Understanding the human dimensions of ecosystems approach to fisheries management: The case of fish workers in the hake sector in Saldanha Bay.

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Abstract

The need to understand the human dimensions of the ecosystems approach to fisheries management is crucial to this study. Significant attention has been directed to defining the human dimensions within the context of the ecosystems approach to fisheries. This study outlines human dimensions in the hake sector in South Africa in terms of hake fish workers. The hake fish workers condition of employment, security of employment, social security issues, remunerations and their living conditions forms part of the social, economic and political dimensions in hake fisheries. The need for ensuring sustainable long-term utilisation of the hake resource and to manage, prevent and reduce all adverse effects of harvesting the hake stock through knowledge based intervention is crucial to this study.

Sustainable fisheries management can use the working and living conditions of fish workers as indicators for effective management of fisheries. Fish workers issues, which include their conditions of service, contractual agreements, work safety, income, working hours and other human dimensions, may have an effect on the effective sustainable management. Ecosystems approaches takes into consideration the human dimensions and ecological consideration for effective fisheries management. Knowledge of the historical and economic importance of the hake sector is crucial for the planning and future of the fisheries. Applying the concept of the ecosystems approaches to hake fisheries management is also critical in understanding the human dimensions in hake fisheries. The qualitative methodology of field work was used in understanding the human dimensions in commercial hake fisheries.

The investigation into the fish workers labour issues and living conditions through a field work highlighted that the labour issues such as type of employment (permanent or casual), conditions of employment (social security, regulated hours of work, good working conditions), stagnation in terms of promotion, remuneration and issues surrounding labour brokers are some of the social issues in the hake sector. The living conditions of fish workers, stagnation and improved remuneration should be attended to in the sector. Fish workers in the hake sector rely on wages for their livelihood. Workers' participation in decision-making at governance level should be enhanced for effective governance in the fisheries.

Keywords

Ecosystems approach, human dimension, hake sector, hake fish workers, labour brokers, fisheries science, fisheries management, Saldanha.

Declaration

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To God all Glory be given.

List of Abbreviations

BCLME - Benguela Current Large Marine Ecosystem

BEE - Black Economic Empowerment

CPUE - Catch per Unit Effort

DAFF - Department of Agriculture, Forestry and Fisheries (Republic of South Africa)

EAF- Ecosystems approach to fisheries management

EBM-Ecosystems based management

FAO - Food and Agriculture Organization (United Nations)

GDP - Gross Domestic Product

ITQ- Individual Transferable Quota

IDP - Integrated Development Plan

MCM - Marine and Coastal Management (Department of Environmental Affairs and Tourism, Republic of South Africa)

MLRA - Marine Living Resources Act

NDP - National Development Plan

RFA- Responsible Fishing Alliance

TAC- Total Allowable Catch

UCT- University of Cape Town

UN- United Nations

UWC-University of the Western Cape

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1 Chapter One

1.1 Introduction

Fisheries management approaches which have been in use over the years had some of its shortfalls and advantages which are explained in this study. Beddington et al., (2007), note the perception that world fisheries are in a crisis due to some failures of traditional management approaches. The single-species approach maximised the catch of single target species and neglected the interactions of species (Mangel et al., 2000). It relied on research vessels for information on catch and by catch. The failure of cod in England and other fisheries failures around the world prompted the need for coming with other methods of sustaining fisheries (Hilborn et al.. 2011; Food and Agricultural Organisation -FAO,2008). The single-species stock assessment had the problem of assuming statistical decision analysis in setting sustainable yield neglecting the complex multispecies and human interactions as noted by Pitcher and Lam (2010).

The failure to acknowledge the holistic nature of multispecies interactions within the ecosystem has also prompted resource managers, conservationists and fisheries scientists to develop approaches which take into consideration these interactions (Mangel et al., 2000). Morishita (2007) notes that the ecosystem approach focuses on both humans and the ecosystem with primary emphasises on the effect of human activities on the ecosystem. The FAO (2008) and McDonnell et al. (1993) in Mangel 2000 argue that the human component is as important to the ecosystem as the ecological component. The ecosystem approach tries to call on the human dimensions and science in enhancing decision making in fisheries management. The ecosystem approach fills the gap in the single-species approach by its holistic approach. It uses both scientific and human dimensions data in decision-making for the benefit of the ecosystem.

Garcia et al. (2003) explain the ecosystem approach as the balance of diverse societal objectives by taking into account the knowledge and uncertainties about biotic, abiotic and human components of ecosystems and their interactions. The ecosystem approach to fisheries management is also defined as a way of promoting the integrated management of environments and natural resources to ensure the conservation and sustainable use in an equitable way (Ruddle and Hicky, 2008). The (FAO 2008) states the concept of ecosystem approach as trying to meet ,the ecological and the human dimensions (social, political and

economic). The inter-connectedness of people and fish is seen by Sowman et al. (2013) as inseparable because the people rely of fish for food. People enjoy employment benefits and livelihood benefits out of marine resources hence the importance of marine resources to people (FAO 2009a).

Morishita (2007) views the ecosystems approach to fisheries management by acknowledging the importance of human dimensions in fisheries. The human dimensions deal with both the short and long term needs of fishing communities. de Young et al. (2008) also agree that, the understanding of the socio-economic and political needs of fish workers and the fishing communities are as important as the conservation needs of the ecosystem. Curtin and Prellezo (2010) agree with Morishita (2007) on the need for meeting social, economic and political needs of fishing communities while conserving ecological natural resources. This is at the heart of the ecosystems approach to fisheries management which Garcia et al. (2003) in their definition of the ecosystems approach to fisheries review the need for balancing societal objectives and ecological objectives.

Daw et al. (2011) acknowledge the importance of a healthy, productive and resilient ecosystem which fish workers depend on for employment when processing or harvesting. They also depend on the marine resources for food, which Hilborn et al. (2011) agree that marine resources support human well-being. Employment is an important benefit for fish workers from marine resources. Employment from harvesting and processing the marine resources improves the welfare of the fish workers through wages.

Greiber and Schiele (2011) reiterate the motivation for humans to conserve the ecosystem products since degradation of the ecosystem can lead to a decrease in human well-being. If fish resources decrease, it means that employment opportunities decrease as well. Humans understand the need for conservation if the goals and objectives of conservation are explained to them. Policies which encourage conservation need to be explained in simple terms to the intended beneficiaries.

The human dimensions in small scale fisheries show how the ecology interacts with social systems and how a breakdown in social systems can affect the ecology (Sowman et al., 2011). The human dimension knowledge helps in decision-making as well as planning in fisheries management to avoid a breakdown in the social system which can result in conflict or affecting the ecology. This study explores on human dimension in terms of fishing workers and how integrating this dimension in fisheries decision-making will help in the hake sector

management. These points to the need for intervention to social issues that affect the fisheries to improve fisheries decision-making.

1.2 Rationale and significance of the research

Worker issues, which include their conditions of service, contractual agreements, work safety, income, working hours and other human dimensions, may have an effect on the effective sustainable management. The International Labour Organisation -ILO (2007) acknowledges the need for improving fish workers' working conditions. Issues surrounding the safety of fishers on board vessels, in fish factories and the need for regulated times of work were also raised at the ILO convention, (ILO, 2003). Regarding fish workers aboard vessels: a clear separation of working time and rest time is needed and a set time must be regulated to reduce abuse aboard fishing vessels. Howse et al. (2012) note what they termed "precarious" working conditions in fishing. The human dimensions on fish workers have not been defined nor are they understood in relation to the commercial fisheries sector like the hake sector and what it means in terms of fish workers (Arber et al., 2009).

Changes in the hake sector from pre-apartheid to post-apartheid have had mixed results in South Africa. Several studies (Croeser et al., 2006; Japp, 2005 van Sittert et al., 2006; Mathers, 2007 and Ponte, 2012) agree on the impact of hake reform and on the need to change ownership structures. There is a need to understand the impact of reform and transformations on the fish workers' working conditions and well-being. Ownership transformation may have been accelerated by the need for Black Economic Empowerment (BEE) and the need to comply with the law. "BEE certification worked well for the big hake companies as it enabled them to continue benefitting from fishing" (Isaacs et al., 2007). It also balanced them off from other radical alternatives which may have been adopted after 1994. The reform process also gave labour a platform to negotiate the working conditions for fish workers when they sided with big companies during consultation on reform and transformation (Mathers, 2007).

The working conditions of fish workers can be used as indicators in sustainable fisheries assessments. It is also important to note that all fisheries at one point provided open access and they supported a relatively low population. With the population increase, better harvesting methods and increased demand of fish and fish products are putting strain on the fish resources, leading in some instances of collapse and failures of the fisheries (FAO, 2008, Arber et al., 2009). The single-species approach, co-management and ecosystem based

approaches were implemented with the idea of reversing the stress caused by over-fishing. The most prominent approach was the single-species approach which is explained in chapter 2. It was used as a basis for decision-making for a long time in fisheries. It was used in calculating the stocks of species but mainly focused on the target species neglecting the rest of the other stocks (Beddington et al. 2007)

The first approaches were being implemented by the state and had this assumption that people were irrational and that the state will force people to adopt conservation activities through various regulations and institutions, which Ostrom (2005) noted was implemented through the introduction of user rights. The ecosystems approach now tries to balance the human needs with the ecosystems health approach. There is a realisation that people's livelihoods cannot be ignored while conservation initiatives are being implemented.

Sustainable approaches are to be promoted through balancing ecosystems health and people's well-being. Sissen and Macce, 2003 in Loquine (2010) note that the fisheries problem can only be addressed with effective, incentive-based management system instruments and a long-term, achievable policy goal, hence the importance of the ecosystems approach to fisheries management. The solution to fisheries management is the integration of the complex human dimension with the natural system (Berkes and Folke, 1998; Garcia et al., 2003).

1.3 Research Questions

This thesis seeks to answer the following questions:

1. What is the historical and economic importance of the hake sector to the South African fisheries?

2. How can we define the concept of human dimension within context of Ecosystem Approach to Fisheries (EAF) management and to explore what extent it does apply to the hake fisheries?

3. Has the literature on the old fisheries management approaches influenced the (EAF) and how has the literature helped the hake sector?

4. What are the basic conditions of employment for hake workers in Saldanha and to what extent are the other human dimensions in the hake sector impacts on the fish workers?

5. How is the human well-being of fish workers in the hake sector being maintained and to what extent is it related to labour conditions in hake fisheries management?

1.4 Methodology

This is a descriptive study that uses qualitative approaches in order to design, collect and analyse data. This study was undertaken in the South African coastal fishing town of Saldanha Bay, focusing on areas such as Middlepos, White City and the hake fishing company in that area. Qualitative approaches have defined the concept of human dimensions in the context of ecosystems approach to fisheries management. In trying to understand the fish workers' working conditions, type of employment, remuneration of fish workers and the role of labour brokers in the hake sector, questionnaires were administered.

1.4.1 Target population

Fish workers consist of general off-shore factory fish workers, stores general workers, value addition fish workers, off-shore operations, processing fish workers, vessel factory workers, vessel crew workers and the skilled workforce in different departments. The interviews included household surveys which were carried out at the fish workers' houses so as to have an impression of where they live and the condition of their accommodation. All the interviewed workers work for a hake fishing company in Saldanha. The respondents included 20 processing workers, 13crew members who go to sea to fish, 5 team leaders, 2 supervisors and one senior manager. Also interviewed were Food and Allied workers' representatives and one of the local brokers.

1.4.2 Research Methods

1.4.2.1 One-on-one interviews

I used one-on-one interviews to get information on fish workers. I had structured questionnaires which were based on the questions I needed. I collected information on the issues of the fish workers' demography and issues pertaining to fish workers' conditions of work, type of employment, living conditions, livelihoods and other issues pertaining to the research.

I first asked permission from management to interview their workers. They gave their consent after reading my objectives of the study. I met most of the respondents at the canteen and they would recommend others. I made appointments for home visits. Supervisors would take me to their offices and so did management. They also helped me to meet potential respondents.

I did home visits and followed through on my questionnaires and also made my own

observations. Most of the fish workers could communicate in English which helped me very much.

1.4.2.2 Observations

In the process of my interviews I observed some interesting traits on the eating habits of fish workers in their canteen. I sat and observed the type of food most of the fish workers were buying to eat at tea breaks and lunch. Most of the fish workers would drink more than 500 ml of soda with fried chips, deep fried hake, or snoek and chips. There was no fruit in the canteen. I also observed that most of the fish workers smoked and would throw their cigarette stumps everywhere after finishing. The non-smokers and the smokers use the same available space during the tea and lunch breaks.

The weight of most of the women that were entering the café caught my eyes. Most of them were full figured. It left me wondering whether it was due to their eating habits, the diet or some health conditions I could not explain. Most of the observations I made were not part of my original study plan.

1.4.2.3 Key informants

While undertaking one-on-one interviews, the interviewees were suggesting to me more people who could provide critical information I needed. I got the contact numbers of the union leaders and one of the retired fish workers. I asked the key informants all the necessary questions related to fish workers' issues. I noticed their love of the hake sector and its importance to the people of Saldanha. I would sometimes invite them to suggest what advice they would give to management and policy makers. It was really engaging talking to those men. Key informants in this study included union leaders and a retired worker, who helped in giving their view of the fish workers' issues in the hake sector. The union leaders were able to explain the conditions of employment of fish workers at one of the hake fishing companies in Saldanha. One of them raised his concerns about the issue of labour brokers and the salary discrepancy between the worker under labour brokers and the one employed by the company. The retired worker explained the working conditions they faced 10 years ago and how these have changed in the recent years.

1.4.3 Primary data

Part of the primary data included issues of fish workers' working conditions, types of employment, fish workers' remuneration, unionisation and the inclusion of fish workers in decision making. This formed part of the human dimensions of fish workers. This data was

obtained through structured interviews. A prepared questionnaire was administered while interviewing target respondents from fish workers which included crew members (fishers), processing fish workers, union leaders and some senior members of the communities who understand the hake sector and its issues.

1.5 Research ethics

Prior to conducting the structured interviews, written consent was obtained from all participants to partake in the interview for this research study. Following the principles of anonymity, confidentiality as well as volunteerism (see Neuman, 2003); these informed the ethical dimension built into the research. Most of the interviews were conducted at the respondents' homes and places of work.

Qualitative data from key informants, in-depth interviews, literature reviews which can either be primary data or secondary data, were used in this research.

1.6 Literature review (Secondary data)

Literature on the human dimensions is discussed and integrated with the literature on the theory of the ecosystems approaches to fisheries management in this study. This helps in filling the gaps and extending prior studies on my topic. Other human dimension studies on fisheries are critiqued in a way as to broaden the debate on human dimensions. Comparisons of human dimensions in small scale fisheries with commercial fisheries broaden the human dimension in the fisheries debate. Various studies on the hake sector in South Africa are also discussed and narrowed down to Saldanha where my case study is based The changes and transformation in the sector in terms of policy, ownership rights, quotas and challenges the hake sector is facing, are also considered.

The conceptual framework also formed part of secondary data used in this study. Articles on EAF were used to inform my conceptual framework (Garcia et al. 2003, Garcia and Cochrane, 2005, de Young et al. 2008, FAO 2009a, , Ward et al. 2002, Paterson et al. 2010, Arber et al., 2009, Aswani et al., 2012, Morishita, 2007, Cutlin and Prellezo, 2010).

1.7 Data presentation, analysis and interpretation

The data obtained from the interviews was presented and analysed in different ways. The first section of the questionnaire which deals with demographic information, electricity availability, running water and the availability of toilets was presented and analysed statistically. This was compared to the theoretical information on the human dimensions in

small scale fisheries where most of the fish workers do not have electricity, running water in their houses and own toilets.

Issues of availability of work throughout the year make the life of fish workers in the hake industry better than fish workers in small scale fisheries. Qualitative data collected in this research was analysed using the thematic approach. In this type of analysis, the data collection and analysis takes place simultaneously. Some of the data was collected in the form of field notes and manually coded to different thematic areas (social, economic, cultural, political and institutional dimensions).

1.7.1 Qualitative data analysis

It involves summarising the data collected and presenting the results in a way that communicates the most important features (see Hancock et al., 2009*).* This study summarises data from the in-depth interviews on the human dimensions in fisheries for fish workers.

In qualitative research the interest is on discovering the big picture by using different techniques to find it. Hancock et al. (2009) note how data is used to describe a phenomenon, to articulate what it means and to understand it. In this study various data from in-depth interviews were classified, summarised and tabulated. It involves the level of analysis where a descriptive amount of the data from interviews and key informants' reports on the fishing workers' issues from the study, are used. This is usually referred to as basic level analysis.

1.7.2 Research interviews

The total number of respondents in this research is 60 which include 30 processing workers, 20 crew members, 5 team leaders, 2 supervisors and 1 senior manager. I interviewed 60 respondents. The 60% of the respondents were female while 40% are men. There are more males in the offshore operation that is the fish workers who go to sea to catch the fish. This may be explained by the fact that the conditions at sea are little bit rough and most women are not prepared to work in those conditions. The men that work in the factory mainly work in the freezers and carry the fish to the women who do the processing. Majority of the factory workers are women.

1.7.3 Description of fish workers interviewed for this study

The age of fish workers range from 20 years to slightly above fifty. The average age of respondents is 32 years old. Basically those with five years and above most of them are permanents. Most of the 30 years and below are from Saldanha had one of the parents who is

working or once worked in the fisheries. It cannot be said of blacks from Eastern Cape, most are still first generation in the Saldanha fisheries with very few with parents in fisheries. There are some blacks with more than 15 years of working in the Saldanha fisheries.

Most of the workers were not working before they joined the fisheries. I recognised also that the majority of general fish workers have only Grade 10. Most people came to fisheries because it was rewarding considering the academic profile in the competitive labour market. Currently the fish workers get R25 an hour which is higher than most sectors. Construction, farms and most general jobs pay less than R15 an hour. The need for Grade 10 as a pre requisite for employment motivates most school going age to go to school compared to other rural coastal towns where opportunities for employment are slim. Also availability of schools, social workers help in mentoring school going children of the need to go to school.

1.7.4 Analysis of descriptive data

In my research I discovered most of the 25 years and below who now work for a hake company in Saldanha have matric which I think is because of limited opportunities in the fisheries hence most of the school children opt to finish their matric because jobs are now fewer and finishing school offers them opportunities of getting employed in other sectors of the economy rather than depend on the fisheries alone. The Socio-Economic Profile (2006:101*)* notes a decrease in labour participation over the years. Schultz (2010) notes low levels of literacy in rural coastal communities of which it is different with the case of Saldanha. It may be attributed to its urban set up hence the municipality provides the schools. The demand for grade 10 results for employment in the hake industry in Saldanha can also be the main reason of higher literacy rate in the town as noted by Statistics South Africa data which noted literacy rate of almost 74% in the town (STATSSA, 2007).

Around 55% of the interviewed fish workers in this study are originally from Saldanha, 30% came from Eastern Cape, 10% from Northern Cape while 5% from other provinces. This also shows that 63% of all the respondents from other provinces other than Saldanha are from Eastern Cape while 26% are from the Northern Cape and 10% from other provinces.. A fishing company in Saldanha where this research was undertaken does not employ foreign Africans as general workers but in technical departments and other highly skilled positions. Labour brokers do employ both locals and foreigners though foreigners are very minimal.

All of the migrant labour (from Eastern Cape, Northern Cape and other areas) works in the factory and some at sea. They are residents in Saldanha and stay in Middlepos and others in

Hopeland in Saldanha. All of the interviewed migrant workers are without houses and are either planning to register on RDP waiting lists or already registered and are staying at their plots waiting for government to build RD houses. Some of them now have RDP homes especially the old workers with more than 7 years in Saldanha. Some of the black workers put their shacks in their friends or relatives plots. I saw a few structures at the end of Middlepos that are kind of unplanned (informal settlement without roads) but none of the workers I interviewed stayed there. With government providing RDP houses all of them have taken full residences in Saldanha. More than 50% of the migrant workers are second generation of migrant workers from the Eastern Cape. Most of them followed relatives or friends who were working in Saldana. After apartheid the equity laws also opened doors for migrant workers from Eastern Cape and the Northern Cape. In my interviews with old Saldanha residents they feel the migrants from other areas are taking their children's jobs. It is an issue that sometimes creates tension between the Saldanha immigrant residents and the locals.

Racial tensions have been in fisheries for a long time in the Western Cape between the bona fide fishers and the new migrants from other areas who are also harvesting fish resources (Schultz, 2010). Limited employment opportunities in fisheries have led to scramble for the few jobs that come out of the fisheries. One coloured elderly woman put it point blank that people from other areas are taking the jobs of their children. Issues of prejudice for outsiders have been noted by shop stewards. Though it is not on a large scale it is an issue in the long run that needs attention.

1.7.5 Fish workers

Fish workers consist of general onshore factory fish workers, stores general workers, value addition fish workers, offshore operations, processing fish workers, vessel factory workers, vessel crew workers and the skilled workforce in different departments. Labour issues are central to this study that is the type of employment, conditions of employment, issues of remunerations, labour brokers and representation of the fish workers in the hake sector. It also gives the fish workers' profile, that is where the workers lived before coming to Saldanha and gives information on migrant workers(from other provinces like the Eastern Cape, Northern Cape and other areas).

Most of the workers have a feeling that the sector has the potential to grow. There is an overall understanding that the changes within the industry have benefitted workers since their wages have increased significantly. Most of the workers with five years and above appreciate

that the changes that have occurred in the sector have benefitted the workers. Ten years ago most of the general fish workers were earning less than R10 an hour and now they earn R25 an hour. The major negative thing most of the old workers highlighted was decrease in the number of jobs.

1.8 Conclusion

Understanding the human dimensions of the ecosystems approach is of importance to this research. These include defining what the human dimension in commercial hake fisheries are in terms of hake fisheries in South Africa. Ecosystems approaches consider the human component of the ecosystem hence the need of understanding the human dimensions in the hake fisheries. The importance of humans in the ecosystem is highlighted by (Gracia et al., 2005) who alluded to the perception that humans cannot be seen as external on the ecosystem abut rather part of the ecosystem. Humans are an important stake holder in the conservation of the ecosystem as their habits can contribute to the ruin or betterment of the ecosystem. (Morishita, 2008) wrote on the attraction of the ecosystems approach to measures which are sustainable, inclusive of the humans and acceptable. It minimises all the obstacles to the achievement of intent goals because of its inclusive nature.

The ecosystems approach to fisheries focuses on fisheries management and expands the mandate beyond seeing a fishery as supplier of fish, people in boats, beyond consideration of commercial important species and beyond management effects on fish harvesting (de Young, et al., 2008). It encompasses the human needs and livelihood factors as equal important to economic needs of fisheries. This is where the human dimensions of fisheries are considered. In commercial fisheries the issues of fish workers is also important. Ecosystems approach addresses that governance of fisheries which ensures both human and ecosystems wellbeing (Gracia and de Young, 2003). The equality of all stakeholders that is all stakeholders concerns should be addressed. The ability to treat both humans and ecosystem wellbeing makes the ecosystems approach attractive to researchers and conservationist.

The following chapter introduces literature on the ecosystem approach to fisheries management by explaining the natural system, social system and governance system of the ecosystem. It further unpacks the theoretical framework to the study. The human dimensions in fisheries are also explained. The human system encompasses the socio economic dimensions, political dimensions and institutional dimensions. The governance system, fisheries management and management approaches are also explained. It also includes the

legal and institutional frameworks and policing in the fisheries sector. It considers the literature on human dimensions, fisheries management and labour in fisheries worldwide and narrows it down to South African hake fisheries in terms of the social dimension, economic dimension, political dimension, institutional dimension and the dimension with the main focus on fish workers.

2 CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

Fishing provides direct employment for more than 200 million people worldwide and also constitutes 19% of the total human consumption of protein (World Bank 2010, Griffin 2008). Fishing is important to mankind for food and providing employment. The trade in fish produces millions of dollars for both developing and developed countries hence its importance in job creation and revenue for nations in taxes and other direct benefits to the state. The demand for fish in the world has put the world's fisheries at risk of collapse due to overfishing.

The management approaches recognise that an emphasis on the fish alone without looking at the communities which make a living out of the resource is suicidal because communities will rebel against any regulation that takes their livelihood (Murray et al., 2008). The management approaches aims mainly at sustainable harvesting of resources to meet the needs of the people. The concept of sustainable development also has the same goals and objective of meeting the needs of the people in a way that does not affect future generations (de Young et al., 2008).

Wilson et al., 2006 in Daw et al. (2011) regard fisheries management as a social problem. This is because decision-making need to be made at various levels including at resource use level. Practically, it means that aspects of economic, social and biological orientation are significant for sustainable utilisation of the resource. The continuing declining trends of capture in fisheries resources in many water bodies across the globe call for the need to plan and strategize the implementation of sustainable management practices to conserve and restore resources within the water bodies (Garcia and Cochrane, 2005).The biological proponents of regulating fishing efforts indicate if fishing remains unregulated, overfishing would occur hence the need for fisheries management.

2.2 Single species approach

The collapse of fisheries due to overfishing and lack of regulation in most open access marine resources led to the need for scientific methods that aided management in decision-making. It premised on getting stock assessments right and using the data on decision-making. The single-species management approach focuses on assessing fish stocks relying on data from offshore scientific surveys and commercial catch rates (Pikitch et al., 2004).Scientists and resource managers then use the data to determine the amount of stock of fish in a particular

area and assess the level of harvesting, advising on whether to increase or decrease harvest on a target fish stock. Single fish stocks were targeted on the assessment hence the single-species approach (Beddington et al., 2007*).*

The single-species approach assessment helped regulating authorities with data on harvest, fish stocks, by catch, migration patterns, recruitment patterns and changes in fish stock. Decision-making was now sorely based on the scientific assessment (Garcia et al., 2003). A lot of weaknesses were attributed to the system because it did not consult local knowledge from fisherman. It did not also take into consideration the whole ecosystem and the interactions of different species (Mangel et al., 2000).One species may be food to another species of which the single-species approach did not address these relationships between species. The interactions of target species which may be food for other species and overfishing of that species will also lead to the collapse of the other species.

Data mined form this approach is usually used in total allowable catch (TAC) determination per species. This has been used in quota determination and other regulation frameworks in fishery management (Beddington et al., 2007).Stock management in the 1970s and early 1990s in South Africa was based on the single-species approach (Japp2005; Rademeyer et al., 2008).

2.2.1 Weaknesses of the single species approach

Errors in data used for assessments would lead to catastrophic failure of fisheries with the good example of the collapse of the Canadian cod industry in Labrador (Murray et al., 2005). Most critiques of this approach emanate from the fact that they do not consider the whole ecosystem interaction and do not consider species interactions (Mangel et al., 2000).These interactions are important because they may even influence the stock of the species. Other fish species may not survive without the other species, hence the importance of the interactions.

Changes in ecosystem structure and function are not captured through the single-species approach of which it is important to understand the fish habitats. Other ecosystem services are not seen with the importance of which biodiversity and other non-fishing services are important too. The ecosystem impact of discarding large quantities of unwanted fish by catch or gear impact on habitat is also another factor that cannot be ignored.

Pitcher and Lam (2010) note how single-species analysis may mislead researchers and

managers into neglecting gear and tropic interactions which determine long-term stock stability and ecosystem health. It also fails to predict social changes within communities (Mangel et al. 2000).The importance of social changes analysis is that it can help in social interventions that are necessary for human survival. Reduction in employment and other social factors need to be factored in so as to improve and plan for the future of fishing communities. The biological proponents of regulating fishing efforts indicate that if the fishing remains unregulated, overfishing would occur. The biological perspective is justified by looking at harvesting too many fish to allow spawning, recruitment and growth while the management approach goes further to try to sustain the habitat, the fish and the community (Rademeyer et al. 2008).

2.3 What is an ecosystems approach to fisheries (EAF) management?

There are several definitions of what the ecosystems approach to fisheries management is. Ward et al. (2002) defined it as part of fisheries management that recognises the link between human wellbeing and ecosystem health with the future in mind. The aim of ecosystems approaches is to maintain present benefits and also to safe-guard the benefits for future generations. Garcia et al. (2003) also narrowed down their definition by highlighting the need for balancing societal objectives and ecological objectives without jeopardising future benefits. The need for safeguarding the future by sustainable management approaches is supported in fisheries management hence the ecosystems approach encompasses both fisheries management and ecosystem management (de Young et al., 2008).

The holistic approach that the ecosystems approach takes differs from the convectional approaches which focussed on species by species approach but rather integrating the human and natural system (Ruckelshans et al., 2008). While old approaches focussed on fisheries management, the ecosystem approach also encompasses ecosystem management so as to manage and preserve the health functioning of the marine ecosystem (Morishita, 2007). Arber et al. (2009) highlight the priority of the ecosystems approach being on the sustainability of fisheries for the benefit of the communities who depend on them.

Corkeron (2006) however questions the necessity of ecosystems approaches and all other new approaches to fisheries management on which he advocates for traditional management methods. Murawski (2007) however acknowledges that the lack of understanding of what the ecosystems approach is and also not knowing how to implement it, is the main issue behind its critiques. There is greater need for understanding the ecosystems approach characteristics

and to implement it in full so as to achieve the desired objectives.

The characteristics of the ecosystems approach makes it friendlier to both conservationist and fisheries business in that it takes into consideration the present and the future. Business companies are worried about today's profits, which is also the going concern of the business. A guaranteed future to do business, all other factors being constant, enable business and policy makers to plan in advance and thereby create a conducive business environment. De Young (2008) notes that the ecosystems approach looks into the effects of fishing; it also encompasses the livelihood factors and economic needs of fisheries. The ability to treat both the human wellbeing and the ecosystem wellbeing makes it attractive to researchers and conservationists. If economic needs are balanced with the livelihood factors of fishing communities as ecological needs then sustainability will be enhanced in the fisheries.

Mangel et al. (2000) saw the ecosystems approach as providing or promoting a methodological and transparent process for analysing and prioritising issues and concerns in fisheries. Issues from different stakeholders are weighed up in decision making, hence giving a chance to better outcomes in decision-making. The need for encompassing stakeholder concerns in decision making makes the approach more acceptable as it reduces issues of conflict among different stakeholders. Issues of stakeholder consultations are also used in co-management and have received positive results in its implementation (Jentoft and Chuenpagdee, 2008).

Fisheries management and ecosystems management are critical tothe ecosystems approach to fisheries management implementation. Ecosystem management can be seen as the use of ecological, economic, social and managerial principles in meeting land and resources to produce, restore, or sustain ecosystem integrity and the desired conditions or use over the long term (Greiber and Schiele, 2011). Ecosystem management therefore is vital in balancing the needs of the natural system, human system and the governance system. The integration of the societal values, expectations, ecological potentials and technological consideration is vital in ecosystem management (Everet et al., 1994 in Curtin and Prellezo, 2010).

Ecosystem products or services directly or indirectly support human well-being (Daw et al., 2011). Human beings have a motivation to conserve the ecosystem services and products because they depend on them. Degradation of ecosystem services leads to decreasing human wellbeing (Greiber and Schiele, 2011). International Union of Conservation of Nature (IUCN) (2010) and Greiber and Schiele (2011) emphasize the relationship between human

wellbeing and ecosystem health. Decreasing human wellbeing may lead to increasing dependency on the ecosystem service. A lot of factors have in a way prompted the need for ecosystem management which includes growing populations and changing standards of living which have caused pollution, over-exploitation and even the destruction of ecosystem services (de Young, 2008).

Human activities impact on the ecosystem hence the need for ecosystem management (Curtin and Prellezo, 2010). Fishing reduces the stock of marine resources by reducing it. Incidental catches also greatly impact on the balancing of the marine ecosystem especially if the food web of the various marine organisms is disturbed or destroyed (de Young et al., 2008). This prompts the need for the ecosystem approach to fisheries management as well as other fisheries management approaches that are complementary.

Morishita (2007), and Curtin and Prellezo(2010*)* all concur that humans are part of the ecosystem and can act positively in the conservation of the ecosystem from the view that humans always destroy or cripple the ecosystem. Humans are part of the solutions to ecosystem management and cannot be isolated. Fisheries management focuses on managing people's behaviour to achieving sustainability in the conservation of resources (Grambie in Garcia and Cochrane, 2005*)*. Managing people entails meeting the needs of the people involved which forms part of the social dimensions in the hake fisheries industry. Fish workers' living conditions including access to clean water, toilets, electricity, health facilities and education become very important. Schultz (2010*)* noted the human dimensions in small scale fisheries to include access to clean water, toilets, electricity, education and infrastructure in fish workers' communities.

The fish workers' well-being should not be ignored as it forms part of the sustainability of the ecosystems. The profit motive in fisheries has over the years overshadowed the most important stakeholder that is the fish worker. Fish workers' issues have been swept under the carpet due to the focus that has been more economic at the expense of social dynamics within the fisheries sector, hence the importance of this study in invoking the debate on human dimensions in commercial fisheries.

Aswani et al. (2012 note that the management of fisheries is intended for the benefit of man, not fish. The effect of conservation must benefit people if it is to be successful. Fishing should be managed to limit its impact on the ecosystem. Fishing affects the ecosystems and should be done sustainably (Mangel, 2000). The rate of fishing and the amount of fish

harvested should be managed in line with the total stocks of the resource available. Overfishing should be discouraged at all costs, be it overfishing of single-species or all species. Overfishing may lead to job losses since it will affect the hake stock. The interactions between species should be understood so that the species which is food for other species may be conserved in order for the dependent species to be also conserved (Garcia et al., 2003). Another important interaction is the interaction between the availability of the hake resource and employment. The higher the quota, the higher will be the employment rate in the sector. Employment in the hake sector is based on the number of quotas per year. This usually affects the casual workers more than permanent workers. Inadequate knowledge of these interactions and the ecosystem as a whole may be catastrophic.

The social ecological system penetrates the core of human and environmental interactions (Loquine, 2010). Understanding the interdependency between the systems especially with regards to the social implications on fish workers has remained largely ignored in South Africa. Governance interactions of the fisheries resources targeted (harvested) and those affected and associated with the resources should be maintained (de Young et al., 2008). There are communities who depend on fish for their livelihood and these communities need to be educated on the need to conserve their livelihood. All regulations must be communicated to the dependent communities and partner with them in the management of the resource. All the stakeholders of a resource must be involved in finding solutions to managing the resources they depend on. The ecosystem approach in fisheries integrates human dimensions, biotic elements, abiotic elements, and the fishery system, all being part of an ecosystem that must be sustainably managed.

2.3.1 The natural, social and governance system

The natural system represents the marine and its resources which include hake stock and all other marine resources. The human system includes the fish workers, all the hake sector stakeholders and the human components of the ecosystem. The governance system entails the governance institutions, stakeholders and policy framework in the hake sector. The inter-relationship of the natural, human and governance system in the ecosystem is beneficial to it (FAO, 2009b). Aswani et al. (2012) note the inter-connectedness of the ecological, social and governance systems of an ecosystem which he saw as explicitly recognized.

Table 1: Components of the ecosystem

Natural system	Social System	Governance system
1. Biotic	Social	Rules
2. Abiotic	Economic	Regulations
3. Physical	Political	Institutions

Source: FAO, 2008.Accessed: 11/11/2012.

The ecosystems approach takes into consideration the natural system, human system and governance system. Humans are part of the ecosystem and the human system cannot be viewed as an external system. Garcia in Curtin and Prellezo (2010) noted the inter-dependence between the natural system and the human system. Humans can impact negatively on the natural marine systems through pollution, overfishing and mismanagement, hence the need for the conservation of the natural system for the benefits of the human system through food from fish and jobs from fishing in the marine system (FAO, 2009b). The destruction of the natural system will negatively impact on the human system through a reduced fish stock which is food to humans, reduced employment to the fish workers.

The conservation of fish habitats in the natural system is vital for future and current generations to continue enjoying the benefits of the marine resources (natural system). Boesh in Curtin and Prellezo (2010*)* saw humans and nature linked in a socio-ecological system. Beddington et al. (2007) note that ecosystem management therefore requires a well-integrated system of management methods that draws the connection between human beings and the ecosystems in which they live. The human system cannot be divorced from the ecosystem because it is dependent on it.

The hake stock which is part of the natural system is of importance to the fish workers because it provides them with a livelihood through employment in the hake sector. The understanding of the human dimensions of the hake sector is important to this study through understanding the social and economic dimensions of the fish workers. The major issues facing fish workers are labour issues, such as the type of employment, remuneration, conditions of employment, worker representation in decision-making, mechanisation and the issue of labour brokers in the hake sector.

2.3.2 The interlink between the ecosystems approach and human dimensions

Koehn et al. (2012) note how ecosystem management comprises a multi-disciplinary field that seek to address the complexity of human relationships, with ecosystems, including their social, cultural, political and economic dimensions. There is a need to integrate and balance the conservation needs of the ecosystem with meeting the socio-economic and political needs (Morishita, 2007). It is important to identify what the social, economic and political dimensions are in ecosystem management. Identification of the social dimension of fisheries helps in planning in ecosystem management by relevant authorities, (Aswani, 2012). The social impact assessments are important in fishing communities so as to identify the social dimensions within the fishing communities and to identify the potential consequences of proposed regulations so as to reduce the negative impacts of policies on fish workers as noted by Arber et al. (2009).

It is of interest in this study to understand the hake sector and how it has developed over the years. The needs of fish workers are secure employment, better working conditions and improved livelihoods. If the hake sector could improve the needs of fish workers and the sector remains profitable and sustainable then it would have been managed sustainably.Regulation within the South African fisheries has had so many varied effects on fish workers' lives. Job losses with the South African fisheries have been noted at a global scale due to both exogenous factors and indigenous factors (Schultz, 2010).

Arber et al. (2009) noted that the use of social and scientific information provides resource managers with the quality information necessary to have a better understanding of the ecosystem that will benefit the whole ecosystem and will help authorities in making informed decisions. Lui et al. (2007) explain the important of human well-being in ecosystem management.

The management of the productivity of the ecosystem is important in maintaining the human well-being (Curtin and Prellezo, 2010). Human well-being is vital since it can have a bearing on the ecosystem itself (Greiber and Schiele, 2011). IUCN (2010) shows the strong relationship between decreasing human well-being and the pressure on the ecosystem. FAO (2009c) notes that 80% of marine resources are fully exploited, which shows that if pressure in demand is increased on these fisheries, they will collapse.

Gale and Cordray (1994), in Arber et al., (2009) comment on how the ecosystems approach encompasses the human dimensions and the ecological considerations. Limited information

on the human dimensions of marine resources use limits policy-makers' ability to evaluate trade-offs and prevent unintended consequences for the marine system and human environment (Aswani et al., 2012). If human dimension data was available most unintended consequences of policies could be planned for and otherwise prevented. The missing link is the availability of social data in planning for policy planning and implementation (Arber et al., 2009).

Aswani et al. (2012) show that the concept of ecosystem based management is based on the idea that we are managing people's influence on ecosystems, not ecosystems themselves. It is important that the hake sector influences on the ecosystem should be managed sustainably. If the sector could be aligned with sustainability as their main goal then conservation strategies would be easy to implement. Policies are made by people and the impact of policies is again felt by people, hence the importance of educating all the stakeholders in the hake sector of the need for addressing the human dimensions (de Young et al., 2008).

2.4 Conceptual framework

The conceptual framework for this study situates the human dimensions of ecosystems for fisheries management in the social, natural and governance system. The social system unpacks the human dimensions in the hake sector with emphasis on the fish workers. The human dimensions expose the core social, economic and political issues facing fish workers through the social, economic and political dimensions within the hake fisheries. A core focus of this study is the working and living conditions of fish workers.

2.4.1 The Natural System

It consists of the biotic or living organisms which include plants, animals and micro-organisms. The hake species as a living organism is of interest to this study. The abiotic or non-living organisms of the ecosystem and the physical state of the ecosystem which includes the marine system or land system (Greiber and Schiele, 2011) are part of the ecosystem. The fish workers depend on the natural ecosystem for food and shelter (de Young, 2008). The land produces plants and feeds animals, which in turn become food for man. The marine sector provides fish, marine plants and other marine resources which are food to man. Loquine (2010) notes the interwoven relationships between the human system and the natural ecosystem, proving the inter-dependence of the natural system and the human system.

The need for understanding the human dimensions of fish workers in terms of the ecosystems approach is crucial to this study. This entails understanding the social, economic and political

dimensions of hake workers in this study. The hake resource availability provides employment to the fish workers. Harvesting of the fish resource and processing of it provide employment and act as a source of income for fish workers. The employment in the hake sector also defines the labour conditions of the fish workers. These labour conditions are important to this study.

The hake resource is crucial to this study. Its food, habitat and the relationship it has with other fish resources in the marine ecosystem. Management of the hake stock is of importance in maintaining a productive sustainable hake stock. Hake stock assessments help in identifying the age structure and the size of the stock in a geographical location under review. Rademeyer et al. (2010) highlights how the assessments are done through research vessels in South Africa through the use of company records from their catch. Fishing reduces hake stock hence the importance of accurate data on the size of catch, by catch and genetic makeup of the catch. Responsible Fisheries Alliance (RFA) (2010) encourages research into all issues in the hake fisheries that is both scientific and social. Research on the impact of harvesting larger size hakes to the genetic makeup and resilience of the future hake stock is important. Knowledge of population structure, recruitment, and natural mortality, spawning areas, migratory patterns and habitat type are crucial to the ecological management of the natural system. Shifts in the population dynamics of target fish stocks, and changes in the structure of the ecosystem have actually motivated the need for research and the generation of new knowledge in fisheries management. Scholars and resource managers have thus been experimenting with various management strategies to enhance sustainability (de Young, 2008).

By-catch species from the harvest of hake include monk, kingklip, snoek, cob, angel and sea beds. The need for precautionary catch limits for any form of by-catch is very important. The knowledge on the relationship between the hake stock and the by-catch species in the ecosystem is essential for good understanding on the impact of hake fishing to the hake species and the non-target specie. Scientific knowledge is essential for proper planning in the fisheries hence the need for accuracy (Aswani et al., 2012).

2.4.2 The social system

The social system comprises the social, economic and political dimensions (FAO, 2008). The need to understand, address and integrate the human dimensions of fisheries systems into fisheries management and decision-making has been recognised worldwide (Garcia et al.,

2003; de Young et al., 2008*)*.The human dimensions have not been fully understood in fisheries management and hence the need for addressing them once they have been understood, (Garcia et al., 2003). There is increasing recognition of the linkages and inter-dependence between marine conservation and development which highlight the importance of incorporating issues such as participation in decision-making, access to livelihood, food security, social equity, and human wellbeing into the debates on environmental protection (Sowman et al., 2010*)*. The human dimensions have become part of the development agenda in fisheries management since there is a link between marine conservation and development (FAO, 2009b).

Koehn et al. (2012) note how the human dimension data and social research data are important to natural resource managers in planning for future policies as well as the implementation of policy .The human dimension data is now widely accepted as vital to fisheries and ecosystem research as it highlights the social, economic and political dimension of communities (de Young et al. (2008). This study contributes to the debate on the human dimensions data in commercial hake fisheries. The human dimension data is important in decision-making at governance level.

Pomeroy et al. (2007) and Jones (2009*)* note that increasing literature and experience have indicated that social factors, not ecological or physical variables are the primary determinants of effective, sustainable fisheries management. The addressing of social issues by relevant authorities will reduce the pressure on resources (Greiber and Schiele, 2011). If human well-being is threatened, the dependence on the resources will increase. Corvalan et al. (2010) note how the destruction of the ecosystem will have greater impacts on the human well-being.

The attention to the human dimensions is an imperative with key human rights and environmental commitment has been encouraged by the World Summit on Sustainable Development and Millennium Development Goals of 2010. If labour issues in the hake sector are not addressed then the issue of fare remuneration will have been forgotten. Equity and equality have been one of the goals the post-apartheid government has been promoting. Equality also entails rewarding the fish workers favourably. Attention to working conditions is also imperative in sustainable fisheries management.

The social dimension of the human system is better explained in terms of gender, class, competition and goals of the sector (Hampton, 2011b). In small-scale fisheries, social dimensions in South Africa are mediated by race, age and culture (Schultz, 2010) in coastal

communities. Social dimensions are the social interactions within communities which include social cohesion, conflict, societal goals and the general challenges communities face. Fox (1999) in Glaser (2010) saw ecologists viewing social dimensions as part of life which interlinks humans and non-humans.

In this research the humans want the hake resource for commercial purposes and employment which comes from processing and fishing the resource. This concurs with Curtin and Prellezo (2010) who assert that humans will try to find ways to improve the ecosystem so that they continue benefiting from the goods and services it provides. Issues of social cohesion in coastal communities also define social dimensions in coastal communities that are what brings them together. Lewis et al. (2006) explain the interests and resources within communities bringing them together in finding ways of protecting them sustainably. In most coastal towns issues of employment bring these communities together. Migration due to job opportunities in coastal communities is large. Schultz (2010) notes the higher number of migrations from other areas to the west coast of South Africa in search of jobs in the fisheries sector.

Issues of poverty and unemployment in coastal communities in South Africa have been written about extensively (Schultz, 2010, Sowman, 2010 Glavovic and Boonzaier, 2007, Isaacs, 2006). Most coastal communities in South Africa are rural in nature, making fishing the main form of employment in these areas. There is greater competition for jobs in coastal communities (Schultz, 2010). The increased competition for jobs and resources has also prompted tension within the communities between newcomers and residents of the coastal communities.

The low provision of basic services in coastal communities in South Africa is reported by (Sowman et al., 2011). The provision of water, electricity and toilets is still low in coastal communities within South Africa. In some areas there is a very low rate of provision of the basic services (Schultz, 2010). Issues of public health, education and public transport are examples of other social dimensions in rural coastal communities in South Africa (Sowman et al., 2011).

It is explained through the socio-economic conditions of fish workers in the hake sectors. The human dimensions in the hake sector explain the social system. The fish workers' working conditions and living conditions also reveal the human dimensions in the hake sector. The working conditions speak of the labour issues in the hake sector as explained in the

conceptual framework. The livelihood activities of fish workers must be understood so as to understand what they rely on for income.

The role of men and women in the hake sector harvesting and processing is also critical so as to understand the social pattern of the hake fishery. Glavovic and Boonzaier (2007) view the social system in terms of gender. A social system can also be viewed as a characteristic pattern of inter-relationships between individuals, groups and institutions.

The social well-being of the fishing community is also part of the human dimensions in hake fisheries. This includes housing issues, electricity and water and infrastructure availability. Fishing community wellbeing in small scale fisheries in South Africa have been found wanting with need for infrastructural development, need for improvement in social services and need for provision of decent housing to these communities (Schultz, 2010). Also of importance to this study is the relationship between the employer and the fish workers. Relationships within the hake sector need to be known that is the community, the commercial hake companies, fish workers and other stakeholders within the hake fisheries. The issue of social power within the hake stakeholders is also of importance

2.4.3 The economic dimension

This is explained mainly through the benefits of resources to communities and individuals from ecosystems services and goods (Glaizer, 2012). Income distribution, trading markets, equity, employment, poverty, food security and vulnerability are also part of human dimensions (de Young, 2008). van Sittert (2006) highlights issues surrounding the fishing communities which include unemployment, poor infrastructure (roads, communication, health and education facilities) and increased unemployment. In South Africa Schultz (2010), Isaacs et al. (2007) noted the need for intervention in fishing communities so as to improve the welfare of these communities. Clark et al. (2009) In Isaacs and Hara 2012 pointed to increased population growth in some fishing communities due to perceived employment opportunities and in reality employment has been decreasing in the fisheries. Raakjaer and Hara (2006) stressed the point of decrease in employment in coastal towns in South Africa. Van Zyl (2008) however points to a brighter picture in hake fisheries where employment has been stable and increasing due to value addition and the general stability in the hake sector.

Employment in coastal communities has been decreasing worldwide due to many factors which include the collapse of the fisheries, pressure on the fish stock and decline in fish stocks, de Young et al. (2008). This results in the closure of fisheries and a rise in

unemployment in fishing communities. High levels of poverty and unemployment in South African coastal communities have been noted (Glavovic and Boonzaier, 2007).

The lack of alternative livelihoods in coastal communities due to limited opportunities in coastal communities is another economic dimension in fisheries (Schultz, 2010). Coastal communities lack development especially those in the rural areas because they do not attract much needed development to boost employment due to limited infrastructure (Sowman and Cardaso 2010).Basic infrastructure like, roads, schools and hospitals are also part of economic dimensions in coastal communities. Some coastal communities lack these services with some lacking doctors, high schools and even public transport in South Africa (Sowman et al., 2011).

2.4.4 Political dimension

These are processes, activities and systems through which societal resources are mobilised and committed to establishing and attaining collective goals (Daw et al., 2011). It encompasses key institutions of authority, regulators and leadership stakeholders in resource management for the sustainability of resource use in communities or societies (Aswani et al., 2012). Political capital is essential in natural resource management, that is, having the political support to carry out conservation work is vital to succeeding in conservation work (FAO, 2009a).

Stakeholder meetings are important to unlocking challenges in natural resource management that is, balancing out the demands of different stakeholders for effective decision-making. Issues of power, community politics, culture and policing are part of the political dimension.

2.4.5 The governance system

It entails institutions, laws and the stakeholders in the hake sector. It speaks of the model of governance of the hake sector. The relationships between the governing authority, stakeholders and the hake sector also describe the governance system. The organisational structure of authority in the management of the hake sector and the policies that govern the hake sector which include the laws, acts of parliament and other compliancy requirements form the governance structure. Important stakeholders include the government, hake resource management work group, scientific work groups, hake industry representatives, e.g. SADSTIA, NGOs (RFA, MSC and WWF), fish workers' unions and others.

Governance entails the many ways, institutions (private, public), and individuals manage the

common affairs of the ecosystem (Greiber and Schiele, 2011). Kooiman et al., (2005) defined governance as the whole body of public as well as private interactions taken to solve problems and create societal opportunities. There are two main forms of governance, namely the state centred governance, which is the top down hierarchical governance and the self-governance which involves privatisation, deregulation and the transfer of responsibility to individuals, organisations and participative or co-management .

Governance promotes sustainability of the hake sector. It enables effective management of the hake resource in the hake fisheries. In the framework the governance systems entails regulating the hake sector. It also encompasses regulating employment in the sector which affects fish workers. Harvesting of hake must be regulated to minimise overfishing. Overfishing will affect fish workers because when the resources they are employed to harvest are no longer there companies will lay off.

The performance of the fishery will define the amount of employment to be offered by the fishery. Companies operating in the fisheries invest for returns in the future hence sustainability of the fishery brings stability for both the fish worker and the commercial entities in the sector. The social, economic and political dimensions are likely to improve if the fishery is performing well compared to an unsustainable fishery. Governance system is crucial to the success of the fishery. Sustainable fisheries management also entails meeting the needs of fish workers. Fish workers employment conditions can be used as an indicator in sustainable fisheries management. Certification of fisheries also looks into employment conditions of fish workers and their general wellbeing at work.

Compliance to regulations reduces ecosystems impact from fishing. Governance systems enable a transparent and participatory management of the hake fishery and in a way promote good communication, information sharing and good governance. Issues of power relations within the hake sector are important, that is who holds the most social power within the stakeholders. Berkes et al. (2008) view power relations within communities as important for effective governance. Power relations between different stakeholders should be regulated so as to enable transparency and good governance. Fish workers participation in hake fisheries governance is important at they are an important stakeholder. Fish workers can impact on the hake resource when they are at work hence the importance of their participation in hake resource governance. Jentoft and Chuenpagdee (2008) highlight the need for participatory decision-making between stakeholders for effective governance of natural resources.

The need for fish workers' participation in decision-making is vital to the success of key decisions within the hake fisheries. Hara et al. (2006) acknowledge how management decisions will work unless it enjoys the support of intended beneficiaries. Stakeholder consultations are for effective governance (Jentoft, 2003). Inclusion of inputs from fish workers is essential for effective governance of the sector. Shannon et al. (2004) saw governance in South African fisheries historically as top down. It later evolved to a form of co-management especially in the hake sector in the South African fisheries. In South Africa, from 2002 the government has been trying to implement the ecosystems approach (Ponte, 2008). Hampton (2010) notes the content of laws and policies in South Africa as mainly driven by government.

Different stakeholders form part of the governance structure which involves government, United Nations (UN) conservation agencies and policy frameworks, and laws (national and international). In South Africa the government, through the Department of Agriculture, Forestry and Fisheries (DAFF) is responsible for establishing who gets what in terms of fishing quotas and the size of quotas per fishery (DAFF, 2010); Marine Living Resource Act, 18 of 1998). It also offers policy directions and the legal framework of the Fisheries Department as empowered by the Constitution. The Minister allocates quotas that are determined by the stock assessments done by scientists and other stakeholders who advise the Minister as per constitutional requirements (Marine Living Resource Act, 1998). The governance of the hake sector is of interest to this study, that is, the institutions governing the management of the hake sector. The role of the institutions and their relationship with the government in the management of the hake sector is important to this study.

Important stakeholders in the hake sector in South Africa include commercial hake companies, South African Deep STIA, NGOs (Responsible Fisheries Alliance, Marine Stewardship Council), the government, scientists and academics. There is a degree of co-management in hake fisheries in terms of decision-making. Implementation of the ecosystems approach has been a priority in the hake fisheries since 2002 (Ponte, 2008). Several authors (Isaacs and Hara, 2007, Peterson et al., 2010, Raemaekers, 2009, Sowman et al., 2011, Hampton, 2010 and Schultz, 2010) have written extensively on the governance of the South African fisheries. Sowman et al., 2011 noted issues of power relations within fisheries as an important dimension in explaining the governance structure with the South African fisheries.

2.4.6 Co- management

Co-management framework is important in the development of the ecosystem based fisheries management in the area of stakeholder consultations and participation in decision making. A number of terms are used to refer to co-management such as cooperative management, collaborative management, joint management, participatory management and multi-stake-holder management. Berkes et al. (2008) define co-management as the sharing of power and responsibility between the government and local users. It can be the sharing of power between the hake sector stakeholders and the government. The stakeholders have a say in the management of the sector because they are the ones that are directly affected by any decision made by the government hence the importance of sharing responsibilities. Consultations are made before any decision that may affect the relevant stakeholders in the hake sector. Stakeholders have the responsibility of complying with new decisions because they would have contributed to the decisions.

Jentoft (2000:528) defines co-management as a "collaborative and participatory process of regulatory decision making between representations." The representation includes all the relevant stakeholders of the hake sector or fishery. The general function of co-management is to encourage partnerships. It empowers the sharing of power and responsibility for conservation between all the stakeholders. It imparts a sense of ownership in all the relevant stakeholders because of their involvement in decision-making and enforcements of sustainable management of hake resources.

It compromises between government concerns for efficient resource utilization and protection on one hand and resource users' concern for equal opportunities, self-determination and self-control, on the other hand (Hara et al., 2006). The issue for efficient utilization of resources and conservation is addressed while issues of equal opportunities are also addressed. The need for transformation in the hake sector in South Africa has been accelerated by all the stakeholders of the need for transformation hence its success (though debatable).

The hake sector in South Africa has been under co-management between the government and the commercial entities (Croeser, 2006). The industry would do the research on the hake stock and manage the hake stock in line with the conservation policy of restocking the hake stock which was on the decline (Ponte, 2008). The need for stable hake stock by the hake commercial companies also motivated with compliance and the view that the conservation of the hake stock would benefit the hake companies in the long run.

Co-management involves consultation between central administration agency and user groups over the content of the management strategy and the delegation of specified management functions to user groups. Jentoft (2003) emphasizes that mutual agreement regarding power sharing is key to co-management. The formalization of power sharing makes it attractive. The reason for co management is that all concerned interests are entertained and this can lead to improved decision making. The hake sector in South Africa is represented by different associations like SADSTIA. Conservationists, academics and government have a say in the management of the hake sector (SADSTIA, 2005).

The recognition that no management decision will work unless it enjoys the support of those it is intended, (Jentoft et al., 2008) has cemented the need for stakeholder consultations in fisheries management decision making. Legitimacy and compliance have really become key concepts in resource management including fisheries. Regulatory agencies and schemes that have widespread legitimacy among users face reduced problem of non-compliance with regulations. Compliancy in the hake sector has been cemented by the good relationship and transparency the sector has been managed over the years. The companies involved in the hake sector are involved in the committees that advise the government on TAC (DAFF, 2010).

The ideal implications for co-management includes the fact that it enhances participatory democracy, broaden knowledge since users' and technocrats' knowledge is both used in decision making and better regulations. It also increases legitimacy of a management strategy and regulation framework which will increase adherence to rules and regulations. The participation and constant dialogue between government and all the stakeholders in the hake sector have been positive over the years hence the stability of the sector.

2.5 Conclusion

Ecosystems models have not yet proved themselves as management tools in making realistic prediction about the future. They cannot predict changes in community structures (Mangel, 2000; Aswani et al., 2012.) Its main objective of maximizing benefit to society rather than rebuilding the ecosystem back to its pristine state also brings another debate. In the South African hake industry it is a work in progress but one of the major progresses it brought to the sector is improvement of fish workers' working conditions. During the reform and transformation processes in the hake sector, the fish workers formed alliances with the commercial fisheries companies in a way which helped them to negotiate for better working

conditions (Isaacs et al., 2007).

The fishing community structure in the ecosystem approach can help improve the wellbeing of the communities through negotiations between government, communities, fish workers and other interested stakeholders. Sowman et al. (2010) support the adopting of a holistic and integrated approach to resource use which the hake sector has been adopting through its stockholders in the improving of the sector. Inclusion of all stakeholders in the management of the hake sector enhances good governance which in a way promotes democracy (Griffin, 2013).Of importance in the fisheries governance was the promotion of equality and sustainability of the fisheries which good governance promoted.

The World Summit on Sustainable Development (2002) encouraged improvement in the governance of world fisheries of which the adoption of the ecosystem approach in 2004 by the South African government was good for its fisheries as it now included all the stakeholders in the fisheries in the management of the fisheries. Inclusion of the indigenous communities, the once excluded black community and the general inclusion of all the stakeholders will in the long run improve the good governance of the sector. Good governance is described by Rhodes (2000), in Kooiman et al., (2005) as the ways or the methods which the society ought to be governed.

It is important to note that the ecosystems approach to fisheries management has provided the platform of managing the ecosystem through balancing the needs of the social system. Human dimension knowledge is vital in planning in the fisheries (Garcia et al., 2003). Fish workers' issues should be addressed for sustainability sake in the sector. Both social and biological concerns of the ecosystem should be addressed so as to maintain a healthy ecosystem. Inclusion of all stakeholders in the management of fisheries enhances the quality of management decisions in the long run which usually leads to win, win situations for all the stakeholders including the ecosystem.

Inclusion of the single stock approach, co-management and ecosystem based approaches concepts in the ecosystem approach helps reduce some of the fears and weaknesses of the approaches on their own. The inclusion of conservation stakeholders in the management of hake fisheries increases the quality of research data of the fish stock and the fish workers. Wandile et al. (2008) in Rademeyer (2011) note limited research on work condition of fish workers but rather more research on the health condition of the fish stock. Fish workers' issues have for a longtime been ignored while issues of conservation have had a strong voice

for a longtime hence now the need for encompassing fish workers issues in the fisheries research. The need for human dimension data in the commercial fisheries is of vital importance into the improvement of the well-being of the fish workers. Koehn et al. (2012) note the importance of human dimension data and key management in the promotion of conservation policies and planning. Attention to the human dimension has been promoted by the World Summit on Sustainable Development of 2011.

Koehn et al. (2012*)* wrote on the importance of human dimension research in addressing the complexity of human relationships, ecosystem demands, and the social, economic and political dimension in the fisheries. Information on the social, economic and political dimension is of importance in the management of the fisheries and making quality decisions which benefit both the society and the ecosystem.

The ILO (2007) reiterates the risk associated with fish workers as they undertake their work. Jeebhay et al. (2008) describe the precarious conditions the fish workers undergo in their work place. Lack of voice by fish workers which Murray et al. (2008) wrote on the threats the fish workers face as they try to improve their work conditions which sometimes may lead to threats of plant closures. With the reduction of jobs in the fisheries most fish workers would hold on to their jobs than let their need for better working condition leads to job losses.

The next topic introduces the hake sector in South Africa and gives the biology of the hake species found in South Africa. It further describes the economics of the hake sector and transformation. The last part explains governance in the hake sector. This chapter is generally giving the overview of the hake sector in South Africa and describing the hake sector post-apartheid. It answers the research question of what is the overview of the hake sector from pre-apartheid to post-apartheid.

3 CHAPTER THREE: THE HAKE SECTOR

3.1 Introduction

The hake sector constitutes of hake deep sea trawl, hake inshore trawl, hand line line and hake long line. The hand line hake is fished near the shore usually at a distance of less than 30km from the shore while hake long line is fished off-shore at a distance of less than 60km from the shore (Warman, 2010). Hand line uses a single line from a small vessel (6-15metres long) with several hooks attached at a line. These vessels are limited at a water depth of not more than 100m and operate on a daily basis. Smaller vessels in long line and hand line operate out of smaller harbours close to their fishing ground such as St Helena, KalkBay and HoutBay in the Western Cape of South Africa and was worth R7, 7million in 2008,(Patersen et al.,2010), and (DAFF,2010).

Long line started with an experimental phase from1994 to 1997 from ski boats operating out of smaller harbours around the coast (Croeser et al., 2006; DAFF, 2010). They usually spend 3-5 days at sea (Rademeyer et al., 2008). The vessels are mostly small, less than 30 metres. Their operations are labour intensive with little value addition. They use double line system with some being dual system, that is they can be used in tuna fisheries and purse-seine fisheries. In 2003 the long line had 70 rights holders while hand line had between 30-40 rights holders (van Sittert et al., 2006; Warman, 2012). The total landed value is estimated at more than R130 million and in 2008 it was R199 million (Patersen et al., 2010). There are about 130 vessels and 788crew who operate out of small fishing harbours along the southern and Eastern Cape coasts. The fishery operates inshore and exports the *Merluccius Capensis* to Europe.

The hake deep sea trawl is of major interest to this study. It is the most valuable of all hake sectors and South African fisheries. In 2008 it was estimated to be worth approximately, R2, 5 billion (Patersen et al., 2010; Rademeyer et al., 2010). It requires large capital investment in vessels and processing plants for the hake processing (Croeser et al., 2006; Isaacs and Hara, 2007). Large companies have a bigger comparative advantage compared to smaller companies in that they enjoy economies of scale.

3.1.1 Background of the hake sector

Hake fishing started in the early 1900s (Rademeyer et al., 2008). The first company to be established was started in 1910 by Irvin and Johnston known as Irvine & Johnson (I&J). The second was Sea Harvest in 1964 in Saldanha (Warman, 2010). The hake sector grew after the

World War 2 to more than 300 000 tonnes a year in the early 1970s (Japp, 2005; Ponte, 2008) from less than 1000 tonnes before the 1930s (DAFF, 2010; Rademeyer, 2010).This resulted in stock decline and over-exploitation of the resources due to over-harvesting (Japp, 2005).

The hake sector from the beginning was open access till 1977 when the exclusive economic zone (200 nautical miles) was established and the total allowable catch system was introduced (Rademeyer et al., 2010). This was necessitated with the growing demand for local fish stock from international players and the need to address declining fish stocks (Warman, 2012). External vessels were excluded thereafter and conservation and stock building become a priority with the total allowable catch being set at below the annual sustainable yield (Rademeyer et al., 2008).

3.2 The Biology of the hake species

Below are the two hake species Merluccius Paradoxus and Merluccius Capensis

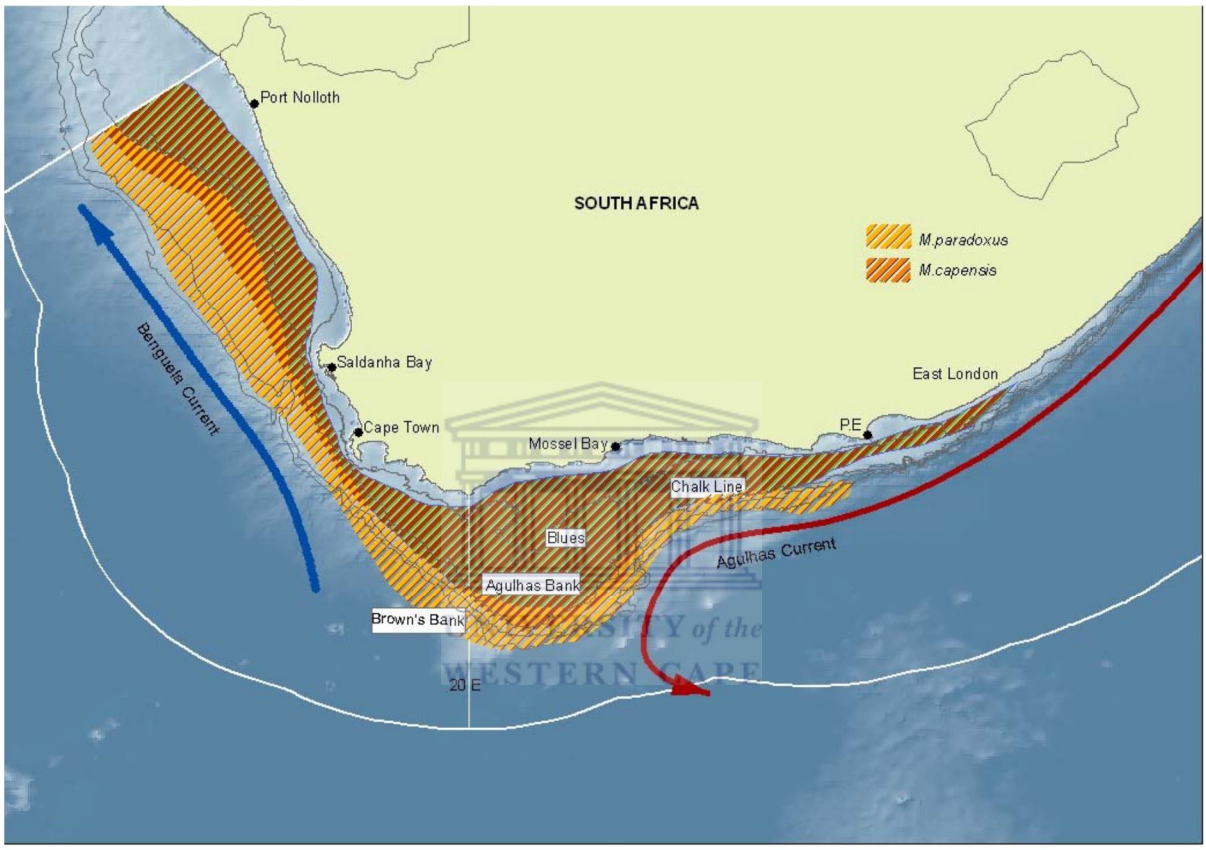
Figure 1: Tw o Hake Species

Source:http://www.capfish.org (Date accessed:23/09/2013).

At the top is the Merlucciusparadaxus and on the bottom in the Merluccius capencis. The M.paradaxus is found on the deeper water while the M. capencis is found on shallow waters. It is usually found in shallow waters and the handline and longline harvest this type of hake (Warman,2012). The two types of hake species are very similar in appearance and can only be identfied by differencein the gill structure, color of their stomach lining and colour or size of their eyes. The *Merluccius pradoxus* is larger than the *Merluccius capensis.* It has distinct dark sports and its body is dark in colour and it is grey or bluish. *The Merluccius capensis* is lighter in colour and does not have black spots.

Both species spawn throughout the year with a defined spawning season occurring in the period of August to March with peaks in November and December(both species) (Hampton, 2011). Hake grows to more than one meter in length and may live for more than 12 years. The growth rate of male and female differs. Females mature at 4 years while males after 2 years) (SA Fisheries Handbook, 2010).

Map 1: Hake fishing along the west and east coast of South Africa



Source: www.capefish.org (Splitting the two hake species in commercial trawl) Accessed 06/06/2012

Above is the map showing where the hake is harvested on the south and west coast of South Africa. In the west coast both species are found in the Benguela system extending northward into Namibian waters and Southern Angola (Hampton, 2010). On the south coast both species predominate on the Agulhas bank. There is a general tendency of hake to move off-shore into deeper waters.

3.3 Hake Industry Reform (1990-2005)

The year 1990 saw the formation of the quota board which was tasked with allocation of the total allowable catch to new players and the old companies (van Sittert et al., 2006), (Croeser,2006). In 1992 the scrapping of the 80:20 rules in the allocation of fishing rights,

after a committee was set by the board with the specific objective of enabling new players in the hake sector, was put in place (Hutton, 1996;Isaacs et al.,2007). In 1992 there were 21 deep hake fishing companies which were white owned which increased to 56 by 2000.

A number of black owned companies were given individual transferable quotas in the mid-1990s to late 1990s where the new rights holders were given quotas of less than 400 tonnes (Isaacs and Hara, 2007). The quota was so small for them to invest huge capital into, that most of them saw it profitable to sell their quotas to existing established companies without actually developing their companies and investing in them (Rademeyer et al., 2008), (Croeser, 2006). An increase in the number of rights holders saw the decrease also in the size of the quotas. In that period the government was allocating equal quotas to those new rights holders whose applications were successful (Isaacs and Hara, 2007; DAFF, 2010; van Sittert, 2006*).*

3.3.1 Allocation and transformation of the hake sector rights

Various laws have been passed to enable sustainable management of marine resources from 1994 which include the Marine Living Resource Act, 18 of (1998) which provides for the conservation of the marine living resources and for the purpose of exercising control over marine living resources in a fair and equitable manner to the benefit of all citizens of South Africa (DAFF, 2010; MLRA, 1998). The five core principles of allocation and management of commercial fishing rights included transformation and sustainable harvesting (total allowable catch). It also included ecological considerations, industry's socio-economic and commercial consideration including performance and potential to perform (MLRA, 1998; Isaacs, 2003; Rademeyer et al., 2010).

3.3.2 Medium term allocation

The year 2002 saw the allocation of the medium term allocations that were to last till 2005. After the allocation the smaller total allowable catch (TAC) was336 tonnes compared to 50 tonnes in 1992 and the larger total allowable catch did not change significantly reducing from 53000 to 45000 tonnes. The larger TAC refers to the quota that was allocated to old tradional companies under the 80:20 principle. The old players in the hake sector where reseved 80 % of the TAC allocation while the new quota holders had 20%. This saw 25 % of that total allowable catch being in black owned companies from zero % in the 79s and 80s (South African Government gazette (2005; Isaacs and Hara, 2007). There were 53 rights holders allocated hake fishing quotas in the medium term allocations (DEAT, 2007).

3.3.3 Long term allocation

This refers to 8-15 years long term rights which were allocated to South African fisheries in 2006 (Isaacs and Hara, 2012). The next round of long term rights allocation will take place in 2020. Stakeholder consultations were undertaken throughout the process of allocation. The South African Fisheries Handbook (2012) sees the long term rights allocation as the most powerful tool in encouraging job creation. It enables companies to plan long term compared to medium term allocation of rights. It benefits both the workers and the companies.

Long term rights put the business principle first in the allocation process which Rademeyer et al. (2010) argues were not conducive for small scale fisheries groups. It had the support of labour unions like FAWU who saw it as an employment creation tool because of its long compared to the medium term allocations (Isaacs and Hara2007). It supported the big business since the criteria of selection in a way favoured the old established rights holders.

Issues of capital investments, players already in business, share ownerships, black empowerment, suitable vessel and ability to develop the fisheries were actually pro big capital since they have been in the sector for many years and had motivation in skills development and employment equity to stabilise the sector from aggressive reform (Ponte, 2008). The allocation process was based also on the need to maintain sustainability of the fisheries in order not to disturb the economic viability of the sector.

3.4 Allocation process

The allocation process before 1998 was done through the Fisheries Act of 1988 (Rademeyer, 2008). It was done through the Quota board (DEAT, 2005; Japp et al., 2005; DAFF, 2010). In the period before the creation of the Economic Exclusive Zones (EEZ) the fisheries were open access and there was not much regulation, it was free for all (Croeser, 2006). The traditional or the pioneer hake fishing companies enjoyed total control of the sector. The adoption of the Marine Living Resource act (MLRA), 18 of (1998) saw the allocation process being led by the Minister through the Director General and the Deputy Director General of Fisheries (MLRA, 1998; DAFF, 2010).

The main objective of the allocation process was of improving transformation profile and increasing black ownership in total allowable catch rights holders (Japp, 2005; Croeser et al., 2006; Rademeyer et al., 2010). Creation of an environment that attracts investments in fisheries and stimulating job creation was also part of the main goals of the allocation process. It also aimed at maintaining and sustaining economic viability of South African

Fisheries (Japp, 2005).

According to the policy of allocation in 2002 an exclusionary criterion was used in selecting rights holders (DAFF, 2007). Main issues assessed in the selection criteria included:

a) Compliance by applicants to the MLRA and any applicant, its members or controlling shareholders would lead to disqualification of the application.
b) Transformation was vital to the allocation process and it focussed on percentage of black ownership. It also focussed on representations at top salary, board of directors and management levels within the companies.
c) Employee ownership schemes within the companies were adding credit to the profile of the applicant.
d) Compliance with employee equity and legislation on skills development.
e) Corporate social investments.
   Source: (DEAT, 2005: 6).

Investments in fishery were also another important component the application process looked at, that is investment in suitable vessels and other fixed assets. New entrance into the fishery was required to demonstrate that they had knowledge, skills and capacity to participate in the hake fishery. Economic viability of the business plan for new applicants was also crucial (DEAT, 2005; DAFF, 2010).

van Sittert et al. (2006) argue that transformation has successfully succeeded in broadening access to the blacks. In 1994 access rights were in the hands of about 300 white owned companies but by 2004 has been reallocated to 5857 individuals and fishing companies (SMMEs) with blacks owning the majority of the rights in South African fisheries. Equity was addressed by formal recognition of subsistence sector in the MLRA (Sowman et al., 2011).

Subsistence fisheries, who have traditionally/historically harvested resources through recreational permits or illegal now have a legal secure access rights. All reforms from independence (1994) were promoting resource sustainability, economic stability and social equity according to van Sittert et al. (2006).Rademeyer, et al. (2010), and DAFF(2013*)* highlight the percentage of black ownership in the hake deep sea trawl sector: in 2001was 25%, in 2005 was 27% and in 2009 was 59%. It is really encouraging to note that before 1990 the sector was white dominated and had transformed at a fair rate despite resistance from traditional dominant players in the first years of transformation (van Sittert et al., 2006;

Isaacs, 2003).

Issues of addressing the skewed ownership patterns of ownership of resources which were in favour of the white minority had always been on the government agenda. Branch and Clack (2006) noted that South African fisheries earn R992 million annually in 2006 that constituted to about 0, 5% of the annual national domestic product. Commercial fishing industry employs twenty something thousand people directly and indirectly according to Branch and Clack, (2006) in Mathers (2007). In the hake sector more than 9000 people are employed in the sector (Isaacs and Hara, 2012).

Below is a figure showing allocations and the structure of hake allocation in South Africa from 1979 to 2010 for 5 big commercial hake enterprises.

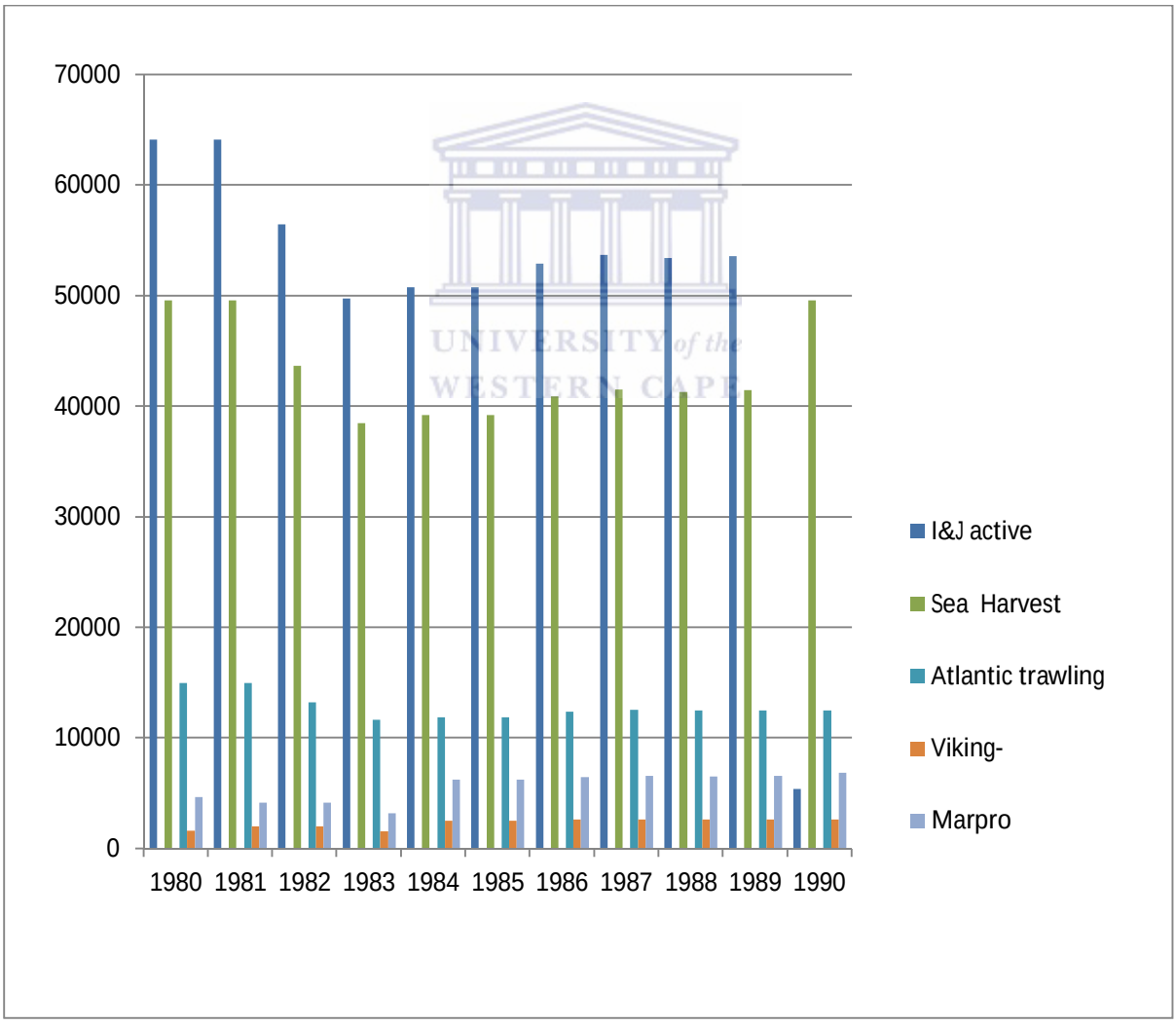


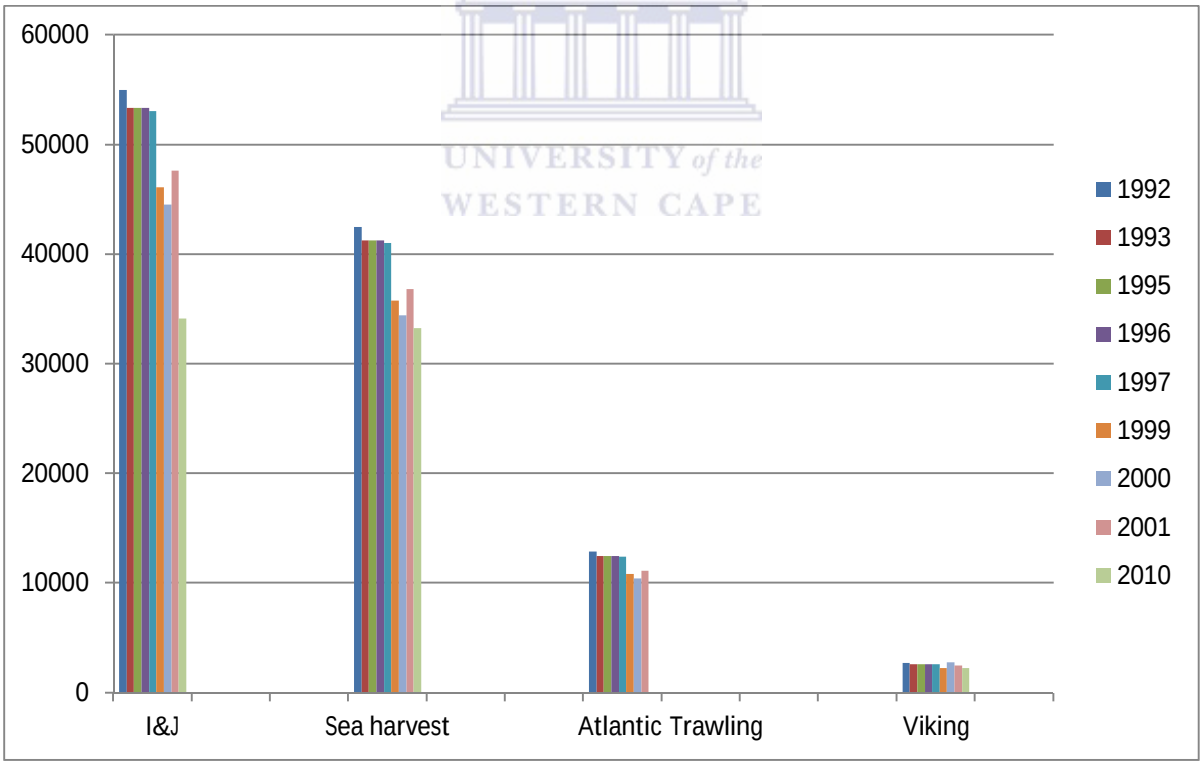
Figure 2: Historical allocations and the structure of hake allocations for 6 big companies in the South African hake sector Source: Japp, 2005:121.

The above figure is showing the 6 big companies' historical allocations from 1980 to 1990.

Only 6 companies had rights to fish hake (Japp, 2005). In 1985 they increased to 7 and in1986 to 8. From 1987 to 1990 they were 18 companies with rights to fish hake in South Africa. The dominance in terms of quotas granted per company was dominated by I & J and Sea Harvest. I&J, Sea Harvest and Atlantic Trawling utilised more than 72% of the total allowable catch over the years (Hersoug and Holm, 1999). The reduction in total allowable catch from 1981 to 1990 may have been attributed to the stock management policy that the government and the companies were engaged in so as to restore the hake stock over the decade from 1981 to 1991.

Transformation began after 1990 during which the then majority white government was in talks with the African National Congress (ANC). The increase in the number of companies may be attributed to attraction in the profitability of the sector. All the new companies between 1980 and 1990 were white owned Raakjaer and Hara, 2006; Rademeyer et al., 2010).

Figure 3: South African hake allocations for 5 big companies: 1991-2010



Source: Japp, 2005: 122; and Warman, 2012: 38.

The figure highlights the allocations from 1991 to 2010there seems to be not much change in quota allocations between 1991 and 1996 except for 1992 when all the companies had a slight increase in allocations as shown in the figure above. The period 1997 to 2001 saw a

reduction in allocations for all the 5 companies and in 2001 increased allocations were noted by all the companies. In 2010 there was also a reduction of the total allowable catch per right holder.

The number of players in the hake sector has increased. The pioneer players are still dominating in terms of quotas largely because they have expanded and employ close to 9000 workers (Isaacs and Hara, 2012). These workers will be disadvantaged by losing their jobs if the government does not give them a considerable amount of allocation of quotas.

It can be noted in Figures 4 that the average amount of total allowable catch (TAC) in the 1990s has been almost constant without much significant changes over the years but the number of new players in the sector have been increasing. Hutton 1999, in van Sittert et al. (2006) noted an increase of total allowable catch between 1994 and 1999 to be at 2, 4%. The dominant companies still enjoy a good market share locally and internationally because of goodwill accrued over the years. They have become good brands and when you think of hake in South Africa their brands are highly visible compared to newcomers (Japp et al., 2005).

There were 12 rights holders before 1992, which in increased to 59 in 2000. The implementation of medium term rights saw rights holders reducing to 53 and to 52 on the long term rights holders (DAFF, 2010).

Table 2: Rights holders from 1992 to 2006

Year	Rights holders 1992	Rights holders 2000	Medium term rights holders 2002	Long term rights holders 2006
Number of holders	12	59	53	52

Source: Isaacs, 2011: 71.

3.5 Economic benefits of commercial hake companies

The hake sector has the most stable form of employment in South African fisheries mainly because it is not seasonal. Mathers (2007) views security of employment in the hake sector important to South African fish workers compared to other fisheries which are seasonal. Generally in terms of employment the hake sector employs more than 9000 employees, (Isaacs and Hara, 2012). It is a large employer and the vertical integration of the sector in terms of value addition, marketing and processing plants helps in employment creation.

It has managed to meet new market demands post 1994 through certification of the deep sea hake trawl sector (Ponte, 2012; DAFF, 2010). It has a good market share in the global fish market hence its importance in foreign currency generation through export from the hake trade. It is managed sustainably and has managed to score and retain its MSC certification in the second assessment.

The value of the landed hake resource in 2008 was R2, 5 billion which is very significant (Rademeyer, 2010).It contributes a significant value to the South African fisheries in terms of value. In terms of tax and levies it also contributes significantly to the fiscus compared to other fisheries in South Africa. It is important to the economy though the South African fisheries contribute less than 1% to the GDP (Croeser, 2006).

South Africa exports more than 80% of its hake to USA, Australia and Europe and only 20% is consumed locally (Croeser, 2006; Ponte, 2007). The hake deep-sea fishery sustains about 8800 direct jobs in South Africa. The market value of landed hake catch is approximately R1.4 billion yearly which includes catch that does not make its way to the market but is consumed for subsistence. In-shore trawling fishing sustains 1100 jobs. The annual market value of landed catch was worth approximately R16 million in 2003 (Japp, 2005).

In the late 1970s the market for hake products was not as established as now. The industry increased its effort to increase earnings through exporting high quality hake products of great value. One-third of hake was exported while the two-thirds were for the domestic market (Croeser et al., 2006). The Chamber of Mines offered the greatest market for hake as cheap protein for mine workers. The local market for hake had always been offering low prices compared to the export market hence the appetite by the hake industry to export.

The increase in exports of hake to the European Union increased after 1994. This was a sign of reintegration into the global economy and other developed regions of the world (van Sittert, 2006). South Africa was under economic sanctions due to apartheid and the end of apartheid opened doors for the hake sector which saw its boom. An increase in demand for white fish in the late 1990s and the early to mid-2000s saw an increase in the middle class hence the demand increased for hake. The supermarkets changed retail business in South Africa. Freezing and processing technology actually accelerated the increase in domestic demand for hake as it could be found fresh in supermarkets. Large companies have large processing facilities were value addition is done to the hake and marketed to various markets. The range of products from processed hake includes hake fillets, steaks, loins, portions and

sticks (Croeser et al., 2006; Ponte, 2012).

3.6 Certification of the South African Hake Sector (Marine Stewardship Council - MSC)

Conservationists have initiated various methods of enabling sustainable fishing in which certification of sustainably managed fisheries was one of them (Ponte, 2008). The idea was to promote sustainably managed fisheries through certification on which consumers would support the sustainably managed fisheries so as to encourage other fisheries as well. MSC was established in 1996 to address the worldwide decline in fish stocks by awarding sustainably managed fisheries with certification and a label that could be fixed to retail products (van Sittert, 2006). The MSC is also a stake holder in the governance of fisheries. It is a private organisation which is registered as an international non-governmental organisation which aims to ensure sustainable long-term utilisation of hake stocks and to manage all known impacts of fishing resources (MSC, 2009). It aims to manage, prevent and reduce by-catch through knowledge based intervention.

The MSC is the main player in the eco label of the global fish market. It certifies fisheries according to how sustainable it is managed. It is worried about the status of the target fish stock, impact of fishing to the ecosystem and the performance of fishery management. In managing the fish stock it enables sustainable harvesting as the correct status of the fish stock will be available to enable allocation of TAC and interventions if needed (Ponte, 2008).

The certification is managed through keeping sustainably harvested fish resources and other fish separate in supermarket shelves or ice displays. MSC certification allows consumers to support sustainable fishing through a mainly market based mechanism. The certification of South African hake was thus important in that it also promoted sustainable fishing of hake in South Africa (Japp, 2005; SADSTIA, 2004; Croeser, 2006).

The South African hake industry was certified after an evaluation process lasting two years in 2004. The South African hake fisheries attained a high score on stock management which meant stocks were better managed (DAFF, 2007). On ecosystem management impact the South African hake fisheries needed to improve. Gaps were identified on by-catch management, ecosystem relations and impact of trawling on sea bird population. These areas generally needed improvement or more information was needed on the gaps (Peterssen et al., 2010; Ponte, 2008).

3.7 Governance system in the hake sector in South Africa

The institutions in the hake sector include the government through the Department of Agriculture, Forestry and Fisheries (DAFF). It also includes working groups which are the scientific management working group and the resource management working group. The Responsible Fisheries Alliance (RFA), SADSTIA and MSC also form part of the governance structure of the hake sector in South Africa.

The fisheries resources have been state property and management was mainly confined to conservation of fish resource. Overtime, the failure of world fisheries made scientists, resource managers and government to think of other methods that would enable sustainability in the fisheries. FAO (2009) notes that world fisheries are in dire state and estimates only 20% being moderately exploited meaning that almost 80% are in danger.

3.7.1 Department of Agriculture, Forestry and Fisheries (DAFF)

The Minister of Agriculture, Forestry and Fisheries is responsible for South African Fisheries. He delegates most of his duties to the Director-General and the Deputy Director-General. The main roles of the Minster are to implement government policy and also make policy to improve the management of the sector. They also enforce compliancy within the sector through various institutions and regulations (MLRA, 1998).

In the organisational structure of the fisheries sector under the Minister is the Director-General; then under him is the Deputy Director-General. Under the Deputy Directors various Chief Directors but of important to this study is the Chief Director of Fisheries who has four Directors under him, that is the Director of Research, Aquaculture, Ecosystems and Resource Management (DAFF, 2010*).* All the Directors are important to the efficient running of the ministry. They enable enforcements of regulations and compliancy to policies. Research improves the knowledge base of the hake stock and interactions. Ecosystem research is very important in creating the knowledge base for implementation of the ecosystems approach to fisheries management which takes into consideration all the stakeholders in the hake sector (Shannon et al., 2010). The Department of Agriculture, Forestry and Fisheries (DAFF, 2010) manages the deep hake trawl as part of the collective national TAC quota for hake (MLRA, 1998).

3.7.2 Working group: Scientific and Management Working Group (SWG)

The Scientific and Management Working Group **(SWG)** was created for commercial fisheries in fulfilment of the requirements of the Marine Living Resource Act of 1998. All commercial fisheries have scientific working groups. It is a formal governance structure where scientists, representatives of stakeholder groups, NGOs discuss scientific management issues for recommendation to the Deputy Director General (DAFF, 2010). Decisions concerning TAC and other scientific issues for the coming year are also set by the scientific working group. It is also important for coming up with key inputs into the operational management procedure (OMPS*)* (Isaacs and Hara, 2012).

3.7.3 Resource Management Working Group

This is the body for discussing the distribution of rights and operational management issues. Rights holders are not allowed to become members and have to be members through stakeholder associations of which only one representative may be allowed to be part of the Resource Management Working Group. Examples of stakeholder associations include the South African Deep Sea Trawling Association, Small Pelagic Association, etc, (MLRA, 1998).

Rights holders belong to associations which are non-profit making organisation whose objective is the promotion and protection of the interests of the association's members. The major function of the association is to represent members in negotiations with government and other stakeholders. They also report and advise on existing contemporary legislation or other matters affecting the industry. They also collect and disseminate information likely to be used by members.

3.8 Governance structures in the hake sector

3.8.1 South African Deep Sea Trawling Association (SADSTIA)

It was formed in 1974 (South African Fisheries Handbook, 2010) with I&J, Sea Harvest and Amalgamated Trawling. During the time I&J had 72% of the quota. In 1994 the association become an industrial body in terms of the Sea Fisheries Act of 1973.

The major achievement of SADSTIA over the years includes the crucial role played between 2000 and2004 in harnessing industry and government support for the assessment and accreditation of the deep sea trawl with the Marine Stewardship Council (MSC). The hake deep sea fisheries achieved certification in 2004.

They also advised and participated in consultations in the promulgation of the Marine Living Resource Act of 1998. This Act led to a lot of changes in the management and administration of fisheries in South Africa. SADSTIA also participated in 2000 when government was initiating the process to allocate medium term fishing rights from 2002 to 2005 and later long term fishing rights in 2006.

3.8.2 Responsible Fisheries Alliance (RFA)

The Responsible Fisheries Alliance's main goal is to create ideas for supporting conservation goals. They also aim to provide a platform for environmental NGOs and responsible fishing companies to work together to secure the health of the ecosystem. They also promote self-governance through dynamic dialogue, information sharing and influence policy in the hake sector (RFA, 2009).

Skills development in the hake sector is of importance as a way of improving the overall management of the hake sector. Currently the Responsible Fisheries Alliance is helping in advising and researching the best ways of implementing the ecosystems approach within the hake sector. The RFA (2009*)* noted that almost 18000 birds are killed in the trawl fisheries in South Africa. Management at a hake fishing company in Saldanha with RFA has now reduced by-catch of sea birds to 8000 through the use of tori lines and reduction of offal-discards which attracts the sea birds.

3.9 Ecosystem management of the hake sector in South Africa

South Africa is committed to ecosystem based approach to fisheries management since 2002 (Patersen et al., 2010). The author argued that the thinking had already started in the 1980s and 1990s when the Benguela ecology programme was integrated with fisheries and environmental research. South Africa is a member of the Benguela Current Large Marine ecosystem (BCMLE) with Namibia and Angola. This organisation of marine scientists and researchers monitors the Benguela current ecosystem and its effect on fish stocks. The Benguela Current Large Marine Ecosystem (BCMLE) facilitates the adoption of the ecosystems approach at national level and regional level (DAFF, 2010).

Management measures include minimum mesh size, international inspection and quota allocation (Patersen et al., 2010). A standard minimum mesh size for nets involved in deep sea trawling is by the national government. Inspection of nets and quota allocation inspection is done through the Department of Fisheries Directorate of Monitoring and Surveillance. The two hake species resources in South Africa were once assessed as a single resource in the

1990s and 1980s. In 2005 the first model of assessing them separately was initiated due to the development of the long line and hand line fisheries for determining total allowable catch (TAC) (Rademeyer et al., 2011). From 2007 to 2010 the new model of assessing them separately was used (DAFF, 2010).

Data is collected from independent surveys as well as commercial surveys. Catch landing data is supplied by the commercial hake companies from their catch, (Rademeyer, 2008). The assessments will be used for the determination of the total allowable catch for the sector. The single species assessment used before 2006 did not show differentiation in the hake species hence its main weakness. Fishing reduces the abundance of the hake stock and indirect fishing can also have an impact on the marine ecosystem structure and dynamics, as does the removal of fish itself (Aswani et al., 2012).

The South African hake sector has a good understanding of the ecosystem of the South African hake fishery, including target species, non-target species and general ecosystems impacts. Petersen et al. (2010) argue that ecosystems impacts of fisheries are now included into management goals and objectives in fulfilling the ecosystem approach to fisheries management in the hake sector. The need for regarding the social well-being of fishing communities and the economic well-being of the fisheries have been observed in South African hake fisheries (Ponte, 2012) which saw the hake fisheries attaining certification.

South Africa has ratified international conventions which includes the (FAO) Code of Conduct for Responsible Fishing (Rademeyer, 2010). This shows its commitment to responsible fishing and ecosystem management. It promotes the need to develop and promote sustainable fishing. This code is voluntary. In 1988 South Africa became a member of the Convention on Biological Biodiversity (CBD), now known as the Jakarta Mandate, which is important in the management of natural habitats and biodiversity. South Africa also ratified to UNFCC in 1997 and acceded to the Kyoto Protocol in July 2002, which aims to stabilize greenhouse gas in the atmosphere that will help prevent climate change. South Africa also signed to Southern African Development Community protocol on fisheries which was signed in 2001 and become in force in 2003. All these national and international bodies aim at enabling sustainable fishing and conserving the marine resources for future generations. Sustainability is about the capacity to endure. It pertains to the management of the productivity of ecological systems and the potential for long term maintenance of human well-being. It is about ensuring the future generations are not worse off as a result of

decisions made in the present (Ponte, 2008).

Currently the Responsible Fisheries Alliance is helping in advising and researching the best ways of implementing the ecosystems approach within the sector.

3.10 Conclusion

The hake industry in South Africa constitutes 40% of the total revenue from all South African fisheries (Isaacs and Hara, 2007; van Sittert et al. 2006; Croeser, et al. 2006). It employs more than 9 000 workers within the hake industry, that is, the deep sea trawl, hake long line, hake inshore trawl and the hake hand line (Isaacs and Hara, 2012). This industry also comprises of the fishing processing plants and the marketing which all employ people, so in terms of employment the hake industry employs a significant number of people. The hake industry is MSC certified in terms of sustainable management initiatives. More than 80% of the hake harvested is exported (Ponte, 2012).

Quite a significant amount of revenue comes from the hake sector hence its importance. It also employs a big number of people hence the need for sustainable transformation so as to keep jobs for people who already work for the pioneer and dominant companies. It is a sensitive industry mainly because of its historical background of once being dominated and owned by a single race. It is also capital intensive hence the need to preserve the capital already planted into the sector and strategically transform it without making the already working capital redundant.

Reform and transformations have managed to change the ownership structure of most of the companies in the hake sector (Mathers, 2007). The pioneer companies are still employing most of the work force. Sea Harvest and I&J still employ the majority of the work force in hake sector. They have managed to vertically integrate their business through value adding to their products which have both a local and international market (Isaacs et al., 2007).

Allocation of fishing rights to new rights holders was an essential undertaking as it was bringing in the once excluded players into commercial hake fisheries. Sowman (2003) notes the necessity of the transformation and reform process in redressing the legacy of apartheid. There is a need for inclusivity of once marginalised and excluded sectors of the economy (Mathers, 2007). Black entrepreneurs were given a chance of owning a stake in the hake fisheries though some critics view the continual exclusion of the majority coastal community people due to poverty (Isaacs et al., 2007) and inability to buy stakes in the commercial hake

companies.

Lack of capital on the new entrance in the hake sector limited the outcome of the reform process. Establishment of new black owned industries in the hake sector did not create much anticipated employment (Mathers, 2007). This resulted in the selling of their fishing rights to the established companies (Warman, 2012*)*. Reform and transformation in South African hake fisheries was based on share ownership, shareholder schemes, empowerment consortiums, joint ventures and change in management. It managed, to some extent, to change ownership structures in big companies and increased the number of black rights holders in the hake sector (Isaacs and Hara, 2007).

Most companies have taken to transforming the industry through restructuring ownership by changing shareholding profiles of the companies. One hake fishing company in Sadanha now has 83% broad based black shareholding (Van Zyl, 2008). Fifteen percent of the shares are held by employees and management, while 25% are held by Kagiso Trust and 60% by Brimstone Investment Corporation. Transformation has been noted in the industry with big black capita through consortiums while the majority of disadvantaged groups did not gain from the new arrangements (DEAT, 2007).

Strategic alliances between big hake companies and unions helped in the improvement of working conditions in the hake sector. As it stands, the South African deep sea hake fisheries have a more secure form of employment and pays better than all the other fisheries at more than R25 an hour (Draper, 2011).

The ecosystems approach to fisheries management has enabled the stakeholders in the hake sector to work together towards the sustainability of the hake fisheries. Government, non-governmental organisations, hake companies, scientists and academics all work together in improving conservation of the hake stock and advising on appropriate management regimes.

The next chapter introduces Saldanha Bay where the fieldwork was undertaken. It explains employment, unemployment, education delivery of services in Saldanha. It prepares for the results and analysis chapter.

4 CHAPTER FOUR: SALDANHA

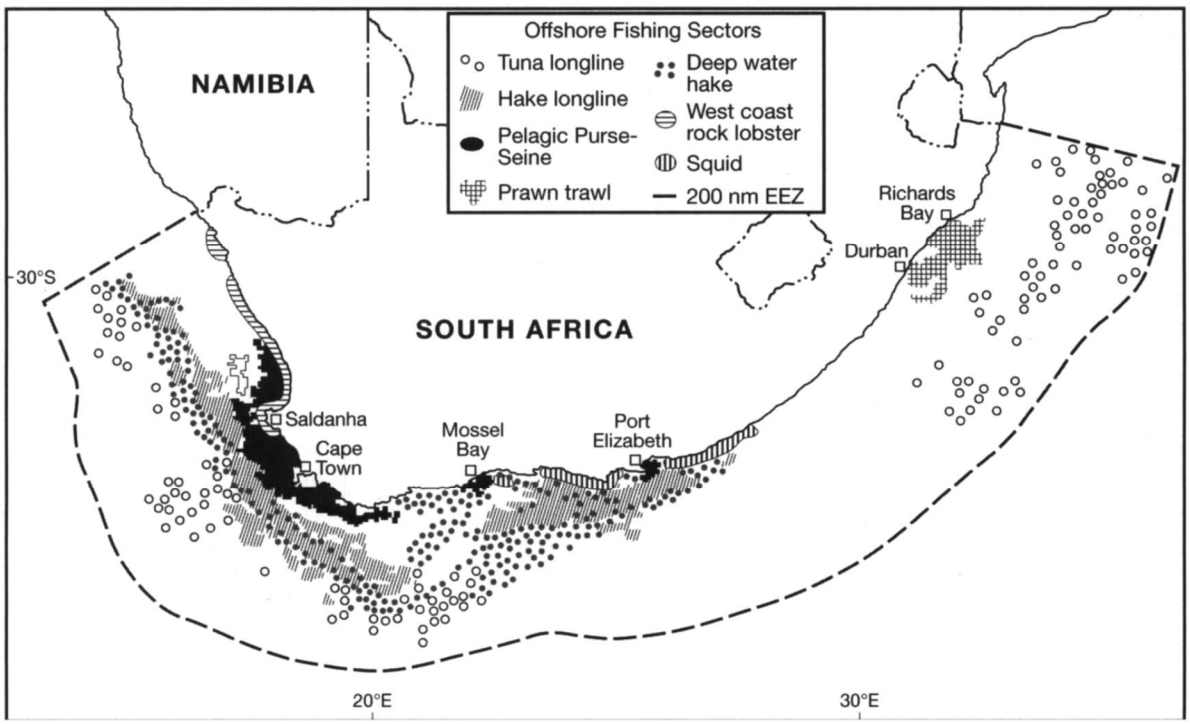
4.1 Introduction

Saldanha used to be a mostly coloured area and most of the workforce was whites and coloureds in apartheid days in South Africa (Schultz, 2010). There was very little black labour. Migration rules for most black workers were tight back during apartheid, more than now. It was difficult for black labour to migrate from Eastern Cape and other black communities due to the Group Areas Act (South African Constitution, 1990) which made travelling for blacks without permits difficult. Management was very tight and indiscipline was dealt with ruthlessly and sometimes led to dismissals without hearing. Whites were treated differently to coloureds and blacks in terms of remuneration. The policy of cheap labour those days benefited only whites. The main language of communication was Afrikaans which made inroads into employment in the fisheries very difficult for the few blacks (Schultz 2010 and Van Sittert, 2006).

Unions were mainly reserved for the whites and most coloured people opted not to join the unions then, for fear of victimisation (Schultz, 2010). Hard labour and very harsh management was one of the characteristics of the apartheid labour in the hake fisheries. Training at workplace was not a priority.

The increasing number of black fish workers shows some of the changes in employment trends in Saldanha. Most of the supervisors are now either coloured or black which show the changes to discrimination policies. Training and development is now essential in meeting quality requirements of the market and also empowering fish workers with semi-skilled certification. The number employed by the company has been on the increase due to value addition and expansion of the company. The number of vessels has reduced, meaning jobs at sea have also reduced but at factory plants a lot of jobs have been created.

The company has better working conditions now compared to then. The company runs an employee wellness programme for employees with alcohol problems. One of the hake fishing companies in Saldanha has become the largest employer in Saldanha. The current quota stands at slightly more than 40 000 tonnes. There have not seen much change in quota for the past years.



Map 2: Map of South Africa showing the location of Saldanha Bay

Source: www.capefish.org (Accessed 23/9/2013).

4.2 Saldanha Bay

Saldanha Bay municipality is one of the biggest fishing towns in South Africa. It is in the West Coast of the Western Cape. It is located 140 kilometres from Cape Town. The residential areas in Saldanha include White City, Hopeland, Middleposand Parkers Town. It is also where the second biggest hake fishing company in South Africa is located and is important for the export of hake. It is an important company to the community in terms of employment. It also hosts other industries for crayfish, mussels, oysters, sea weed, small pelagic fisheries and canning industries in town. The town also boasts of having the South African Military Academy and a naval training centre. One of the biggest manufacturing plants is Saldanha Steel. The biggest employers in Saldanha are the fisheries (Saldanha Municipality, 2008).

In 2013 the Saldanha municipality received a major boost through the creation of Saldanha Industrial Development Zone (IDZ) which has the potential to create 62 billion dollars in 20 years and create more than 25 000 jobs, according to SA news (2014). This will help ease unemployment in an area of high unemployment. An IDZ is a purpose built industrial estate linked to an international air or sea port which might contain one or multiple customs controlled areas tailored for manufacturing and storage of goods to boost benefaction,

investment, economic growth and the development of skills development(SA Gvt policy paper on IDZ, 2013).

4.3 Employment in Saldanha

One of the hake companies in Saldanha employees around 3886 and is one of the biggest employers in Saldanha municipality (van Zyl, 2008). The above workers include 2500 permanent and contracted which represent more than 50% of the employed workers by one of the hake fishing companies according to Environmental Evaluation Unit (EEU), UCT (2008). There are no statistics of employment in the small hake companies in Saldanha (van Zyl, 2008). The Saldanha municipality report(2008) notes that 25%-35% of households' income in Saldanha comes from the hake industry of which the jobs are from the big hake fishing company, which represent 14, 9% to 17,2% of the household income according to EEU, (2008). It also employs 65 people per 1000tonnes of quota allocated now.

The hake industry is the most valuable fishery in South Africa – The annual landed value of hake was approximately worth 71 million US dollars in 2009 (Isaacs and Hara, 2012). Commercial fisheries in South Africa were worth 714 million US dollars in 2007 of landed fish resource (Feike, 2008, in Isaacs and Hara, 2012). Nationally hake deep sea employs around 9000 workers (Isaacs, 2011. I. This is because the sector operates on high volume low profit (Raakjaer and Hara, 2006). The development of the IDZ in Saldanha in 2013 will also help increase employment in the area.

Fishing has historically been the sector making the largest contribution to local employment. van Zyl et al. (2008) attribute the downscaling to the reallocation of quotas to small-to-medium enterprises for previously disadvantaged groups and the general global fishing fish stock decline. The increased number of hake fishing companies means a reduced allocation of the fishing quota. There is general consensus that most of the small-to-medium companies are facing viability problem due to their sizes (van Sittert et al., 2006). The hake industry requires a huge capital investment and small companies fail to enter the international market and rely on the domestic market with lower prices. The major companies employ more workers compared to small hake companies because they have already established markets for their products compared to small companies that have to find the new market for their products. Generally the hake sector provides security of employment, more than most fisheries in South Africa.

4.4 Unemployment in Saldanha

van Zyl et al. (2008) predict negative growth in the fishing industry. According to Saldanha Bay municipality, (2007:10) manufacturing and tourism are on the increase but they cannot employ at the same rate at which the fishing sector does. The fishing sector has in the past been the greatest employer in Saldanha. It is an intensive employer hence its importance in providing employment where unemployment is high. The municipality notes the need for increased funding in other sectors of the economy to boost employment in the area. The continued decrease in employment in fisheries will impact on employment in the West Coast for a long time.

The continued inward migration will also add the number of the unemployed in the region which usually is far larger than outward migration as noted by one of the managers at a hake fishing company in Saldanha. This has been adding the number of the unemployed in the regions. The municipality noted this trend in Saldanha municipality (2010). The decrease in employment prospects in the area actually creates a big problem in the area with increasing unemployment.

Raakjaer-Nielsen (2006) and van Zyl et al. (2008) note that the agriculture sector employs 23, 6% of the population in Saldanha of which more than half of the 23.6% work in the fisheries. According to the Socio-Economic Profile, 2006, one in three families in Saldanha depend on the fisheries sector for livelihood. The threat in Saldanha due to reduced TAC is a threat to livelihood. Most residents in Saldanha have no other skills for adopting into other sectors of the economy, hence most jobs created by manufacturing and tourism are being filled by outsiders rather than the residents from Saldanha. It was noted that most people have only experience for laborious work due to low skill capacity.

van Zyl et al. (2008) estimate that 65% of households in Saldanha live close to poverty datum line bringing in R3200 per month or less. The 65% are better off individuals who at least have income above the poverty line though close to the poverty datum line than those without. He also noted that 22% of the residents in Saldanha have income that falls way below the poverty line of R800 per month. These are people who have an income but are actually living in poverty. Their incomes are too small to sustain them, while 11% have no income of which the 11% might have increased to date due to closure of some companies and the downscaling also of most of the companies due to reduced TAC. Reduction of stable fish stocks with increasing players in the hake sectors have led to quota reallocations among many

players leading to decrease in TAC.

4.5 Education in Saldanha

The majority of Saldanha residents are able to read and write although 22% of them are considered functionally illiterate (Saldanha Bay municipality 2006). This shows that quite a number of the residents have primary schooling or some form of secondary schooling which the Saldanha municipality 2006 also notes the increase in students finishing their matric.

4.6 Livelihoods

A large number of the Saldanha population have limited livelihood opportunities outside of unskilled labour. For most of them, the only form of employment they know and they have experience and skill, is of working in the fisheries. Most of the fish workers have been working as general workers in the fisheries for years and the work have now almost defined most of the residents. They are known as fish workers. Limited education opportunities in the apartheid period and the once available opportunities for employment in the fisheries did not motivate most of them to finish the schooling hence limited opportunities in other jobs requiring higher skills. Saldanha's economy is moving from reliance on fishing and agriculture to include manufacturing and tourism.

The growth in manufacturing and tourism has raised the hope of most residents for employment with the reduction in employment on the employer that is the fisheries in Saldanha (Saldanha Bay Municipality, 2007). The report notes that the growth of manufacturing and tourism may not translate into job creation for the locally unemployed because both sectors are not as labour intensive as the fisheries in the region. There is also another concern that many of the residents do not have the skills needed to participate in the manufacturing and tourism sector which may benefit unemployed people from other areas, not Saldanha residents who do need employment.

4.7 Middlepos

The biggest informal settlement in Saldanha is Middlepos and this is where most of the unemployed people live. It attracts most of the unemployed and most immigrants because most of the residents construct their houses made of plastic, zinc and timber on unoccupied pieces of land in the area. Unemployment in the informal settlements of Saldanha may be even higher than anticipated. The informal settlement has been growing at a fast rate because of the new immigrants from Eastern Cape and other areas. The majority of the migrants were from the Eastern Cape because of the perceived job opportunities in the area (Socio-

Economic Profile, 2008).

Real or perceived job opportunities in Saldanha have been a major contributor to population growth in Saldanha (Clark et al., 2009 in Hampton 2010). Due to intensive employment of the fisheries in Saldanha in the past, it created a hype of availability of employment in the area which has attracted most of the new immigrants although the jobs are no longer there. The new immigrants have to scramble for the remaining jobs with the locals. The Saldanha municipality's growing unemployment is a major concern to the authorities.

4.8 Delivery of service in Saldanha

Most of the residents in Saldanha have running water at their residence. More than 90% of the residents have running water (STATSSA, 2008). The informal settlements have running water also as they have been trying to formalise the informal settlements. The Saldanha Bay municipality (2007) notes the formalisation of informal settlements in Saldanha through servicing of roads and stands allocation to those who are on the RDP waiting list. This enabled connection of water to most of the informal settlements residence.

Nine hundred and five residents had no toilets in their houses (STATSSA, 2008). Most of the houses in Saldanha have toilets connected to the sewage system. This is a different scenario to most coastal communities who still face shortages of toilets and other services.

4.9 Conclusion

The Saldanha Bay municipality in the Socio- Economic profile: (2008) census data shows rising unemployment. The municipality attributes the rising in unemployment to possible reductions in fishing quotas and declining opportunities in the labour intensive fisheries (van Zyl et al., 2008). Some companies have been downsizing their operations over the past years due to changes in the fishing sectors. Pelagic companies have been downsizing over the years, which means a lot of jobs are at stake or have already been lost.

Fishing in Saldanha generally does contribute significantly to livelihood of the community either directly or indirectly. The population of Saldanha in 2001 was estimated at 21640 (Socio-Economic Profile, 2007) and if one in three depends on livelihoods it will mean over 7000 people in Saldanha's livelihood is dependent on fishing. The need to preserve employment in the fisheries must be government's priority because of the livelihood impact due to loss of jobs in coastal communities. It was projected that after 2010the population will be above 28000 (Socio-Economic Profile, 2008).

The next chapter discusses the findings from my field work. It starts by describing the demography of fish work in the hake sector and stating the different roles of fish workers with their challenges. The type of employment, conditions of employment and the general working conditions of fish workers are explained as per the research finding. Occupational health issues in the hake sector are also discussed, focusing on issues of protective clothing and the general welfare of fish workers at work places. Of importance is the need to understand the fish workers' working conditions and how it affects their livelihood as fish workers. The social, economic and political dimensions from the research findings are also explained in this chapter. An analysis of the field work is then done at the end of this chapter.

5 CHAPTER FIVE: HUMAN DIMENSIONS IN HAKE FISHERIES

5.1 Human dimensions of fish workers in a hake factory in Saldanha

The main social problems faced by fish workers are associated with the type of employment, conditions of employment, remuneration, health and safety issues and poor housing infrastructure. Their housing infrastructure is not good because majority of the workers stay in zinc, cardboard and plastics made homes. This makes them vulnerable to weather because usually these types of houses are cold. Thabo (not his real name). Thabo reiterated the need for intervention in their housing needs. Hampton (2010) noted poor housing infrastructure in coastal communities.

5.1.1 Conditions of employment

Conditions of employment in fisheries in South Africa are often associated with long hours at work, seasonal in nature and often times abuse at sea (van Sittert et al., 2003; Schultz, 2010). It is also associated with low pay and less job security due to its seasonality. Generally unemployment is high when it will be out of season and the limited opportunities of work employment makes the fish workers vulnerable (Sowman et al., 2008). Conditions at sea in usually small boats which are often times overcrowded also makes the condition of employment in fisheries bad (Hampton, 2010). Issues of forced labour have been reported in Thailand fisheries where migrant workers are forced to work without pay and without their consent (ILO, 2013).

Issues of lack of social security of fish workers are an issue in most countries especially where the boat owners or companies have no formal relationship with the fish workers (ILO, 2004). Most fish workers do not have life cover, medical aid and paid sick leave in developing countries' fisheries (ILO, 2007). Conditions of female fish workers are crucial since they need maternity leave and other work provisions arrangement as nursing mothers. There is a need for standard set daily wage, set and regulated hours of work and regulated rest and leave days for sea going fish workers.

Conditions of employment in fisheries are usually rated as bad in most fisheries especially in South Africa (Schultz, 2010; Hampton, 2010; and ILO, 1999). In most developing countries it is really an issue in fisheries management, on finding ways of improving working conditions in fisheries. Long working hours and the use of child labour (ILO, 1999). Commercial fisheries in South Africa have been trying to improve the working conditions

and unions have helped in demanding better working conditions over the years (Ponte, 2008).

Certification of the South African hake sector and the need for maintaining goodwill with its market has prompted the need for improved work conditions since the issue of employee welfare is part of sustainable fisheries (DAFF, 2012). Conditions of employment are rated bad if the working conditions are not regulated and more than the normal 9 hours of work. They are also bad if social security of fish workers is not guaranteed that is issues of paid sick leave, pension, medical aid and maternity leave for female fish workers.

Issues of formal employment arrangement and job security also describe the conditions of work for fish workers. Satisfactory working conditions would have regulated hours of work, provision of social security in employment contracts, formalised and contractual arrangements spelling out the conditions of work. It can also be said to be satisfactory if it set a standardised daily wage, regulated leave and rest days for fish workers and paid sick, maternity and other leave days. The risk factor also contributes to the satisfaction of work for fish workers. It can however be rated good if it some of the conditions of satisfactory conditions of work are provided.

The responses of the majority of the fish workers are that they value formalised employment and job security. They would prefer set hours of work, regulated leave days, set hourly/daily wage rates and issues to do with social security. Every worker needs job security hence the importance of formalisation of employment. Contracts of employment help in the formalisation process.

5.1.2 Safety and health regulations

All the respondents agreed that the company follows healthy and safety regulations. The company has strict healthy and safety regulation to protect the workers. I had the opportunity to interview the Safety and Health Officer of the company who also confirmed the company's commitment towards safety and health for their employees He implored that the government and labour organisation push for safer working conditions hence the compliancy of bigger companies. The fish workers can sue the company if they get injured without being given proper protective clothing. Generally health and safety precautions are observed and adhered to according to the fish workers both at sea and at the processing plant.

5.1.3 Remuneration

Processing fish workers at a hake company in Saldanha are paid at an hourly rate of slightly

above R25 per hour. Both casual and permanent workers are paid at the same rate. Workers recognise that a lot has changed to their benefit as their wages are now better and above most sectors of the local economy. Comparing it to retail work, domestic work and gardening in Saldanha, they are better off according to Unathi (not her real name), one of the fish processing workers. She said, "I hold a better status in my community because of their work in the fisheries, I am happy to be working. I was once working in the clothing shop and was earning less than half of what I am earning". The workers recognise that their wages are fair.

5.1.3.1 Offshore workers' remuneration

Vessel crew complain much about their basic salary of R149 a day when they are at sea plus an R8 bonus per tonne caught which they feel must be reviewed. I asked how much they usually get after a 15 day trip in which most of them get about R2200 basic plus around R2600 in commission which translates to about R5000 in two weeks' time. The commission is determined by the catch they get per trip and may vary. Unathi said, "The Company needs to review our wages. We catch the fish, it is risky at sea and if we could be paid at R25 an hour plus commission we would be better off". Unions concur with the fish workers but also feel the companies need to lower its wage bill so as to promote employment. One shop steward at a hake fishing company noted the threat for massive retrenchments if they push too much for wage increases. This resonates with Murray et al. (2008) that pressure for wage increases in Canada by fish workers usually leads to threats of plant closures.

The issue of long working hours at sea is another issue of which sometimes they work up to 15 hours a shift when there is a lot of catch. More work leads to high commissions but still the workers feel the need for increasing their daily rate of pay before the commissions. These consist of a crew that goes to sea and do the actual fishing. They also include the vessel factory workers who do the same work as the offshore factory work. They process the hake at sea. The amount of work is determined by the amount of catch that would have been harvested per trip. They are affected by bad weather at sea. The need for set time of rest and set time of work time at sea is of importance to sea going fish workers (ILO, 2007).

They work under unstable work platforms and mobile resources. ILO (1999) noted safety risk varies across fisheries. Increased risk awareness in the fisheries sector has helped in reducing the safety risk. Increased regulation in the South African fisheries is aimed at increasing health safety of fish workers (Rademeyer, 2008). All the workers interviewed noted increased adoption of safety and health regulation.

They also complained of long hours and days at sea which can run up to 35 days a trip. They also have the same issues that the inshore factory workers complain about. They also raised the issue of unstable working platforms due to waves in the sea. This makes their tasks difficult because of the shocks from waves and rough sea at times. Draper (2011) notes the cold conditions at sea, the cabins the fish workers sleep at sea in the boats, the long times at sea, and the hard work at sea as part of the social issues of the sea going crew. Most of the sea going crew narrates their first days at sea as the hardest but with time and getting used to the job it becomes better though not easy. Working away from family, friends and the community in its self is stressing.

The sea going fish workers are from Saldanha, Darling, Hopeview, Vredenburg, Mamre some from Cape Town. Most of them who do not stay in Saldanha go to their areas of residence directly from the sea. There is transport provided by the company which takes them to their homes. This cannot be said for workers who work at the onshore factory who all reside in Saldanha basically because their shifts may not allow them to stay far from work. Increased competition on fewer jobs has increased tensions between indigene nous inhabitants of Saldanha and the outsiders who take their jobs. In small scale fisheries, Schultz (2010) noted rises in tensions in coastal communities due to increased competition for limited resources.

Improved wages in the commercial fisheries is important since most of the workers in this study rely on wages for a livelihood. There is need for promotion of adult education to promote tertiary education to those with grade 10 and without tertiary education so as to improve their employment opportunities in other sectors of the economy. The Socio-Economic Profile (2008) notes that majority of residents in Saldanha only have grade 10 and the need to foster tertiary education initiatives in the area. Increased social spending on tertiary education in coastal communities can reduce unemployment as it also fosters innovation and job creation.

5.2 Sea going fish workers

The conditions of employment for sea-going fish workers are different to that of fish workers who work in the factory at a hake company in Saldanha, although they considered it good. The fish worker at the processing plant at the hake company in Saldanha works on a stable platform compared to the unstable platforms sea going fish workers encounter at work. There is less risk for fish workers at the processing plant compared to working at sea. They see their families every day which is differed for sea going fish workers who spent more 3 days at sea

with some spending up to 35 days at sea. They also have a regulated set time of work. Mike (not his real name) talks of the long days of loneliness at sea without family. In his words he said, “I miss my family so much at sea that I feel so depressed and lonely”. He usually goes for 15 days and narrates what he called the long absence from civilisation with limited space for accommodation.

Accommodation at sea is also another issue some noted that needs improvement in terms of space for sleeping. One of the former sea going females narrated the ordeal of bathing while holding the bathroom door because of fear of male intruders. Mercy (not her real name) narrated her ordeal and concluded by saying the condition of sea going are not conducive for women. She also noted change of character to most of the women she had gone with. “We just become bad people in small pace of time, our language becomes something else, I would not care to bath even when someone is watching me because it was an everyday experience of a men snooping on you while bathing and we would just joke about it”.

The conditions of work at sea are further hardened by the uneven platforms they work at due to harsh sea conditions. The ILO (2003) notes hand gutting and filleting at sea as more dangerous at sea because of the uneven platform. At sea usually they do not have regular working hours and the vessel is their home and work place which often stress the fish workers. However Polnac (2010) notes less attention to the working condition by sea going fish workers being attributed by their desire to maintain their economic wellbeing and the personality of being adventurous aggressive and courageous. The issue of commission on catch is also another issue that the fish workers at sea complained on. The bad days will also mean fewer wages. Fish workers at the factory have an hourly rate plus an overtime rate if they work overtime which is different to sea going fish workers.

5.3 Processing workers

Processing workers complain of the temperatures of the processing plant they work – they say it is around minus 2 degrees. Thandi (not her real name) lamented the temperatures in the processing factory by saying, “The coldness enters our bones for very long period of time and we fear the repercussions of the coldness in old age”. Although they wear protective clothing some of the workers complain of the temperatures which are cold. They also work on slippery ground from the fish skin that comes out of the fish they process. Porgie et al. (2005) in Polnac and Poggie, (2008) also note reluctance by most fish workers to change occupation due to the attraction by male fish workers to follow their father’s occupation in coastal

communities. I noted most of the fish workers with parents in the sector rated their working condition as better.

Most of them do work while standing, this causes back aches, muscle pains and generally the work is laborious which requires concentration and physical strength. These are common symptoms in the fisheries, with cases of soft tissues injuries associated with the work in the fisheries (ILO, 2004). Most of the workers complain about the coldness in the processing plant which I learned is about minus two degrees Celsius. They have jackets but the temperatures are cold especially on the parts of body which will be uncovered like the face. Long shifts and intense prolonged working activity associated with fishing causes fatigue, a common factor in the fish processing plants (ILO, 1999). This also included those workers who transport fish and fish products from the freezers to the processors.

Cases of cuts from sharp machinery they use in processing the hake have also been reported though the cases are few. Processing workers can also fall due to slipperiness of the floor due to the fish they work on. Their work is dependent on the amount of fish that is landed. If there is no fish it also means no work and if the vessels bring fewer fish it means shorter working hours for them which impacts on their wages. I discovered that most of the factory workers face the same issues hence the need for improving their working conditions.

The majority of the fish workers at a hake company in Saldanha rated their working conditions as good. There is a greater appreciation by both casual and permanent workers for getting employed in a region of high unemployment. Most of the fish workers have set hourly wage, paid sick and maternity leave. The sea going workers hours are not regulated and are dependent on the catch of the day and daily targets. In interviewing permanent workers and casual workers on working conditions, most of the permanent employees rate their work as better while the casuals just rated it as good.

5.4 Types of employment

The type of employment one has influences and has bearing on one's job security. Usually the permanent employees can benefit in long term financial arrangements with financial institutions, say in purchasing housing under bonds as compared to temporary contract workers. They do not benefit from medical aid, provident fund and funeral policy that the permanent workers enjoy. Usually casual labour is laid out first in times of retrenchment. Casual workers are 40 % of the employees interviewed in this study working at one of the hake companies in Saldanha. van Zyl (2008) also noted that 38 % of all the fish workers were

casual in 2008 at the same hake fishing company in Saldanha. Casual workers are contracted for 3- 9 months usually and their contracts may be renewed at the end of the contract.

5.4.1 Permanent workers

Sixty percent of the workers at one of the hake companies in Saldanha are permanent. Permanent workers are entitled to a life cover and medical aid. The company contributes 50% towards the life cover and medical aid. Permanent workers also have a more secure form of employment compared to casual workers. They are paid at the same rate with the casual workers for the same work. The no work no pay principle applies to both the casual workers and permanent workers. Generally fish workers prefer being permanent because of the job security. Permanent workers also enjoy half payment of medical aid, life insurance and pension cover. These social security benefits are vital to the conditions of employment of workers.

Casual workers though enjoying some of the benefits permanent workers enjoy, like set hourly wages, they still have job insecurity since they are not permanent. Casual workers have limited social benefits compared to permanent workers. Issues of benefits motivate workers to increase productivity. Reddick (2009) argues that employee benefits help in improving employee morale and health productivity as well as attracting and retaining employees.

5.5 Challenges of the hake sector and its impact on the workers

The hake sector in South Africa like other fisheries globally has been facing a lot of challenges emanating from the operating environment and other factors. In this research management noted reduced local demand of their products probably due to the fact that the nation is not a high fish consumer with an average of 6,4-6,7kg per person per year compared to a global average of 18,4kg in 2009 (FAO, 2012). Other factors included the economic downturn in Europe which is the biggest hake market for South Africa. The sector has been operating under tight margins over the years because of both exogenous and endogenous factors.

The increases in fuel prices have also not made things easier for the sector. An increase in prices for spares for vessels is also another factor that has reduced the profit margins in the sector. The effort per tonne of catch has increased over the years meaning more costs in fuel, labour and other variables. Vessels now take more days at sea. The increased need for cutting cost has actually led to cutting labour that is reducing the number of people per shift while

the work is increasing for workers in global trends (Murawski, 2007). Technological advancement to another extent also has reduced the number jobs in the sector though there is not much research into the impact of technological advancement to employment in South African fisheries.

Most fish workers have only seasonal and occasional employment depending on the availability of the fish in the fisheries. Workers are either casual or permanent. Permanent workers have more rights compared to casual labour and usually have different company benefits favouring the permanent workers (ILO, 2003). The traditional system of remuneration in the fishing industry is that of sharing the catch. Crew and owner of vessels share their catch. The proceeds are then shared according to the agreed formula. Some have an agreed minimum wage and also share the proceeds at agreed formula. Others may also receive both regular salary and a share of the catch or a share of the catch calculated on the basis of the gross proceeds from its sale.

The hake fisheries in South Africa have a more formalised form of employment where the fish workers are contracted and a formal written contract is signed by both the employer and the employee. The ILO (2007) notes that the minimum age has now been revised to 16-18 years of age for fish workers in the fisheries. It is prohibited by law to employ someone under the age of 16 in South African fisheries. Employment of child labour is prohibited in fisheries. Medical examinations should be done by all fish workers and medical certificates should be required for all forms of employment in the fisheries. Requirements for pre-sea training are also essential to all workers going to sea. This enables all prospective workers to experience the sea conditions before the actual experience.

Working hours in the South African fisheries according to Fishing recommendation (1920) in ILO (2007) are 8 hours a day or 48 hours a week. This set time though recommended by international labour best practices is not usually followed. Abuse of workers in fisheries is rife in commercial fisheries (Jeebhay, 2008). Most companies do not comply with this requirement as they usually work more than the prescribed 8 hours. Fish workers going to sea usually work long working hours especially where the remuneration is based on the amount of catch.

Fish workers are entitled to their rights at work. Promotion of decent working conditions at fish workers work place is essential in fisheries (ILO, 2003). The conditions of service should be favourable to fish workers. The relationship between management and workers should be

healthy. Fish workers are entitled to a 30 minutes break and 30 minutes for lunch (South African Fisheries Handbook, 2007). Contract workers are entitled to a record of service and recommendation letter to enable the fish workers to look for other work if need arises.

Social security is also important to fish workers. The workers need paid sick leave, paid maternity leave, life and pension cover. Healthy insurance is also important for workers. Fishers should also have the right to advances on salaries against their earnings under prescribed conditions.

Labour brokering is a form of outsourcing practised in South Africa in which companies contract labour brokers to provide them with casual labour. Labour brokers handle almost all aspect of the workers' employment (interviews, recruitment, HR admin, payroll, transport etc.) The current definition of labour broker under South African law as of March 2009 is:

> "A natural person who conducts business where by such person for reward purpose provides a client of such business with other person to render a service or perform work for such client for which service other person is remunerated by such person." (South African Constitution)

In the hake sector labour brokers provide labour once excess demand of labour is required. Some companies in Saldanha use labour brokers to offload hake from vessels and some of the subcontracted workers in the processing plant. In South Africa it is regulated although labour unions and general population are not happy with them. They stand accused of paying lower rates compared to employees employed directly by the company. The Congress of South African Trade Unions (COSATU) argues that the labour brokers are responsible for increased casualisation of labour in South Africa. Currently 30% of South African labour is casual (COSATU, 2010). Casual labour receives much lower salaries than permanent and has much lower job security.

6 CHAPTER 6: GOVERNANCE OF THE HUMAN DIMENSIONS IN THE COMMERCIAL HAKE SECTOR

6.1 Introduction

The government in post-apartheid South Africa made policies that enabled reform in the sector which saw change of equity to new shareholders through Black Economic Empowerment BEE deals and other private acquisitions (Japp, 2005; Mathers, 2007; Isaacs and Hara, 2007). Ponte (2012) also notes the role the government played in influencing equity transfer which had equality as its goal in the sector. Fish workers were once shareholders at one of the hake fishing companies in Saldanha before they sold their stake back to the company. The power relations at the time saw workers who had a stake in the company as part of owners which has now changed and could influence company policy through the representatives in the board. They were part of decision making at board level.

Unions play an important political role in wage talks, in the bargaining council and influencing the need for increased wages. Most old fish workers who have been with the company for more than 10 years acknowledge the role their union has advocated for improved wages, pensions and other benefits. The legacies of apartheid to workers was hard heating as black workers in all the sectors of the economy had low wages compared to their white counterparts.

The employer- employee relations have been improving over the years due to calls from both public and civil society to the need for improvement of working conditions in the hake sector. Fish workers acknowledge this improvement though there is need for improvement.

There is the realisation that their working conditions are improving. The bigger companies have a bigger comparative advantage when it comes to working conditions because of their vast experience in the sector. Most of the fish workers rated their condition from good to better. Their main motivation being the better wages they now get compared to pre-apartheid days. There is this realisation among the workers that they are grateful to be employed. Some want their children to pursue technical professional jobs since they reward better than working as general fish workers.

Another important political dynamic is the gender dynamics in the commercial hake sector fish workers. In the processing of hake women are very important because of their skill and precision to their work. Most of the processing of hake is done by women. This promotes the

employment of women and empowers them to be income providers in their homes. The social worker I talked to in Saldanha noted an increased number of working women compared to men in Saldanha. Most women are not comfortable to go to sea hence their importance at the factory where processing occurs.

Women have been working in the processing plant for years and the occupation is synonymous with women that few men who take the processing jobs are stigmatised as working women jobs. It is quiet an interesting phenomenon in the hake fisheries. The men I interviewed were adamant that they will not feel comfortable working in a female job as it is known in the communities. I further asked them on why they feel it is an all-women job and the answer was that the tasks are associated with women in the hake fisheries (cutting of fish and processing them). In most African cultures women do the cooking and usually when men fish the woman will process and cook the fish for the men. Management at a hake fishing company in Saldanha experimented with some men and discovered that they are as productive as women but the man will end up looking for positions in other departments because of stereotyping.

The socio-economic position of women in communities usually makes them vulnerable hence where the women have economic power it is really a good thing for them because they become less vulnerable to abuse and poverty. It is encouraging to note that most fish workers who are women have more dependence as compared to their male counter parts because of the caring nature of woman. Their job empowers even their family members due to remittances they sent to their families especially the immigrant workers. Of the women I interviewed most of them were single mothers and five of the single mothers were immigrant workers who remit about one thousand rand monthly to Eastern Cape where their children stay.

The issue of power relations in the sector is of importance in understanding the political dimensions in the sector. The commercial hake sector companies are very influential in policing of the sector through powerful associations like SADSTIA. They also have backing of labour unions who favour the maintenance of jobs in the sector through maintaining a reasonable quota for the big companies (Isaacs, 2007; Mathers, 2007).

6.2 Governance of the fish workers

SADSTIA has been a powerful association in negotiating for the traditional commercial hake companies. Reform and transformation was a threat to the monopoly once enjoyed by the big hake companies. The size of the association and its financial muscle helped it in negotiations (Warman, 2010). The jobs it provides could not be ransomed for any form of reform hence the continual dominance of the traditional hake companies. The power of unions on and employees at the other hand also helped the fish workers' remuneration in the hake sector. Labour and unions negotiated on the same side during reformations in the hake fisheries (Mathers, 2007). The need for jobs by unions and the need for a sustainable quota for the hake companies worked well for the hake companies.

6.2.1 Worker representation in decision making

Representation of workers in commercial hake companies in decision making need to be enhanced. Some of the fish workers noted they are not fully represented and also went further to label shop stewards to have sold out to company bosses hence no longer representing their causes. It is important to note that labour force in the hake sector is well organised and union regulated hence fish workers' concerns are deliberated faster than other sectors without proper representation.

Representations at company level involve consultations in company policy matters and decision making in areas that affect the fish workers. Involvement of fish workers in decision making helps in reducing conflicts with fish workers since the workers would have been involved in the decisions companies would make. It also enhances transparency and promotes good governance at both corporate level and government level.

Fish workers' representation at sector level is very important as it keeps the workers well versed with current information and developments in the sector which can help them in decision making and contributions to the sector. Fish workers as an important stakeholder must also be involved through their representatives in the Hake Resource Management Working Group and also in the Scientific Resource Working Group. This will help fish workers in the bargaining council and also in negotiations with government in matters affecting the sector.

Involving fish workers in TAC determinations and quota allocations may also help in transparency in the hake sector. Fish workers feel if increase in TAC per company can increase jobs then it is essential that the government prioritise job creation and job security of

the fish workers. The gap between decision makers and the fish workers must be reduced through workers' participation in decision making. Increasing the social power of fish workers through participation in decision making empowers the fish workers to voice their concerns and improve their overall wellbeing.

Information sharing is also essential in the good governance of the hake resource. Fish workers should be provided with information on whatever is happening in the sector. Communication becomes crucial especially between management and the fish workers. Good communication channels should be created in commercial fisheries so that information can easily be shared without communication hindrances.

Fish workers should also help in checking if commercial companies are complying with policy requirements and government directives. Knowledge of government policies and sectoral policies can really empower the fish workers from abuses and other form of cheating commercial entities may be doing.

6.2.2 Labour brokers

There are about two or three labour brokers at one of the hake fishing companies in Saldanha though they employ less than 100 workers. In an interview with one labour broker, who employs around 60 casual workers for the hake company he noted their job is providing casual work or work on demand as he called it. He defined his role as meeting the demand of the labour market with labour at all times. Most of the workers work in offloading the hake deep sea trawl vessels and some in the stores that is where the fish from the sea is kept. The company pays him an undisclosed amount per hour (which the labour brokers and the company were not willing to disclose but speculation by unions at one of the hake companies in Saldanha is that it is between R18 and R26 an hour) and he pays workers between R9 - R12 an hour while the company offers above R26 an hour for people doing the same job. The labour broker also provides his workers with protective clothing as it is the company policy of having to wear protective clothing at all times when doing work in the facility/ factory. The number of people working through the labour brokers is determined by the amount of landed catch which the vessels bring. The company only uses the labour brokers if they unable to manage with their permanent staff. They are only called when there is excess work. The workers who work for labour brokers are supposed to wear protective clothing when at work.

6.2.3 Unions

Labour unions have been calling for the banning of labour brokers. The Food and Allied Workers' Union (FAWU), a union in the fisheries said in their press conference, in May, 2013, "labour brokers cannot continue to make silly arguments that the so called sector which is purportedly worth R20 billion is creating jobs yet we know that these jobs exist in fisheries, farms and other sectors of the economy. Can they with evidence show us the factories or jobs they have created?" Unions have no kind words for labour brokers, which Congress of South African Trade Unions (COSATU) has been at the fore front asking for the jobs they purport to create. Workers under labour brokers earn a third to two-thirds of what they could earn if they directly worked for the company.

In farms in Western Cape the labour brokers have managed to give their workers at piece rate that is each work is charged per unit or plants or weight. With this method average workers earn more than the regulated R105 but have no benefits. Social security is minimum and the no work no pay principle is applied. The farm owners give the responsibility of workers to labour brokers who pay and manage the worker. Issues of pension schemes, medical aid and other social security issues are often ignored though most of the labour brokers try to be formal. DAFF (2011) reiterates the need for government awareness programmes to make the workers informed of their rights in terms of labour legislation.

Workers who work for labour brokers complain that they earn far less than their counterparts doing the same work. It is in this view that most unions call for regulations of the brokers or banning them entirely in the fisheries. While companies view the labour brokers as essential in times they have labour shortages. In this scenario of them receiving R9 an hour to R12 an hour means they are earning less than half of what their colleagues who are directly employed by the company for the same job.

Recently in Marikana area where National Union of Mineworkers of South Africa (NUMSA) the majority union was overtaken by a new union in the mining sector Association of Mineworkers and Construction Union (AMCU) is one of the cases where workers feel betrayed by their trade unions. The feeling that some unions have been compromised by company bosses and are no longer representing the interest of the workers is also felt in the hake sector. The unions themselves point fingers at each other. The unions themselves also in some instances have lost the plot because it is now more about numbers rather than issues they represent according to shop steward who was commenting on the issue of pay rises.

Workers' representation in decision making is of importance because any major change in policy may affect the workers welfare. Management should consult with the workers especially in matters that affect them. Issues like retrenchments, terminations of employment need consensus from both parties. Exclusion of fish workers in decision making may lead to work stoppages due to labour disputes if workers are not fully consulted. There are four labour unions at one of the fishing companies in Saldanha with the majority of workers being members of Food and Allied Workers' Union (FAWU) with 1103 members, West Coast Union 136 members, Independent Labour Union of South Africa (ILUSA) 60 and the non-aligned workers' union 740 members. Labour representation has improved post-apartheid. The unions represent the workers in bargaining council, during disciplinary hearing and policy planning at company level. A worker only needs 3 months to be recognised as a union member. Unions are a voice for fish workers. One fish worker noted that most of the unions start very well but as they grow they lose focus noting the strikes in the mining sector which have now led to job losses in the sector.

Fish workers are entitled to join unions of their choice. The majority of the workers are part of the Food and Allied Workers' Union (FAWU), it is a COSATU affiliate. The shop steward I interviewed noted what he called exploitation of workers by labour brokers though he could not prove some of the allegations he was raising. The union represents workers in the bargaining council and also during disciplinary processes in the company. During time of policy changes at commercial companies the union liaises with company bosses in safe-guarding the interest of the workers. Isaacs (2001) notes the perception of fish workers were that the shop stewards are no longer representing effectively the interest of workers. Some feel they are now in the pockets of the business owners.

6.3 Social dimensions of fish workers

An increase in the benefits for fish workers is essential especially with regards to pensions. The pension support insurance of R75 000 is not enough to provide a livelihood after work. Most of the former fish workers are in absolute poverty because the pensions they get will not last a year if they resign. The company contributes half of the amount towards contribution to pension while the other half the worker contributes monthly. Increased life insurance should be promoted because R70 000 that the families get is not enough to support young families who would have lost a bread winner hence the need for improvements in this regard.

The other social dimension in the commercial hake sector includes need for improved

occupation and health issues in the sector. The main health issues in the hake industry include cuts from machines especially processing workers. They work with sharp machines and knives when they cut and process fish. They suffer pains in the joints and back due to long time standing while working. One in four workers interviewed have had a minor cut at work in the processing. Very little fatal accidents have been reported. Issues of pulled muscles and chemical burns have been reported according to the environmental officer I interviewed. It is important to note that commercial fisheries are a dangerous occupation (ILO, 2003). They noted more than 24000 fatal accidents occur every year and many more non-fatal injuries occur every year. Fish workers work in an unpredictable and often hostile marine environment. Most of the factory sea workers complained about sometimes unstable work platforms due to tides and rough seas. Fish resources are mobile and vessels sometimes travel for many kilometres looking for fish resources. Many are separated with families sometimes for 15 to 35 days. This creates physical stress and sometimes causes strain in their family relationship due to the long period of absenteeism from family due to work. Young families are put under threat and issues of prostitution, heavy drinking and drugs due to long time at sea have been reported (Schultz, 2010).

Long work time at sea causes fatigue which can increase incidents of accidents at sea both for factory workers at sea and crew members. It also increases stress level and have large health implications in the long run for the workers. Long hours standing and working increase joints and muscle pains. ILO (1999) noted processing activity on vessels and in factory exposes workers to industrial diseases such as occupational asthma and allergies. They also noted that allergy to fish is common among fish eating population and in fish processing communities hence the need for increased use of protective clothing (gloves, overalls).

Heavy loads also cause back pains and in the long run may develop arthritis due to repeated expansion and contraction of bone joints muscles. Some may also face circulatory problems due to cold. Dust from flour may cause respiratory problem for the workers. Conditions of the workers eating area were not satisfying at all. It was a dirty, not organised room with cigarette stumps everywhere on the floor. The company should ensure healthy eating habits for healthy staff. Of interest in my field work was the workers cafeteria where fish workers buy their lunch and spend their lunch in one of the big hake processing plant. The place looked untidy and did not resemble the status of the company. Of interest when I was in the cafeteria was the type of food they ate for lunch which was basically junk food such as snacks, fried chips, fried fish, “Vetkoek” and fizzy drinks. Most of the food is not healthy at

all which may explain the weight of most of the women fish workers. Most fish workers I interacted with had more than a 500 ml of Coke for lunch which translates to more than 65 grams of sugar and almost 40 calories. Puoane in Howse et al. (2012) in Saunders 2007 note increase in diseases linked to high consumption of energy dense food, made of animal origins and of food processed or prepared with added fats, sugars and salts. The fast food sold in the cafeteria of one of the hake companies in Saldanha sold food of the above description. There is a health habits debate in the developed world which accuses the soda companies of aiding obesity because of the high sugars in their drinks. Most female fish workers are overweight which may lead to high blood pressure, diabetes, heart disease all related to high salt and sugar intake. Saunders (2007) notes how an excess body weight is associated with increased risk of diseases. Saunders et al. (2007) wrote on the relationship between obesity and diseases like heart disease and cancer. Poor diets can lead to obesity and overweight (Kumanyika (1996), in Howse (2012). Observing the type of food that most of the fish workers consumed it may explain the overweight in most of the female fish workers I observed. In the cafeteria I also observed higher tobacco uptake by both females and male fish workers which also in its own is a very bad health habit as it leads to cancer or other lung diseases (Saunders et al., 2010).

6.4 Living conditions

Housing is a problem to most of the fish workers especially those without their own houses or those still on the RDP waiting list. There is great need for provision of houses for accommodation to fish workers. The houses they stay in are made of zinc and plastics are vulnerable to harsh weather. Schultz (2010), noted poor housing infrastructure in coastal communities. There is greater need for the hake sector and government to find ways to provide housing to the fish workers. Over 80% of the fish workers do not have brick houses though more than 50% of eligible RDP beneficiaries now have own plots/stands waiting for construction of their houses which may take years to be built for them. It is also interesting to note that most of the workers above 40 years now have own houses either through the RDP programme or bonds. This may have been necessitated by the number they have been living in Saldanha with most of this category having lived there for more than 15 years.

The informal settlements in Middlepos are the worst of all the places the fish workers stay in Saldanha. This resonates with what (Blavovic and Boonzaier, 2007*)* who noted on the issue of poor infrastructure in places fish workers in coastal communities. These are some of the human dimensions in commercial fisheries. We can note the issue of poor housing

infrastructure is part of the social dimensions in small scale fisheries (Sowman, 2010*)*. Improved infrastructure is noted in communication, roads and transport which is not the case in other coastal communities.

All workers have electricity where they live and also have running water while some share toilets; most of them have own toilets at their houses. Those who share toilets are those who are renting at a house or have their shacks at someone place. Some workers have own their houses especially those 35 years and above while most young fish workers are staying with parents or are renting.

Most of 40 years and older fish workers have benefited from the RDP government housing programme and most of the workers who have more than five years in Saldanha now have plots of land and waiting for the RDP houses to be built for them. Housing is really an issue for most fish workers. They do not have proper accommodation. Shacks are cold in winter and also hot in summer hence the need for housing provision for fish workers. The areas the workers stay in Saldanha are White City, Hopland and Middlepos. More than 90% of the respondents in this research have own electricity, running water and own toilets. This can be supported by Statistics South Africa data which noted that Saldanha had 905 houses without own toilets mainly in the informal settlement which by now is now formalised with stand numbers and roads.

Most of the workers own televisions, stoves and fridges though young workers may not have some of the above assets especially those with the company less than two years. The sizes of the above assets vary. Those that are married and are both working have bigger assets. Their purchasing lifestyle is determined by whether they are paid weekly or monthly. Those who are paid monthly usually do their shopping twice a month while those who are paid weekly do their shopping weekly. Factory offshore workers are paid weekly hence their purchasing patterns is weekly.

Mighen (not his real name) puts it this way, “if they take away my job, me and my family we do not have any way to start, two years ago when we went on strike for three weeks, I did not have anything to feed my family with”. This shows the extent of reliance the fish workers have on their employment. It is not just Mighen’s case but almost all of the fish workers reiterated on the importance of their jobs to their livelihood since they did not have any other alternative livelihood activity.

Fish workers' food security is compromised if they lose their jobs. Mighen's case points out that fish workers' food security is tied to their employment. With their wages they can buy food and be food secure. Their purchasing practices show that food security of the fish workers is linked to their employment. There is higher food insecurity in coastal communities due to unemployment and the seasonal nature of employment in most of these communities coupled with low wages (Sowman et al., 2011; Hara and Isaacs, 2006).

Crime rates have also been on the increase according to the respondents of this research. They cited reduced opportunities for unemployment and inward migration as fuelling crime. Most of the old fish workers also cited that there used to be work for everyone in the old days which is now not the case.

6.5 Relationship between TAC and conditions of employment

Management also noted the size of their quota yearly also determines the number of workers to be employed. A reduced quota will lead to reduced employment while an increase will lead to an increase in employment. They noted the need for increased quotas which is determined by the yearly total allowable catch (TAC). Transformation within the industry has reduced the number of jobs that the big companies can produce due to reduction in their quotas. With the increase in the number of hake fishing rights over the years it means the total allowable catch is now divided over a number of rights holders compared to fewer companies years back.

Employment is a source of livelihood to all the fish workers. All of the workers that I interviewed have no other livelihood activity. Employment in the hake sector is important as most of the fish workers have got more than one dependent 82% of the interviewees indicated that they have more than one dependent some of them have more than two dependents. This shows the importance of jobs in the hake sector in Saldanha. If these jobs are to be lost it means also that their livelihood is lost as they would have lost their income from working. Current policies in South African fisheries have been calling for the reform and promotion of small companies at the expense of larger companies that do employ larger numbers of people. This can be seen with the trend that chapter 2 explains on quota allocations.

The fish workers' food security is threatened through shortened work hours due to reduced quotas and reduced catch. There is a need for increased quotas for big companies so as to solve the issue of unemployment in coastal communities. The food security status of the employed is better compared to the unemployment as can be noted with the purchasing

patterns in this study. Almost all the workers' purchasing patterns were influenced by the way one is paid. Those paid weekly do their shopping weekly while those monthly do twice a month. Schultz (2010) noted the issue of food insecurity increasing in coastal towns in South Africa. Most permanent fish workers noted that they could afford food for themselves and their dependents while casual workers noted that their wages were determined by the hours they would have worked which are sometimes shorter than the hours the permanent workers work. Hake fish workers incomes provide a stable food security status to those employed. The Socio-Economic Profile, (1998) noted food insecurity to those unemployed in the coastal communities. Interventions should foster ways to improving employment in the coastal communities so as to improve their food security situations.

Unemployment promotes vulnerability, as most of those not employed cannot afford decent food for their families (STATSSA, 2008). This can lead to poverty. It is important to improve and develop South African fisheries so as to boost employment as a measure of preventing poverty in coastal communities.

The importance of large commercial hake companies to employment cannot be understated. While the number of hake rights holders has been increasing it has not translated to jobs (van Sittert, 2006). Fish workers are more concerned about the increase of jobs in the sector as it will enhance job security for the fish workers. When jobs reduce it creates uncertainty to the fish workers as they will fear for their job losses. Policies should in a way continue to favour big companies so as to foster employment in the sector. The conditions of employment are far much better in bigger companies compared to smaller companies

6.6 Defining human dimensions in the commercial hake fisheries

Human dimensions in the commercial hake sector can be defined as the social, economic and political dimensions in the hake sector which affect the livelihood, wellbeing and the lives of fish workers. The social dimensions include poor working conditions, insecure form of employment for contracted casual fish workers, use of contracted labour through labour brokers, poor remuneration, poor health and occupational issues in the sector. All these factors have a bearing on the livelihood of the fish workers. Some of the above factors may even impact on the health of the fish workers.

Some of the social dimensions raised by fish workers include stagnation in terms of career advancement, housing shortages and skills shortage, unemployment when casual workers are laid off, and issues of poor workers' representations in decision making. Most of the fish

workers interviewed have been doing the same work for years. The low level of education of the general fish workers hinders career advancement. Some have only grade 10. While I noticed some form of career advancement to those with grade 12 and tertiary qualifications, there is little opportunity for those with low qualifications for career advancement hence the issue of stagnation.

Fish workers have a voice in the hake sector through unions. Though they have unions the workers interviewed noted the need of inclusion of fish workers in decision making in matters of the sector that affect the workers in the sector. This included issues surrounding the granting of quotas, policy issues and at company level. While unions represent workers in bargaining council and at company level the unions are often regarded as puppets of the business community and the government. The issue of representation of fish workers is also important in the hake sector. Representation reduces vulnerability as it gives the fish workers a voice to be heard. Smith (2001) in Clay and Olson (2010) defines vulnerability as a socially constructed set of conditions influenced by the politics of representation and extent of the power relations. The power relations between capital and the workers will determine the voice of the workers. Though the hake sector is unionised workers' participation in decision making is important. Most unions are no longer making workers participate in decision making but are making decisions for workers which are not good for the development of labour relations in the fisheries. Management and workers must always work together in the development of the hake sector.

The use of labour brokers is another challenge to human dimensions in the commercial hake sector. Labour broking reduces the working conditions of the workers working under them. These workers usually have no voice since they are casual and not unionised. The fish workers working under labour brokers are poorly remunerated and receive almost less than half of what their counter parts employed directly by the company receive. Poor regulations in policies governing the use of labour broking have often resulted in workers losing out in some of the arrangements. All the workers under labour brokers are casual which makes them very job insecure.

Poor housing infrastructure is one of the human dimensions of fish workers in the hake sector in South Africa. The majority of the general fish workers stay in shacks that are the wood and zinc constructed houses which are prone to both heat and cold. They cannot afford to buy houses of their own but most of them are on government waiting lists and with most of them

having allocated plots of land where the government will build them RDP houses. Some are staying at a friend's plot where they built their own shacks while some are renting. The issue of housing is a national problem in South Africa and the government is failing to cope with the demand for housing though it is trying (DAFF, 2010).

The hake sector has been resistant to job cuts as employment has remained stable due to a stable quota, vertical integrations by the hake companies which have created more employment in the sector. While in other fisheries there have been massive job cuts it not has been the same with the hake fisheries. Unemployment increases vulnerability especially in communities which are dependent on employment for livelihood. Paavola (2007) notes how those with more social, political and economic power have more options in dealing with vulnerability. The poor are most affected by unemployment compared to those with social, political and economic capital. Employment is the main form of livelihood for most of the fish workers meaning those who find themselves out of employment will face problems if they don't have a stronger social capital. Clay and Olson (2010) note there are cases in fishing communities when work is more than a job because it becomes one livelihood. There is greater need for employment creation in Saldanha so as to create more jobs. The reduction in the number of jobs in the fisheries over the years also means destruction of livelihoods for many. The government and the private sector must work together in preserving employment as well as saving the already existing jobs. Government policies must now encourage job creation and must work towards creativity in creating jobs. Transformations must lead to job creation and any form of transformation that leads to job losses must be discouraged.

Working conditions must improve especially for the fish workers who go to the sea who complain of working long hours. Proper working hours should be implemented in the shifts for sea going workers. Gasper (2002) explains well-being as an evaluation of a person's situation. It is important that the fish workers' well-being is improved through good working conditions. Most of the workers also advised on the need to be paid per shift not per catch as they cannot determine the amount of catch per every shift they work. Most of the fish workers working for big companies in hake industries have better working conditions compared to smaller companies. Improved benefits for workers and improved health and safety conditions for workers are important. Most hake fish workers perceive their working conditions as good compared to their colleagues in other fisheries. Fish workers 'welfare should be improved at all cost so as to motivate the workers for higher productivity. Welfare and well-being are usually used interchangeably.

All the above human dimensions if not attended to lead to poverty and vulnerability. The general decline trend in employment globally increases poverty levels among coastal communities (FAO, 2008). Generally human beings are included in ecosystems planning if they pose a threat to the ecosystem (Clay and Olson, 2010*)*.It is not usually the case if the ecosystem poses threat to the human being hence the general acceptance now that human beings are part of the ecosystem and cannot be ignored hence the importance of the ecosystems approach to fisheries management.

The following chapter gives a summary of the human dimensions in hake fisheries according to the findings of this study. It concludes the study by linking the conceptual framework and the findings of the study. It summarises fisheries management in South Africa's hake industry and also tries to give meaning to the integration of human dimensions in fisheries management. It answers the research question of what the human dimensions in the South African hake sector are.

7 CHAPTER SEVEN: CONCLUSION

7.1 Introduction

Labour issues in the hake sector form the main human dimension in the hake sector and include the type of employment, remuneration, conditions of employment, workers' representation and the issues of labour brokers. These issues influence the social, economic and political dimensions in the hake sector. Human dimensions in the hake sector describe the social, economic and political dimensions faced by fish workers in the hake sector. The type of employment of the fish workers is vital to the job security status of the individual. The need for stable and secure employment in fisheries is vital for fish workers livelihood since from the findings of this study employment is the main and only livelihood activity for most of the fish workers. It is important to note that the hake sector is not seasonal in nature and hence has potential to provide secure form of employment. Casual workers aspire to be permanent for security of employment. Casual work is insecure and does not have enough social security in the form of benefits compared to permanent work hence the need for an increase in permanent work in the hake sector.

Conditions of employment, which include hours of work, regulated daily wage, regulated leave and rest days, issues of social security, occupational health issues and the issue of labour brokers, define the social, economic dimensions in the hake sector. This study has highlighted the need for improving the working conditions of workers. While employment in the hake sector is formalised the need for set daily wage for sea going fish workers is needed and the need for improvement in the current rate considering the risky nature of their jobs. Most workers noted the improvement in their working conditions and the need to continuously improve the conditions. The sector should continue to strive for the betterment of the fish workers' well-being. Sea going fishers' working hours should also be regulated and their remuneration should further be improved. This study has however differed from the general assumptions that conditions of work in the fisheries are bad (Howse et al., 2012) which is not the case in commercial hake fisheries.

Remuneration in the sector should also be improved so as to safe guard the livelihood of the fish workers in the sector. Though currently they are better remunerated than most other fisheries in South Africa there is still greater need to continue improving the wages and other benefits for the fish workers. Pensions and life cover need improvement so that the life of fish workers after retirement may be better and that they may maintain their lifestyle in

retirement. International Labour Organisation - ILO (2007) encourages the promotion of decent working conditions.

Occupational health issue in the sector should also continue to improve to meet international standards. A zero tolerance approach of accidents at work place should be aimed within the sector if possible. There is need for further research into some of the occupational health issues which affect fish workers who have worked long time in the sector. The findings of such research should be addressed and ways of preventing them implemented for long term stability of the sector. ILO (2003), noted issues of arthritis having been noted in fish workers who have worked in the sector for a long time.

Poor housing infrastructure in Middlepos where the majority of the fish workers interviewed reside calls for the attention from both the hake sector in Saldanha and the government to intervene. Social corporate responsibility entails the need for social investments by companies operating in communities. It may be one of the social responsibilities companies like Sea Harvest that have operated in Saldanha for long time can pursue. Public corporate partnership plays a big role in alleviating some of the legacies of apartheid of poor infrastructure in black communities. This kind of housing development may need all sectors of the economy to work together in developing poor infrastructure in poor neighbourhoods of our communities.

There is also good provision of basic services such as water, electricity and toilet facilities. Most families have own toilets, own running water and electricity in their houses which is not the same as other rural coastal communities. Raemaekers (2010), Schultz (2010), and Sowman *(*2011*)* all concur about the lack of the above services in rural coastal communities where small scale fishers reside.

Basically, food insecurity is moderate in Saldanha to fish workers who are employed but this may be different with the unemployed and elderly. Most of the elderly are on government grants (Socio Economic Profile, 2008*)*. Fish workers cannot be rated as poor as most of them take in more than R4500 a month which is above the poverty datum line compared to most companies who offer far less than R4500 a month to general workers. Most old workers have benefited from the government's RDP housing schemes and others are now on the housing waiting list. Most of the fish workers do possess assets like televisions, fridges and stoves which make them better off than non-working people.

Unions want government to increase quotas to big companies so as to improve employment opportunities in the sector. Union leaders also talked against reforms that do not create employment but only benefitted those who are politically connected. The only work that most of the fish workers know is that of working in the fisheries and if they are out of work they will not have any other alternatives. The need for a quota based on agreed employment creation with hake companies was seen as crucial for the employment creation in the sector. Labour based employment is encouraged by unions at the expense of the use of machines to increase employment opportunities in the sector.

If social dimensions which include labour issues, issues of labour brokers, housing issues for fish workers and improved occupational health issues could be addressed, sustainable management of the hake resource will be attained. The need to identify the social dimensions in the hake sector and implement interventions with view of improving the welfare of communities is critical in promoting the ecosystems approach to fisheries management (Aswani et al., 2012). The ecosystems approach promotes intervention in the social dimensions of fisheries so as to facilitate effective fisheries management (Jones, 2007). The knowledge of these social dimensions is crucial as human dimensions have become part of the development agenda in fisheries management as the link between marine conservation and development (Sowman, 2010). If development could be achieved through the ecosystems approach in hake sector management it will be important. The hake sector is important.

There is greater need for improving the voice of fish workers. Ways of improving the fish workers' voice should be implemented as a policy in the sector so as to safe guard the interests of the workers. Unions should play a greater role in raising the voice of the fish workers through consultations not just rubber-stamping or claiming to represent workers. Fish workers' real issues should be articulated in a manner that will prompt change for the betterment of fish workers' welfare. Job creation should be promoted rather than job losses. Food Agriculture Organisation (FAO) (2012) noted the need for good governance which encompasses stakeholder participation which is key to successful and equitable management outcomes of fisheries management. Fish workers' involvement in all key stakeholder consultations to improve the voice of fish workers and incorporating the fish workers issues at all levels of planning. Aswani's (2012) assertions of managing people's influences on the ecosystem are essential to sustainable management of the hake resources.

The power of organised labour in the hake sector cannot be underestimated as they have

managed to represent their members over the years and improve the wages of its members. Hake sector workers are under the union of Food and Allied Workers Union (FAWU) and other small unions. They are members of the umbrella body of the Congress of Trade Unions in South Africa (COSATU). It is also important to note that hake workers at sea in one of the hake fishing companies in Saldanha were once shareholders of the company till they sold their stake the past few years. The past arrangement made workers feel like they were owners of the company but it did not benefit them because dividends were sometimes so little. The stake is now in the hands of management.

The issue of race is also another important political dimension along the coast. The indigenous coloured communities have the history of being fisherman along the west coast and now the new immigrants from other provinces are seen as a threat to employment opportunities for locals (Schultz, 2010). This tension is often down played but it's rampart along the coast. It was also increased by apartheid. In the long run I foresee tension escalating to high level if employment opportunities continue to dwindle along the coast.

The cultural element of hake fishing can be seen as an important element creating or maintaining self-esteem at individual or family level as noted by Bene (2004) in small scale fisheries. Polnac (2001:536) notes, "how fishing occupation confers not only important markers of self-identify and individual pride, but also "satisfaction bonus" that cannot be measured on economic ground."

The hake fish workers are associated with hake fishing in South African fisheries hence hake sector employment plays a major role in improving the livelihood of the fish workers and their dependency on it.

The hake sector stakeholders have a motivation for managing the hake resource so as to maintain the hake stock for business and for future generation. Hake fishing companies have a responsibility of sustainably harvesting fish resources with the view in mind that the hake resource is fully utilised (DAFF, 2010; WWF, 2012). The same document states that the biomass of the *Merluccius paradoxus* is around 15 % of the pristine state while the *Merluccius capensis* is around 57%. The need to manage harvesting so as to enable restocking of the hake resource is of importance.

Issues of governance of the hake sector are important to the conservation and sustainability of the hake sector. The governance structures include SADSTIA, MSC, RFA and government.

These are important in the policing and regulating of the sector. Of major concern of the governance structures is the sustainable management of the sector for the benefit of all the hake stake holders. Issue of stock assessments and contribution to policing of the sector is central to the governance structure (DAFF, 2010; Rademeyer, 2012).

The holistic environmental management strategies and sustainable fishing are being adopted in the South African fisheries in the adoption of the ecosystems approach to fisheries management (DAFF, 2010). Multispecies stock assessment is done in contrast to the single species approaches which have failed the fisheries because of their weakness of not considering species interactions and relationships (Pikich and Lam,2009;Rademeyer et al., 2010). The ecosystem approach to hake fisheries management takes into consideration all marine organisms and processes are connected and that alterations in these processes are not easily recognised and difficult to restore (WWF, 2011).

The human dimensions of the ecosystem approach to fisheries management integrate the fish workers' human dimensions in the hake sector which forms part of the human system and the ecological considerations of the marine ecosystem for the sustainability of the hake resource. The social dimensions in commercial hake fisheries are mainly labour related. Increased literature indicates the importance of social factors as primary factors in effective sustainable management (Pomeroy et al., 2007; Jones, 2009). Labour issues represent the social factors essential in fisheries management.

7.2 Integrating the human dimensions in fisheries management

The FAO (2008) notes the need for adopting livelihood thinking into the ecosystems approach implies that fisheries management should look at fish workers' context that is where they live, their household, communities and fish based economies and towns. Fish workers in this study reside in Saldanha and their livelihood is wage based as most of them from the findings of this study do not have any other economic livelihood alternative except of going to work. This resonates with Koehn et al. (2012) which note the importance of human dimension data in planning and decision making in fisheries. The importance of jobs in coastal towns like Saldanha where commercial hake companies have been providing employment to the community for a long time is a good example to analyse the employment based livelihood into the ecosystems approach.

Middlepos, where majority of the fish workers reside is characterised by poor housing infrastructure (Socio-Economic Profile, 2008). The type of housing material used to build the

houses of some of the fish workers explain the need for intervention. Most of the fish workers have no alternative accommodation hence they have to make do with the shacks made out of plastics, zink and cardboard. Housing development is a social priority in Middlepos area of Saldanha. The South African Constitution put housing as a basic right in the Bill of Rights (South African Constitution). Respecting the need for housing in hake fish workers community should be encouraged by both civil groups and the fish workers themselves.

This study has also shown that most of the fish workers have more than one dependent. Most of the fish workers are coming from very humble backgrounds and are taking care of families and extended family. Protection of jobs in the commercial sector is paramount to protecting the livelihood of more than one person for every job. Government policies should foster the protection of the current jobs and also aims at creating more jobs in the hake sector to reduce unemployment in Saldanha and other coastal towns. Job creation initiatives by the government should not be just a paper policy but help the unemployed in the fishing communities like Saldanha. The use of human labour should be promoted at the expense of mechanisation to create more jobs. Government should introduce tax incentives for job creation and even hake quotas may also be allocated according to job creation ability and the number of fish workers employed by the company. This also resonates with Arber (2009) on how the use of human dimension data can provide resource managers with quality information necessary to have an understanding of the ecosystem that will benefit the ecosystem.

The hake sector has organised labour and has secure employment because of its scope and value hence the need for continual improvement of the fish workers' working conditions. Security of work is important because it protects the fish workers from unfair dismissal. In Saldanha the majority of hake fish workers are permanent employees which make them better off than the casuals though having contracts which expire and will be out of work. It is important to note the life of fish workers is dependent on their work and most of the workers the only work they know is working in the hake sector. There is no fish workers abuse in the hake sector from talking with the fish workers in the sector which is contrary to Jeebhay, (2008).

There is greater need for improving the working conditions for sea going crew in terms of working hours and daily wage. Health and safety regulations are well maintained and monitored in the hake sector because of higher costs of compensation on affected workers

which they will seek from the company if they are harmed at work with proper protection. On board the vessels, safety drills are undertaken and safety gear is always in the vessels in case of emergencies. All workers agreed that the sector follows stricter health and safety regulations to minimise accidents especially at sea. Though minor incidences are reported there is greater need for zero tolerance on accidents. Issues of cuts, burns and strained back muscles must be addressed that solution to minimising these incidences. It is also important to undertake research on older retired workers if they have any work related complications after work so as to prevent current workers from past experiences. There is generally a decrease in work place accidents over the years in the fisheries (Jeebhay, 2008).

It is important to note the bigger role hake fish workers play in bringing in value to the sector. There is greater need for protecting employment for future generations in the hake sector. One good thing about the hake sector is that it is a big employer hence the need for sustaining the sector in the long run and the importance of the ecosystems approach to fisheries management in promoting sustainability of ecosystems. This study tries to integrate the human dimensions of the ecosystems approach to fisheries management in the sustainment of the hake industry in South Africa.

Poverty in the fisheries is one of the issues that is constantly being noted in most world fisheries (Garcia and de Young, 2003). It is important to note that hake fish workers cannot be categorised as poor and they are far much better off compared to other fish workers in the fisheries. In terms of wages the hake fish workers are better off than most sectors of the economy in South Africa. It must be government priority to serve the remaining jobs in the hake sector.

The hake deep sea trawl policy (Government policy documents) highlights the overall sector's objectives are of ensuring the long term sustainability and utilisation of the hake stocks. It also manages all the known impacts on the marine ecosystem affected by trawling, including preventing and reducing by catches which is what the ecosystems approach to fisheries tries to achieve. The issue of conservation of hake fish stock is important to both the fish workers who still want to be employed in the sector and also the sustainability of the hake companies. Government needs the taxes from the big business and the employment from the sector hence the importance of the sector to the economy as a whole.

7.3 Contribution of the hake sector to food security and reduction of vulnerability of fish workers

The wages the fish workers earn can enable them to buy food for themselves and their families. It enables them to buy food and meet their dietary needs and preference. Food security was defined at the World Summit (1996:1) as:

> "A condition when all people, at times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preference for an active and healthy life."

Most studies in South African coastal communities have highlighted food insecurity in coastal towns (Schultz, 2010). Malnutrition has also been observed in children in some coastal towns which is evidence of poor diets. The ability of fish workers to buy food reduces their vulnerability to hunger and poverty. I asked most of the respondents on whether they can afford to buy their food preferences of which the majority were able to. Wages in the hake sector removes the fish workers from the general assumption asserted on fishers of being the poor of the poorest. Vulnerability may be as a consequence of poverty (Bene, 2004*:* 14). The fact that fish workers have a wage above the poverty datum line shows they are less vulnerable. Though fishing is regarded as a high occupational risk form of employment hake fish workers' safety and health standards are far much better compared to other fisheries.

7.4 Ecosystems impact of hake fishing considered in the management of the hake sector in South Africa

Through the Responsible Fisheries Alliance the hake fishing companies have managed to get expertise on the ecosystems approach to fisheries management. The Responsible Fisheries Alliance has managed to lead in capacity building on responsible fisheries in the hake sector. All the stakeholders have been convening and discussing responsible fisheries management which is part of the ecosystems approach to fisheries management. A fishing company in Saldanha noted that the current fishing trends are very responsible since a precautionary approach to conservation is being implemented through the government so as to manage hake stocks. The government and its stakeholders that include, academics, NGOs, experts, companies and all other stakeholders are involved in research so as to have accurate data on the stocks and the ecosystems the South African hake is found.

Companies in the hake sector reduce the impact of by catch through regulated mesh size of their vessel nets. There is a greater precautionary measure in the hake sector in increasing

selectivity and decreasing the harmful impacts of their fishing gear. Transparency and accountability in the hake sector in South Africa has helped the sector improve its image and is MSC certified through the Marine Steward Council. This certification awards sustainably managed fisheries with a label that is fixed in retails internationally. This allows consumers to promote sustainable fishing through market based mechanisms.

The ecosystem approach to fisheries management is centred on ecosystem management and fisheries management. While ecosystems management focuses on the conservation of the biosphere components of an ecosystem, fisheries management aims to sustainably harvest fish resources to meet social and economic needs. In this research the Saldanha community benefits socially through employment and other development attracted by the hake sector. The economic benefits will include the monetary benefits which include wages, taxes and royalties from the sector which benefits both the community and the nation at large. It also includes the foreign currency derived from exporting hake which is crucial for the country's balance of payment.

The increased understanding of fisheries and poor performance of conventional fishing approaches has promoted the use of the ecosystems approach to fisheries management. Its holistic nature in dealing with fisheries issues beyond seeing a fishery as a supplier of fish, beyond consideration of just the commercial values of fish species, beyond management efforts, directed solely on fish harvesting process. It aims at limiting the impact of fishing on the ecosystem. The ecosystems approach depends on both fisheries science and social science as a basis for decision making. Fisheries science uses stock assessment to estimate population parameters of the focal species from their age, length structure of past catches, biomass of the past catches, past fishing efforts and other biological parameters. The social science part of the ecosystems approach is the human dimensions of fisheries management summarised in this chapter in terms of the social, economic, cultural political and institutional dimension.

There is greater need for further research on the human dimensions in commercial fisheries with the focus on other commercial fisheries in South Africa. Also needed is expanded research aimed at understanding socio-economic investigations to improve the understanding of the circumstances of the individual and communities who depend directly on the hake fish for a living and the way they may be affected by any policy change. While gender roles in the hake industry are evident it is also important to understand the role of women in other sectors of the South African fisheries. The greater need for empowering women in the

fisheries must also be understood. The need for fair wages to fish workers working under labour brokers should be encouraged. The labour union leaders in South Africa have been calling for the banning or stricter regulation of labour brokers so as to protect workers. In this case the labour broker gets more than what the worker who actually does the work gets of which is not fair. These are some of the human dimensions in commercial fisheries in South Africa. The ecosystems approach advocates for increased social interventions (Garcia, 2003*)* in the fisheries for effective management of fisheries hence the importance of dealing with these issues.

It is important to note that while conditions on board and safety of fishers at sea in the hake sector is better there is greater need for understanding these factors in other fisheries which may not be the same as the hake sector. Concerns over higher levels of alcohol consumption on board in the hake fisheries are unfounded as they have stricter safety regulations and standards. This may not be the case for other fisheries sector in South Africa hence the need for further research on the issue of consumption of alcohol on board. The issue of alcohol on board has been widely cited on small scale fisheries safety and health concerns (ILO, 2007).

The age structure in the commercial hake sector in this study has an average age of 30-35 with most of them having more than 5 years' experience. An understanding of age structure in other commercial fisheries is important so as to understand if the youth are getting employment in the fisheries and how much jobs are the youth benefitting from the South African fisheries.

Saldanha has a unique experience of growth of the tourism sector while fisheries jobs are on the decrease. There is a need to understand the number of fish workers who lost their jobs in the fisheries who are now in the tourism sector in Saldanha. The impact of migration on the conflict for jobs must also be researched. Issues of social cohesion between migrant workers and indigenous workers and how conflict within the coastal communities can be mitigated are important.

Another important phenomenon is the current economic downturn in South Africa's major markets that is Spain and the European Union and how it affects hake sales and the general profitability of the hake sector. It is also important to develop the local market and research on pricing models that will create or increase the local market in the long run.

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