and to explore its implications for implementing South Africa's new SSF policy. Four objectives were identified to help achieve these broader goals. These were:

1. Situating Hangberg within the larger context of small-scale fisheries governance, both internationally and in South Africa;
2. Reviewing the evolution of syndicated abalone poaching in South Africa;
3. Profiling the human dimensions of abalone poaching in Hangberg by:
   3.1. Investigating its historical development;
   3.2. Revealing its current structure, scale, and methods of operation;
   3.3. Exploring its main social and economic drivers; and
   3.4. Characterizing its social and economic impacts in the community; and
4. Drawing lessons from this profile to inform implementation strategies for the new SSF policy, as well as recommend further research.

1.4 Dissertation format

Chapter 1 has introduced the broad theoretical background to this study, illustrating how effective small-scale fisheries governance requires different approaches to the commercial sector. The importance of adopting a systemic approach to fisheries management, incorporating socio-economic, cultural, political, and institutional factors into decision-making *in addition to* contributions from conventional fisheries science, was highlighted as particularly important. Key concepts from the governance and compliance literature were introduced as frameworks for understanding fisheries management, as well as legal pluralist perspectives of fisheries conflict.

A historic overview of post-apartheid fisheries reform in South Africa followed, revealing some of the challenges fisheries and conservation managers have faced since the end of apartheid. It was shown how the government's laudable ambition of broadening access to marine resources has been constrained by its need to maintain economic stability and long-term sustainability, leading to the expectations of many historically disadvantaged small-scale fishers not being fulfilled. The links between their frustration and non-compliance were most evident in the abalone fishery, where high demand and the arrival of powerful criminal syndicates resulted in an explosion of illegal fishing from the mid-1990s onwards.

In Chapter 2, an in-depth case study of abalone poaching in Hangberg is presented, which uses a systems thinking approach to try and understand the multiple drivers and impacts of the illegal fishery.

Chapter 3 draws conclusions and gives recommendations for improved management strategies in the future, as well as further research.

CHAPTER 2: PROFILING ABALONE POACHING IN HANGBERG

2.1 Background: A new abalone poaching hot spot?

> *"Because of depleted stocks and police clampdowns in the area, some poaching syndicates from Hermanus and Arniston are believed to have moved their operations to the West Coast … "* (Cape Times, November 2003)
>
> *
>
> *"Police say abalone poaching around Hout Bay and Llandudno is becoming 'worse than Hawston and Onrus' … "* (Cape Times, November 2010)
>
> *
>
> *"A sting operation involving law enforcement officers following a gang of suspected perlemoen poachers from Robben Island to Hout Bay led to violent clashes in Hangberg yesterday, with live ammunition fired … "* (Cape Times, March 2012)

Over the course of the last decade, a small fishing community on the Cape Peninsula has joined the likes of Hawston, Hermanus, and Gansbaai—all infamous abalone poaching towns on South Africa's south coast—in making newspaper headlines. In the process, Hangberg—situated in the popular tourist suburb of Hout Bay (see Figure 2)—has developed notoriety for being a new abalone poaching "hot spot". Previous research has documented the existence of an entrenched informal rock lobster fishery in the community, which has attracted the attention of law enforcement officials for decades (Hauck 2009b). However, the newer phenomenon of abalone poaching has not yet received serious attention from academic researchers.

Key concepts relating to small-scale fisheries governance—both internationally and in a South African context—were introduced in Chapter 1. In particular, the importance of adopting new approaches for managing the small-scale sector was highlighted. In South Africa, following years of troubled attempts to transform marine fisheries since the end of apartheid, some of these approaches have been adopted for the first time in the new SSF policy. Communities like Hangberg are precisely where the new policy will have to be tested.

Hangberg: A brief history

Situated above Hout Bay harbour on the Cape Peninsula, the Hangberg community—zoned 'coloured' under the apartheid Group Areas Act of 1950—has been involved in fishing for centuries. Stone age deposits in the bay indicate that humans were catching a variety of species using handlines, spears, and fish traps as long as 2 000 years ago (Gibbs n.d.). From 1667 onwards, Dutch farmers settled in the valley, fishing from small boats and with trek nets to feed their labourers and barter for grain (Gibbs n.d.).

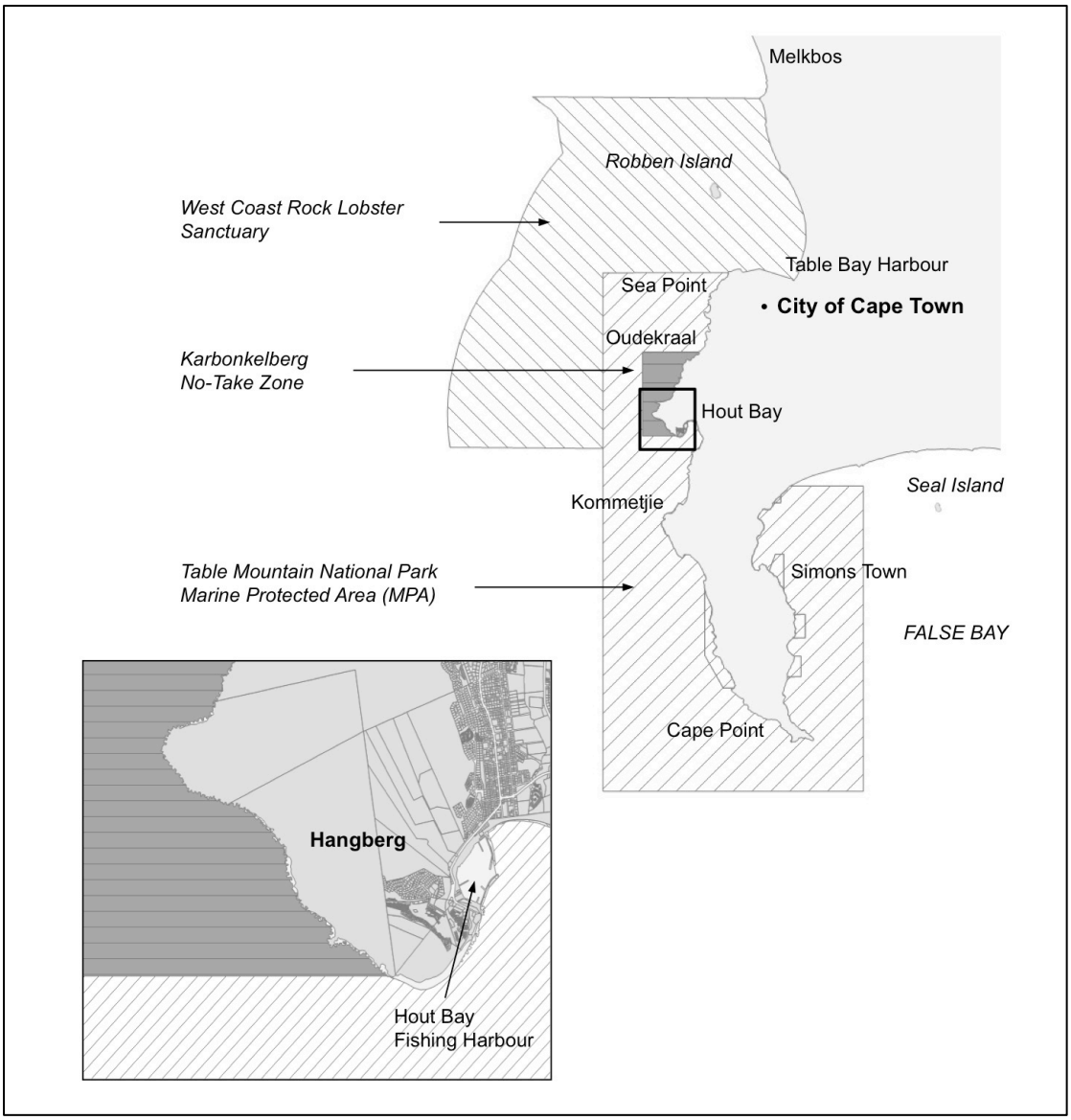

Figure 2: Map of the Cape Peninsula in Cape Town, South Africa, showing the fishing community of Hangberg inset.

The first formal fishery in Hout Bay was based on dried snoek, which was exported to Mauritius in exchange for sugar from the early 19th century onwards (Gibbs n.d.). A rock lobster fishery developed shortly after, with a system of customary user rights evolving among early Hangberg fishers who targeted the resource (van Sittert 1994). Industrialization followed in 1903, when the Hout Bay Canning Company set up a factory on board an old wooden ship. It operated until 1914, supplying the European market, but then exploded after a gas leak, killing seven men (Gibbs n.d.) .

The emergence of a lucrative export market for rock lobster had important implications for fishers in Hangberg, who began to be systematically excluded from accessing the resource (van Sittert 1994). Previously considered 'poor man's food' and used as bait for linefishing, rock lobster became a focal point of fisheries development in Hout Bay, which saw the construction of a harbour in 1937 and fish processing factories in the 1950s. Pressure from industry led to fisheries authorities creating rock lobster 'sanctuaries' from 1927 onwards; one such no-take zone was established at Karbonkelberg, where the Hangberg community traditionally fished, in 1934 (van Sittert 1993).

Despite facing increasing opposition from the government, traditional fishing continued in Hangberg, often on an illegal basis (van Sittert 1994). The community consequently developed a reputation as a problem area among fisheries managers, with the perception that high levels of illegal fishing were depleting important resources like rock lobster (Hauck 2009b; Sowman *et al.* 2011a).

In 2004 the Table Mountain National Park MPA was proclaimed, partly to combat abalone poaching on the Cape Peninsula (Raemaekers *et al.* 2011). A no-take zone—one of six on the peninsula—was superimposed over the original Karbonkelberg rock lobster sanctuary (Figure 2), angering traditional fishers who were not consulted during the process (Hauck 2009b; Sowman *et al.* 2011a). The perceived injustice of this no-take zone remains a point of contention in Hangberg today, and has been argued to contribute to ongoing problems of non-compliance (Hauck 2009b).

Poverty, unemployment, and poor service delivery

Other than fishing, few opportunities for employment exist in Hangberg (Raemaekers *et al.* 2010). Unemployment is high, with monthly incomes well below the Western Cape average (Kapembe *et al.* 2007). The primary and high schools are both

overcrowded, serving children from Imizamo Yethu—a predominantly black informal settlement on the other side of the Hout Bay valley—as well as Hangberg (Tefre 2010). Fewer than 12% of respondents in a 2010 survey of local fishers had completed matric; none had received tertiary education (Raemaekers *et al.* 2010). Drug abuse is rife and on the rise, with the spread of *tik* in particular contributing to a range of social problems including child abuse, petty crime, and prostitution (Tefre 2010).

In the 1950s fishing companies erected council flats in Hangberg to house their employees (Fieuw 2011). These became overcrowded in the 1970s, when the fishing industry boomed, leading first to the proliferation of backyard dwellings and later, in the 1990s, to the development of an informal settlement that spilled over the slopes above the council flats (Fieuw 2011; Raemaekers *et al.* 2010). Recently, this informal settlement grabbed headlines after violent clashes erupted with police, who had been tasked with evicting residents from an area zoned as a firebreak (Cape Times, March 2012).

Recent research by Witte (2010) has revealed that fewer than individuals 150 hold fishing quotas in the community, out of a total population of more than 5 500. The majority of these rights holders—approximately 85—hold interim relief permits, which they mainly use to catch rock lobster (Donovan van der Heyden, pers. com). Five individuals hold long-term rock lobster rights (Witte 2010).

2.2 Methodology

2.2.1 Introduction: Lifting the curtain on a hidden fishery

Investigating abalone poaching in Hangberg—an illegal activity that is deliberately kept hidden from outside view—required the sensitive application of a broad range of research methods. At times it was necessary to employ creative approaches in order to facilitate access or gather information. Methodological approaches from previous studies of fisheries non-compliance in South Africa (e.g. Hauck 1997, Hauck 2009b, Raemaekers 2009) provided an invaluable template for designing and executing the research strategies outlined below.

Ethnographic techniques [11], including extensive interviews and participant observation, formed the basis of this study, accompanied by covert surveillance, secondary data sources, and some elementary biological fieldwork. These methods were selected with the aim of developing a holistic profile of the human dimensions of Hangberg's illegal abalone fishery, in order to understand it as fully as possible in its real-world context.

Different methodological approaches were combined using a process of 'triangulation', commonly used in social science research to improve both the value and validity of results (Jick 1979). Triangulation involves using multiple strategies to answer the same set of questions, and is thus useful for investigating phenomena from different angles and "deepening and widening one's understanding" of them (Olsen 2004; p. 1). Triangulation can also be used to cross-check information from different sources, and thus reduces the risk of drawing false conclusions from unreliable data (Jick 1979). Finally, triangulation allows quantitative and qualitative research methods to be combined, thus bridging historical divides in the social sciences and enabling greater inter-disciplinarity (Olsen 2004). Nevertheless, qualitative research methods formed the basis of this study.

[11] To some, the term 'ethnography' has been tainted by its association to colonial-era anthropology, which documented foreign cultures under a set of imperialist, racist assumptions. However, ethnographic research remains integral to much social research today. According to Emerson *et al.* (1995; p. 1), ethnography comprises two core activities: "First-hand participation in some initially unfamiliar social world," and "the production of written accounts of that world," based on such participation. This definition has been adopted for this study.

Conducting research of this nature required input from experts in different disciplines, and experienced criminal researchers, crime novelists, and investigative journalists were consulted for advice regarding fieldwork techniques, as well as for their insight into the illegal abalone fishery (Table 4).

2.2.2 Methods used

Interviews and participant observation

Interviews were conducted between August 2012 and January 2013. Consultations were held with a wide range of stakeholders, including abalone poachers, members of the broader Hangberg community, law enforcement officials, conservation managers, and investigative journalists (see full list in Table 4). These individuals were selected for their different perspectives on abalone poaching in Hangberg, in order to understand it as holistically as possible. In addition, an informal weekend trip to Hawston was conducted in order to gain insight into the illegal abalone fishery on the Overberg coast, and to shed light on poaching behaviour in Hangberg after early fieldwork revealed links between poachers in the two communities. Interviews with two self-confessed poachers were conducted there, as well as with two non-poaching residents.

Sampling process

Throughout this study, a snowball approach was used to both identify and be introduced to new participants. This method, which entails being 'referred on' to key individuals by existing contacts, is considered particularly useful for investigating clandestine groups, who are typically mistrustful of outsiders (Biernacki & Waldorf 1981). It is also helpful for identifying key individuals who may not have been considered during initial planning (Biernacki & Waldorf 1981). In Hangberg, a few key informants acted as 'gatekeepers'[12] to the community, providing introductions to poachers along with assurances of my credibility. Their assistance proved vital: without it, it is unlikely that poaching groups could have been accessed at all. Gatekeepers were identified with the help of researchers at the Environmental

[12] This term is commonly used in criminological research to refer to individuals who facilitate access to clandestine groups (Noakes and Wincup 2004). It has been adopted here with no negative connotations.

Evaluation Unit (EEU) who had previously conducted studies in the community[13]. A radio journalist who had covered recent unrest in Hangberg also helped establish early contacts. Finally, I made use of my own contacts in the Hangberg community, established while living in Hout Bay as a teenager.

To a lesser degree, gatekeepers were also necessary for gaining access to law enforcement officials and conservation managers. In most cases, this access was formally arranged through the EEU.

Interviews

A formal, structured format was seldom followed during interviews: it was felt that this would limit responses by participants and inhibit the development of trust. Instead, unstructured interviews were preferred, which allowed questions and responses to unfold more naturally as conversations proceeded. To direct the process of probing the clandestine fishery, however, key themes were identified prior to heading into the field each time, usually based on information from previous interviews. Relevant questions were thus consciously and continuously worked into otherwise unstructured interviews and discussions.

Hangberg fieldwork

In Hangberg, the majority of interviews took place with one group of self-confessed poachers in particular, with whom rapport and trust had been established during early encounters. Repeated visits—more than 30 in total, corresponding to over 80 hours spent in the community—made it possible to re-check facts, clarify uncertainties, and follow up on leads. In this way, knowledge of the illegal fishery was built up slowly and iteratively. More direct or conventional approaches, for example holding formal meetings or distributing questionnaires, are unlikely to have been nearly as effective for a study of this nature. More than 100 individuals were engaged with in total; approximately 25 gave substantial interviews or participated meaningfully in group discussions (Table 4).

[13] The EEU is housed in the Department of Environmental and Geographical Sciences at the University of Cape Town.

Table 4: List of individuals interviewed during this study

Organisation, institution or population group	Number of individuals interviewed
<u>Hangberg residents:</u>	
Illegal abalone fishers	
• Middlemen	1
• Boat owners	3
• Divers	4
• Skippers	2
• *Bootsmanne*	4
• Carriers	5
Non-poaching residents	6
Subtotal	*25 (> 100)*[*]
<u>Hawston residents:</u>	
Illegal abalone fishers	2
Non-poaching residents	2
<u>Department of Agriculture, Forestry & Fisheries (DAFF):</u>	
Chief Directorate: Monitoring Control & Surveillance	
• Fisheries Patrol Vessels	1
• Compliance	1
• Special Investigations	1
Chief Directorate: Research, Antarctica & Islands	
• Inshore resources	2
<u>South African Police Services (SAPS):</u>	
Water Wing	3
<u>South African National Parks (SANParks):</u>	
Table Mountain National Park, Marine Section	1
<u>National Prosecuting Authority (NPA):</u>	
Senior Prosecutor, Cape Town Magistrate's Court	1
<u>Other:</u>	
Recreational dive operator, Hout Bay harbour	1
Investigative journalists	3
Criminal researcher	1
Cape Town abalone poacher from the 1970's	1
Small scale fisheries researchers	2
Researcher, TRAFFIC	1
Total	**48**

[*] *More than 100 individuals in Hangberg were engaged with in total. About 25 gave substantive interviews.*

To put participants at ease, notes were seldom taken during fieldwork, and were usually only written up upon leaving the field. For similar reasons, it was not feasible to capture interviews with audio recording devices: most participants were wary of their statements being distributed or used against them in the future. There are thus no official transcripts of interviews conducted during this study. Quotations that appear in the report were transcribed from memory; these have all been anonymously attributed. The main disadvantage of this approach is that important details may have been lost on occasion, as there were limits on the sheer volume of information that could be accurately retained after an afternoon in the field. Allied to this was a risk of reconstructing statements inaccurately, or subtly changing people's words. However, it was felt that these quotations—even in accidentally altered form—provided rich insights into the illegal abalone fishery that reported speech would not have been capable of, and they have thus been included here. To reduce the likelihood of committing errors, only quotations that were vividly remembered and transcribed immediately after fieldwork were used.

Interviews were conducted telephonically on certain occasions. Text messages were also occasionally used for checking facts with participants while writing up field notes at home.

Participant observation

Interviews in Hangberg were accompanied by extensive participant observation, broadly aimed at getting an "inside view" (Emerson *et al.* 1995; p. 3) of the lives, attitudes, and activities of poachers in the community. This took place continually during interviews, as well as at local football matches—many poachers played for or supported one particular team, which turned out to be funded by a prominent poaching 'kingpin'—and on hikes to a remote launch site used during poaching operations.

Covert surveillance

In addition to direct engagement with abalone poachers in Hangberg, more covert approaches were also used. These included observing boat launches from Hout Bay harbour, and conducting repeated snap surveys of poaching vessels parked in Hangberg and moored in Hout Bay harbour, in order to estimate the size of the abalone poaching fleet and monitor poaching activity.

Secondary data sources

In addition to primary research conducted in Hangberg and with other key stakeholders, a wide range of secondary sources was consulted to gain insight into the illegal abalone fishery. A wealth of existing academic literature about fisheries issues in Hangberg, mostly compiled by researchers from the EEU, proved particularly useful for developing a picture of the community during early stages of this project (e.g. Hauck 2009b; Raemaekers *et al.* 2010; Witte 2010)

Newspaper articles

Newspaper articles describing both abalone poaching and anti-poaching operations in South Africa, dating back to the mid-1990s, were collected online using Google News and Sabinet's SA Media database. After general searches returned hundreds of articles, narrower, more systematic searches were conducted to select articles relating to three key themes. These were:

- Abalone poaching nationwide, focusing on the arrests and trials of syndicates linked to Chinese Triad groups;
- Poaching-related violence in Hawston during the 2000s; and
- Recent poaching activity in Hangberg, as well as at Robben Island, Cape Point, and other locations known to be targeted by groups in the community.

These themes were chosen to develop background understanding of abalone poaching in South Africa, to track the co-evolution of poaching syndicates and anti-poaching operations over the last two decades, to shed light on the social impacts of abalone poaching in coastal communities, and to contextualize current poaching operations in Hangberg. Articles were also used as starting points for conversations with poachers, and as reference material to compare with data gathered in the field.

Court documents

Legal reports describing criminal trials of abalone poaching groups in the Eastern Cape were accessed using the Juta Law database. These were used to gain insight into the inner workings of poaching syndicates elsewhere in South Africa, which shed light on poaching activities in Hangberg. Of particular interest were the links between divers, local middlemen, and larger syndicates. These documents are not cited in this report, but helped contextualize the research and develop a broad understanding of

the illicit abalone trade. This made it easier to interpret partial information obtained from interviews and appeared to encourage participants to trust me, based on my knowledge of aspects of the illegal abalone fishery that are usually kept secret.

Measurements and observations of discarded abalone shells

Early in this study it was revealed that poaching groups in Hangberg used a remote drop-off point to offload their illegal harvests, with the majority employing assistants to shuck their catch (or remove abalone flesh from the shell) as soon as it came ashore. It was thus possible to observe, and on two occasions to measure, batches of freshly discarded abalone shells during fieldwork. This provided insight into the behaviour of poaching groups and gave rough indications of the size distribution of abalone that divers were targeting. Local sensitivities prevented me from measuring shells more frequently; nevertheless the breadths of approximately 100 fresh shells were recorded on two separate occasions with the help of local assistants (Figure 3).

Figure 3: Measuring freshly shucked abalone shells near Hangberg, Hout Bay, with the help of two local research assistants. The abalone flesh pictured (held by the assistant wearing red) was discovered amidst discarded shells, having presumably been misplaced by carriers the evening before.

2.2.3 Ethical considerations

A number of important ethical considerations presented themselves during this study. First, it was essential to protect the confidentiality of participants, the majority of whom were poachers and thus vulnerable to prosecution for their illegal activities. These participants were repeatedly assured of their privacy throughout the research process, and further put at ease by the absence of audio recording devices—or overt note taking—in the field. Where direct quotations have been used in this study, they have been presented anonymously.

A related issue was the need to maintain clear boundaries between different groups of participants. Early on in the research process I discovered that poachers and anti-poaching groups invested a great deal of effort into monitoring each other's activities. Crossing repeatedly between these two camps thus carried risks of inadvertently divulging sensitive information to either side, which would have entirely compromised the integrity of this research[14]. It was imperative not to contribute to poachers being arrested—and equally imperative not to assist them in their activities. This delicate balance was achieved by firmly refusing requests for information, by maintaining distance from both poaching *and* anti-poaching operations, and by taking utmost case to prevent my field notes from falling into anybody else's hands.

Second, my duty to report illegal activities was called into question. While no abalone poaching activity was directly witnessed during this study, participants occasionally revealed details of planned operations in advance. This show of trust was treated with utmost confidentiality and respect. Other times, transactions involving large sums of money were witnessed following successful dives. Boat owners were overheard planning upgrades and repairs to their vessels. On at least five occasions, poachers reported violent confrontations with outside poaching groups or members of the community. Less seriously, marijuana smoking was observed on an almost daily basis. None of these transgressions were reported to the police. The decision was also taken to omit certain sensitive details from this report, to avoid compromising the safety and privacy of participants.

[14] It also raised suspicion among poachers *and* law enforcement officials that I was working as an informant for 'the other side'.

A final issue, similar to difficulties encountered by Hauck (2008) while investigating Hangberg's informal rock lobster fishery, involved unfairly raising the expectations of participants. Many poachers expressed hope that this study would result in them receiving formal abalone permits, and repeatedly urged the researcher to argue their case to the fisheries authorities[15]. It was explained that, while this research aimed to help small-scale fishers in the long run by contributing to the effective implementation of the SSF policy, their wishes for abalone rights would probably not be fulfilled.

2.2.4 Limitations

Language and culture

All abalone poachers encountered during this study, as well as most members of the broader Hangberg community, spoke *kaapse* Afrikaans as their first language[16]. The majority could also speak English, and would often switch between the two languages during conversations. By comparison, I speak English as a first language and Afrikaans as a second. Despite being relatively proficient in Afrikaans, it was sometimes difficult to follow group discussions, which were often lively and filled with banter. This was less of an obstacle during one-on-one conversations, as most participants were happy to explain themselves in English if asked to do so.

Many conversations were started in Afrikaans in order to establish rapport, before shifting to English later. The bilingual abilities of most participants meant that there was never an urgent need for translators. On some occasions participants translated for one another, as some spoke English better than others. As a result, language was seldom a significant barrier to communication during fieldwork.

Indirectly, however, language may have prevented me from gaining deeper access to the community. Language is essential for establishing rapport; it is more than simply a medium for communicating facts. Undoubtedly, not being fluent in Afrikaans slowed the development of personal relationships during this study, which may in turn have limited the degree to which poaching groups could be infiltrated. This was linked,

[15] Certain individuals attempted to manipulate the research process to this end, presenting false or skewed information to cast themselves—and Hangberg's abalone poachers in general—in a favourable light.

[16] *Kaapse* Afrikaans is a regional dialect rich in colloquialisms and idiomatic expressions, spoken widely throughout the Western Cape.

more broadly, to substantial cultural differences between us, reflecting in no small part the ongoing division of South African society along racial lines. This frequently made fieldwork uncomfortable, and entailed a rapid and occasionally bewildering process of 're-socialization'—or learning the social rules and norms of an unfamiliar group of people (Emerson *et al.* 1995)—for this researcher, who was raised as a middle-class, white South African.

On the other hand, being foreign to the Hangberg community may have carried certain advantages. As I was largely unaccustomed to the world of coloured fishers, so too were they to mine. Frequently they appeared to assume a kind of naiveté on my behalf, divulging important information without realizing they had done so.

Timeframe

Earning the trust of abalone poachers—a highly guarded and suspicious group of individuals—was not easy during this study. Effectively having just four months to do so presented a significant added constraint. While existing research relationships between UCT and key individuals in the community helped facilitate early access, developing and maintaining rapport with poachers proved to be a slow, ongoing process. Towards the end of this study, it became difficult to balance this need for continued engagement with the demands of writing up a dissertation, and certain relationships that had tentatively been established began to wane. To remedy this, attempts were made to remain in weekly cellphone contact with key participants, and to visit the community as frequently as possible. To give closure to the project, meanwhile, a feedback session was arranged to report the main findings of this study to members of the community[17]. Finally, a conscious decision was made early in the research process to focus on the human dimensions of the illegal fishery and not to characterize its impacts on abalone resources, as had initially been planned.

Personal safety

On some occasions, concerns for my personal safety prevented me from investigating aspects of the Hangberg abalone fishery more fully. In particular, the activities of local middlemen—who purchase poached abalone from divers and sell it on to outside groups, while running small poaching syndicates of their own—were largely left

[17] Two feedback sessions were arranged, but cancelled due to poor attendance. At the time of going to print, efforts to arrange a third session have been unsuccessful.

unexplored. Middlemen and their clients are powerful players in a lucrative criminal economy; they are capable of taking violent steps to protect their interests. More time in the field may make it possible to gain access to these groups in the future; in this study, however, their operations have mostly been pieced together using second-hand information, and from the testimonies of two former middlemen living in Hangberg[18].

Despite these limitations, however, it was possible to learn a great deal about abalone poaching in Hangberg during this study. Findings from my multi-method research strategy appear in the following section.

[18] In mid-January, right at the end of this study, contact was made with two additional individuals who used to work as abalone middlemen in the 1990s and early 2000s, respectfully. Their stories were incorporated where possible; however time constraints precluded restructuring this dissertation to include them in full.

2.3 Findings

Based on four months of fieldwork, it was possible to develop a fairly comprehensive profile of the human dimensions of abalone poaching in Hangberg, including details about its participants, historical development, current structure and scale, *modus operandi*, and main socio-economic drivers and impacts. The nature of conflict and cooperation between poaching groups was also probed, as well as perceptions of law enforcement success.

It is important to bear the sensitive nature of this research in mind while reading this section. It was not always possible to sift robust facts from looser perceptions during interviews, and some findings thus remain anecdotal. Attempts were made to cross-check information with multiple sources wherever possible, but the secrecy of the illegal abalone fishery made this difficult on occasion. Similarly, quantitative estimates of the size and scale of the fishery are necessarily tentative. Nevertheless, perceptions, anecdotes, and tentative estimates have been included, because they *still* offer valuable insight into a highly clandestine illegal fishery.

2.3.1 Fisher profile

With the exception of two white accomplices from outside Hangberg, all abalone poachers encountered during this study were coloured men. Their ages ranged from 16 to older than 50, with the majority appearing to be in their twenties. The men, who spoke a rapid blend of *kaapse* Afrikaans and English, appeared to regard me with a mixture of curiosity, amusement, and suspicion. Not once were any of them aggressive or threatening; the worst treatment I received in the field was being ridiculed or ignored. Many participants adopted a somewhat intimidating persona during early encounters, but relaxed in subsequent visits and became friendlier.

Few poachers claimed to be formally employed, and because most poaching operations take place at night it was usually easy to locate the men during daytime visits to Hangberg, gathered at a number of regular 'hangouts'. The home of one participant, a middle-aged skipper who piloted poaching vessels for a living, proved to be one such meeting point during this study, and many self-confessed poachers were encountered there for the first time. A revolving cast of perhaps 30 individuals in total—allied to three of the five main poaching groups in the community—would

visit over the course of an afternoon to socialize, smoke marijuana, and plan upcoming dives. Observations revealed that other poaching groups gathered like this elsewhere in Hangberg; however I was unable to gain meaningful access to them.

Compared to their contemporaries in the community, many poachers displayed conspicuous signs of wealth, including expensive sunglasses, branded shoes, and shiny wristwatches. At times these status symbols could appear incongruous, accompanied by a torn pair of jeans or a broken cellphone. Wealthier poachers revealed no such contradictions, however, driving fast cars and wearing clothes in good repair. These individuals were also noticeably fatter than many of their compatriots, in all likelihood reflecting their greater ability to eat well. As a low-ranking abalone carrier commented:

> "Those guys don't need to worry about buying bread—they're eating KFC every day!"

Poachers and non-poachers alike in the community commonly wore jewellery like necklaces and earrings; most had heavily tattooed arms and torsos; and a smaller number had had their upper front teeth removed. In this way their appearance clearly referenced Cape gang culture—but many hastened to explain that they were not gangsters, and indeed that serious gangsterism had been "chased out" of the community more than a decade ago. Rastafarian culture was also visibly prominent in the community, with many individuals wearing dreadlocks or the iconic colours of red, yellow, and green. These biographical details are not trivial: it emerged later that there were important links between poaching behaviour and cultural identity in Hangberg. This point will be returned to in the discussion.

The poaching hierarchy

Poachers were discovered to perform different roles—and earn different profits—in the illegal abalone fishery (Figure 4). At the bottom of the scale were carriers, runners, and spotters, usually youths who worked in small teams for older poachers. Deck assistants, or *bootsmanne*, were next, followed by skippers who piloted poaching vessels. Divers tended to have even greater status, although this varied according to their age and experience. A small group of boat owners and middlemen occupied the upper echelons of the Hangberg abalone poaching hierarchy, controlling

large parts of the fishery and earning the greatest profits. A more thorough explanation of these roles will follow in the section on the structure of the fishery.

Involvement in other fisheries

Most poachers interviewed claimed to have backgrounds in other fisheries, or to have worked aboard commercial fishing vessels in Hout Bay. A smaller number had worked in fish factories in the harbour; they complained that the pay was very low. At least three poachers held interim relief permits for rock lobster and linefish, appearing to focus mainly on the former. One individual had been granted long-term rock lobster fishing rights, owning and legally operating rigid-hulled ski boats in addition—allegedly—to conducting abalone poaching activities. Aside from legal fishing rights, many abalone poachers also claimed current or previous involvement in Hangberg's illegal rock lobster fishery, which continues to operate despite the emergence of the more lucrative abalone fishery in recent years.

Certain poachers attempted to portray themselves as poor fishermen during interviews, despite actually earning substantial profits from the illegal abalone fishery. This was more common during earlier phases of fieldwork, presumably due to poachers considered me to be more naïve, and thus vulnerable to deception. The most extreme example of this was when a local middleman, quite possibly the wealthiest individual in the entire Hangberg abalone economy, claimed that poaching would cease altogether if each diver was granted an annual quota of "say 150 kilos—just enough for people like us to survive." As was discovered later, this quantity represents just two or three night's work for a skilled diver. Nevertheless, many individuals lower down in the poaching hierarchy appeared to be genuinely poor.

A number of wealthier participants appeared to adopt strategic language during interviews, for example by referring to themselves as "impoverished nearshore fishers" or making reference to their "ancestral rights". The perceived injustice of the government treating "marginalized" fishers as criminals, while allocating generous quotas to big commercial companies who "raped the seas", was also frequently commented on. At times it sounded as if participants were reading phrases directly from a co-management handbook, probably reflecting prior attendance at developmental fisheries workshops and meetings.

Many participants resented being regarded as criminals, arguing that they had been forced into abalone poaching by a lack of alternative opportunities. In making this point, poachers frequently distanced themselves from "real criminals", taking pride in the fact that they hadn't targeted other illicit forms of income themselves. As a prominent diver and boat owner said:

> "We don't break into white people's houses—that's idiots who do that kind of stuff."

By comparison, many poachers referred to themselves as fishermen first and foremost, claiming that they were "men of the sea" and that the state had failed to recognize their rights. Negative perceptions of poaching by the public were unwarranted, they argued, and based on a lack of information. Feeling misunderstood, many poachers thus appeared to regard this study as an opportunity to have their story told properly, revealing sensitive information that could, under different circumstances, have gotten them into trouble:

> "Poaching is not like what people say—that's *their* view, man … they are standing on *that* side and they are judging, you see? They're not living here, to see what really happens."

2.3.2 Historical development

Participants claimed that individuals in Hangberg have harvested abalone for decades, but only began taking large quantities—and earning substantial profits—after establishing links with Chinese export syndicates in the early 2000s. While the precise date is unclear, independent estimates offered by poachers, community members, and law enforcement officials agreed this took place between 10 and 15 years ago. This is consistent with the testimony of a local poacher with a long history of involvement in the abalone fishery, who claimed Chinese buyers first made contact with Hangberg in "about 2001". Prior to this, participants explained, small quantities of poached abalone were sold locally for culinary use, and occasionally to buyers from Chinese restaurants in the city:

> "Abalone poaching is not new; it's been happening here forever … now there are just more people and bigger buyers involved."

This early abalone poaching appears to have taken place on a sporadic and ad-hoc basis, however, and evidence suggests that fishers formerly placed little value on the resource. One participant, a diver and boat owner, chastised older generations in the community for failing to recognize how lucrative the illegal abalone market was:

> "We thought crayfish (rock lobster) was the fucking diamond … our people were fucking stupid, we didn't know anything!"

A white individual who currently works with poachers in the community claimed to have "shown local guys the ropes" on board rubber ducks in about 2004. According to him, poaching operations had previously been restricted to diving from the shore, mainly targeting reefs between Hout Bay and Oudekraal (see Figure 2). A senior SANParks official reported a similar story, claiming to have first encountered abalone poaching vessels in Hangberg sometime after 2003. These first vessels, he said, were "owned and operated by outsiders", but had local divers on board. Poachers in the community also mentioned the key role white poachers played in the early development of the fishery:

> "We didn't have a boat at that time, but this white guy did have a boat, so me and three other guys, we'd go dive with him, you see? And so we'd make

money. He didn't charge us much to work on his boat and what-what … and so later we started buying our own boats."

Since then, a highly organized boat-based fishery has developed in Hangberg, with at least five main local poaching groups currently owning and operating fleets of rubber ducks. A number of outsiders continue to work with local poachers—but only if they have been given permission to do so by local groups. Interviews with law enforcement officials revealed that Hangberg is considered a "hub" for abalone poaching on the Cape Peninsula, with residents thought to "welcome" outside groups into the community and charge them "tax". As will be discussed later on, this allegation is partially accurate, but omits certain key details.

In interviews, officials from DAFF and the SAPS alleged that outside syndicates launched the illegal abalone fishery in Hangberg by loaning locals money to purchase boats and equipment. Poachers in the community mostly denied this, claiming that local groups established themselves—without assistance—by saving and re-investing profits earned from diving. The truth is likely to lie somewhere in between. An informant who previously worked as a middleman for poached abalone, purchasing the product from divers and selling it on to syndicates outside Hout Bay, explained how he would be able to access start-up funding from his Chinese contacts if he wanted to "re-enter the game," requesting a sum of "maybe R500 000 in cash" to begin supplying abalone again. A self-confessed abalone and rock lobster poacher from the 1970s, meanwhile, who claimed to have worked around Hout Bay without any assistance from local residents until the early 1990s, alleged that the first abalone middleman in Hangberg had requested equipment from his buyers so as to equip local divers.

Other participants described a process of rapid internal growth in the fishery, independent of direct outside intervention. A boat owner in his mid-twenties attributed his rise to what is currently a prominent position in the Hangberg abalone poaching hierarchy to "working hard" as a diver—including diving for groups in Hermanus and Gaansbaai—before teaming up with two local poachers to purchase a

rubber duck of his own[19]. Owning a boat enabled his group to start earning significantly greater profits, which they re-invested: after less than five years, the size of their fleet has grown to four.

Most participants agreed that abalone poaching only "took off" in Hangberg in about 2007, after the potential rewards it offered became widely apparent. Instead of expanding suddenly, however, the fishery appears to have followed a snowball trajectory, attracting more individuals the larger it grew. Interviews revealed that this process was partially driven by migration from Hangberg's illegal lobster fishery, which pre-dates abalone poaching but is said to offer lower profits. A number of participants thus claimed to have switched from lobster poaching to abalone in recent years; others continue to work in both fisheries on a part-time basis

It is interesting to note the entwined trajectories of Hangberg's illegal abalone and rock lobster fisheries. Lobster poaching came first, featuring loosely organized teams of fishers operating small wooden rowboats in the Karbonkelberg MPA. Abalone poaching followed later, and may initially have been organized along similar lines. Interviews revealed that certain abalone middlemen handled shipments of illegal rock lobster too; many carriers also claimed to work in both fisheries. Now there are signs that lobster poaching has started happening on a much bigger scale, through the poorly monitored Interim Relief Permit system (Serge Raemaekers, *pers. com.*). However, abalone is substantially more valuable: interviews revealed that illegal fishers earn approximately R75 / kg for rock lobster, as opposed to over R200 / kg for abalone.

[19] He would not explain what motivated his decision to work on the Overberg coast when abalone poaching had already started in Hangberg—except to say, "There was work that side," as if the question was obvious.

2.3.3 Structure of the fishery

Abalone poaching in Hangberg operates according to a loose hierarchy, with a small number of powerful individuals controlling large parts of the illegal fishery and earning the greatest profits (Figure 4). These individuals are either local middlemen, who facilitate the sale of poached abalone to outside syndicates, or boat owners, who own the rubber ducks used to transport divers to reefs around the Cape Peninsula. Divers are next, forming a distinct sub-unit of the abalone poaching economy. After selling their catch to local middlemen for upwards of R200 / kg, divers pay hire fees to the owners and crews of the boats they work aboard, as well as the carriers that return their catch to Hangberg from a remote drop-off point over the mountain. Other jobs in the abalone poaching economy include working for local middlemen and 'spotting' for law enforcement activity from vantage points on mountains and at harbours.

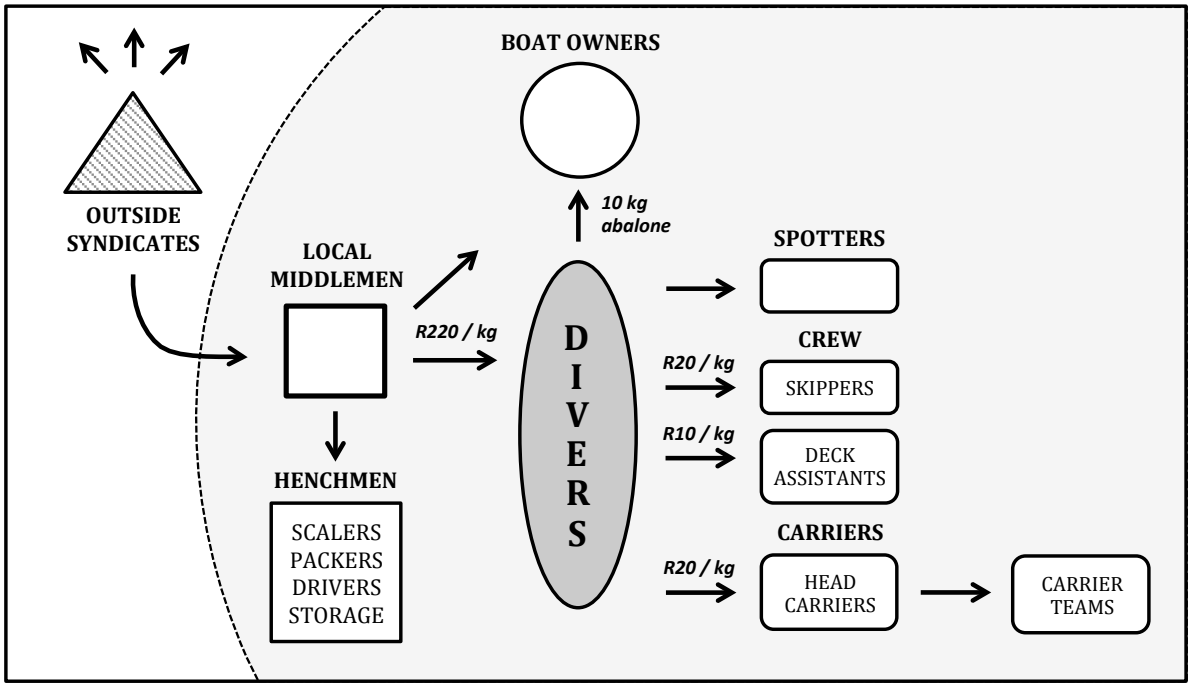

Figure 4: Structure of the illegal abalone fishery in Hangberg, with arrows indicating the flow of payments through the system. Approximate fees and prices have been included where known. The price of R220 / kg paid by middlemen to divers represents an average price for a mixed harvest comprising both medium (R250 / kg) and large-sized (R200 / kg) abalone.

Before describing each of these jobs in more detail, it is important to note that, despite the structure that is apparent in the Hangberg abalone fishery, there appears to be no overarching system of control. Instead, the fishery seems to have evolved into a kind of equilibrium state between independent groups. Whatever informal rules are in place are not enforced by a central authority, but agreed upon and adhered to by the poachers themselves. Note, too, that differences exist between groups, meaning that the fees and procedures discussed below, while generally accurate, are not absolute.

Local middlemen

Two groups currently act as middlemen for poached abalone in Hangberg, purchasing the product in de-shelled form ('shucked') from divers, weighing and packaging it, and selling it on—for profit—to buyers outside Hout Bay. Both groups have links with larger poaching syndicates that operate nationwide, supplying abalone for eventual illegal export to the Far East. Local informants confirmed that Chinese Triads run these syndicates, but were generally reluctant to divulge further details.

> "The *perly* gets sold to the Chinese … we don't want to know about their business, and they let us get on with our business …"

Middlemen wield great power within the Hangberg community, as they effectively control the abalone market. Without a link to buyers from larger syndicates, local divers cannot sell their catch. Divers thus rely on middlemen to participate in the illegal abalone economy, despite the fact that middlemen take a cut of the money earned selling their product on.

It appears that local middlemen have begun playing a more important role in Hangberg in response to stricter law enforcement in recent years. Poachers claim that, until approximately five years ago, buyers from "the other side of the mountain"—meaning anywhere other than Hout Bay, and including Sea Point, Milnerton, and parts of the Cape Flats—used to drive to Hangberg and purchase abalone directly, before transporting it out themselves. The increased risk of being caught in transit, however, has begun to deter this kind of 'travelling merchant' activity, and participants claimed that most buyers will now only pay upon having abalone delivered to their premises. Abalone poachers interviewed during a weekend

visit to Hawston repeated this story[20], suggesting that a similar shift has taken place elsewhere in the Western Cape.

This appears to have consolidated the position of local middlemen, who have become an indispensible link between divers and the larger syndicates. As one poacher explained: "You can't just sell to the big buyer! You have to go through the local buyer first … that's how the game works now". Middlemen are now responsible for most shipments of abalone that leave Hout Bay, employing teams of henchmen to weigh, package, store, and transport batches of the product[21]. They are also responsible for bribing corrupt officials, which a former middleman explained is essential to sustaining their illegal trade. He claimed that information gleaned from corrupt relationships allowed middlemen to schedule their deliveries during periods of low police activity and avoid roadblocks. In case of trouble, meanwhile, certain officials could "make evidence disappear"—and even ensure that confiscated abalone was returned to poachers in Hangberg before it spoiled. He further alleged that official vehicles were used for deliveries on certain occasions, claiming that "ambulances don't get stopped at roadblocks".

Besides smoothing the passage of poached abalone out of Hout Bay, interviews revealed that these corrupt relationships allow middlemen to exercise control over potential rivals. The same officials who leak information to poachers also act on tip-offs, giving middlemen a tool with which to *piemp* (tip off) other groups that attempt to export abalone from the valley, and thus helping them to maintain a monopoly on the local market. As the same former middleman, who quit dealing in abalone after being caught too many times, explained:

> "Some of us get caught, and others don't—it's as simple as that."

Late in this study, it was alleged that middlemen kept poachers in debt by lending them money or drugs. One source, an official from SANParks, was adamant that this was a major driver of the Hangberg abalone fishery, claiming that many individuals had no choice but to keep poaching, either to pay off their own debts or those accrued

[20] They proceeded to offer the researcher and his assistant R15 000 to deliver a bakkie-load of abalone *en route* home to Cape Town, insisting that "white students never get caught." The offer was refused.
[21] The term 'henchmen' has been chosen here for its association with the assisting of criminal activities, but the image it evokes—gangs of men, eager for violence—is potentially misleading in certain cases. Storage, for example, appears often to be the job of mothers in the community, who install freezers in their homes to keep the abalone fresh.

by their families over the years. To illustrate this point he recounted the story of a young man from the community that his team caught trying to dive from the shore on four consecutive days:

> "He didn't have a wetsuit; his skin was blue. We kept asking him, 'Why are you doing this when we keep on catching you?' On the last day, he just looked at me and said, '*Meneer, ek moet duik. Ek moet*.'" [22]

Boat owners

At least five groups in Hangberg, including both groups of local middlemen, own and maintain small fleets of rubber ducks for accessing distant reefs around the Cape Peninsula. At least three white boat owners also work with divers from the community at present. There are also at least four local "small-timers" who own a single boat each, but are said to work infrequently. Boat owners charge divers a fee to work aboard their vessels—usually the cash equivalent of 10 kg fresh abalone—and earn lucrative profits as a result. Larger rubber ducks can accommodate up to 8 divers at a time; at current prices, this can net a boat owner between R16 000 and R20 000 for a single trip (calculations in Appendix A). Many boat owners are also divers themselves, and work aboard their own vessels. This means they earn market price for their own abalone in addition to fees collected from other divers.

Boat owners pay for fuel costs, which amount to approximately R4000 for a return trip to Robben Island, and maintenance. In addition, some pay a monthly fee of R2000 to park their vessels in the Hout Bay Boatyard when not in use. Most boat owners choose to park their rubber ducks on trailers in the community, however, frequently parking them directly outside their own homes. When questioned whether this blatant behaviour increased the chances of boat owners being caught, participants laughed. This will be returned to in a later section dealing with perceptions on compliance.

Each boat owner runs a distinct poaching group comprising divers, skippers, and *bootsmanne*. Membership of these groups appears to be relatively fluid, with some poachers claiming to belong to more than one. However, each group has a core of experienced members who plan poaching operations together, usually in conjunction with representatives from other groups. In case of arrests, boat owners occasionally

[22] "Sir, I *have to* dive. I *have to.*"

pay fines on behalf of their team members to avoid having them sent to jail. One was stoic in the face of having to pay R20 000 for his skipper, a repeat offender, during this study:

> "If I don't pay the fine this man will go to Pollsmoor—and then he's gonna cry!"

According to interviews, rubber ducks in Hangberg are usually purchased second-hand. This is mainly to mitigate the cost of possible confiscations, which take place on an ongoing, yet sporadic, basis. Local poachers were scornful of outside poaching groups—particularly from Port Elizabeth—whom they said used expensive superducks, and thus attracted greater attention from law enforcement officials:

> "When you see a rubber duck that big going to sea, it's just … fucking *obvious*, man!"

A senior DAFF official claimed that most poaching vessels in Hangberg were "barely functioning" and "cobbled together from random parts". Police from the Water Wing, meanwhile, alleged that poachers in Hangberg assemble their boats from stolen parts. Observations in the field confirmed that many vessels were indeed in poor condition, with cracked hulls and damaged, mismatched pairs of outboard motors. Around a quarter, however, appeared to be in good repair and fully equipped with safety gear like radios, flares, and life jackets. This turned out to be a strategy for avoiding problems with law enforcement officials, who harass poachers for minor offences—"Anything we can get them for," according to one policeman—to prevent them from going to sea. These mostly include checks for adherence with mandatory South African Marine Safety Authority (SAMSA) regulations.

Nevertheless, most boats in the community appeared to be unlicensed. Interviews revealed that other vessels were registered under the names of friends or family members to avoid penalties in case of arrests. According to a senior prosecutor at the Cape Town Regional Court, this made it difficult to conclusively link boat owners to poaching activity in criminal trials, meaning "the top players in the Hangberg abalone game seldom get caught".

Divers

Divers form a distinct sub-unit of the Hangberg abalone poaching economy, selling their catch to local middlemen, and paying a range of fees towards boat owners, crew, carriers, and spotters (Figure 4). Divers currently earn approximately R200 / kg for 'large' abalone (greater than 115 g) and R250 / kg for 'mediums' (110 – 115 g). Participants claimed that there was no market for abalone smaller than 110 g, which they referred to as "nuggets"[23]. Skilled divers can harvest over 100 kg of abalone on a good night, earning up to R25 000 for less than four hours work. With all expenses paid, this equates to profits of nearly R15 000 (calculations in Appendix A).

Interviews revealed that there are currently at least 50 abalone divers in Hangberg, although not all of them work on board rubber ducks. Shore-based diving is attractive because it involves smaller groups and less complicated organizational procedures; shore divers also do not have to pay boat fees, and thus get to keep a greater proportion of their earnings. However, shore diving is risky because it is more difficult to escape if caught. It also prevents access to lucrative offshore reefs like Robben Island, and limits harvests to smaller quantities. As a result, shore diving appears to be mainly the domain of part time and inexperienced divers, as well as an occasional activity for individuals who dive from boats.

Although it is possible to dive for abalone using just a snorkel, divers on board rubber ducks use scuba. The majority interviewed during this study claimed not to have received certified training, having learned instead from other divers in the sheltered waters of Hout Bay harbour, or in the swimming pool of a wealthy local kingpin.

A skilled job

Diving for abalone takes skill and courage, especially when working at night. Dangers include sharks, faulty equipment, large waves, and strong currents. If law enforcement officials arrive, skippers are instructed to flee to avoid having their vessels confiscated; divers may be left floating in the dark for hours at a time.

[23] According to officials at DAFF, this is unlikely to be true: poachers on the south coast harvest abalone much smaller than 110 g in large quantities (Angus McKenzie, DAFF; *pers. com.*).

One participant recounted swimming ashore to Robben Island and spending three days hiding there, dodging a search party:

> "But it wasn't too bad—we had food, clothes, *entjies* (cigarettes), chocolates, just in case … "

Good divers are sought after by poaching groups because they work quickly and harvest large quantities of abalone. The best divers are capable of shucking abalone underwater while they work, reducing the weight of their catch and enabling them to fit more flesh in each dive sack. These elite divers are said to all be white men; it is claimed they have been poaching abalone for longer and have thus been able to develop better skills. Participants say that local coloured divers are improving, however, and that a culture of diving has started to develop within the Hangberg community.

Highly skilled divers from elsewhere in the Western Cape occasionally work aboard Hangberg rubber ducks, paying the usual fees. One of these individuals, a dreadlocked man from Gaansbaai, was encountered during this study, although he declined to be interviewed. Local participants claimed the man would rent a room somewhere on the Cape Flats for a few weeks at a time, commuting through to Hout Bay whenever his team was working. A number of Hangberg divers, meanwhile, claimed to have previously worked for poaching groups on the Overberg coast. This exchange between poaching communities appears to be facilitated by informal contacts and to occur on an individual-to-individual, ad-hoc basis.

Crew

Each poaching vessel goes to sea with one skipper and up to two deck assistants, or *bootsmanne*, on board. Interviews revealed that there are approximately 25 skippers and 30 *bootsmanne* in the community at present. Both positions are paid by divers: skippers earn approximately R20 / kg abalone harvested, and *bootsmanne* approximately R10 / kg. The difference in pay reflects the greater skill that piloting rubber ducks requires. During this study, poachers went to sea in gale force winds on a number of occasions, claiming that this was safer for avoiding patrols. Navigating rubber ducks in such rough seas, however—especially boats that are old, damaged, or missing safety equipment, as many in Hangberg are—demands considerable confidence, expertise, and experience.

Bootsmanne help divers to prepare their gear on deck, collect bags of abalone when they surface, and help them clamber back on board when they are done. Interviews revealed that *bootsmanne* use colour-coded cable ties to tell different divers' bags apart.

Carriers

Poachers in Hangberg make use of a remote secondary launch site during their operations, so that vessels can leave and return to Hout Bay harbour without divers or abalone on board. To facilitate this, divers employ teams of carriers to carry their gear and abalone to and from the launch site, situated on the far side of a nearby mountain. Each diver employs up to four carriers at a time, paying a head carrier between R20 and R30 per kilogram of abalone carried, which he distributes to the rest of his team. Carriers are also responsible for shucking and cleaning abalone after it comes ashore. Discarded shells have accumulated since abalone poaching took off in Hangberg in the early 2000s, resulting in large knee-deep middens that can be observed near Hangberg today (Figure 5).

Carriers haul sacks of up to 50 kg at a time up a steep mountain slope, taking turns to carry the load. The path is uneven and gullied in places by erosion. The work is exhausting, and the pay moderate compared to other jobs in the Hangberg abalone fishery: on a good night, a carrier can earn up to R1000 for his efforts. However, this still represents a significant sum of money for many in the community, and carriers appear to compete with one another for work.

Divers that treat their carriers well are rewarded with loyalty. This is important because most harvests are only weighed upon reaching Hangberg, with no way of determining if abalone has been stolen *en route.* There is thus an incentive for divers to pay their carriers well and purchase them cigarettes, top up their cell phone credit, or tip them after a good night's work. Divers that treat their carriers poorly, meanwhile, are more likely to be targeted by thieves. As one carrier put it:

> "I take my own cable ties with me some nights, so I can open the bags and take a few kg's *perly* for myself, then re-seal them … it helps me make a bit of extra money on the side."

One way for divers to avoid being robbed is to shuck their abalone underwater, then weigh the entire load with a mobile scale prior to delivering it ashore. This is the chosen method of a white boat owner who works in Hangberg; he says it is the only way to ensure his full catch arrives at his local buyer without suffering losses on the way. He said that local divers were unable to shuck their catch below water, however, because they work in large teams and are forced to compete with one another for abalone (see *Modus operandi*).

Carrying large quantities of shucked abalone over the mountain can be dangerous. A load of 50 kg, at local prices, is worth more than R10 000. This contributed to the spread of a phenomenon called "bush poaching", involving rival groups ambushing one another *en route* home from the remote launch site. In response, local middlemen have started employing armed guards to escort carriers over the mountain. This will be discussed further in an upcoming section on conflict and cooperation between poachers.

Figure 5: Discarded midden of poached abalone shells near Hangberg, Hout Bay. Rowboats like the one pictured here are used to harvest rock lobster, not abalone.

2.3.4 Scale of the fishery

It is difficult to accurately determine the size of Hangberg's illegal abalone fishery based on four months of research. While many poachers were happy to participate in this study, most were reluctant to discuss the activities of other individuals in the fishery, making it tricky to ascertain its overall extent. Nevertheless, by combining interviews and field observations with other complementary sources it was possible to estimate the size of certain 'sectors' of the fishery with reasonable confidence. These are presented in Table 5.

In total, it appears that between 200 and 300 individuals are currently directly involved in abalone poaching in Hangberg, with 250 individuals the most likely estimate. This number excludes individuals in the employ of local middlemen—including those responsible for guarding, weighing, packing, storing, and driving the product—and is thus probably a conservative estimate. However, it also ignores the fact that some individuals perform more than one role in the abalone economy—for example owning a boat in addition to diving, or carrying as well as packing—which may have inflated the number.

Table 5: Estimated sizes of different sectors of the illegal abalone fishery in Hangberg

Sector of fishery	**Estimated size**	**Range**
Middlemen	2	2
Boat owners	8	5 – 10
Divers	60	50 – 70
Skippers	25	20 – 30
Bootsmanne	25	20 – 30
Carriers	130	100 – 150
Subtotal: People	*250*	*197 – 292*
Rubber ducks	28	25 – 35

Assuming that each abalone poacher supports three additional people with his income, this means that the fishery directly contributes to the livelihoods of some 1000 individuals in the Hangberg community. With many participants claiming to provide for large extended families, however, it is likely that this number is even higher in reality.

Fishing effort

Illegal fishing effort varied substantially during this study, predominantly influenced by weather conditions and patrol activity. Participants complained that the months of August and September had been particularly windy, for example, effectively preventing them from working for weeks on end. Later on, a small fleet of naval vessels from Simonstown moored in Hout Bay for nearly a week, ostensibly practicing tactical manoeuvres. Poachers in Hangberg viewed this with suspicion, thinking the navy had been co-opted into anti-poaching operations, and claimed to be hesitant to go to sea.

Interviews revealed that poachers could work "up to 11, 12 times a month," but that "four or five" operations were usually sufficient for them to live off[24]. During this study, however, poaching groups appeared to work a maximum of two—and very rarely three—nights a week, interspersed with periods of less frequent activity. It thus seems unlikely that groups conduct more than eight operations a month on a regular basis.

While there are perhaps thirty poaching rubber ducks in Hangberg at present, not all are in working condition. Furthermore, a significant number—perhaps one third—are locked up after being confiscated by law enforcement officials. Participants claimed that approximately ten vessels were currently in use; covert observations suggest this number is closer to 15 in reality. Not all these vessels are in use concurrently, however, and the maximum size of the Hangberg poaching fleet on a given night is probably fewer than ten.

Up to ten divers can work on board a single rubber duck. Smaller vessels carry fewer divers—one group routinely works with just two. A carrying capacity of five divers

[24] This figure was higher for individuals in low-paying jobs—carriers, for example, who only earn up to R1000 for one operation.

appears to be a reasonable average, based on interviews and observations; this means that more than 40 divers can work on a single night.

Measurements and observations of discarded shells

Measurements of two batches of discarded shells—representing two separate poaching operations at Robben Island—revealed that approximately 40% of each harvest was below the legal size limit of 114 mm shell breadth. Fewer than 10% measured less than 95 mm, however, and close to 20% of each sample consisted of shells larger than 13 mm shell breadth. This indicated that divers were still able to locate pockets of decent-sized abalone, and that they did not appear to be targeting smaller individuals. Observations of other discarded batches also revealed sizeable proportions of medium and large shells, giving tentative support to this idea.

2.3.5 Modus operandi

After initially being restricted to shore-based diving, the illegal abalone fishery in Hangberg has developed into a highly organized boat-based operation within the last decade. Poaching groups use inflatable rubber ducks fitted with high-powered outboard motors—the most powerful boat observed in this study was fitted with twin 250 HP engines—to access reefs around the Cape Peninsula. Fishers explained that they prefer these vessels to hard-hulled ski boats for a number of reasons: they are faster and more manoeuvrable, can safely navigate in shallower water, and are safer for picking up divers from the water (a hard hull, bouncing in rough seas, can kill a surfacing diver with a single blow to the head). Rubber ducks also offer skippers a wider field of vision, which is important both for evading law enforcement officials and spotting divers as they surface.

Planning

Interviews revealed that poaching operations are carefully planned in advance, usually involving input from all the main poaching groups in the Hangberg community. This cooperation allows groups to share information about law enforcement activity, particularly regarding the location of patrol vessels. This information—officials from the SAPS Water Wing termed it "counter-intelligence"—is gathered from paid lookouts positioned at strategic locations like Cape Town harbour and Signal Hill; corrupt officials working at DAFF, SANParks, and the SAPS; and accomplices working aboard commercial fishing vessels, who report on any patrol activity they witness.

After establishing the whereabouts of patrol vessels, the poaching groups select a target. Participants claimed to target more than 50 different reefs, extending from Seal Island in the middle of False Bay, around Cape Point, to beyond Melkbos up the west coast (Figure 2). Interviews revealed that poaching groups usually launch their vessels from Hout Bay harbour, only occasionally using other slipways on the peninsula.

Next, groups inform their members and begin preparing their boats and equipment. Dive cylinders are filled, trailers are hitched to four-wheel drives, and fuel tanks are filled at petrol stations in Hout Bay. Changes in weather are closely monitored, with

poachers claiming to prefer slightly rougher seas to make it easier to avoid patrol vessels. A pilot explained his preference for stormy weather:

> "You see, when the wind is blowing hard, then the *boere* (police) don't like to go to sea … that's when we can work."

The operation

Interviews revealed that most poaching operations take place at night. From about 5pm onwards—the time local DAFF compliance officials end their shift—rubber ducks are driven to the slipway in Hout Bay harbour and launched without divers or diving equipment on board. On some occasions vessels are pre-launched in the days preceding a poaching operation and moored beside larger fishing vessels in the harbour. This makes it easier for them to depart without being detected.

A skeleton launch team—usually comprising just a skipper and one assistant—pilots the vessel out of the bay to a remote secondary launch site, collecting divers and crew who have hiked there over a steep mountain path. Once these poachers have boarded with their gear, the skipper heads for the chosen dive location, maintaining cellphone contact with other vessels to check their progress and monitor patrol activity, changes in the weather … and other threats:

> "We sometimes see whales in the water, yes—but we never hit them! We don't go up close."

Upon reaching their destination, divers enter the sea equipped with scuba tanks and the skipper retreats to deeper water for safety. Poaching groups usually work separately from one another, keeping lucrative patches—discovered during previous operations or on reconnaissance dives—a closely guarded secret. Divers are often deployed a short distance away from the reef they are targeting, to avoid giving the exact location away to other groups.

Divers use powerful torch beams to illuminate the sea floor at night. These waterproof devices are attached to the sides of their dive masks or strapped to their forearms, freeing their hands to handle abalone. Many divers use two, or even four, torches at a time; each diver is said to prefer a slightly different configuration. Viewed from the surface, a police official described, the orbs cast by the torches look "almost alien, hovering silently across the sea floor."

Working quickly with a flat blade, divers prise abalone from the rocks and collect them in large waist bags, which they deliver to the surface when full with the assistance of buoyancy control (BC) devices. They inform the skipper when they are surfacing using cellphones double-wrapped inside condoms. Most divers interviewed claimed not to shuck their abalone underwater, like divers on the south coast are reported to do (Serge Raemaekers, pers. com), explaining that competition with other divers forces them to work as quickly as possible.

> "When you're working in a big group, there's no time to shuck … you just *steek* (stab), put in the bag, *steek*, put in the bag … if you're so busy shucking the others will get all the abalone before you."

On board the rubber duck, the *bootsman* helps lift the heavy bags from the water while the skipper controls the vessel. Larger boats, which carry more divers, usually have two *bootsmanne* on deck. Each diver's catch is sealed and kept separate from the rest to ensure correct payment upon returning to Hangberg. Colour-coded cable ties are one method used to tell the bags apart.

In case of trouble

If patrol boats arrive during a poaching operation, the task of the skipper is to flee immediately, leaving the divers behind to fend for themselves. This is to avoid having the rubber duck, a poaching group's most valuable asset, confiscated. The divers remain underwater for as long as possible, only surfacing once their air supplies have run out. Sometimes they swim ashore to wait. If the skipper escapes successfully—which happens "ten out of every eleven times", according to police officials—he returns to collect the divers as soon as it is safe. If he does not, the divers must arrange a lift with another boat, or make alternative arrangements. One poacher claimed to have attempted swimming from Robben Island back to Sea Point one night, only to turn back after getting too fatigued. He hinted, however, that other divers had managed this feat in the past.

Returning home

After a successful poaching operation the vessels return to the secondary launch site, where bags of abalone are offloaded and divers disembark. A skeleton crew returns the boat to the harbour, empty and with no evidence of poaching activity on deck. At the drop-off point, teams of carriers immediately begin shucking the harvest,

discarding the shells and packing the flesh into large plastic sacks. An armed guard escorts the carriers over the mountain to a drop-off point in Hangberg, where employees of a local middleman receive the goods. The abalone is weighed, and the following day the divers get paid in cash for their harvest. They confess to sleeping very late, usually only waking in the afternoon, after returning from work shortly before the break of dawn.

2.3.6 Conflict and cooperation between abalone poachers

Conflict between local groups

Poaching groups in Hangberg cooperate when planning dive operations, primarily to share information about law enforcement activity. This helps them to evade patrol boats while working (see section on *Modus operandi*). Different groups often launch their boats together and travel in tandem to their chosen destination, maintaining cellphone contact *en route*. Interviews also indicated that groups assist each other in times of need, rescuing abandoned divers and towing stricken vessels home:

> "We don't work together—but we are together with the phones, you know? If something happens to that boat we come with our boat; we help each other that way."

Much of this cooperation appears to mask deeper tensions, however. Interviews revealed, for instance, that a second motivating factor causing groups to work together was simply that it prevented poachers from selling each other out.

> "If you go to sea alone somebody will *piemp* you to the *boere*, it's guaranteed! That's why it's better for us to do things together, then nobody can cause trouble."

Poaching groups also seek safety in numbers by working together. A SAPS official explained that their patrol vessels usually travel singly; this means only one poaching boat can be pursued at a time. This means a group only needs to be second slowest to avoid being captured at sea. A white boat owner who works with locals was candid when questioned about this:

> "You see that big superduck there? I like working when that guy is on the water. I know my boat can outrun his, every time."

Conflict between middlemen

Most participants denied that the two groups of middlemen in Hangberg compete with one another, repeatedly claiming that divers were free to sell their abalone to whomever they wished. Interviews suggested that these two groups adjust their prices according to their available storage capacity and demand from upstream buyers. As a result, it appears that one group will occasionally offer divers superior

prices to the other. It was claimed that there was never any animosity from middlemen if divers chose to do their business with the other group instead.

Interviews with a participant who previously worked as a middleman, however, revealed a slightly different story. He suggested that rival buying groups had repeatedly tipped off law enforcement officials about his activities, contributing to his eventual arrest delivering a carload of abalone to Sea Point. He also claimed that another middleman had "stolen" abalone from him by soliciting business from one of "his" suppliers without permission[25]. This suggests that middlemen do engage in at least minor tussles over control of the Hangberg abalone market. Another former middleman put it more strongly when questioned:

> "I wouldn't call it competition, man … it's more like those other guys try and actively *undermine* you."

In the past, carriers have been ambushed *en route* to Hangberg from the drop-off point and had bags of abalone stolen. This stolen abalone is worthless without a buyer; carriers claim that it simply gets sold to a certain part-time middleman in the community. While it could not be determined whether this contributes to tensions with other middlemen, it seems highly likely that it does.

Conflict with outside poaching groups

The tense cooperation observed between poaching groups in Hangberg does not automatically extend to poachers from elsewhere in the country. During this study, it emerged that groups from Port Elizabeth, Gaansbaai, Hermanus, Hawston, and Mamre—among others—have operated out of Hangberg previously, using the same secondary launch site as local groups, and working alongside poachers in the community. Many of these groups appear to be no longer welcome, however, after failing to pay sufficient dues or respect to local poachers:

> "Those white dudes from PE pay you *kak* for carrying; they don't understand how steep the path is! Now we don't work with them anymore."

[25] "I don't understand it," he said, "I was offering the guy a better price!" The rival middleman, however, funds a local soccer team; the disloyal abalone poacher in question is a part-time manager and fanatical supporter. "Ja, maybe it's because he bought the team kit or something," the participant answered when questioned. "I don't understand these people sometimes."

Exactly how access by foreign poaching groups is controlled, however, remains unclear. Law enforcement officials repeatedly alleged that foreign poachers were charged "fees" to work in the community, giving the impression that access was tightly regulated and under some form of centralized control. Interviews in Hangberg suggested that this is only partially true, however, revealing a complex system of personal alliances and informal working arrangements instead.

There appear to be two main ways for foreign poachers to work in the community: as divers working aboard local boats, or as boat owners employing local divers. In both cases agreements are forged between the individuals involved; there was no indication that local 'authority figures' interfere in the process. That locals are employed in some form seems to be an important prerequisite, though. In the words of an experienced older skipper:

> "We only let them in if they use our guys in the community, that's the rule *ja*."

It appears that foreign groups usually get 'banned' from Hangberg following disputes about money. Local poachers claimed that certain groups paid them poorly; others were said to owe individuals in the community large sums for previous operations. While this can lead to foreign groups falling out of favour with local individuals, it does not necessarily prevent them from working in Hangberg. It was alleged that one white boat owner, for example, had the pontoons on his rubber duck slashed after an argument with a carrier. Another was said to have been targeted by a powerful local boat owner who wanted to "burn his boat out" over an issue of non-payment. At the time of writing both individuals were still working in Hangberg, having maintained alliances with other local individuals.

On other occasions, however, foreign groups have been forced to stop operating altogether in Hangberg. It appears that if enough local poachers get angry, or perhaps if key local figures get involved, a former ally can be declared unwelcome. This can be accompanied by a range of punishments—including outright violence, damage to boats and property, abalone being stolen *en route* home from the drop-off point, and abandonment at sea—until the individuals in question give up, and move off. A police official took a cynical view of this process:

> "The guys arrive and make friends in the community, find out where all the good spots are, that sort of thing … inevitably they piss somebody off by not paying them or something, and then the relationship sours. It usually takes about eight months."

When larger groups are involved, the main method of exclusion appears to be tipping off law enforcement officials about planned poaching operations. One interview revealed that a convoy of poachers, *en route* from Hawston with rubber ducks in tow, was once intercepted after local poachers alerted the police. A skipper in the community claimed that other poaching groups—particularly from Port Elizabeth, who seem to be major rivals—had been obstructed in similar ways:

> "You must tell the cops we're doing their job for them—we keep the PE guys out the water!"

2.3.7 Perceived socio-economic impacts

Interviews indicated that abalone poaching has had mixed effects in the Hangberg community, generating widespread employment and supporting the livelihoods of hundreds of residents on the one hand, but introducing conflict and eroding social cohesion on the other.

Negative impacts: Abalone as a social ill

Social workers and community leaders frequently blamed abalone poaching for what they perceived as a general loss of values among the youth in Hangberg, claiming that "easy money" had contributed to the spread of irresponsible behaviour and unsustainable consumption patterns in the community. Poachers were criticized for wasting money on status symbols like fast cars, expensive clothes, and state-of-the-art home theatre systems, instead of "investing in their futures". Many were accused of "living the high life" by staying out late at night, purchasing large quantities of drugs and alcohol, and trying to impress women with conspicuous displays of wealth. A community leader and former poaching middleman explained:

> "In the past you lived within your means, but now it's the opposite way around. These damn kids have expensive lifestyles to support now!"

Compliance officials from DAFF repeated a similar message, claiming that abalone poaching had "snowballed" in Hangberg by attracting young men in pursuit of quick riches:

> "Kids are dropping out of school to start poaching … a few months later they're driving Nissan Navaras[26]."

A senior member of the SAPS Water Wing, meanwhile, argued that most poachers in Hangberg had no interest in harvesting sustainably or protecting resources, and were "just in the game to get wealthy." He also accused poachers of living beyond their means and wasting money, and was scornful of the notion that poaching contributed meaningfully to people's livelihoods:

> "You must understand, these guys aren't just poaching for survival, like they always say—it's to survive with a very specific *kind* of lifestyle that matters."[27]

[26] The Navara is a powerful double-cab utility vehicle.

One resident of Hangberg, not a poacher himself, complained that poaching groups made little effort to support poorer members of the community—"They don't even make a big pot of soup or buy us bread once in a while"— but expected assistance during confrontations with the law. This was probably a reference to a widely publicized incident in March 2012, when attempts to apprehend suspected poachers sparked violent uprisings in the community[28].

Undermining education

Interviews in Hangberg confirmed that a number of local youths had dropped out of high school to begin poaching. It was claimed most of these individuals started off by carrying abalone and running errands for older poachers, with some progressing to working aboard boats or diving for abalone themselves. One prominent diver explained how poverty had influenced his decision to start working in the illegal fishery:

> "When I was in school, and I saw the weather is calm like today, then I— Fuck the school! I went to go dive because you can earn two thousand, three thousand bucks in a day! You see, those were hungry days: daddy was a druggie, and mommy worked by a garage … so I went to go dive! I dropped out of school when I was in Standard Nine, and I'm still diving today."

This phenomenon was perceived as negative by two local social workers but positive by many older poachers, who argued that having a matric certificate made little difference for young people seeking a job. Many interviewees referred to the lack of opportunities facing educated young people in the community, contrasting it to the conspicuous wealth and status on display in the illegal abalone economy:

> "You study and do exams for what, so you can go work some *kak* job at Checkers, make a thousand rand for the whole week?"

Building on this theme, a retired teacher from a local school explained that many teenage boys in his class had seen little value in education, regarding wealthy

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[27] A fellow officer, however, confided separately that he "understood" poachers in Hangberg, claiming he would find it difficult to resist the allure of poaching himself if he lived in similarly impoverished circumstances.

[28] The clashes took place, rather ironically, on Human Rights Day, a public holiday. See 'Hangberg goes to war over abalone raid,' Cape Argus, 22 March 2012.

poaching kingpins as role models. “They asked me what the point of all my qualifications was if they could drop out and start earning more then me,” he said. “I told them that things like morals were also important—and that my income was more sustainable.” Besides causing some pupils to drop out, he claimed that poaching had also had other impacts in his classroom: carriers bunking after late-night operations, or repeatedly falling asleep in class. “Some of them had no interest in learning whatsoever. Like I told their parents, it was like they just came to school to chat to girls.”

A social worker in the community offered an alternative view of the link between poaching and education in Hangberg, arguing that an influx of black children from Imizamo Yethu to the local high school in the 1990s, and subsequent overcrowding, had caused many coloured students to drop out, feeling marginalized. This, she claimed, had contributed to the rapid growth of the illegal abalone fishery, as “local kids were just sitting around with nothing to do.” According to recent newspaper reports the school is now predominantly attended by black students, and severely under-resourced (Cape Argus, July 2011)

While poachers frequently scoffed at the value of education, a small number expressed regret at having made “stupid decisions” by not completing matric. “I wish I had finished,” a carrier confided once, “it would have made such a difference. I want to get a proper job again—I’m not earning enough from abalone.” Another young participant shared a similar story towards the end of this research:

> “My *broe*, I am over the abalone poaching game. I want a job now—anything that gives me a paycheck at the end of each month, annual leave … It doesn’t matter what. I don’t wanna work in this game no longer.”

Abalone poaching and gangsterism

Hangberg residents repeatedly challenged the popular conception that abalone poachers are ‘gangsters’ during this study, arguing that “the real gangsters”—members of notorious Cape Flats groups like the Americans and prison gangs like the 26s—had been chased out of Hout Bay more than a decade ago, and that gangsterism was now “very limited” in the community as a result. Despite this, participants attributed a range of criminal activities—including trading in drugs, abalone, and

prostitution—to certain local middlemen. According to many participants, however, this paled in comparison to crimes committed by corrupt government officials.

> "You want to know who the biggest gangsters are? My *broe*, they're running the fucking *country*!"

However, interviews also revealed worrying indications of mob behaviour in Hangberg, with reports that corrupt police officials sometimes revealed the identity of residents who had 'anonymously' reported poaching activity, who then proceeded to be 'punished' by poachers. One participant, not a poacher herself, expressed dismay at the sense of powerlessness this gave her:

> "The police are supposed to protect you, but if you assist them with information then it's just one phone call and the poachers know it was you! There is nothing you can do about it."

Positive impacts: The contribution of abalone to economic development

Flagrant displays of wealth aside (see Fisher Profile), this research also revealed that some money from abalone poaching was used more responsibly than state officials claimed. A few examples are listed below:

- A diver complaining about the increased price of dog food, pointing to a large bag in the corner of his lounge. Most of his neighbours' dogs, by comparison, are fed scraps.
- The wife of a boat owner deliberating over whether to send her daughters to a girls-only convent school 30 minutes drive from Hout Bay. Many mothers in Hangberg would not be able to afford the transport costs, let alone the higher fees.
- A skipper stressing his need to "work hard" over December to buy his four children Christmas presents.
- A diver explaining how, instead of buying himself a car, he had installed a bathroom with a flush toilet in his family's bungalow, to make it "better for the wife and kids".

2.3.8 Perceptions of law enforcement

Police records of poaching-related arrests in Hangberg could not be accessed during this study[29]. Interviews with poachers and law enforcement officials, however, provided valuable insight into some perceived successes and failures of law enforcement activity. A few key themes are reported on below.

The inadequacy of deterrence measures

Most poachers encountered during this study appeared confident in their ability to evade the law. By combining surveillance work with information leaked by corrupt law enforcement officials, the poachers claimed to have a reliable picture of patrol activity while planning their operations, shifting dive sites or timing their launches to avoid encountering compliance officials on the water. Poachers frequently claimed to be "on standby" during this study, awaiting further information before committing to going to sea. On at least ten occasions operations were cancelled at the last minute reports were received of unanticipated patrol activity.

Poachers also appeared largely unconcerned about the possible consequences of being caught. Many claimed to employ expensive lawyers to defend them in court, boasting that this made them almost immune to prosecution:

> "They mustn't come play with me—I've got *gevaarlikke* (dangerous) lawyers my *broe*!"

An interview with a senior prosecutor at the Cape Town Magistrate's court revealed that poor coordination between different state agencies, for example the Department of Justice, DAFF, and the SAPS, was often responsible for failed prosecutions. He highlighted poor quality police work and "inexperienced" prosecutors as two areas of particular concern, but added that that measures had been put in place to address these shortcomings. He also complained that judges often meted out lenient sentences to convicted poachers, which failed to present poachers a big enough deterrent.

Notwithstanding the confidence projected by most abalone poachers in Hangberg, some also revealed signs of vulnerability. One participant, a youth standing trial for

[29] Obtaining police records entails long and complicated application procedures that frequently result in failure (Gregg Brill, UCT; *pers. com.*). Attempts were made during this study, to no avail.

poaching at Robben Island, described spending nearly two weeks in Pollsmoor prison before being released on bail:

> "The gangsters in there, we couldn't understand what they were saying to us. They were scary people, *broe* … "

Corruption in government agencies

Interviews with poachers and law enforcement officials revealed that corruption in government agencies makes curbing the illegal fishery even more difficult. A SAPS official explained how corrupt colleagues of his could "make evidence disappear" after poachers were apprehended, critically weakening the State's case later on. A senior compliance official from DAFF, while reluctant to divulge details, admitted that his unit faced similar problems.

Poachers in Hangberg spoke candidly about their relationships with corrupt officials, even divulging names on a number of occasions. They revealed that certain officials allowed them to keep their diving equipment after being apprehended, enabling them to continue working while waiting to appear in court. Another official, the poachers alleged, allowed them to re-purchase their confiscated rubber ducks for a fraction of the usual price, rather than putting them on public auction as he was supposed to.

Notwithstanding these negative reports, police and other compliance officials interviewed appeared confident in their ability to apprehend poachers—eventually. One experienced SAPS captain explained that, sooner or later, everybody ran into the law:

> "The guys get away most times, *ja*, but we catch them in the end. If you poach, you must know: one day, your time will come."

The same individual was unwilling to discuss how effectively the legal system dealt with poachers; he emphasized that his job was simply presenting suspected criminals to court. He was pragmatic about the challenges facing law enforcement officials, meanwhile, describing his anti-poaching work as "an ongoing game of chess".

These findings have profiled the historical development and current status of abalone poaching in Hangberg, which has evolved into a highly organized illegal fishery within the last 15 years. Some of its key social and economic impacts in the community were reported on, revealing the major role abalone poaching has assumed since local individuals first established links with larger criminal syndicates. Diverse elements of the illegal fishery system—ranging from conflicts between poachers, to coloured identity politics, to corruption in state institutions—were investigated, contributing to the formation of a comprehensive picture of poaching operations today.

2.4 Discussion

2.4.1 Abalone poaching is deeply embedded in Hangberg

Abalone poaching has become deeply embedded in the Hangberg community. In a period of less than 15 years, the illegal fishery has evolved from a small, informal operation into a highly organized criminal one, characterized by substantial profits, widespread involvement, and complex systems of control. In doing so, abalone poaching has assumed a central position in the local economy, directly contributing to the employment of at least 250 residents and indirectly supporting the livelihoods of hundreds more. It has also become important for other reasons, not directly related to money: as a protest against perceived injustices in the small-scale fisheries sector, and indeed South African society as a whole; as an opportunity for local fishers to gain recognition for their skills in the community; and as an outlet for young men seeking the excitement and adventure of an 'outlaw' lifestyle. Abalone poaching in Hangberg is thus a complex phenomenon, motivated and sustained by multiple, interlinked factors.

Compliance breakdown: Is abalone poaching in Hangberg rational?

Like all crime, poaching is essentially an issue of non-compliance with particular rules. It is thus useful to frame questions about poaching within the broader context of understanding compliance (e.g. Hauck 2008). Early 'instrumentalist' compliance theories emphasized the importance of rule enforcement for preventing criminal activity (Keane and Jones 2008). Rational, self-interested individuals were expected to transgress rules whenever the perceived benefits of doing so outweighed the costs—expressed in economic models as the severity of punishment, multiplied by the likelihood of being caught (Becker 1974). While subsequent research has revealed the importance of additional factors, this kind of personal cost-benefit analysis remains key to understanding compliance behaviour in many natural resource systems today (Keane and Jones 2008).

In Hangberg, lucrative profits from abalone poaching appear to comfortably dwarf the threat of law enforcement. There are far too few compliance officials to monitor the entire Cape Peninsula at any given time, and poachers are usually able to evade capture by gathering and sharing information about the location of patrol vessels. If

they *are* caught, poachers know how difficult it is for the state to prove them guilty, and employ expensive lawyers to defend them in court. In the event of being sentenced, their fines—which seldom match the lucrative profits from poaching—are usually paid by wealthy 'kingpins' in the community, allowing poachers to escape imprisonment and resume their illegal activities with apparently little fuss.

In other words, neither the probability of being caught nor the severity of punishment currently appear remotely high enough to deter abalone poaching in Hangberg. Time constraints meant that it was not possible to model poaching behaviour during this study, as has been attempted elsewhere using simple cost-benefit analyses (Knapp 2012). It is highly likely, however, that the illegal abalone economy, and not the threat of law enforcement, would emerge victorious from such an exercise. Poachers are aware of this fact, and project an attitude of impunity towards the law. Some of this can be attributed to posturing, certainly: the poachers exist within a subculture that rewards bravado, and probably over-emphasize their ability to avoid being apprehended. Nevertheless, evidence from this study suggests that current compliance efforts *are* for the most part unable to prevent individuals from poaching on a regular basis, and that much of their confidence is thus entirely justified.

The effect this has had on the rapid growth of the illegal abalone fishery cannot be quantified, but is probably highly important. Over the last 15 years, a succession of Hangberg residents would have observed rampant and lucrative poaching activity going unchecked in their community, weighed up their options, and decided to participate. While it is possible that the rapid rate of growth of the fishery has subsequently slowed, in response to increased law enforcement activity in recent years, there is little indication that it has dropped to zero yet—or indeed that the fishery has started to shrink.

However, some evidence suggests that a small number of individuals *have* left the fishery to avoid encountering problems with the law. One rubber duck allegedly no longer operates because its owners, considered "small-time players" by other poachers, feel that going to sea has become too risky[30]. A former abalone middleman now only deals in illegal rock lobster, after having large shipments of abalone

[30] This caused considerable consternation for at least one active poacher, who felt aggrieved that a good rubber duck was going to waste.

confiscated and paying a series of harsh fines. It is difficult to know what the net effect of these decisions on the size of the fishery is, though: there were also reports of new entrants getting involved during this study, and of new poaching vessels and equipment being purchased.

In revealing the inability of law enforcement to combat abalone poaching in Hangberg, this research mirrors earlier work on fisheries compliance in South Africa, which has revealed that capacity constraints, poor coordination between different state institutions, and corruption—among other problems—frequently hamper the effectiveness of deterrence measures by the state (Hauck & Kroese 2006; Sundstrom 2012). This has been vividly illustrated in the abalone fishery, which has virtually collapsed in the face of rampant illegal harvesting (Raemaekers *et al.* 2011). In response, fisheries authorities have invested heavily in law enforcement and developed a series of new anti-poaching strategies (Hauck & Kroese 2006; Raemaekers *et al.* 2011). This study, however, suggests that these efforts have not yet made a tangible difference, despite having been identified as a management priority over a decade ago (Hauck & Kroese 2006).

Social drivers of the Hangberg abalone fishery

Alternative compliance theories highlight the importance of so-called 'normative' factors—including ethical obligations, respect for regulatory institutions, and perceptions of fairness and justice—for influencing individuals' decisions to obey laws and regulations (Hauck 2008; Keane and Jones 2008). In Hangberg, these motivations for complying with fisheries regulations appear to be extremely weak. Previous research has revealed that the national fisheries authority is held in extremely low regard by members of the community, where it is perceived to cater for the needs of big commercial companies instead of local fishers (Hauck 2009b). The establishment of the Karbonkelberg no-take MPA in 2004, with no prior consultation with the local rock lobster fishers whose traditional fishing grounds it absorbed[31], was particularly unpopular with residents (Sowman *et al.* 2011a). Despite attempts to adopt more participatory systems of governance, decisions like

[31] The area encompassed by the Karbonkelberg no-take MPA was formerly a rock lobster sanctuary, established in 1934 to protect the interests of an emerging industrialized export fishery, by excluding traditional fishers. The decision to locate the new marine reserve in exactly the same place as the old sanctuary, in all likelihood motivated by a misguided sense of pragmatism, paid scant attention to the perceptions of local residents, who were understandably aggrieved (Sowman *et al.* 2011a).

these continue to be made in a top-down manner by fisheries and conservation authorities, severely damaging their legitimacy in the eyes of community and contributing to ongoing non-compliance (Hauck 2009b; Sowman *et al.* 2011a). Research presented here suggests that abalone poaching is just the latest manifestation of these deeper, unresolved problems.

During this study, poachers repeatedly justified their illegal activities by arguing that existing fisheries regulations were unfair. The exclusion of their people from important marine resources—both historically and at present—was cited as a primary motivation for poaching, with many poachers claiming that they would cease their illegal activities altogether if they were allocated abalone permits. The granting of formal rights to abalone poachers in Hawston in the 2000s was frequently hailed to as a positive solution to illegal harvesting; in this way, poachers in Hangberg could be said to be engaging in similar 'protest fishing' to that which took place on the Overberg coast more than a decade ago (Hauck and Sweijd 1999).

The terms of this protest, however, appear to be broader than simply a call for fishing rights. During interviews it became apparent that poaching was often motivated by a deeper sense of social injustice in South Africa, of which inequalities in the fisheries sector, while important in their own right, were regarded as just one symptom. Participants repeatedly expressed frustration at the plight of coloured people in this country, whom they considered to have been largely overlooked since the end of apartheid. The perceived preferential treatment of Imizamo Yethu, a predominantly black township across the Hout Bay valley, was frequently cited as a local example of this ongoing political favouritism, which one individual claimed was "worse than under apartheid".

According to Cape Town historian Mohamed Adhikari, such perceptions are common among colored people in South Africa, many of whom have come to feel "victimized" by the ruling African National Congress (Adhikari 2004; p. 176). Flawed attempts to transform South Africa's fisheries sector in the late 1990s, which resulted in many new black entrants with no fishing experience receiving quotas at the expense of *bona fide* colored fishers (Isaacs 2006), no doubt contributed to these feelings of resentment in coastal communities. This research revealed that abalone poaching in Hangberg is inexorably bound with larger questions of race and identity, and cannot

be understood fully—nor, in all likelihood, prevented—in isolation of them. There is a pressing need for input from the social sciences to explore these sorts of links further. Once again, the depth to which fishery systems must be understood in order to develop appropriate management strategies is highlighted by this example.

Status and the thrill of the chase

In addition to these negative drivers of non-compliance in Hangberg, this research revealed a number of positive factors, also embedded in the social fabric of the community, that appear to *attract* individuals to the abalone fishery. Firstly, abalone poaching provides men with an opportunity to be recognized for their skill and bravery, both of which are essential for conducting illegal poaching operations at night. Successful divers are highly regarded within the community, as are skippers who can safely navigate rubber ducks in rough seas. In interviews, a number of abalone carriers admitted that they didn't dive or work aboard poaching vessels because they were afraid for their safety. In other words, despite the substantially better pay these jobs offer, not everybody in Hangberg is willing or able to perform them. Those who *can* appear to take immense pride in the fact—as well as earn the respect of others who understand the substantial risks their work involves.

Secondly, abalone poaching appears to offer individuals the chance to live an exciting 'outlaw' lifestyle, breaking rules and living life on the run from the law. This phenomenon has been noted elsewhere: Forsyth & Marckese (1993) argued that pleasure from the excitement of poaching, as well as from outsmarting game wardens, was a primary motivation behind illegal hunting in Louisiana, U.S.A. While it could be argued that poachers in that part of the world are financially better off, and thus in a better position to derive enjoyment from their illegal activities, it is inconceivable that abalone poachers in Hangberg do not share at least some of this enthusiasm for doing their 'job'. The fact that most youths in the community face a severe lack of opportunities in later life is also likely to fuel this thrill-seeking behaviour. This driver of poaching behaviour in South Africa has received little to no attention previously and warrants further investigation in the pursuit of holistic, context-specific understanding of non-compliance in small-scale fishing communities.

A mainstay of the local economy

Through a combination of factors, abalone poaching appears to have assumed a central role in Hangberg's impoverished local economy. While it is not possible to quantify its overall contribution on the basis of this study, indications are that the illegal abalone fishery generates substantially more activity than many other economic sectors in the community. In a decent month, a skilled diver can feasibly earn nearly R90 000 and pay out R32 000, for personal takings of around R55 000. In doing so he also contributes directly to the employment of at least seven other individuals, not including middlemen and their workers. A boat owner with a medium-sized rubber duck, meanwhile, can earn R55 000 without setting foot in the water, taking home more than R35 000 after paying for petrol. If he dives aboard his own vessel, as many boat owners do, his profits from one month can exceed R90 000 (calculations in Appendix A). The economic multiplier effects of this kind of cash income must be substantial to say the least—not to mention its social importance in an otherwise highly marginalized and poor community.

Among other things, this study revealed that money from abalone poaching funds renovations, plumbing installations, school fees, and Christmas presents in Hangberg; in this regard, the abalone fishery preforms a range of important functions that the formal economy currently does not. While it is true that poaching also supports the upkeep of extravagant, 'wasteful' lifestyles, these substantial contributions to hundreds of peoples' livelihoods cannot be ignored. Attempting to stamp out abalone poaching without offering people viable alternatives is not only likely to fail: it also represents a miscarriage of social justice. The new SSF policy recognizes this fact, and aims to combat poverty and food insecurity *en route* to tackling non-compliance (DAFF 2012a). Yet the policy, like the MLRA before it, comes with important—and very necessary—caveats.

"The vision of the small-scale fisheries policy," a plain-language summary of the 50-page document explains, "is to ensure that the well-being of small-scale fishers is secured *and* the health of fish stocks and the sea is maintained" (DAFF 2012b; p. 1; italics added). In other words, the scope of the SSF policy as a tool for poverty alleviation is tightly constrained—especially considering that abalone and rock lobster, by far the country's two most valuable nearshore marine resources, are both

currently in a "depleted to very depleted state" (DAFF 2012c). Dissuading the impoverished residents of Hangberg—and other fishing communities like it—from harvesting these species illegally, but not having the wherewithal to grant them formal access, is likely to continue to present challenges to fisheries and conservation management. In the absence of viable alternatives to poaching, poaching is likely to continue—and if the new SSF policy fails to provide these then it will be far less likely to usher in real, lasting change.

Systems of rules

Despite being illegal in terms of South African law, it was found that the Hangberg abalone fishery operates according to informal rules and norms of its own. This research revealed the existence of complex hierarchies and codes of practice among poachers in the community, ranging from rules regarding the payment of fees to procedures for limiting and resolving conflict. From a legal pluralist perspective, these informal structures could be argued to represent a functional alternative to the formal legal system: although not recognized by the state, they are instrumental for regulating poaching behaviour, and thus perform at least some of the functions of statutory law, albeit in a markedly different form (Bavinck 2007; von Benda-Beckmann 2002).

Unlike the formal legal system, these informal structures are mostly considered legitimate in Hangberg, where they have evolved within the community instead of being enforced from outside. Researching rock lobster poaching in the community, Hauck (2009a) argued that the structure of the fishery was based on historical fishing practices, allowing poachers to operate "with very little conflict at the local level" (p. 154). It appears that the abalone fishery, which developed later, was established along similar lines. Both fisheries comprise teams of boat owners, fishers, and carriers, with local middlemen who sell the product on to outside groups (Hauck 2009b) and have become embedded in the social fabric of the community. This will continue to present significant obstacles to authorities hoping to bring them to an end.

Housing and abalone poaching

Abalone poaching also cannot be understood in isolation from housing issues in Hangberg. In September 2010, violent protests erupted after police attempted to evict

residents from a small informal settlement that had encroached across a firebreak, and onto SANParks land. Two years later, in March 2012, similar scenes played out when police attempted to confiscate poached abalone from a private residence in the community: tires were burned, vehicles were stoned, and a number of residents and policemen suffered injuries. The parallels do not appear to be coincidental. Participants repeatedly equated their dispute over land with their ongoing exclusion from marine resources during this study, arguing that both illustrated the low regard in which they, as coloured people, were held by the state. This perception fuelled further animosity towards fisheries regulations, which were seen to be intertwined with deeper injustices, and thus for the most part illegitimate.

Abalone poaching and housing issues in Hangberg are linked in other ways. A number of informal dwellings above the firebreak are used as drop-off points for poached abalone, as they are situated immediately below the path home from the remote drop-off point. The slopes are poorly lit and there are no roads, making it extremely difficult for the police to gain access. The informal settlement thus represents an important strategic asset for abalone poachers, some of whom are alleged to own and control certain sections of it—as well as stir up anger whenever problems with law enforcement arise. This example reveals how complex—and difficult to trace—the linkages between seemingly disparate elements of a fishery system can be (e.g. Garcia and Charles 2007) and how important it is to heed the human dimensions of fisheries management.

Déjà vu? Parallels with the past

There are striking similarities between the findings presented in this dissertation and previous studies of marine poaching in South Africa, suggesting little has changed in the broad-scale dynamics driving the illegal abalone fishery. Hauck (2009b) revealed how abalone poaching had evolved from a "traditional, politically-driven informal fishery" on the Overberg coast to a "highly organised fishery dominated by a lucrative illicit international trade" (p. 113). In doing so, she emphasized how repeated failures by government to translate apparently sound policies and management strategies into *action* had critically undermined attempts to curb the booming illicit abalone economy (Hauck 2009b; also Hauck & Kroese 2006). The root causes of non-compliance she discussed—poverty, unemployment, poor law enforcement, an utter

lack of normative support for fisheries regulations—apply as equally to Hangberg today as they did to Hawston almost two decades ago. Comparisons with Hauck's work on rock lobster poaching in Hangberg, meanwhile, indicate that the social and economic drivers of non-compliance in the community have changed little in the last decade (Hauck 2009b). One might be forgiven for feeling a creeping sense of déjà vu.

What are the implications for fisheries governance in South Africa if twenty years of dedicated anti-poaching efforts have, for all intents and purposes, failed to bear fruit? And what are the prospects for implementing the new SSF policy when all evidence suggests that its predecessor, the 2003 Abalone Policy—which was similarly premised on co-management, social justice and other core tenets of 'good governance'—made at most a small dent in South Africa's thriving illegal abalone economy? These questions will be returned to in the third section of this discussion.

2.4.2 Lasting social impacts

South Africa's abalone stocks have proved to be more resilient to poaching than previously expected (Raemaekers *pers. com.*), yet consensus appears to be that the resource is heading for commercial extinction (Raemaekers *et al.* 2011). Measurements and observations of freshly shucked shells during this study suggested that poachers in Hangberg are still able to locate pockets of decent-sized abalone on the Cape Peninsula. However, the biological reality is that *H. midae* grows and reproduces far too slowly to sustain current levels of harvest (Raemaekers *et al.* 2011), and it probably only a matter of time before stocks on the Cape Peninsula collapse beyond any form of commercial viability, as has already happened on the Overberg coast.

Between now and that future date, however, there appears to be worrying potential for conflict in Hangberg, the effects of which will probably be felt long after the abalone resource has declined. This research revealed that abalone poaching has become an important pillar of the local economy, supporting expensive lifestyles *and* contributing meaningfully to people's livelihoods. As resources dwindle, these functions of the illegal fishery are likely come under increased pressure, potentially spurring greater competition between its participants. Already, incidents of theft on the path from the drop-off point have prompted local middlemen to employ armed

escorts to guard their product. While these guards do not appear to have been called into action yet, they represent a very real threat of violent conflict over abalone in the future.

As income from the illegal fishery subsides, poachers are also likely to begin taking greater risks. In the weeks preceding Christmas, a number of participants expressed an urgent desire to work, needing money to purchase gifts for family members and friends. Brazen daytime launches were observed more frequently during this period than at any other time. This circumstantial evidence supports the prediction that, as the gap between poachers' earnings and expenditure widens, they may be tempted to abandon caution and place themselves in danger—for example by working in rougher seas, diving with faulty equipment, launching in daylight hours, or stealing from rival groups.

In parallel, poachers may attempt to substitute their earnings from alternative sources. Few are skilled or educated, however, and it is unlikely that *any* will find formal jobs that pay as well as abalone poaching does. By extension, it is possible that some poachers will turn to other forms of crime instead. During interviews, a number threatened to "break into houses" or "rob white people" if forced to stop working at sea. On other occasions, poachers said they would return to catching rock lobster if the abalone fishery collapsed[32]. In other words, certain abalone poachers appear to have lost the opportunity to start operating in the formal system again—bringing to mind journalist Hunter S. Thompson's (1966) description of a different group of outlaws altogether, the United States motorbike gang known as the Hell's Angels:

> "A man who has blown all his options can't afford the luxury of changing his ways. He has to capitalize on whatever he has left, and he can't afford to admit—no matter how often he's reminded of it—that every day of his life takes him farther down a blind alley."

Unrelenting pressure from outside groups

Adding to existing tensions between poachers in the community, the Hangberg abalone fishery is likely to come under increasing pressure from outside poaching

[32] There is a possibility that this has already begun: during one interview, a SANParks official claimed to have observed a substantial increase in lobster poaching activity around Hangberg in 2012, like he had "never seen before".

groups. With abalone resources on South Africa's east and south coasts having been severely depleted by illegal harvesting, poachers have begun targeting the Cape Peninsula and west coast more heavily in recent years. There is little reason to believe that this trend will cease in the near future.

Meanwhile, a combination of factors continues to make Hangberg a particularly appealing destination for foreign poaching groups. First, the community has become accustomed to poaching activity, and does not condemn it outright. Second, many poachers in the community are willing to work with outside groups, although possibly less readily than they were in the past. Third, Hout Bay harbour has one of the only slipways on the Cape Peninsula that can be accessed at night; it is probably also the only harbour on the peninsula where pre-launching poaching vessels during the day is feasible [33] (Steve Benjamin, pers. com). Fourth, Hangberg's nearby mountain slopes provide a safe drop-off point for poached abalone, as it is difficult for law enforcement officials to gain access. For these reasons and others, Hangberg is likely to continue attracting foreign poaching groups in the future, increasing the potential for conflict as time goes by.

The Hawston precedent: Lasting social impacts

Lessons about the lasting damage poaching can cause can be drawn from fishing communities on the south coast, where organized illegal abalone fisheries have been operating for longer. Hawston, for example, was at the centre of early syndicated poaching operations in the mid-1990s, attracting members from Cape Flats gangs who had begun dealing with Chinese criminal groups (Steinberg 2005). A number of prominent gangsters bought homes in the community and began conducting poaching operations of their own, resulting in conflict with local groups and a series of violent confrontations that became known as the 'abalone wars' (Hauck and Sweijd 1999). At the same time, so-called 'gang culture' infiltrated the community, causing dramatic increases in drug abuse and violence (Hauck 2009b; Steinberg 2005).

Fieldwork in Hawston, backed by a wealth of secondary sources, revealed that these social impacts have lingered in the community, despite the substantial decline of the

[33] This refers to the practice of launching a vessel from the harbour slipway and mooring it between larger fishing vessels, making it easier to depart later on without being noticed. Poaching groups were frequently observed doing this in Hout Bay.

abalone fishery in recent years. A series of murders and turf wars have taken place in the last decade; *tik* addiction is rife; and many youths are members of powerful Cape gangs (Steinberg 2004). The situation came to a head in October 2012—less than one month after I visited the community—when Hawston erupted following the death of a young abalone poaching suspect in police custody. Furiously claiming that the teenager had been murdered, residents rampaged through the town for two days, culminating in vehicles being torched and a local police building being razed to the ground. "This is a gangster town," a local contact explained shortly afterwards. "The police know they can't come in here and stamp us out … they know certain individuals in this community won't rest until the people responsible for that murder are tracked down and shot."

Social breakdown and fisheries governance

A livelihoods approach tells us that fishing communities rely heavily on marine resources (Allison & Ellis 2001; FAO 2005). An interactive governance approach, meanwhile, recognises that cooperation between different actors is essential for managing complex fisheries systems sustainably (Charles 1995; Kooiman & Bavinck 2005). Exploring this paradox, Jentoft (2000; p. 53) flips the statement "viable fisheries communities require viable fish stocks" to read "viable fish stocks require viable fisheries communities". In other words, social and ecological processes are intrinsically linked—they are two sides of the same coin (Folke *et al.* 2005).

The finding that abalone poaching has sown seeds of discord in Hangberg—and other fishing communities like it—thus has broader implications for fisheries governance in South Africa. Interactive governance theory is fundamentally premised on dialogue and cooperation between different actors (Kooiman *et al.* 2008; Kooiman & Bavinck 2005). Co-management has been proposed as a mechanism for facilitating this process by drawing new voices into decision-making and executive processes (Jentoft 2000; Jentoft *et al.* 1998). Drawing on these themes, the new SSF policy has a strong emphasis on enabling fisher representation (DAFF 2012a)—but without strong community ties underpinning them, these kinds of ideals are unlikely to be met in reality (Jentoft 2000).

This research was based on a single case study in Hangberg—and on a single, extraordinarily high-value species. Extrapolating lessons for South African fisheries

management must necessarily be done with caution. Nevertheless, previous work on abalone poaching (Hauck and Sweijd 1999; Raemaekers and Britz 2009; Steinberg 2005) as well as a large database of newspaper reports suggests that the findings from this study have relevance elsewhere in this country. While it is true that the price of abalone is an anomaly, meanwhile, other South African species also trade on the black-market: rock lobster (Hauck 2009b) and sharks (HSI 2006; Oceana 2010) are two examples[34]. The socially divisive aspects of illegal fishing reported here are thus likely to apply to other fisheries as well.

2.4.3 Hard lessons for small-scale fisheries governance

According to a recent summary document, the new SSF policy aims to provide small-scale fishers with "the opportunity to fish, to increase the benefits from fishing … to feed their families as well as help them make a successful living" (DAFF 2012b; p. 1). It has been somewhat ironic to discover that the illegal abalone fishery currently fulfils *all* of these objectives in Hangberg. On the other hand, abalone poaching certainly does not "promote biodiversity and the sustainable use and management of marine living resources," a guiding principle behind the SSF policy (DAFF 2012a; p. 14). This appears far less likely to bother disadvantaged fishers, though—in the short term at least—than it does conservationists and fisheries managers, to whom poaching understandably represents an issue of grave concern.

In the nearly 20 years that have elapsed since the end of apartheid, fisheries reform has failed to bring meaningful change to Hangberg, which remains extremely poor and marginalized today. Fewer than 150 residents currently hold fishing rights, a remarkable fact considering the community's deep roots in traditional fishing. Meanwhile, individuals from Imizamo Yethu and further afield have begun competing strongly for jobs in local processing factories and on board commercial vessels, contributing to reduced job opportunities for Hangberg residents (Witte 2010). This has resulted in a bizarre situation whereby the majority of the community currently have neither formal direct access to marine resources, nor indirect access through employment in the commercial sector.

[34] During this study, one participant claimed that sea cucumbers were "even more valuable than abalone," but that he didn't have access to a buyer.

A functional alternative to the formal fisheries sector

That abalone poaching in Hangberg has begun, in many ways, to resemble a formal fishery—with dedicated vessels, specialized division of labour, and complex rules and operational procedures in place—is thus entirely unsurprising. The state has repeatedly failed to cater for fishers in the community: but the criminal economy has offered them a lucrative alternative, and a number of individuals have grasped the opportunity with both hands. Effectively, local middlemen and boat owners are entrepreneurs who have capitalized on what policymakers might call an "enabling environment" for job creation and economic growth (e.g. DAFF 2012a; p. 28), establishing themselves as key players in a lucrative—but highly criminalized—fishery. In other words, fishers in Hangberg have filled the vacuum left by a lack of formal opportunities by inserting themselves deeply into the national abalone black-market.

This has taken place despite there being little to no history of dedicated abalone harvesting in Hangberg. While interviews revealed that local fishers had taken out abalone in the past, this appears to have happened on a sporadic and ad-hoc basis. By comparison, communities like Hawston and Gansbaai on the south coast formed the nexus of the commercial abalone fishery, supplying a pool of skilled divers to work for white-owned companies during apartheid (Sauer *et al.* 2003). There were thus clear links between traditional fishers and the birth of syndicated abalone poaching in the region (Hauck 1997). This research has suggested that Hangberg's illegal fishery grew on the back of outside influence instead, with poaching groups from elsewhere in the country helping establish a *new* tradition of marine resource use in the community that rapidly became entrenched.

There is an important lesson for South African fisheries governance in this. While the state fumbled with its reform efforts, fishers in Hangberg essentially made a plan and ran with it, quickly learning a new trade and adopting it as a core livelihood strategy. This was possible because a powerful rival actor—the criminal economy—had risen to prominence and could facilitate the evolution of a fully alternative fishery system.

This actor's hand can also be seen operating in Hangberg's rock lobster fishery, where the state's interim relief measures have been co-opted to enable an explosion in poaching activity, made possible by weak monitoring and enforcement programs. In

both cases, a clandestine parallel system has completely subverted fisheries management and conservation efforts by gaining the support of members of the community. It has been informative to discover that entirely new fishing practices—boat-based abalone poaching—can become established within this system alongside older, customary practices.

The role of planning and policy in bringing change to complex fisheries systems must be examined here. The 2003 Abalone Policy was specifically designed to address the root causes of poaching by reaching out to marginalized fishers who had been overlooked by post-apartheid fisheries reform. Ten years on, however, it is debatable whether this had much lasting positive impact at all (Hauck 2009b; Raemaekers *et al.* 2011). Instead, the Abalone Policy—like many fisheries management interventions before and since—appears to have been poorly implemented and hamstrung by failures to *fully* appreciate the complexities at play in the very small-scale fishing communities to which it was designed to apply. This has left the status quo largely intact in places like Hangberg, maintaining the social and economic conditions that continue to fuel the illegal abalone economy today.

This research adds to a growing literature arguing that many of South Africa's most persistent fisheries problems have their roots in inappropriate governance approaches and arrangements, manifested in poorly planned and implemented management strategies (e.g. Hauck & Kroese 2003, Hauck 2009b, Sowman 2011, Sowman *et al.* 2011b, Isaacs 2012). As the example of the failed 2003 Abalone Policy clearly illustrates, however, it is not sufficient simply to embrace the progressive language of good governance—co-management, inclusiveness, flexibility, holism—without ensuring that these lofty concepts are linked to tangible interventions at the ground level. This is particularly true in fishing communities that continue to bear the brunt of South Africa's extremely high levels of social and economic inequality.

Economic incentives to break the law

Nearly 15 years after syndicated abalone poaching began in Hangberg (and much longer after the birth of illegal rock lobster fishing) the state has made would-be poachers a counter-offer with its new SSF policy, promising fishers participatory governance, multi-species quotas, and preferential fishing areas in return for improved compliance. Crucially, however, this progressive gesture is constrained by

the need to conserve resources and manage for sustainability (abalone, which is considered to be on the brink of commercial extinction (DAFF 2012c), will not appear on *any* multi-species quota list emanating from the SSF policy).

The criminal economy, by comparison, is unfettered in this regard: evidence from the Overberg coast suggests that illegal harvesting will continue until abalone is almost entirely depleted. What this means is that short-term economic interests—whether purchasing a new pair of Nike shoes, refurbishing a bathroom, putting supper on the table, or repaying a drug loan—are likely to continue fuelling non-compliance in Hangberg, potentially undermining the new SSF policy as they have undermined fisheries management efforts in the past. For all that it embraces new paradigms and creative approaches, the SSF policy cannot offer fishers a fraction of the income that abalone—or rock lobster for that matter, or linefish if prohibitive quota restrictions are flaunted—is capable of at present. In impoverished coastal communities like Hangberg, this is likely to remain a significant weakness.

Of course, compliance is motivated by normative factors as well (Kuperan & Sutinen 1998); the SSF policy aims to encourage voluntary compliance with fisheries regulations by improving normative support. However, rival actors will continue to undermine management efforts unless the root causes that allow these actors to gain prominence are addressed. The socially divisive aspects of abalone poaching are an example of how the illegal fishery system can resist attempts to bring it under control.

A reality check for implementation

What hope is there for the SSF policy, then? Some, certainly—but only if its implementation is grounded in reality. This research has illustrated the formidable challenge illegal fishing poses to fisheries governance in South Africa. More than anything else, abalone poaching is symptomatic of unresolved inequalities and social injustice in this country; it is motivated and sustained by a range of interacting social and economic factors. In a sense, then, illegal fishing is embedded not only in the poverty and hopelessness of Hangberg's overcrowded tenement blocks, but in the social fabric of post-apartheid South Africa itself. Recognizing this fact is the first step to dealing with ongoing problems of non-compliance.

This dissertation has argued that progressive, community-oriented policies for the small-scale sector, while undeniably a step in the right direction, are not enough. To be successful, they need to be accompanied by coordinated efforts to tackle some of the surrounding socio-economic drivers of illegal fishing along the coast: housing problems, unemployment, and education, for example, *in addition* to inequitable quota allocations and poorly planned MPAs. Bringing positive change to fishing communities, in other words, will require integrated development strategies, not piecemeal, sector-specific interventions. Without attention to these broader elements of the fishery system, the SSF policy is likely to fail.

This is not news to policymakers: a guiding principle of the SSF policy is to "recognise the interdependency of the social, cultural, economic and ecological dimensions of small-scale fishery systems". Among its 14 strategic objectives are aims to "co-manage the small-scale fisheries sector … in an integrated and holistic manner" and to "promote poverty alleviation, food security, sustainable livelihoods, fair and safe labour practices, and local economic development" (all DAFF 2012b; p. 14). That the policy acknowledges these points in the first place is laudable—it represents a considerable shift from old-school, reductionist approaches to fisheries management. However, without a real appreciation of the ways illegal fishing behaviour can embed itself in fishing communities, there is a risk of these grand intentions coming to nothing. There is thus a crucial need for well-planned implementation strategies that take these factors into account.

The new SSF policy certainly has a lot to offer in the long term: it is developmental and visionary in scope, and has the potential to catalyse lasting economic and cultural revival, as well as improved community collaboration in places where it is has been deeply eroded. Its benefits may thus extend beyond the monetary to the societal, which is arguably more necessary in South Africa now than anything else. Rebuilding communities in the aftermath of apartheid's brutal social engineering is of equal importance as redistributing wealth and facilitating economic development. But one cannot happen without the other, and the new SSF policy must pay careful attention to the realities of non-compliance in fishing communities to avoid being judged one day as being high on rhetoric, but low on practicality.

CHAPTER 3: CONCLUSION

3.1 Overview of study

The overall aims of this study were to profile the human dimensions of abalone poaching in Hangberg and to explore some of its implications for implementing South Africa's new small-scale fisheries (SSF) policy. To achieve these broad aims, the following four objectives were identified: 1) Situating Hangberg within the broader context of small-scale fisheries governance, both internationally and in South Africa; 2) Reviewing the evolution of syndicated abalone poaching in South Africa; 3) Profiling the human dimensions of abalone poaching in Hangberg, including its historical development, current operations, structure, and scale, and major socio-economic drivers and impacts; and 4) Drawing lessons from this profile to inform implementation strategies for the new SSF policy, as well as to recommend further research.

These objectives were targeted using a 'fisheries systems' research framework, which highlighted the need to understand abalone poaching in Hangberg holistically, and not in isolation from its broader social, cultural, economic, historical, and political contexts. Time constraints precluded investigating the *full* fishery system, however, and a conscious decision was made to focus on its human dimensions, which had not received dedicated attention before.

Qualitative research methods were used to probe the illegal fishery and to facilitate access to clandestine groups, a process that required the gradual and iterative development of trust. Key concepts from the small-scale fisheries governance literature, particularly those underpinning the progressive principles and objectives of South Africa's new SSF policy, were the framework of analysis used to interpret the findings.

A comprehensive review of new approaches to small-scale fisheries governance, presented in Chapter 1, provided the theoretical backbone of this study. Conventional management strategies, developed to control big commercial fisheries in the northern hemisphere, were shown to be largely inappropriate for the small-scale sector, which is characterized by far greater social and ecological complexity than

industrial fisheries, and thus requires more nuanced forms of management. Particular attention was paid to highlighting the fundamental importance of understanding the human and social dimensions of fisheries management. Compliance theory was introduced as a key framework for understanding recurring problems in the small-scale sector, with particular attention paid to the importance of normative motivations for influencing fishers' behaviour. Concepts from the legal pluralism literature were also touched on, revealing how informal legal systems could operate in parallel to formal, statutory law.

Concepts from this first section were then used to trace the history of fisheries transformation in South Africa, which sought to correct gross racial imbalances after the end of apartheid but repeatedly failed to address the needs of small-scale fishers. It was shown how frustration at slow reform helped fuel non-compliance in coastal fishing communities, where the perceived legitimacy of state fishing regulations had begun to wane. This process was most vividly evident in the abalone fishery, which witnessed an explosion of organized poaching activity shortly after the end of apartheid, when criminal groups began operating an illegal export market to wealthy consumers in the Far East.

This set the scene for Chapter 2, an in-depth case study of the human dimensions abalone poaching in Hangberg. A creative, multi-method approach was used to investigate the evolution and current operations of the illegal fishery, which had not been studied in any detail before. Methods used included interviews, participant observation and covert surveillance, accompanied by reference to secondary data sources like newspaper articles and court documents. Together, these contributed to a comprehensive understanding of abalone poaching in the Hangberg community today.

3.2 Key findings and recommendations

The abalone fishery is deeply embedded

This research revealed that abalone poaching has become deeply embedded in Hangberg, fuelled and sustained by a wide range of social and economic drivers. In less than 20 years, a highly organized boat-based fishery has developed in the community, targeting reefs right around the Cape Peninsula and supplying abalone to larger criminal syndicates. In many ways these poaching operations have begun to resemble a formal fishery, apparently filling a vacuum left by ineffective transformation efforts by the state. Showing this juxtaposition of the criminal economy with the formal fishery system has been a major contribution of this dissertation.

At least five local poaching groups currently operate in Hangberg, along with a handful of outside groups who work with poachers in the community. Profits from abalone poaching are substantial, but vary: poachers were found to operate according to a loose hierarchy, performing a range of different tasks in the fishery. Nevertheless, in most cases abalone poaching comfortably dwarfs other forms of income available to Hangberg residents, and the illegal fishery appears to have become a mainstay of the impoverished local economy. In total, the abalone fishery probably employs at least 250 individuals at present, contributing to the livelihoods of more than 1000 people in total.

From the perspective of compliance theory (Gezelius & Hauck 2011), neither instrumentalist not normative motivations currently appear remotely sufficient to offset the attractions of abalone poaching in the community, which are primarily economic but also linked to political protest, thrill-seeking, and the pursuit of status. Law enforcement efforts, while occasionally successful, remain hampered by capacity constraints, institutional inefficiency, and endemic corruption, and do not yet appear remotely sufficient threat to deter abalone poaching. Meanwhile, fisheries regulations continue to be regarded as largely illegitimate. Partly because of this, and partly because abalone poaching has begun to play such a pivotal role in the local economy, the illegal fishery is effectively condoned by large parts of the community. From an interactive governance perspective there is thus conflict between two major actors in the Hangberg fishery system: the state and the criminal economy. This mismatch is

likely to pose tough challenges to implementing SSF policy objectives, for example including local small-scale fishers in co-management structures: beneath the surface, a lucrative rival fishery system continues to operate.

This research has shown that the illegal abalone economy continues to thrive in communities like Hangberg and that efforts to curb it—for example the 2003 Abalone Policy—have largely been unsuccessful. Comparisons with previous research (Hauck 1997; Hauck 2009b; Raemaekers & Britz 2009) suggest that little has changed in the abalone poaching game in the last two decades: small-scale fishing communities are still ripe breeding grounds for non-compliance due to ongoing social and economic marginalization; law enforcement is still crippled by corruption; there is still little normative support for fisheries regulations; and so on. This Hangberg case study also adds support to anecdotal evidence that South Africa's illegal abalone fishery has significantly expanded westwards to the Cape Peninsula in the last decade following stock collapse, and possibly improved policing, on the Overberg coast.

An important theme in this research was the link between abalone poaching and identity politics in Hangberg, with many participants claiming that poaching was a response to systematic discrimination against coloured people by the state. Perceived injustices in the small-scale fisheries sector were seen to symbolize deeper injustices in South African society. From this perspective, it emerged that problems with housing, education, and other types of service delivery in Hangberg are deeply intertwined with the ongoing exclusion of small-scale fishers from marine resources. As key elements of the fishery system, they cannot be understood in isolation from one another.

Mixed social impacts and potential for conflict

This study found that the illegal abalone fishery has had both positive and negative social impacts in Hangberg. On the one hand, money from abalone poaching contributes to local economic development and to the livelihoods of at least 1000 residents. On the other, lucrative profits encourage extravagant spending, and a culture of conspicuous consumption appears to have taken hold in the community. Abalone poaching thus funds *lifestyles* in addition to livelihoods, with substantial cash sums spent on clothes, fast cars, and recreational drug use. The widely held

perception that poachers are fast living, wasteful, and irresponsible individuals is neither wholly accurate nor entirely false.

By elevating the living standards of many residents, abalone poaching appears to have increased the potential for conflict in the Hangberg community. Poachers are likely to struggle to maintain their current levels of income as abalone resources decline, possibly fuelling increased competition between local poaching groups *and* with outsiders in the future. This research revealed that confrontations are already commonplace in Hangberg's illegal abalone fishery: the recent deployment of armed guards to escort batches of abalone from a remote drop-off point is of particular concern. Hawston, a fishing community on South Africa's south coast with a longer history of abalone poaching than Hangberg, was used as an example of the negative social impacts poaching can have in fishing communities if left unchecked. Violence, gangsterism, and drug abuse have become firmly established there, despite the illegal abalone fishery having declined in recent years.

Implications for small-scale fisheries governance in South Africa

In the almost 20 years that have elapsed since the end of apartheid, fisheries transformation efforts have largely failed to bring meaningful change to coastal communities like Hangberg. The criminal economy, however, has offered a lucrative alternative to legal fishing, and a powerful, highly organized *illegal* abalone fishery has evolved in response. This fishery operates in parallel to the formal system, and has begun to perform a number of its most important social and economic functions: providing employment, fostering economic development, and providing access to marine resources. This dissertation has argued that this is likely to pose stern challenges to small-scale fisheries governance—particularly with regards to implementing South Africa's progressive new SSF policy.

While the new policy is developmental and forward-looking in scope, it is necessarily constrained by the need to conserve marine resources. This means that it will never be able to match the profits offered by the criminal economy, which 'allows' its fishers to harvest at completely unsustainable levels and which is likely to continue operating until abalone resources are almost entirely depleted. Short-term economic interests thus have the potential to sabotage the implementation of the SSF policy, which among other things fundamentally depends on community participation and

assistance with compliance. Similarly, the divisive aspects of abalone poaching reported here are likely to undermine attempts at participatory governance, highlighting once again the importance of treating fisheries systems holistically and not attending to biological, ecological and social considerations separately. Evidence of the failure to curb South Africa's illegal abalone fishery in the last two decades—despite considerable attempts to adopt more progressive, holistic governance arrangements—serves as a clear warning of what can go wrong if this need for better integration is not heeded.

In pursuit of integrated solutions

This does not mean that the SSF policy is doomed to fail. The policy has the potential to bring lasting change to coastal communities by facilitating increased participation and contributing to more sustainable forms of social and economic development. Its strong focus on human rights and social justice, combined with its firm theoretical grounding in the resource governance literature, provides an unprecedented opportunity to experiment with an entirely new approach to fisheries management. Care must be taken, however, to ground future implementation strategies in reality.

This dissertation has argued that illegal fishing is symptomatic of persistent inequalities in South African society, and that it cannot be understood in isolation from this broader context. It has also argued that the criminal economy has become an important actor in terms of fisheries governance, offering small-scale fishers a functional alternative to a formal system that continues to overlook their interests. Unless steps are taken to tackle this illegal fishery system holistically, accompanied by integrated socio-economic development initiatives and enacted through multiple government channels, the many positive and visionary objectives of the SSF policy are unlikely to be met. Reforming South Africa's fisheries sector remains more important than ever before—but successfully addressing the country's tainted legacy will require more than just fish.

3.3 Further research

The governance literature has a strong emphasis on dialogue and inclusion. However, a core finding of this research was that a sophisticated criminal economy co-existed with, and in many ways had begun to rival, the formal South African fishery system, severely undermining notions of cooperative governance. While legal pluralism has been used to understand fisheries conflicts like these, its focus has mainly been on recognising customary or local forms of law. There is a need to widen this scope to include newer plural systems, and to investigate ways of bridging the gap between state actors and their counterparts in the parallel economy.

This is linked to a second set of potential research questions: identifying possible 'tipping points' that could steer abalone poachers back towards the formal fishery system. Participants in this study claimed that they would cease harvesting illegally if they were granted small individual abalone quotas. While it is unlikely that these statements were entirely true, it is nevertheless conceivable that certain combinations of social and economic motivations—increased government legitimacy, preferential access to other valuable marine resources, tighter law enforcement, the relative safety of operating legally—could entice poachers to abandon the lucrative illegal abalone fishery, and thus provide a mechanism for curbing the increasing non-compliance trend. Answering these questions will require input from the fields of economics and psychology, among others.

A third and final area of future research would be far less abstract: building on the qualitative base provided by this study to conduct more quantitative studies in Hangberg and other poaching communities. Value-chain analyses, aimed at estimating the overall worth of abalone poaching with all its multiplier effects, and more rigorous evaluations of poaching effort, are two examples of this kind of work. However, it will be important to bear the secretive nature of the illegal abalone fishery in mind, as well as the potential dangers it poses to researchers. This short-term case study has shown that is possible to gain access to poaching groups and profile aspects of their operations. There may ultimately be limits, however, to the depths these clandestine groups can be penetrated.

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Appendix A: Hypothetical diving profits

A) For one diver	
Income:	
Large abalone @ R200 / kg	50 kg
Mediums @ R250 / kg	30 kg
Total income	***R17 500***
Expenses:	
Boat fee of 10 kg fresh abalone	R2200
Skipper fees @ R20 / kg	R1600
Bootsman fees @ R10 / kg	R800
Carrier fees @ R30 / kg	R2400
Contribution to spotter fee of R1000 / boat	R200
Total expenses	***R7200***
Profit from single operation	**R10 300**
Profit from 5 operations in a month	**R51 500**
B) For one boat owner (non-diving)	
Income:	
Diver fees @ R2 200 / diver (5 divers on board)	R11 000
Expenses:	
Petrol to Robben Island	R4000
Profit from single operation	**R7000**
Profit from 5 operations in a month	**R35 000**
C) For one boat owner (diving)	
Income:	
1. **Diver fees @ R2 200 / diver (4 other divers on board)**	R11 000
2. **Personal harvest (50 kg large; 30 kg mediums)**	R17 500
Total income	***R28 500***
Expenses:	
1. **Petrol to Robben Island**	R4000
2. **Personal diving fees (Same as for other divers; no boat fees)**	R5000
Total expenses	***R9000***
Profit from single operation	**R19 500**
Profit from 5 operations in a month	**R97 500**