

IMPACT OF CURRENT LEGISLATIVE FRAMEWORK ON INLAND SMALL-SCALE FISHERIES IN SOUTH AFRICA: A CASE STUDY OF LIMPOPO, FREE STATE AND NORTHERN CAPE PROVINCES

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ABSTRACT

Unlike in many other African countries, inland fisheries in South Africa are poorly developed. The provincial legal framework regulating inland fisheries is based on biodiversity control principles. It recognises recreational angling but does not recognise the fishing rights for small-scale fishers who fish for livelihood purposes. This study reviewed the national legislation with assessing its impact on inland fisheries and analysed the provincial environmental management legislation in Limpopo, Free State and Northern Cape Provinces. Mini surveys were conducted in Nandoni Dam, Lake Gariep and Vanderkloof Dam to determine the perception of small-scale fishers on the current laws. The legislative analysis shows that the provincial laws in the three provinces focused on regulation of recreational angling activities and there is general lack of compliance from small-scale fishers. The perception from the small-scale fishers is that the current laws regulating the sector are unfair and therefore legislative reform is needed.

Key words: inland fisheries, fishing rights, small scale fishers, national legislation, environmental management legislation, South Africa.

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TABLE OF CONTENTS

1	INTRODUCTION	5
1.1	Background	5
1.2	Rationale	6
1.3	Objectives	6
2	METHODS	7
2.1	Qualitative surveys and data collection	7
2.2	Study area.....	7
2.2.1	Overview of Nandoni Dam	8
2.2.2	Overview of Vanderkloof Dam	8
2.2.3	Overview of Lake Gariep.....	9
3	INLAND FISHERIES SECTOR IN SOUTH AFRICA	10
3.1	The status of inland waters in South Africa.....	10
3.2	Sector governance in South Africa	10
3.3	Ownership of and access to fisheries resources	11
3.4	Economic impact of the inland small-scale fisheries subsector.....	11
3.5	Economic impact of the recreational angling subsector	12
4	RESULTS	12
4.1	Participant profile.....	12
4.1.1	Citizenship status of the participants	13
4.1.2	Racial composition of the participants.....	13
4.1.3	Age of the participants	14
4.1.4	Distance travelled to the site	14
4.1.5	Motivation for fishing	15
4.1.6	Employment status of survey participants	16
4.2	Economic benefits to fishers	17
4.2.1	The frequency of fishing activities in each study area.....	17
4.2.2	Fish trading areas	17
4.2.3	Quantity of fish sold per day.....	18
4.3	Sustainable utilisation of natural resources.....	19
4.3.1	Observation of catch decline.....	19
4.3.2	Perception on catch limitations	19
4.4	Access control and monitoring	20
4.4.1	Participants' knowledge of permit requirement.....	20
4.4.2	Participants' knowledge of fishing rules.....	20
4.4.3	Participants' knowledge of compliance monitoring agencies	21
4.4.4	Access to fishing grounds	22

4.5	Fishing gear used	22
4.6	Personal perception on current laws	23
5	ANALYSIS OF CURRENT LEGISLATION.....	24
5.1	National legislation governing inland small-scale fisheries	24
5.1.1	The Constitution of the Republic of South Africa	24
5.1.2	National Environmental Management Act, 1998 (Act No. 107 of 1998).....	25
5.1.3	National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	25
5.1.4	National Water Act, 1998 (Act No. 36 of 1998).....	26
5.1.5	National Freshwater (Inland) Wild Capture Fisheries Policy of South Africa, 2021.....	26
5.2	Provincial legislation with direct impact on inland fisheries.....	27
5.2.1	Limpopo Province: Environmental Management Act, 2003 (Act No. 7 of 2003) 28	
5.2.2	Free State Province: Nature Conservation Ordinance No. 8 of 1969	29
5.2.3	Northern Cape Province: Nature Conservation Act, 2009 (Act No. 9 of 2009) 30	
5.3	Legislation review summary	31
6	DISCUSSION.....	31
6.1	Legislation governing inland fisheries.....	32
6.2	Citizenship, race, age and gender composition of small-scale fishers.....	32
6.3	Importance of inland fisheries	33
6.4	Gear type used by the fishers	33
6.5	Perceptions of current laws	34
7	CONCLUSION.....	34
8	RECOMMENDATIONS.....	35
	Acknowledgements.....	36
	References.....	37
	Appendices.....	40
	Appendix I: Summary of national laws affecting inland fisheries	40
	Appendix II: Summary of regulations with an impact on inland fisheries	43
	Appendix III: Summary of provincial laws regulating inland fisheries	44
	Appendix IV: Survey questionnaire.....	51

LIST OF FIGURES

Figure 1. Map of Nandoni Dam and its position in Limpopo Province, South Africa.	8
Figure 2. Map of Vanderkloof Dam and its position in Northern Cape Province, South Africa.	9
Figure 3. Map of Lake Gariep and its position in Free State Province, South Africa.	10
Figure 4. Citizenship composition of the participants interviewed in Nandoni (orange), Gariep (blue) and Vanderkloof (grey).	13
Figure 5. Racial composition of survey participants at Lake Gariep (blue), Nandoni Dam (orange), and Vanderkloof Dam (grey).	14
Figure 6. The ages of survey participants by study site, broken into six age categories.	14
Figure 7. Distance travelled by the survey participants (fishers) from their place of residence to the dam where they undertake fishing activities.	15
Figure 8. The main motivation reported by survey participants for undertaking fishing activities in each study area.	16
Figure 9. Employment status reported by survey participants.	16
Figure 10. Fishing frequency reported by survey participants from Gariep (blue), Nandoni (orange), and Vanderkloof (grey).	17
Figure 11. Places where fish are sold, by fishing site.	18
Figure 12. Quantity of fish sold (kg) per day, by survey site.	18
Figure 13. Reported observation of fish catch decline by survey participants by survey location: Gariep (blue), Nandoni (orange), and Vanderkloof (grey).	19
Figure 14. Survey participant perception on whether fish catch should be limited, by survey site.	20
Figure 15. Survey participant knowledge of permit requirements at fishing locations, by survey site.	20
Figure 16. Survey participants' knowledge of fishing rules at Lake Gariep (blue), Nandoni dam (orange), and Vanderkloof dam (grey).	21
Figure 17. Survey participants' knowledge of compliance monitoring at Lake Gariep (blue), Nandoni dam (orange), and Vanderkloof dam (grey).	21
Figure 18. Denial of fishing access reported by survey participants at Lake Gariep (blue), Nandoni dam (orange), and Vanderkloof dam (grey).	22
Figure 19. Preference of survey participants for alternative fishing gears at Lake Gariep (blue), Nandoni dam (orange), and Vanderkloof dam (grey).	23
Figure 20. Survey participants' perception on the fairness of the current laws regulating fishing at Lake Gariep (blue), Nandoni dam (orange), and Vanderkloof dam (grey).	24
Figure 21. Provincial demarcation of South Africa during the apartheid era.	27
Figure 22. The current map of South Africa.	27
Figure 23. Schematic representation of fishing laws in Limpopo province in comparison with on the ground practices by small-scale fishers observed operating at Nandoni Dam.	28
Figure 24. Schematic representation of fishing laws in Free State province in comparison with on the ground practices by small-scale fishers observed operating at Lake Gariep.	29
Figure 25. Schematic representation of fishing laws in Northern Cape province in comparison with on the ground practices by small-scale fishers observed operating at Vanderkloof dam.	31

1 INTRODUCTION

1.1 Background

Globally, small-scale fisheries are regarded as an important contributor towards job creation, food security and poverty eradication (Isaacs & Hara, 2015). This observation is generally applicable to small-scale fisheries within both marine and freshwater systems. In 2018, inland fisheries catches were recorded at 12 million tonnes representing 12.5% of total capture fisheries globally (FAO, 2020). This is significantly lower than global marine fisheries production during the same year. However, the importance of inland fisheries cannot be downplayed based on this fact. Inland fisheries in many countries contribute to livelihoods, employment, and nutritional and food security. In some countries such as landlocked countries, inland waters are all that is available in terms of fisheries, and they are vital for the livelihoods of the citizens.

For example, Malawi is a landlocked country without any jurisdiction to marine waters (FAO, 2020). Malawi is one of the African countries with high fish consumption rated at number six in the Southern African Development Community (SADC) region (Ministry of Forestry and Natural Resources, 2021). Even in the absence of marine fisheries, Malawi in 1970 had consumption of 14 kg per capita per year (Nankwenya, et al., 2017). Fish consumption decreased to 7.3 kg in 2018 (Ministry of Forestry and Natural Resources, 2021). This decrease in fish consumption is attributed to a lack of adequate fish supply to satisfy the increased population (Nankwenya, et al., 2017). The sector is still important to the country as it contributes 4% of the Gross Domestic Product (GDP) and about 500,000 jobs (Nankwenya, et al., 2017). The jobs created in the sector contribute meaningfully to the overall economy in a country with a population of 17.5 million (Government of Malawi, 2018).

Malawi has developed legislative framework which promotes an enabling environment for fisheries to thrive. In 1997, the government of Malawi enacted the Fisheries Conservation and Management Act, 1997 (Act No. 25 of 1997). The Act is fundamental to the development of the sector, and this is clear from the title which states that “the Act makes provision for the conservation and management of the fisheries of Malawi and for matters incidental thereto or connected therewith,” (Malawi Government, 1997). This legislation clearly defines and recognises the different fisheries categories including the small-scale fisheries subsector, which is not the case in South Africa within the inland fisheries context.

On the other hand, South Africa is different to Malawi because it has both marine and inland waters. South Africa has the benefit of a long coastline which stretches through four provinces i.e. Northern Cape, Western Cape, Eastern Cape and Kwa-Zulu Natal. Marine fisheries activities are recognised by legislation, viz. the Marine Living Resources, 1998 (Act No. 18 of 1998), which provides a dedicated legal framework for both marine commercial, recreational and small-scale fisheries sectors (Snowman, 2006).

In 2012, the government adopted the Policy for Small-Scale Fisheries for South Africa with the primary objective of “introducing certain fundamental shifts in Government’s approach to small-scale fisheries sector.” The change in governmental approach to the sector is accompanied by, among other policy interventions, a “provision of formal and appropriate legal protection for small-scale fishers through the recognition and allocation of their rights,” (Department of Agriculture, Forestry and Fisheries, 2012).

Currently, the marine fisheries sector in South Africa consists of about 27,000 jobs, with a total output of 600,000 tonnes and contributes roughly 0.1% to the GDP in a country with a population of 59.6 million. Although the sector’s contribution seems small, it contributes more

than 5% to the Western Cape's Gross Provincial Domestic Production which is where 11 of the 13 proclaimed fishing harbours are situated, making this an economically important sector (Department of Agriculture, Forestry and Fisheries, 2019).

South Africa also has vast inland waters where the main categories of South Africa's fisheries i.e. small-scale and recreational fishing activities occur. Major dams in the country are said to have fisheries potential with an estimated production of 15,000 tonnes per annum. The distribution varies widely throughout the country with relatively higher productivity in provinces with warmer conditions such as Limpopo, North West, Kwa-Zulu Natal and Mpumalanga (Isaacs & Hara, 2015).

The position adopted by the African Union regarding the development of the inland fisheries sector in Africa is encouraging and should be regarded as a point of reference for South Africa and other African countries. Due to its social and economic importance, the African Union has elevated and categorised the inland small-scale fisheries sector as an area of priority in terms of the Policy Framework and the Reform Strategy adopted in 2014 (Hara, et al., 2021). Ideally, member states should prioritise inland small-scale fisheries sector in line with the position adopted by the African Union.

In South Africa, the government is providing support towards the development of the marine small-scale fisheries sector, especially since its legal recognition and implementation of the Policy for Small-Scale Fisheries for South Africa. Crucially, the rights of the black Africans, who were excluded from formal participation in the fishing industry by the Apartheid regime, have been restored (Pretorius, 2017). This is a significant shift since the country transitioned into democracy in 1994. However, the same cannot be said for the inland small-scale fisheries sector which is currently informal and the fishing rights for livelihood are not provided for in legislation thus far. Therefore, inland fishers are still marginalised even under the democratic government (Hara, et al., 2021).

1.2 Rationale

Section 24 (b) (iii) of the Constitution of the Republic of South Africa provides that "everyone has the right to have the environment protected, for the benefit of present and future generations, through reasonable legislative and other measures that secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development." This provision is consistent with the FAO's Code of Conduct for Responsible Fisheries. However, the current legislative framework in South Africa does not account for the socio-economic aspects of inland small-scale fisheries and thus, does not satisfy the constitutional requirements and is inconsistent with FAO's Code of Conduct. Consequently, small-scale fishing communities are unable to legally access the fisheries resources valued at R484 million (USD 30 million) (Hara, et al., 2021). This study will assist with understanding the legislative environment in the country and the experiences of the inland small-scale fishers fishing at Nandoni Dam, Lake Gariep and Vanderkloof Dam.

1.3 Objectives

Inland fisheries sector in South Africa is currently underdeveloped and the freshwater fisheries resources are underutilised as a source of protein (Britz, et al., 2015). The current regulatory framework lacks clearly defined user-rights and does not provide for social and economic goals. As such, the rural fishing communities are excluded from the livelihood, social and economic benefits that are linked to freshwater natural resources. The current regulatory framework has, therefore, contributed to inequitable access to these natural resources (Department of Forestry, Fisheries and the Environment, 2021). To address the unjust exclusion of the small-scale fishers, it is important that South Africa embark on a process of

developing legislation that is aligned to the Constitution. As a first step towards the development of such legislation, it makes sense to first identify the laws that have an impact on the sector and determine the extent of such impact. The information gathered from this study will improve understanding of the current regulatory environment and the small-scale fishers' experiences in terms of the requirements of the law.

The main objective of the study is to identify the relevant legislation and analyse the impact of the regulatory framework on the inland small-scale fisheries sector in South Africa. Specifically:

- Review the national and provincial legislation directly affecting the small-scale fisheries sector.
- Analyse the provincial legislation regulating small-scale fisheries sector in Limpopo, Free State and Northern Cape provinces.
- Determine the small-scale fishers' perception on the current regulatory framework through mini surveys conducted on three public dams.

2 METHODS

The data for this study was gathered through a review of the primary literature including reports, official government documents, and journal articles. Legislation currently in place was analysed regarding the practices and experiences of small-scale fishers operating on three public water bodies: Nandoni Dam, Lake Gariep and Vanderkloof Dam. Information from the literature was used to determine, in general terms, the profile of the inland fisheries sector, particularly the small-scale fisheries subsector.

A desktop review of national and provincial legislation with an impact on inland fisheries was undertaken. There are numerous other laws with indirect impacts on the sector. However, the scope of the study was limited to the analysis of laws with direct impact on the sector such as environmental protection and water use management legislation. To achieve the main objective of this study, a legislative analysis was undertaken to determine compliance, or lack thereof, with the provincial legislation regulating inland fisheries resources.

2.1 Qualitative surveys and data collection

A survey questionnaire was designed and used as a data collection tool. The primary aim of the mini survey was to determine the experiences and perception of the small-scale fishers on the current legislative framework and their expectations for future laws.

Three data collectors with experience in the inland fisheries field were appointed to collect data at Nandoni Dam (Limpopo Province), Lake Gariep (Free State Province), and Vanderkloof Dam (Northern Cape Provinces). Each data collector was assigned a location to survey over a period of two days in December 2021. The collected data was captured using Google forms and analysed using Microsoft Excel.

2.2 Study area

South Africa is the Southernmost part of the African continent with a population of 59.6 million (StatSA, 2020). The country is divided into nine provinces with 4703 registered dams, of which 704 are public dams managed by the Department of Water and Sanitation (Britz, et al., 2015). Limpopo Province is the Northernmost part of the country with a population of 5.8 million (StatsSA, 2020). The Northern Cape Province has the largest surface area with the lowest population of 1.29 million (StatSA). Free State Province has a population of 2.0 million. Figures 1, 2 and 3 show the location of the study areas on the map of South Africa.

2.2.1 Overview of Nandoni Dam

Nandoni dam is located in Thulamela Local Municipality, Vhembe District (coordinates 22° 59' 20" S, 30° 36' 10" E). The dam has a capacity of 164 million cubic metres. Inland fish resources on this dam have been taken over by Traditional Authorities due to a lack of presence by government agencies. Traditional Authorities are the leaders of Traditional Councils, they are responsible for administration and allocation of land as empowered by the Traditional Leadership and Governance Framework Act, 2003 (Act No. 41 of 2003) (Britz, et al., 2015). The dam is built on state-owned land, and it is administered by three traditional councils as it spans three territories: Mphaphuli, Mulenzhe, and Tshivhase (Sinthumule, 2021).

The dam was built mainly to provide water to the people in the Vhembe and parts of Mopani districts. Nandoni Dam also supplies water to the wildlife at the Kruger National Park. The dam is used by the nearby rural communities for domestic purposes such as bathing and laundry. Nandoni Dam is also a source of income generation as it is used by predominantly unemployed men who fish for both their own consumption and to sell (Gumbo, et al., 2016). However, the majority of local residents continue to live in poverty as they are unemployed and mostly dependent on social grants, fishing and subsistence farming (Sinthumule, 2021).

Both recreational and small-scale fishing activities occur on this dam (Britz, et al., 2015). Most encountered fish species on this dam are *Oreochromis mossambicus*, *Clarias gariepinus*, *Micropterus salmoides* and *Cyprinus carpio*.

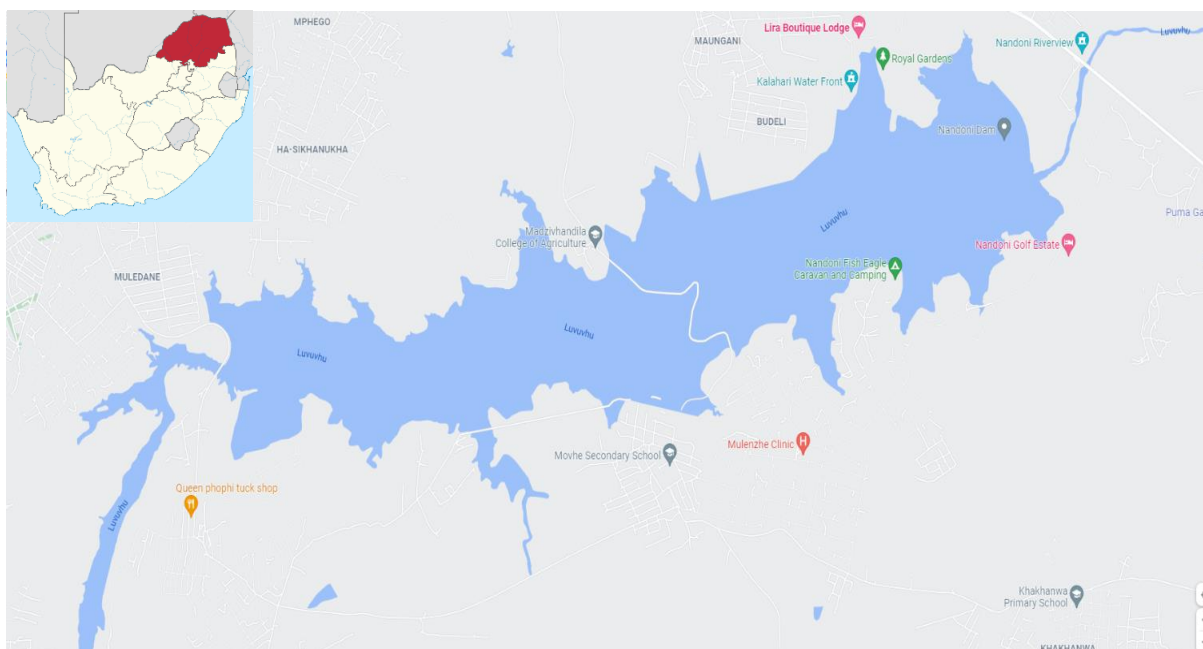


Figure 1. Map of Nandoni Dam and its position in Limpopo Province, South Africa.

The Vanderkloof Dam is located in Pixley ka Seme District Municipality (coordinates 29° 59' 31.99" S 24° 43' 54.01" E). The dam is the second largest in South Africa covering 121 km² surface area with capacity of 3,187 million cubic meters. It is estimated that the productivity on this dam surpasses 400 tonnes per year, and therefore has a potential to support commercial fishing (Britz, et al., 2015). Vanderkloof Dam is connected to Lake Gariep by Orange River and receives on average 98.5% of its water from Lake Gariep (Tomasson, et al., 1984).

The main purpose of the dam is to provide water for irrigation, generate hydroelectricity, and secure the water supply for the surrounding communities. The dam is also used by recreational

anglers who travel from all over the country, mostly during the December and April holidays. Some recreational anglers frequent the dam on weekends throughout the year (DWS, 2014).

The dam is a source of income for nearby towns which are characterised by high levels of unemployment and poverty. Community members from Petrusville, Luckoff, Phillipstown, Koffiefontein and Keurtjieskloof depend on this dam as they undertake fishing activities for their own consumption and sales at a small-scale level (van der Vyver, et al., 2016). A group of 23 small-scale fishers engage in kraal fishing, which has been practiced for over 20 years on this dam (Wood, et al., 2016).

Recreational anglers and small-scale fishers target several species such as *C. gariepinus*, *C. carpio*, *Labeo capensis* and *Labeobarbus aeneus* (van der Vyver, et al., 2016). The Near Threatened (as listed on International Union for Conservation of Nature Red List) *Labeobarbus kimberleyensis* is found on this dam as it is indigenous to the Orange River (Barkhuizen, 2015). *L. kimberleyensis* is listed as a “Protected Species” in terms of National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004).

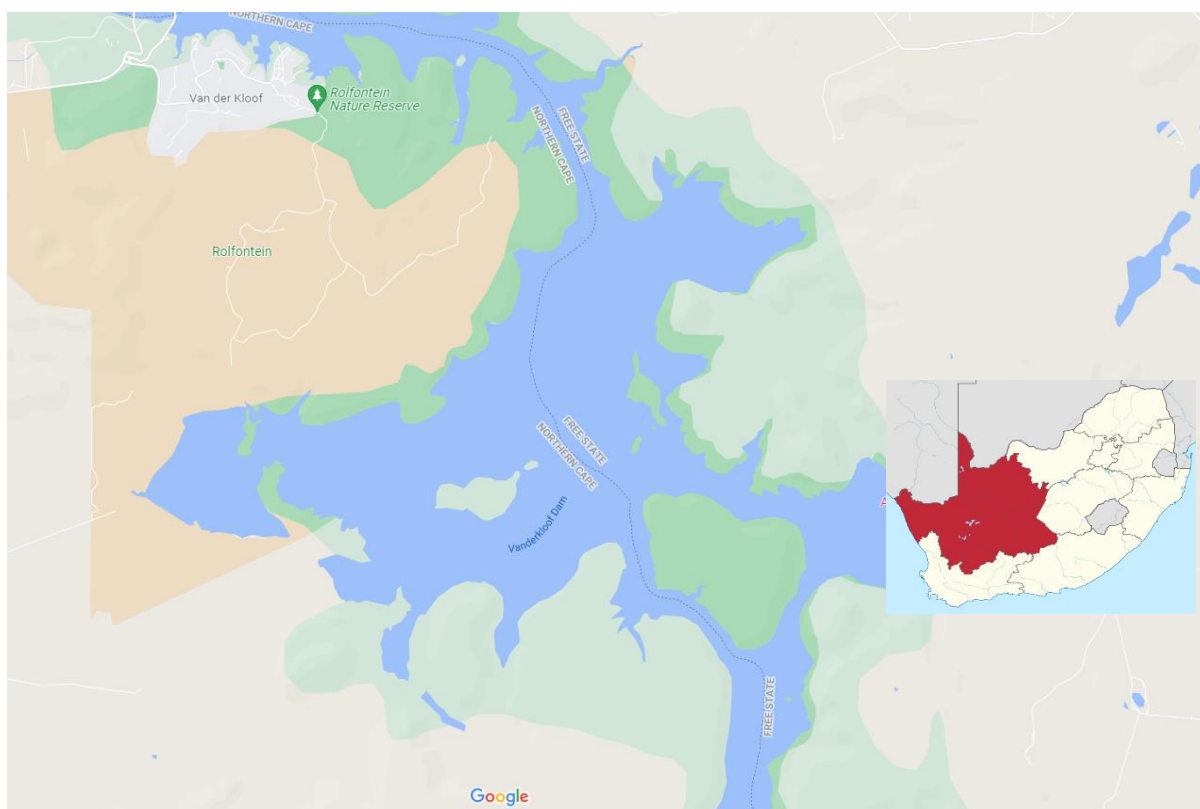


Figure 2. Map of Vanderkloof Dam and its position in Northern Cape Province, South Africa.

2.2.3 Overview of Lake Gariep

Lake Gariep Fishing Area is located in Xhariep District Municipality (coordinates 30° 37' 25" S, 25° 30' 23.81" E). Unemployment rates and poverty in this district have been on an increasing trend since 2008 (Chomane, 2018). Xhariep District has a considerably high unemployment rate (35.3%) with 41.9% of the population living in poverty (COGTA, 2020).

Lake Gariep is South Africa's biggest impoundment covering 360km² at maximum capacity (Ellender, et al., 2010). The dam is estimated to have commercial fishery potential with productivity of >400 tonnes per year (Britz, et al., 2015). Both recreational and small-scale

fishing activities occur on this dam (Ellender, et al., 2010). The majority of recreational anglers are tourists from all over the country, while a smaller proportion are from the local towns (Ellender, et al., 2009).

Fish population on Lake Gariep is dominated by *L. capensis*, *L. aeneus*, *L. kimberleyensis*, *C. carpio* and *C. gariepinus* (Ellender, et al., 2010).



Figure 3. Map of Lake Gariep and its position in Free State Province, South Africa.

3 INLAND FISHERIES SECTOR IN SOUTH AFRICA

3.1 The status of inland waters in South Africa

South Africa is regarded one of the driest countries in the world with scarce water resources. Various factors contribute to water scarcity in the country with generally low rainfall and high evaporation rate (Seago, 2016).

Rainfall is unevenly distributed across the country's catchment areas with some catchments receiving less than 100 mm/year and some catchments recording above 1500 mm/year rainfall. On average, South Africa records 450mm/year rainfall (Department of Water Affairs, 2013). High evaporation rate, which results in water loss, is attributed to the hot climate in the country. Like many other developing countries, South Africa has challenges regarding water pollution and quality, which threatens water security and, ultimately, socio-economic development and environmental protection (Seago, 2016).

Many South African waterbodies display problems associated with high nutrient enrichment and eutrophication. These problems are common in most industrialised countries (Department of Water Affairs and Forestry, 2002). Inadequately treated effluents that are discharged into river systems and run-off from municipalities and agricultural establishments contribute to the eutrophication of waterbodies, resulting in low available oxygen, taste and odour problems, production of algal toxins and fish deaths (van Ginkel, et al., 2001). These problems associated with the scarce water resources in the country may negatively affect and hinder fisheries development in the country if they are not adequately managed.

3.2 Sector governance in South Africa

The recommended governance system for small-scale fisheries is based on the Ecosystem Approach to Fisheries, which suggests that biological and human components of the ecosystem

should be incorporated in order to achieve socio-economic benefits through sustainable utilisation of fisheries resources (Britz, 2015).

The Ecosystem Approach to Fisheries involves consideration of ecological issues such as habitat protection and restoration, pollution reduction and waste management, sustainable harvesting of fisheries resources, as well as socio-economic benefits to people such as increased and equitably distributed wealth and sustainable livelihoods (Department of Forestry, Fisheries and the Environment, 2021).

This principle has been adopted in the national policy developed by South Africa's national department responsible for fisheries management, the Department of Forestry, Fisheries and the Environment. However, there is a need for clear legislated definition of rights for each resource user category to legitimise all the relevant resource users. The legitimisation of all resource users will allow the different stakeholders fishing under different categories equal opportunities towards accessing the natural resources.

3.3 Ownership of and access to fisheries resources

In South Africa, the current regulatory framework for inland fisheries is mainly based on environmental protection. Socio-economic aspects are neglected, particularly for the small-scale fishing sector which is characterised by fishing to achieve livelihood requirements. For fisheries governance, the legislative framework recognises and provides control mechanisms for recreational angling activities (Department of Forestry, Fisheries and the Environment, 2021). Therefore, people fishing within the small-scale sector are not formally recognised. This lack of recognition is inconsistent with the objectives of the constitution, however the majority of the current legislative framework regulating the sector was developed before the democratic dispensation. As such, the laws are not based on the principle of equal rights for all citizens (Britz, et al., 2015) and thus, are inconsistent with the Bill of Rights as enshrined in the constitution.

In South Africa, freshwater bodies are owned by the state, while some dams are owned privately. From a fisheries development perspective and in terms of the National (Freshwater) Inland Wild Capture Fisheries Policy, government intends to manage only the public waterbodies (Department of Forestry, Fisheries and the Environment, 2021). Currently, access control to public waterworks is managed by the Department of Water and Sanitation. The provincial departments responsible for environmental management are the custodians of respective provincial legislation, who regulate the harvest of wild freshwater fish (Britz, et al., 2015).

The current regulatory framework recognises the recreational angling sector, but not the rights of small-scale (subsistence) fishers (Department of Forestry, Fisheries and the Environment, 2021). To access the resources legally, the small-scale fishers are forced to settle for acquiring recreational angling permits. However, the rules for recreational angling have certain conditions which are misaligned to the objectives of a person fishing for the purposes of meeting livelihood requirements of nutrition and income generation.

3.4 Economic impact of the inland small-scale fisheries subsector

There is a gap in information regarding the full economic value of the small-scale fisheries sector. Currently, the information is fragmented but there is evidence that the sector provides social and economic benefits, and contributes towards food security, livelihood opportunities and income generation primarily for people residing within the vicinity of public waterbodies (Britz, et al., 2015).

Using Market Use Value (MUV), the economic value of the small-scale fisheries sector is estimated at R484 million (USD 30 million). A previous study showed that at Flag Boshielo Dam, fishers using gillnets make a profit of R11, 500 (USD 770) per month, while the small scale-fishers using angling method generate monthly profit of R1, 500 (USD 100) (Hara, et al., 2021).

There are, however, other significant factors that need to be considered when a potential fishery is assessed besides the economic and the biological dimensions of the resource. Factors such as popular fishing practices, the sustainability of such practices, empowerment of disadvantaged groups, status of fishery governance, and resource management need to be better understood. The existing resource users also need to be identified and quantified and the equitability of their fishing practices needs to be determined (Britz, et al., 2015).

3.5 Economic impact of the recreational angling subsector

The recreational angling sector is a popular activity and has been recorded on 69% of public dams with approximately 1.5 million participants in the country. The recreational angling sector contributes significantly to the economy with a linkage to the tourism sector and its associated supply value chains. Recreational angling is organised as a sporting code in South Africa with affiliation to the South African Sports Confederation and Olympic Committee (SASCOC) (Britz, et al., 2015). Accordingly, the rights of recreational anglers are clearly defined in legislation (Britz, 2015) with the provincial legislations providing for applicable laws related to angling on public waterbodies. The recreational angling sector is recognised by the Department of Water and Sanitation and therefore, their activities on public dams are formalised as provided for by the National Water Act 1998 (Act No. 36 of 1998) and through the compilation of dam-specific Resource Management Plans. The control of the recognised activities including recreational angling involves zoning, whereby certain groups of resource users with common interest are allocated a specific space or zone on the dam where they are allowed to operate (DWS, 2014).

The economic value of the recreational angling sector is estimated at R36 billion (USD 2.2 billion) per annum (Saayman, et al., 2017). This value is high in comparison to that of small-scale fisheries, which is estimated at only R484 million (USD 30 million). Furthermore, the recreational angling sector contributes to job creation and rural livelihoods. Therefore, recreational anglers need to be recognised as important stakeholders of the inland fisheries sector (Britz, et al., 2015).

4 RESULTS

Surveys were conducted in three study areas where there is a known presence of small-scale fishers. The fishers who participated in the surveys were asked questions and the interviewer recorded the responses on a questionnaire sheet for each participant. A total of 61 small-scale fishers in three study areas, Nandoni Dam, Lake Gariep and Vanderkloof Dam, participated in this study. At Lake Gariep, 21 participants were interviewed. At Vanderkloof Dam and Nandoni Dam 20 participants were interviewed in each of the two study areas.

4.1 Participant profile

Out of all 61 participants interviewed, only 10% were female. Five female participants were recorded in Vanderkloof, and one female participant was recorded at Lake Gariep. All the participants at Nandoni Dam were male.

4.1.1 Citizenship status of the participants

A question was asked to determine the citizenship status of the participants. The majority of participants at Nandoni Dam chose not to disclose their citizenship status (n=9; 45%). On the same dam, 40% of the participants (n=8) had South African citizenship and the rest had foreign citizenship (n=3; 15%).

At Vanderkloof Dam, the vast majority (n=19; 95%) of participants had South African citizenship and one participant (5%) chose not to answer the question. All participants at Lake Gariep had South African citizenship. None of the participants interviewed had dual citizenship that included South Africa. The citizenship composition of the participants in the 3 study areas is shown in Figure 4.

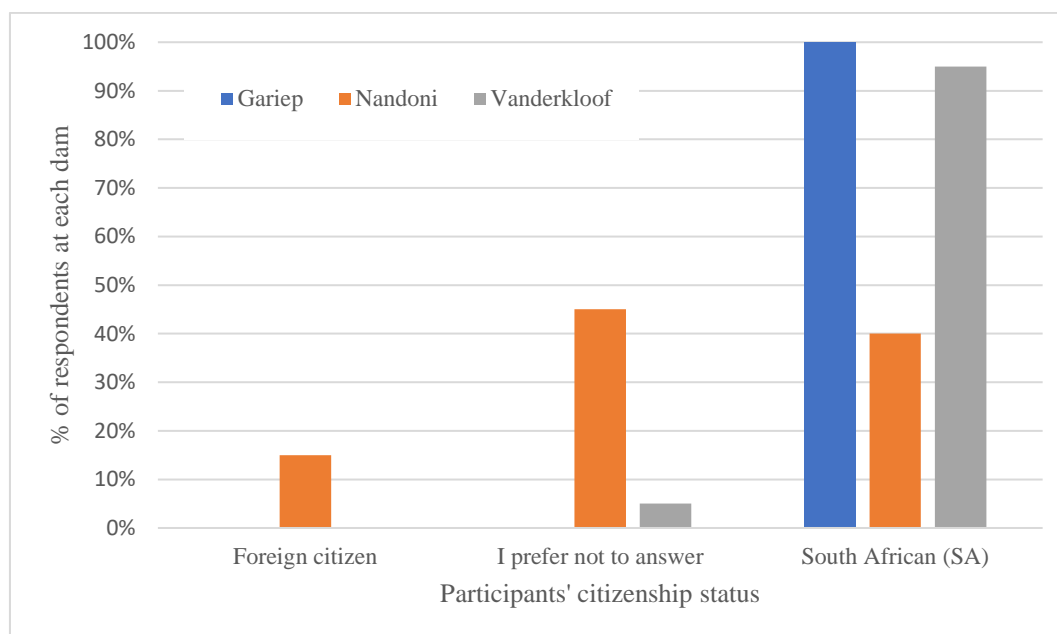


Figure 4. Citizenship composition of the participants interviewed in Nandoni (orange), Gariep (blue) and Vanderkloof (grey).

4.1.2 Racial composition of the participants

The country of South Africa has four legally recognised racial groups: African, White, Coloured and Indian/Asian. The largest racial group is African (80.9%), followed by Coloured (8.8%), White (7.8%), and Indian/Asian (2.6%) (Statistics South Africa, 2021).

At Nandoni Dam all participants belonged to African racial group. The participants at Lake Gariep belonged to the Coloured (n=14; 67%) and African (n=7; 33%) racial groups. At Vanderkloof Dam, the majority of the participants belonged to the Coloured racial group (n=15; 75%), while few belonged to African racial group (n=3; 15%) and two participants (10%) chose not to disclose their race. None of the participants were recorded as White or Indian/Asian racial groups. Figure 5 shows the racial composition of participants at each study site.

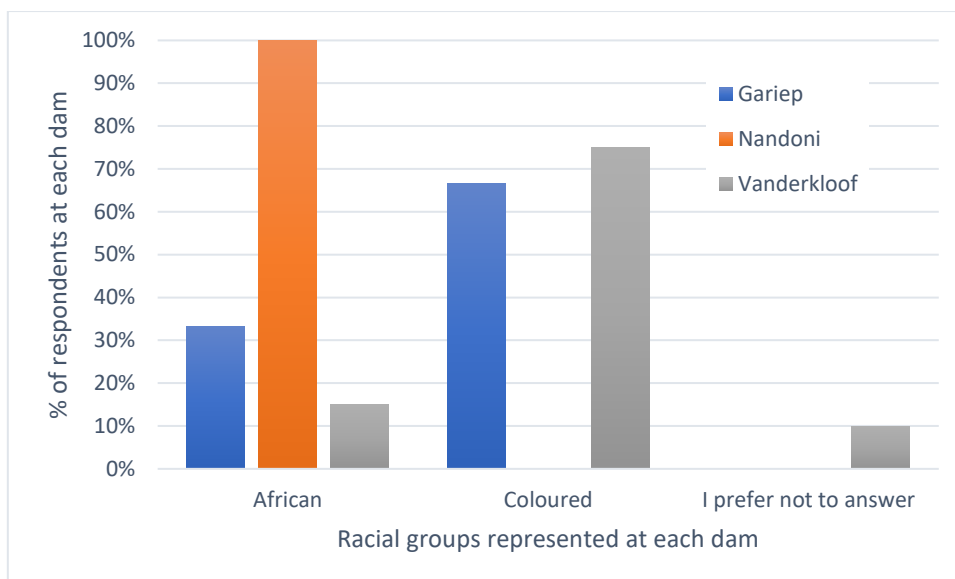


Figure 5. Racial composition of survey participants at Lake Gariep (blue), Nandoni Dam (orange), and Vanderkloof Dam (grey).

4.1.3 Age of the participants

The respondents were divided into six age categories: 17 years or younger, 18 to 25 years, 26 to 34 years, 35 to 44 years, 45 to 54 years and 55 years or older. The majority of the participants in Gariep were 17 years or younger (n=8; 38%). In Nandoni, the dominant age category was 26-34 years (n=6; 30%) and one participant decided not to disclose their age. In Vanderkloof, most fishers were in the 35-44 years (n=8; 40%) age category and none of the participants were 17 years or younger. Figure 6 shows the breakdown of participant age by study site.

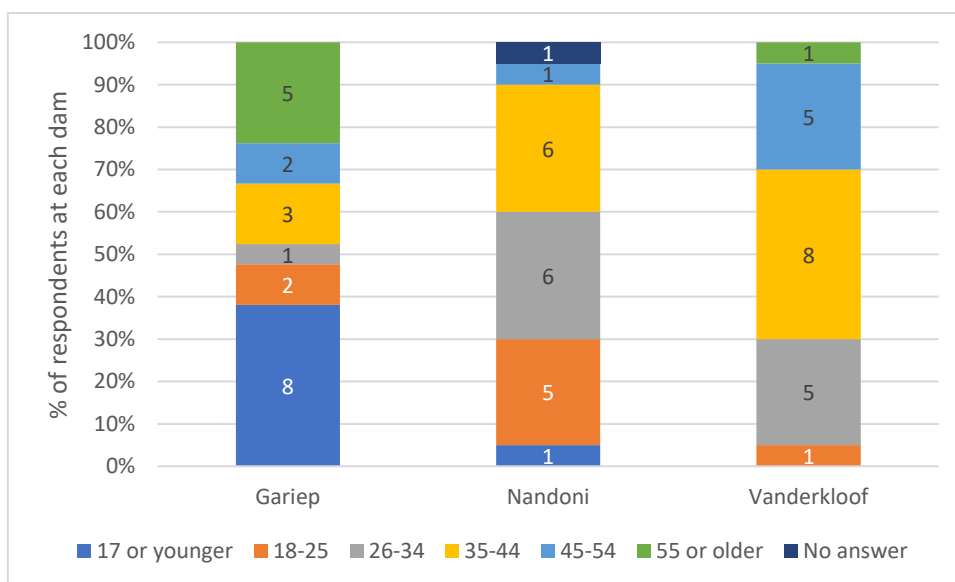


Figure 6. The ages of survey participants by study site, broken into six age categories.

4.1.4 Distance travelled to the site

The distance between the fishers' place of residence and the dam where they are fishing was recorded as one of five distance categories: 10km or less, 11 to 30 km, 31 to 50 km and 70 km or more. The results show that fishers tend to reside closer to the dam where they are fishing.

At Nandoni Dam, half (n=10; 50%) of the fishers resided within 10 km of the dam. The other 50% indicated that they lived between 11 and 30 km from the dam. At Gariep Dam, the majority (n=13; 71%) resided within 10 km of the dam. At Vanderkloof Dam, half (n=10; 50%) of the participants resided within 10 km of the dam, and a quarter (n=5; 25%) resided between 11 and 30 km from the dam. The distance travelled by the fishers from their places of residence to the dams for fishing are shown in Figure 7.

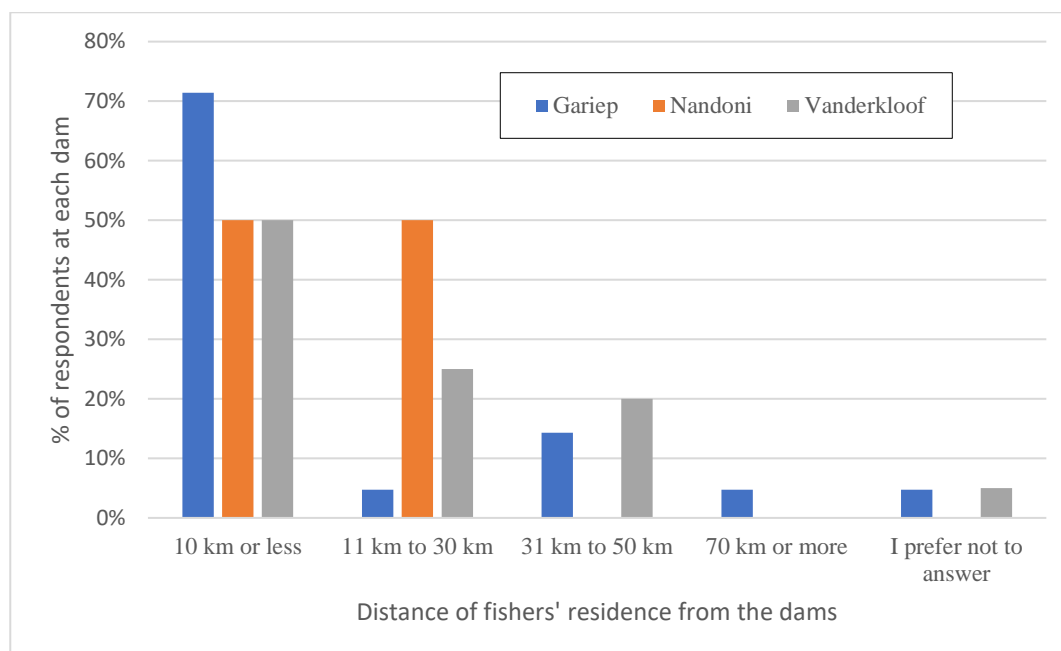


Figure 7. Distance travelled by the survey participants (fishers) from their place of residence to the dam where they undertake fishing activities.

4.1.5 Motivation for fishing

The survey participants were requested to indicate their main motivation for fishing. Two options were provided: “own consumption” and “sales.” At Gariep Dam, the majority (n=13; 62%) of participants indicated that their main motivation for fishing was to sell the catch and the rest (n=7; 38%) indicated that they fish for their own consumption. The vast majority of the fishers at Nandoni Dam (n=19; 95%) indicated that main motivation for them to fish is to sell the catch and only one fisher indicated that they fish mainly for their own consumption. At Vanderkloof Dam the majority (n=18; 90%) of participants indicated that they mainly sell their catch. However, it was stated by most of the participants at Lake Gariep and Vanderkloof Dam that the fish is equally important for their own consumption and sales purposes. Figure 8 shows the main motivation reported by participants to undertake fishing activities.

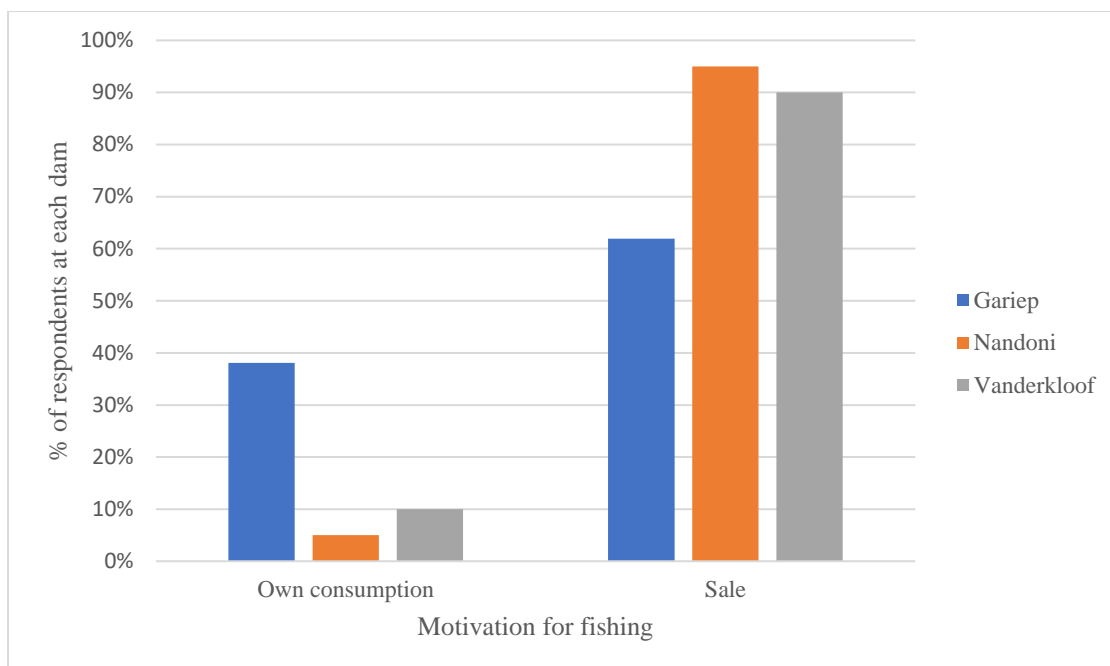


Figure 8. The main motivation reported by survey participants for undertaking fishing activities in each study area.

4.1.6 Employment status of survey participants

The great majority of survey participants indicated that they were unemployed (Figure 9). The highest unemployment per study area was recorded at Vanderkloof Dam (n=18; 90%), followed by Lake Gariep (n=17; 81%) and Nandoni Dam (n=15; 75%).

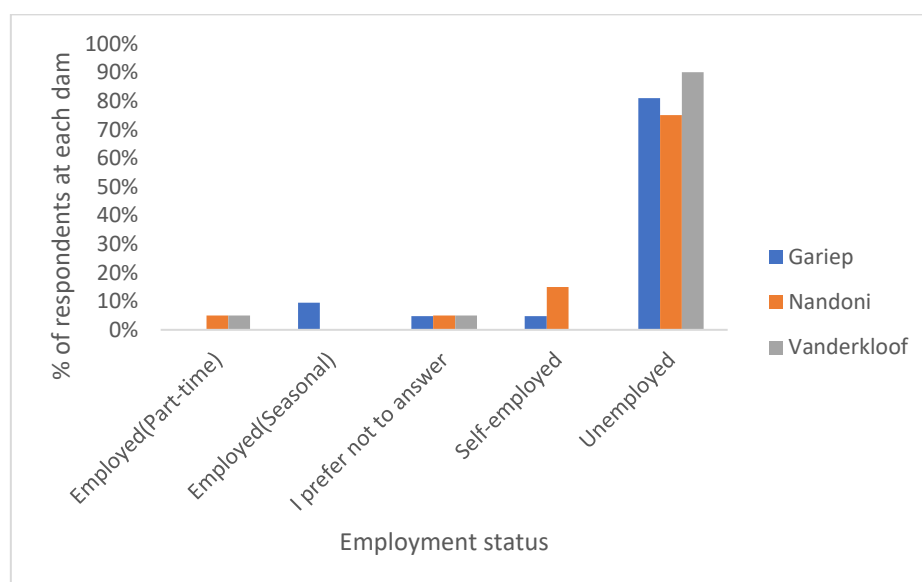


Figure 9. Employment status reported by survey participants.

4.2 Economic benefits to fishers

4.2.1 The frequency of fishing activities in each study area

In each of the study areas, a majority of participants spent most of the week fishing at the dam (Figure 10). At Nandoni Dam, the majority of the participants (n=10; 50%) indicated that they fish seven days a week. The rest of the participants were fishing between two to five days a week. At Vanderkloof Dam about a third of participants (n=6; 33%) indicated that they fish five days a week, 17% reported fishing for two days, 22% reported fishing for three days and 17% fished four days a week. Only 12% indicated that they fished six or seven days in a week. Most of the participants at Lake Gariep (n=6; 30%) indicated that they fish seven days a week, especially during school holidays (most of the participants were students and the surveys were conducted during December school holidays). The rest of the participants (70%) indicated that they fish between one and five days in a week.

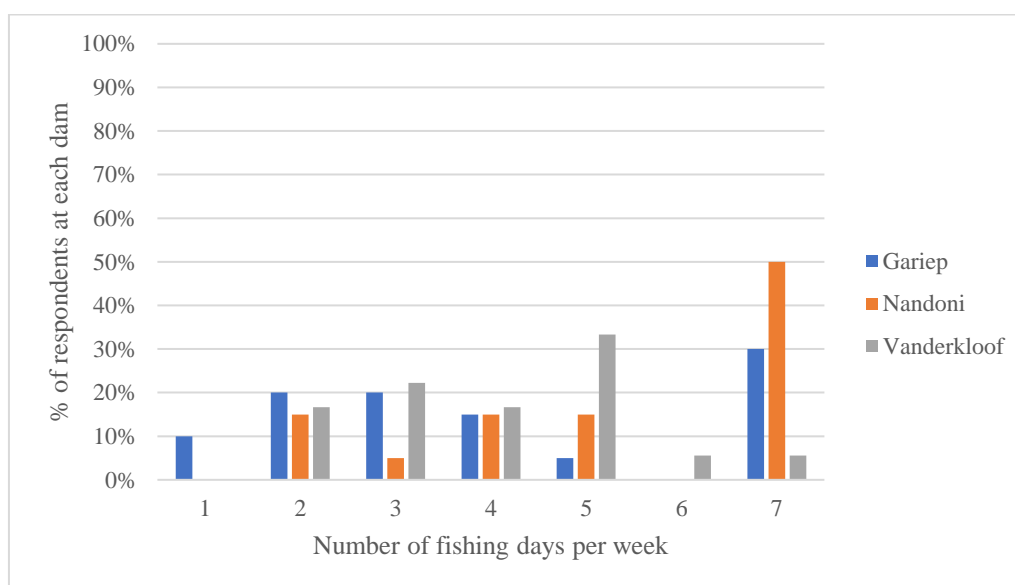


Figure 10. Fishing frequency reported by survey participants from Gariep (blue), Nandoni (orange), and Vanderkloof (grey).

4.2.2 Fish trading areas

The participants were given a choice of four categories of trading areas to determine where they sell most of their fish: 500m or less from the landing site, in my village, outside my village, outside my province. The fish are generally sold locally, and all the participants indicated that none of their fish is exported outside South Africa (Figure 11).

At Nandoni Dam, the majority of participants indicated that they sold their fish within 500m from the dam (n=8; 42%). The participants said that most of their customers are the motorists driving past the road within the vicinity of the dam. None of the participants sold their fish outside the province. Five participants (28%) at Nandoni Dam indicated that they sold fish in their own village. Another 28% of the participants indicated that they sold the fish in the neighbouring villages.

The majority of participants (n=15; 83%) at Vanderkloof Dam indicated that they sold their catch in their village and some (n=3; 17%) travel outside their village to sell a portion of their catch. None reported selling their catch within 500m from the landing site.

Most of the participants at Lake Gariep (n=8; 62%) sold their fish in their village. None reported selling within 500m of the lake but some travel to neighbouring villages to sell fish (n=5; 31%). Eight participants chose not to respond to this question.

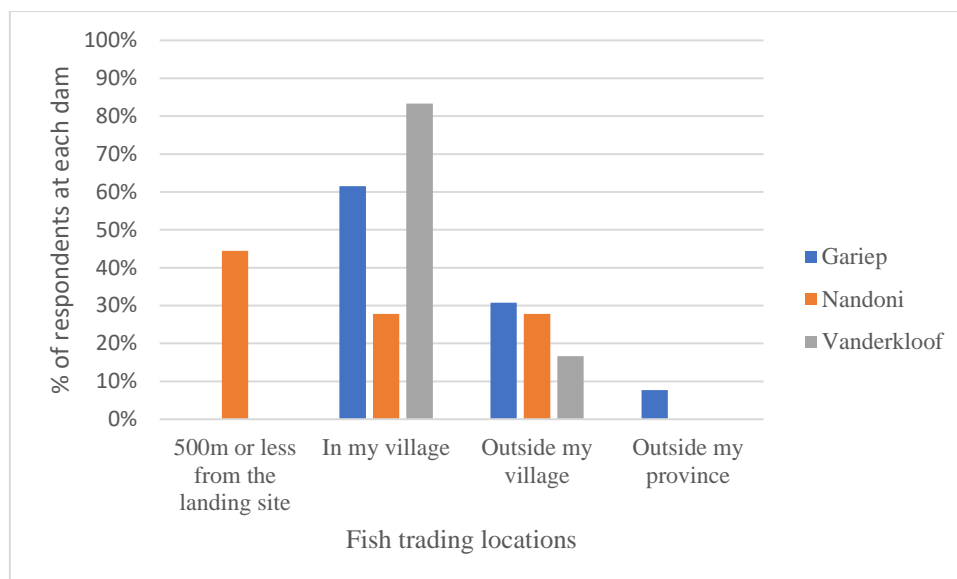


Figure 11. Places where fish are sold, by fishing site.

4.2.3 Quantity of fish sold per day

Each participant was asked to indicate the quantity of fish they sold per day on average. The participants chose one of the following four categories: 10kg or less, between 11 and 20kg, between 21 and 50kg and 51kg or more (Figure 12).

At Lake Gariep, almost half (n=6; 46%) of the participants sold 51kg or more of fish per day. This is interesting considering that all participants indicated that they used rod, line and a hook. This gear is expected to yield a lower catch in comparison to that most prominent at Nandoni and Vanderkloof Dams. At Nandoni Dam, the majority of participants (n=10; 53%) indicated that they sold between 11 and 20kg of fish per day. Only one participant indicated that they sold 51kg or more of fish per day. The majority of participants at Vanderkloof (n=8; 40%) indicated that they usually sell between 21 and 50kg of fish per day. The remaining 60% representing 12 participants indicated that they sold various quantities ranging from 10kg per day to anything between 21 and 50kg per day.

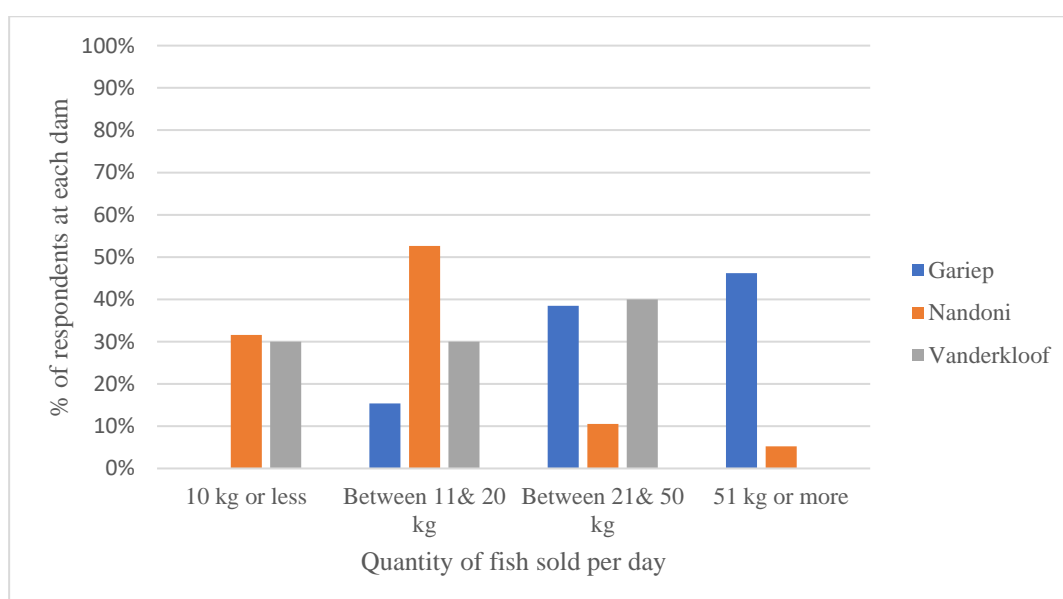


Figure 12. Quantity of fish sold (kg) per day, by survey site.

4.3 Sustainable utilisation of natural resources

4.3.1 Observation of catch decline

The survey participants were asked whether they had noticed a decline in catch over the years. The majority of participants in Gariep (n=12; 56%), in Nandoni (n=12; 60%) and in Vanderkloof (n=18; 90%) indicated that they had not observed declines in fish catch (Figure 13). However, some participants indicated that they had observed declines in catch for certain species.

At Vanderkloof Dam, some participants reported declines in *C. carpio* and *L. kimberleyensis*. However, some of the participants were convinced that these fish species might just be unevenly distributed and thus, concentrated on the other sections of the dam where the small-scale fishers are not allowed access. *L. kimberleyensis* is not targeted but rather caught as by-catch because it is regarded as a protected species. The participants at Nandoni Dam reported that *O. mossambicus* and *M. salmoides* populations seem to be declining. The catches for *C. gariepinus* and *C. carpio* were high on the list of species observed to be declining at Lake Gariep (Figure 13). Collectively, five species dominated the observed declines. These reported declines and possible causes should be investigated as part of further research before a fishery is established.

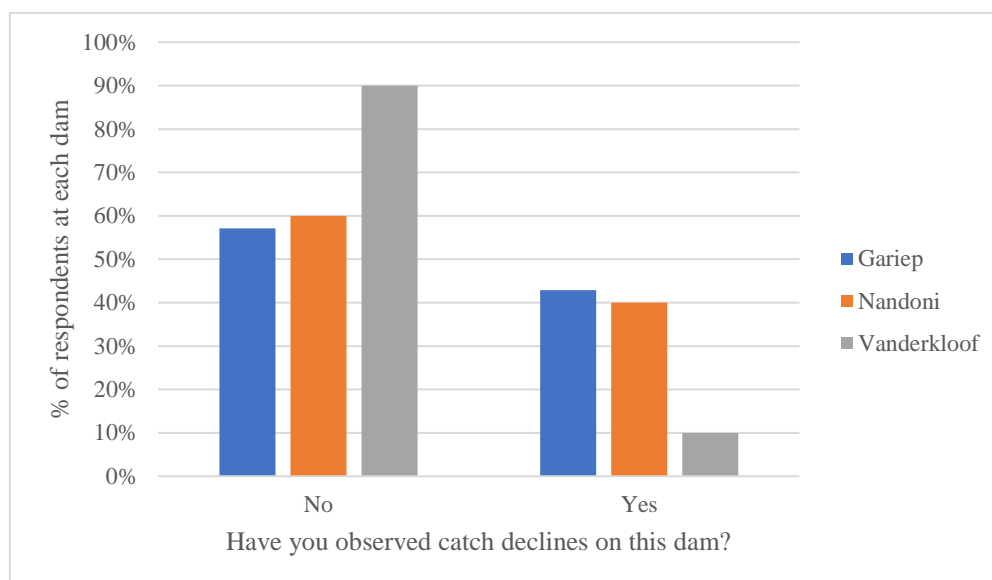


Figure 13. Reported observation of fish catch decline by survey participants by survey location: Gariep (blue), Nandoni (orange), and Vanderkloof (grey).

4.3.2 Perception on catch limitations

The majority of the participants surveyed in all study areas (Gariep Dam n=14, 67%; Vanderkloof Dam 100%; Nandooni Dam n=15, 88%) were not in favour of imposing limitations on the allowable catch (Figure 14).

There were several reasons stated by the participants, but the reasons were mostly related to the need to maximise income which would be negatively impacted if limits were in place. The participants at Vanderkloof Dam believed that the dam is big enough and the fish populations were high enough that there was no reason for quantity limitations. Participants at Nandoni Dam were concerned that their income will be affected negatively if quantity limitations were to be imposed.

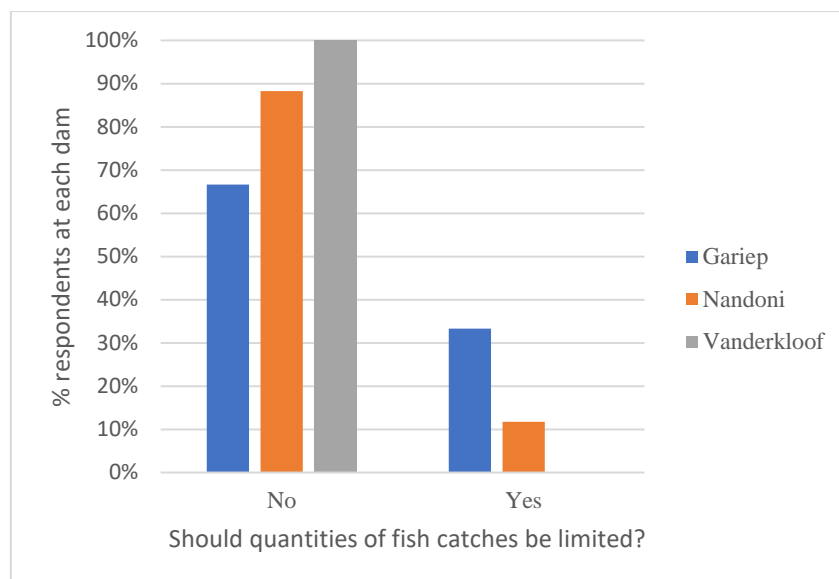


Figure 14. Survey participant perception on whether fish catch should be limited, by survey site.

4.4 Access control and monitoring

4.4.1 Participants' knowledge of permit requirement

The participants were asked whether they knew if a permit was required for them to fish on the dams. The majority of the fishers at Nandoni Dam (n=11; 55%) indicated that they were not aware of a need to obtain a permit. However, participants at Lake Gariep (n=17; 81%) and Vanderkloof Dam (n=13; 65%) indicated that they were aware that a permit or a licence is required for them to fish (Figure 15).

None of the participants at Lake Gariep had a fishing permit. At Vanderkloof Dam, only 15% (n=3) of participants indicated that they had a permit. At Nandoni Dam, 70% (n=14) indicated that they did not have a permit, and the rest (n=6; 30%) chose not to answer the question.

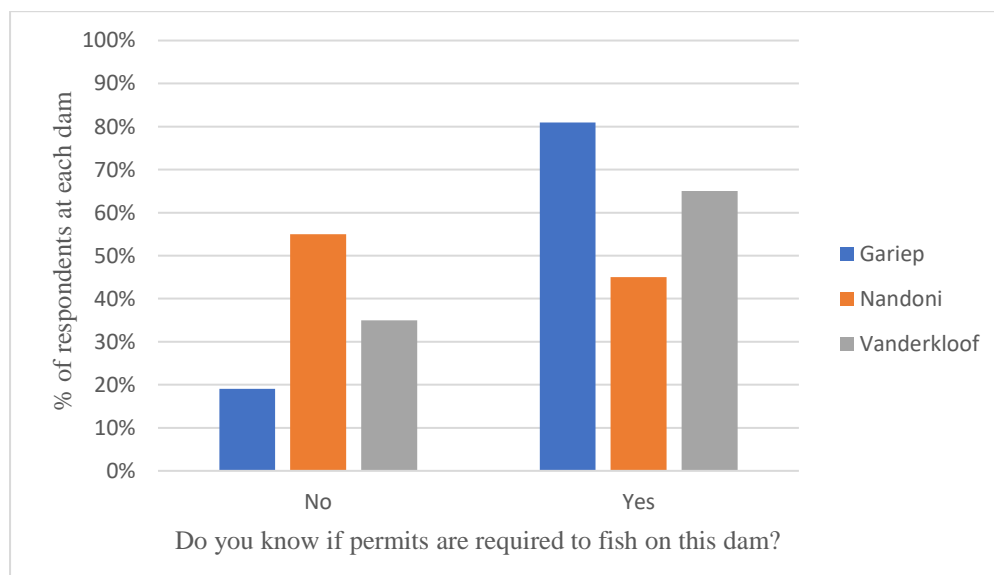


Figure 15. Survey participant knowledge of permit requirements at fishing locations, by survey site.

4.4.2 Participants' knowledge of fishing rules

The participants were asked if they knew about the rules of fishing on the dams. The majority of participants at Nandoni Dam (n=12; 60%) indicated that they were not aware of the existence

of rules and only 30% (n=5) indicated that they were familiar with the rules. The majority of participants at Lake Gariep (n=15; 71%) and Vanderkloof Dam (n=12; 60%) indicated that they know there are rules in place. The majority of participants at Vanderkloof Dam (n=12; 55%) and half of the total participants at Lake Gariep indicated that they were familiar with the applicable rules. Figure 16 shows the participants' knowledge of rules regarding fishing on the dams where they were fishing.

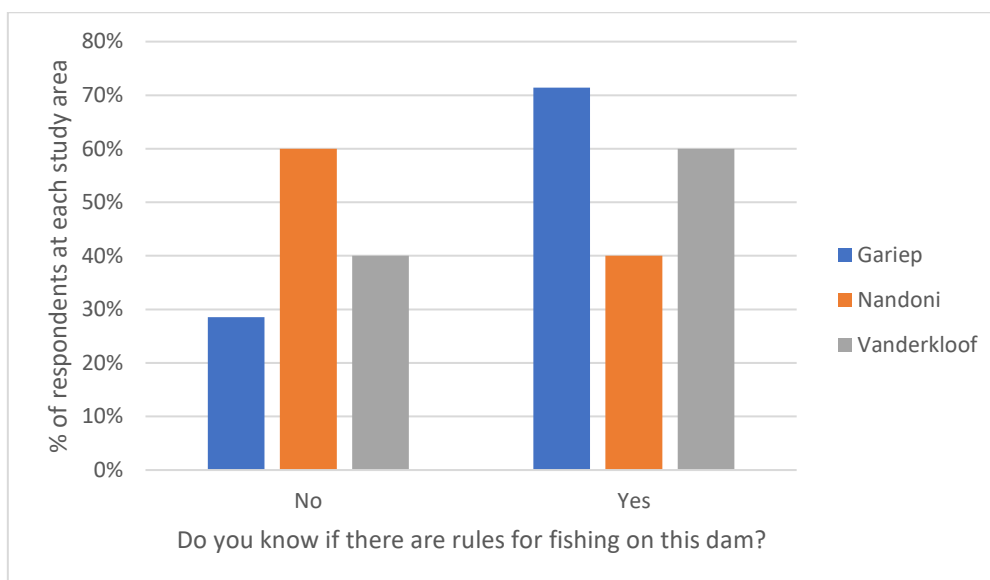


Figure 16. Survey participants' knowledge of fishing rules at Lake Gariep (blue), Nandoni dam (orange), and Vanderkloof dam (grey).

4.4.3 Participants' knowledge of compliance monitoring agencies

During the surveys, participants were asked to indicate if they were aware of the agencies responsible for monitoring compliance on the dams. The majority of participants from all study areas (Nandoni (n=17; 85%), Vanderkloof (n=13; 68%) and Gariep (n=11; 55%)) indicated that they did not know who monitors compliance (Figure 17). The few participants who indicated that they knew the agencies responsible for monitoring explained that the dams are usually monitored by the South African Police Services, provincial nature conservation agencies and Department of Water and Sanitation.

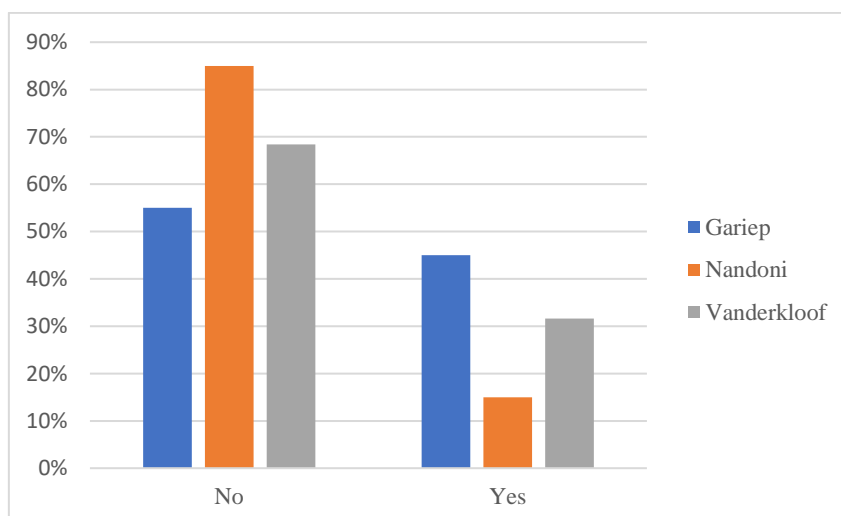


Figure 17. Survey participants' knowledge of compliance monitoring at Lake Gariep (blue), Nandoni dam (orange), and Vanderkloof dam (grey).

4.4.4 Access to fishing grounds

The interview results show that majority of the participants have never been denied access to the dams where they fish (Figure 18). Some participants at Lake Gariep (n=4; 19%), at Nandoni Dam (n=2; 10%) and at Vanderkloof Dam (n=3; 15%) indicated that they have been refused access for fishing. According to the participants, the reason for denial of access at Vanderkloof Dam was mainly during the period when kraal fishing was deemed illegal. The participants at Lake Gariep indicated that they had been denied access for several reasons such as when recreational angling competitions were held on the dam and during the hard lock-down imposed by government in response to the Covid-19 pandemic.

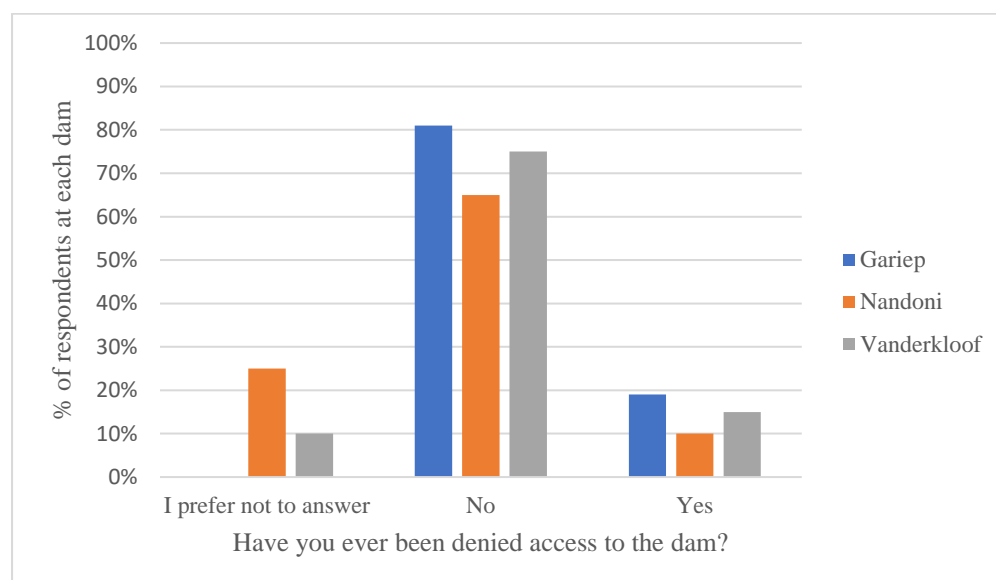


Figure 18. Denial of fishing access reported by survey participants at Lake Gariep (blue), Nandoni dam (orange), and Vanderkloof dam (grey).

4.5 Fishing gear used

Two types of fishing gear were reported at Nandoni Dam during the surveys. The majority of respondents (n=10; 53%) were using gillnets and the rest (n=9; 47%) were using rod and a line. One participant chose not to answer the question. The participants using gillnets indicated that they preferred it over other gear types mainly because it is easier to operate and catches many fish with less effort. When the participants were asked if they would consider using a different method if they had an opportunity, the collective responses varied from one study area to another (Figure 19). At Nandoni Dam, the majority of participants (n=9; 45%) chose not to answer the question but there was a noticeable number of participants (n=7; 35%) who indicated that they would not want to use a different gear type. This is the same study area where most of the participants used gillnets. 20% of the participants indicated that they would prefer to use gillnets as alternative gear, however, they are using the angling method as it is the recognised fishing method in the province.

At Lake Gariep, all the participants used a rod and line. Only a few participants (n=5; 24%) indicated that they would prefer to use gillnets in order to catch more fish. The majority of participants (n=16; 76%) indicated that they would not consider using a different gear type meaning the currently dominant rod and line is preferred regardless of the availability of other options.

The dominant fishing method amongst the participants at Vanderkloof Dam was kraal fishing (n=14; 67%). Most of the participants (n=16; 80%) indicated that they would use a different

gear type if they had an option. The mostly preferred alternative gear type was identified as gillnets as they would be able to catch more fish.

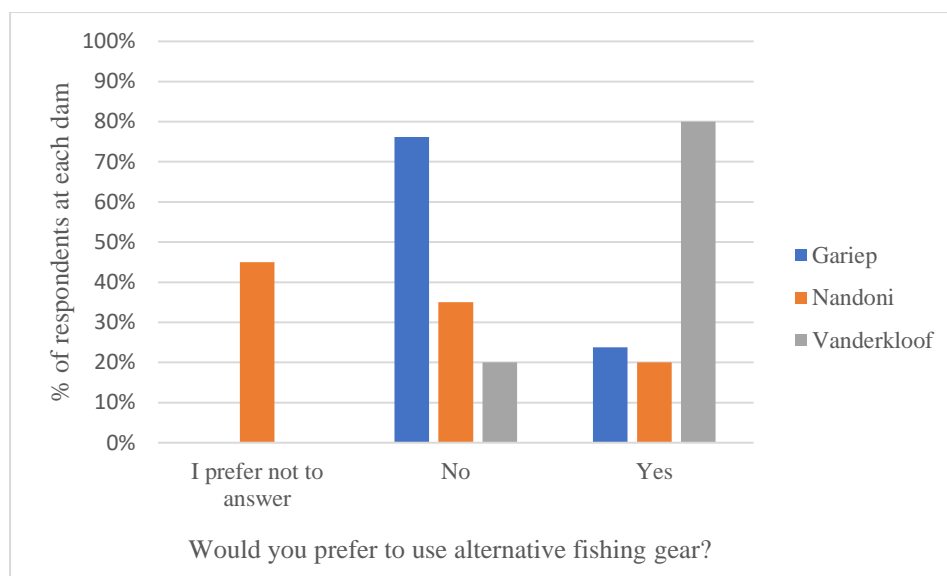


Figure 19. Preference of survey participants for alternative fishing gears at Lake Gariep (blue), Nandoni dam (orange), and Vanderkloof dam (grey).

4.6 Personal perception on current laws

The survey participants' general perception of the current laws governing inland fisheries was examined by asking everyone if they thought the laws were "fair." The participants had five options to choose from: strongly agree, agree, neutral, disagree or strongly disagree. Results are presented in figure 20.

The majority of participants at Nandoni Dam (n=8; 62%) felt that the laws were unfair and "strongly disagreed" with the suggestion that the laws were fair. In the same study area, (n=3; 23%) of the participants "disagreed" with the statement. The general perception in this study area was that the current laws were unfair. The participants indicated that the current laws restrict them from accessing other fishing sites on the dam and they are hindered from exercising their right to access natural resources.

At Lake Gariep, the majority (n=8; 38%) of participants believed that the laws were fair as they "strongly agreed" with the statement while (n=4; 19%) participants "agreed" with the statement. The participants indicated that they were able to catch the desired quantities of fish even with the current laws.

Most of the participants at Vanderkloof Dam were neutral (n=8; 42%) on the question of fairness. The participants indicated that they were unfamiliar with the laws and therefore, they were not able to give an opinion on the subject.

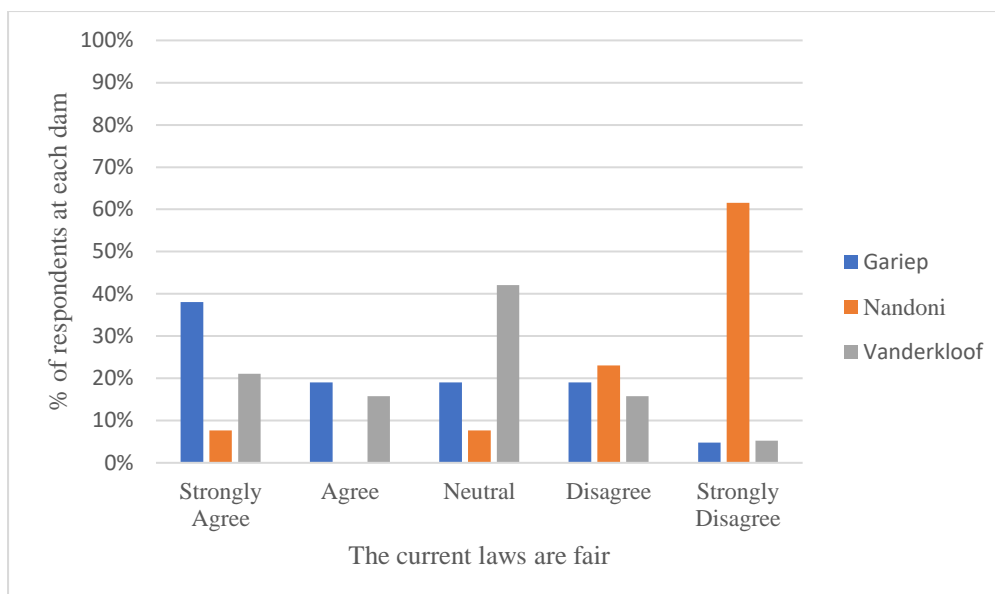


Figure 20. Survey participants' perception on the fairness of the current laws regulating fishing at Lake Gariep (blue), Nandoni dam (orange), and Vanderkloof dam (grey).

5 ANALYSIS OF CURRENT LEGISLATION

This analysis does not intend to substitute or provide a different interpretation of the original provision of any legislation referred to in this study and the outcome of this report does not aim to exhaustively analyse every piece of legislation or provision thereof within the inland fisheries scope.

5.1 National legislation governing inland small-scale fisheries

Several pieces of national legislation regulate certain aspects of inland fisheries in South Africa but none of these directly address inland fisheries. The two acts reviewed, National Environmental Management Act 2003 (Act No. 7 of 2003) and National Environmental Management: Biodiversity Act 2004 (Act No. 10 of 2004), are concerned with the management of the environment and biodiversity control respectively. The National Water Act 1998 (Act No. 36 of 1998) was also reviewed as the management of water resources have an influence on access to inland fisheries resources.

5.1.1 *The Constitution of the Republic of South Africa*

The Constitution is the Supreme Law of the country and therefore, any law or conduct that is inconsistent with the Constitution is deemed invalid. In a case whereby any law or conduct is found to be unconstitutional, section 2 provides that the obligations imposed by the Constitution must prevail.

The most important provision of the Constitution in relation to inland fisheries development is section 24 (b) (iii) as it provides that the social and economic aspects should be promoted while protecting the environment for the present and future generations. However, the current regulatory framework for inland fisheries sector is falling short on compliance with the requirements of section 24 (b) (iii) as it caters mainly to environmental protection and thus neglects the constitutional imperatives of social and economic development, particularly for the small-scale fishing sector.

Globally, the Food and Agricultural Organization of the United Nations (FAO) provides guidelines towards sustainable development of the small-scale fisheries sector. These guidelines indicate that there is a need to balance environmental, social and economic factors (FAO, 2015). These guidelines are consistent with Section 24 (b) (iii) of the Constitution of South Africa. However, there is a need for legislative reform to recognise all resource users and bring into practice the development of the sector through incorporation and balancing of environmental, social and economic elements.

5.1.2 National Environmental Management Act, 1998 (Act No. 107 of 1998)

The National Environmental Management Act is the principal legislation for matters related to environmental management in South Africa. The purpose of the act as summarised in the long title is “to provide for co-operative, environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance and procedures for co-ordinating environmental functions exercised by organs of state; and to provide for matters connected therewith.”

The preamble of this act acknowledges that “the State must respect, protect, promote and fulfil the social, economic and environmental rights of everyone and strive to meet the basic needs of previously disadvantaged communities...” As stated in the preamble, the National Environmental Management Act brings section 24 (b) (iii) of the Constitution into operation in terms of general biodiversity management. However, this legislation does not specifically cater to inland fisheries development possibly because it is meant to cover environmental matters broadly, with specific functions being addressed through specific subordinate legislation.

The National Environmental Management Act states that the environmental function is a Schedule 4 functional area meaning it is a concurrent mandate. Therefore, the environment is managed through cooperative governance by both national and provincial government departments. However, the Constitution is silent when it comes to inland fisheries competency even though the new National Freshwater (Inland) Wild Capture Fisheries Policy indicates that the fisheries mandate in its entirety, inclusive of both marine and inland fisheries, is a national competency (Department of Forestry, Fisheries and the Environment, 2021).

As principal legislation, the National Environmental Management Act is broad and thus gives effect to implementation of specific environmental legislation i.e., National Environmental Management: Biodiversity Act, National Water Act and other acts which are less important to the scope of this study. The relevance of the National Environmental Management Act to inland fisheries is that it provides guidance to the provincial departments in terms of management of biological resources within aquatic systems. Therefore, the provincial legislation places emphasis on the principles of biodiversity protection and the use of natural resources applied through the provincial nature conservation agencies (Weyl, et al., 2007).

5.1.3 National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

This act is one of the Specific Environmental Management Acts (SEMA’s). One of the key issues addressed by this act is to consolidate biodiversity management legislation in the country by facilitating the implementation of uniform national norms and standards across all sectors.

The National Environmental Management: Biodiversity Act provides for listing of species that are regarded as protected or threatened and publishes restrictions which are applicable to any such species. Species regarded as threatened are further classified as critically endangered, endangered or vulnerable. Critically endangered species are the indigenous species that are facing a high risk of extinction in the wild in the near future. Endangered species are comparatively at a lower risk of extinction and thus not critical. However, they still face a risk of extinction in the wild in the near future. The last category classifies the vulnerable species

as those species that are facing a risk of extinction in the wild in the medium-term future. Accordingly, the fish species listed are provided protection and certain restrictions are imposed to avoid unsustainable exploitation of such species.

5.1.4 *National Water Act, 1998 (Act No. 36 of 1998)*

This act was developed to reform the past water use management laws which were discriminatory, misaligned with the objectives of the Constitution, and inappropriate for the democratic South African conditions (Department of Water Affairs and Forestry, n.d.). The preamble of the National Water Act recognises the inequitable access to water and the use of water resources achieved through the implementation of laws and practices that were based on unfair discrimination. To address this problem, the act provides for a water use management environment which aims to achieve sustainable utilisation of water to benefit all citizens.

As empowered by this act, the Department of Water and Sanitation (DWS) is responsible for administering the rights to use water in South Africa. The DWS is therefore responsible for management, control, development, conservation, use, and protection of water resources such as dams, rivers and streams (Department of Water Affairs and Forestry, n.d.). For fisheries activities, the DWS is responsible for controlling access to public waterworks such as the dams where fishing activities are undertaken (Weyl, et al., 2007).

Although access for fishing activities is not explicitly provided for under this Act, section 21(e) provides access to users engaging in controlled activities identified as such under this act or as declared by the Minister responsible for water. Section 113 also has an important impact on inland fisheries in terms of providing access to the public dams. This section empowers the Minister responsible for water to control access to and use of government waterworks for recreational purposes. The external guidelines published by the then Department of Water Affairs and Forestry provides for water use for recreational purposes such as swimming and boating (Department of Water Affairs and Forestry, 2007). However, the National Water Act and guidelines are silent on provision of access to public dams for fishing purposes.

Access control, legitimisation and support of recreational activities are facilitated through the implementation of Resource Management Plans (RMP) developed by the department responsible for water. However, on most dams, the RMP's incorporate recreational angling. The non-recreational small-scale fisheries sector is generally not included in the RMP's except in the recent progressive case of Vanderkloof Dam RMP finalised in 2014 (Britz, et al., 2015).

5.1.5 *National Freshwater (Inland) Wild Capture Fisheries Policy of South Africa, 2021*

The policy was developed with the Constitution as one of the guiding principles (Department of Forestry, Fisheries and the Environment, 2021). As such, the presumption is that the policy is consistent with the Constitution. The policy seeks to address the current legislative problem by providing a baseline for the development of legislation that is consistent with section 24 (b) (iii) of the Constitution. The government has eventually acknowledged the problem faced by the small-scale fishers and progressively developed this policy which was approved by cabinet in 2021. However, this policy does not fully address the problem.

This policy provides a point of reference in terms of the current direction of the small-scale fishing sector development and law reform as envisioned by government, guided by the FAO Voluntary Guidelines and the national constitution. The policy covers not only freshwater fish but also the management of aquatic plants such as “waterblommetjie” (*Aponogeton distachyum*), which are harvested for consumption (Department of Forestry, Fisheries and the Environment, 2021).

5.2 Provincial legislation with direct impact on inland fisheries

South Africa was divided into four provinces before 1994: Cape, Transvaal, Natal and Orange Free State, as well as ten ethnicity-based homelands within the provinces. The Cape province was later divided into Northern Cape, Eastern Cape and Western Cape in the post-apartheid era. Transvaal was divided to form the new Limpopo, North West, Gauteng and Mpumalanga provinces (Thompson, 2001). The provinces have different environmental legislations, which differ from each other, and this issue is discussed in detail below for the provinces that were included in this study. The homelands used to have their own nature conservation laws, which were subsequently repealed upon transitioning into democracy. Figure 21 below shows the provincial demarcation of South Africa before the democratic era, while figure 22 shows the current map the country.

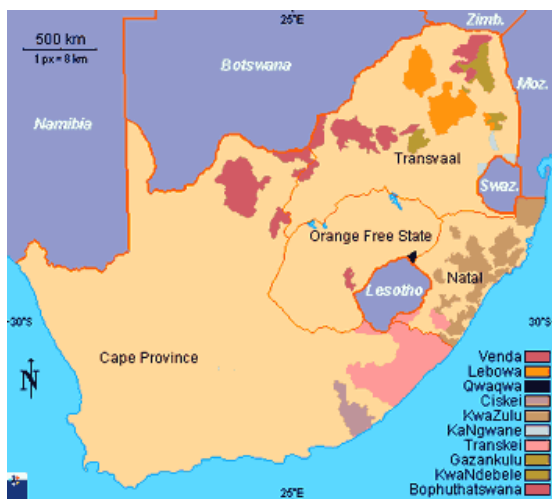


Figure 21. Provincial demarcation of South Africa during the apartheid era.

Environmental matters are functional areas of concurrent national and provincial legislative competence as set out in the Constitution (Schedule 4). After the division of the country into nine provinces in the democratic era, the respective provincial governments developed legislation to govern certain functions and to align to the new provincial separation. Therefore, each province has its own environmental management legislation.



Figure 22. The current map of South Africa.

5.2.1 Limpopo Province: Environmental Management Act, 2003 (Act No. 7 of 2003)

This act repealed a total of 12 acts and ordinances in the province including those previously implemented by the homelands. The Environmental Management Act is implemented by the Limpopo Department of Economic Development, Environment, and Tourism. This legislation broadly manages and protects the environment in the province including the aquatic systems.

The objectives of this act are “to manage and protect the environment in the province; to secure ecologically sustainable development and responsible use of natural resources in the province; to contribute generally to the progressive realisation of the fundamental rights contained in section 24 of the Constitution of the Republic of South Africa Act, 1996 (Act No. 108 of 1996); and to give effect to international agreements affecting environmental management which are binding the province.”

The Environmental Management Act contains several clauses that are aimed at regulating the inland fishing activities and provides for authorisation of fishing activities under certain limitations. Figure 23 shows the behaviour of small-scale fishers who participated in this study at Nandoni Dam, in relation to the legal requirements in terms of the Environmental Management Act. The practices observed on the dam were mostly related to section 54 (1) (a), section 54 (1) (b); section 54 (1) (g) and section 57 (1) (b).

Section 54 (1) (a) recognises angling as a method that is allowed for fishing on inland waters in the province. The use of any other method is prohibited unless the authorisation for usage of that method has been obtained from the provincial authority. In terms of the Environmental Management Act, angling means “(a) to catch fish by using a line and fishhook, whether or not a rod is used; (b) and includes the use of a landing net to land, or a keep net to keep, fish caught in accordance with the method as described in paragraph (a), but excludes the use of a set-line...” The results of the surveys that were conducted for this study indicated that 53% were catching fish by means of angling, thus complying with section 54 (1) (a), while 47% were using the gillnetting method, which prevents free passage of fish and is thus prohibited. Section 54 (1) (g) provides for specifications related to angling equipment and the relevant accessories. In terms of this section, a person may only fish using not more than two lines at a time. Each line may not have more than two single lines attached to it with either natural bait or a line with more than 1 artificial lure or spoon attached to it. Most of the fishers who were using the angling method were using more than two lines and in certain instances, more than two hooks per line.

To satisfy their clients, the fishers have certain sizes that they keep to later sell to their customers. This is aligned to the broad objectives of section 57, which deals with the protection of aquatic systems. Accordingly, the fishers indicated that they usually return small fish immediately and thus complying with section 57 (1) (b).

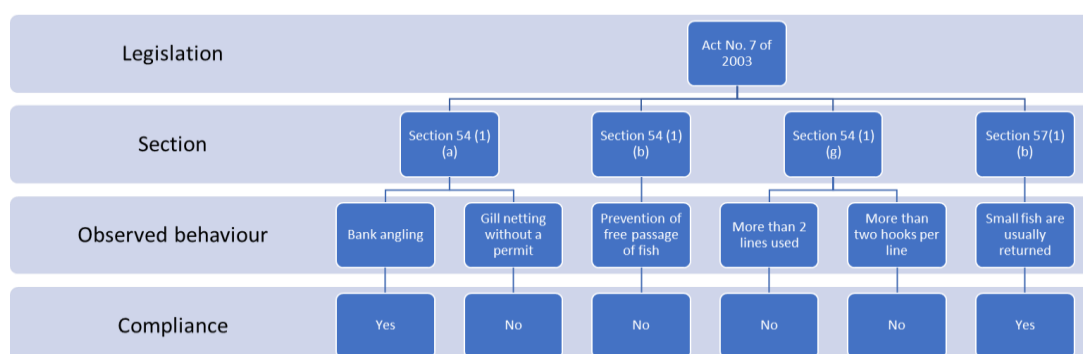


Figure 23. Schematic representation of fishing laws in Limpopo province in comparison with on the ground practices by small-scale fishers observed operating at Nandoni Dam.

5.2.2 Free State Province: Nature Conservation Ordinance No. 8 of 1969

The purpose of this ordinance is “to provide for the conservation of fauna and flora and the hunting of animals causing damage and for matters incidental thereto.” Part 3 deals with matters related to conservation of fish and recognises angling as a legal fishing method. Part 3 of this ordinance also provides bag limits for species such as Largemouth yellowfish (10 fish per person per day) and Trout (6 fish per person per day). The Nature Conservation Ordinance is implemented by the Free State Province Department of Economic, Small Business Development, Tourism and Environmental Affairs. The use of fishnets or traps is prohibited under section 27(1) unless authorised in a form of a permit. However, other types of nets are allowed only when they are used to land or keep fish that has been caught using a line and hook.

Figure 24 shows the observed behaviours of small-scale fishers on Lake Gariep, in relation to the legal requirements in terms of the Nature Conservation Ordinance. The practices observed on the lake were mostly related to sections 23; 26(1); 26(2)(a); 26(2)(b); 26(2)(c) and 27(1).

Section 23 of Nature Conservation Ordinance prohibits fishing on public inland waters in the province without a licence, however the results of the surveys conducted at Lake Gariep indicated that none of the fishers had a fishing licence.

All survey participants reported fishing using the angling method, in accordance with section 26(1) which prohibits catching fish using a method other than angling. In this ordinance “angle” means to catch fish by use of a line and fishhook, whether a rod is used or not. Section 26(2) explicitly prohibits jigging and use of set line. Jigging refers to the action of catching fish by hooking it on any part of its body other than in the mouth.

Section 26(2)(a) outlines the limitations regarding the angling gear. It is prohibited to angle using more than two (2) fishing lines, with more than two (2) single hooks attached to each line. Each participant used a maximum of two (2) lines and two (2) hooks per line as required in terms of section 26(2)(a).

None of the participants used setline to catch fish or had fishnets or traps in their possession. Accordingly, the anglers complied with the requirements of section 26(2)(c), which prohibits the use of set-lines without a permit. The fishers were also compliant with section 27(1) as none of the participants were catching fish using any other method besides angling.

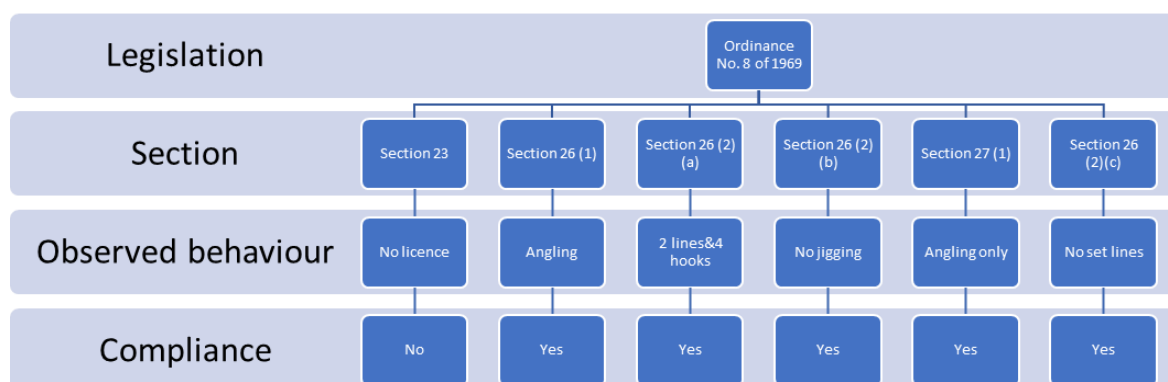


Figure 24. Schematic representation of fishing laws in Free State province in comparison with on the ground practices by small-scale fishers observed operating at Lake Gariep.

5.2.3 Northern Cape Province: Nature Conservation Act, 2009 (Act No. 9 of 2009)

This provincial act repealed the Nature and Environmental Conservation Ordinance, 1974 (Ordinance No. 14 of 1974), which was passed prior to the democratic dispensation.

To provide for environmental management in the Northern Cape province after the division of Cape Province into three provinces, the Act No. 9 of 2009 was developed to “provide for the sustainable utilisation of wild animals, aquatic biota and plants; to provide for the implementation of the Convention on International Trade in Endangered Species of Wild Fauna and Flora; to provide for offences and penalties for contravention of the Act; to provide for the appointment of nature conservators to implement the provisions of the Act; to provide for the issuing of permits and other authorisations; and to provide for matters connected herewith.” Similar to the legislation in Limpopo and Free State provinces, the Nature Conservation Act is based on biodiversity conservation of all wild flora and fauna. Although the Cape province was divided into three provinces (Northern Cape, Eastern Cape and Western Cape) in 1994, Act No. 9 of 2009 was only passed in 2009.

In relation to inland fisheries, the laws provide for protection of certain fish species in terms of section 32. A unique aspect of this section is that it provides for further restrictions of certain activities in relation to “specially protected” fish species. Without a permit authorising such action, it is prohibited to angle (and not immediately release), otherwise catch, transport, import, export, trade or keep fish that is listed as a specially protected species.

The act makes a distinction on the requirements for fishing on public and private waterbodies. For example, section 36(1) prohibits fishing on public inland waters (including at public dams) without a licence. However, this is not a requirement on private waters. To fish on private dams, a person is required to obtain permission from the owner of that property.

Section 34 restricts certain activities in relation to protected fish species. Among other restrictions, fishers are not allowed to catch, angle (and not immediately release), keep or trade in protected fish. These restrictions apply for the indigenous largemouth yellowfish, which is usually caught as by-catch.

Fishing methods used by the fishers on Vanderkloof dam included angling (with or without a rod). However, during the survey, 85% of the participants reported that they did not have angling licences. Some of the fishers indicated that they use jigging and angling methods mostly when the kraal fishing season is closed. Jigging without a permit is prohibited in terms of section 38(a).

Similar to the legislation in Limpopo and Free State provinces, section 38(d) of the Nature Conservation Act prohibits angling with more than 2 lines. Furthermore, it prohibits attaching more than 2 hooks per line. However, it was observed that some fishers were using more than 2 lines, and, in some instances, more than two hooks attached to one line.

According to section 46, placing any item in the aquatic system that would prevent free passage of fish is prohibited. The consequence of this provision is that it is unlawful to set up a gillnets or fishing kraals in the waterbody. Although none of the participants indicated that they used gillnets, the majority were using the kraal fishing technique.

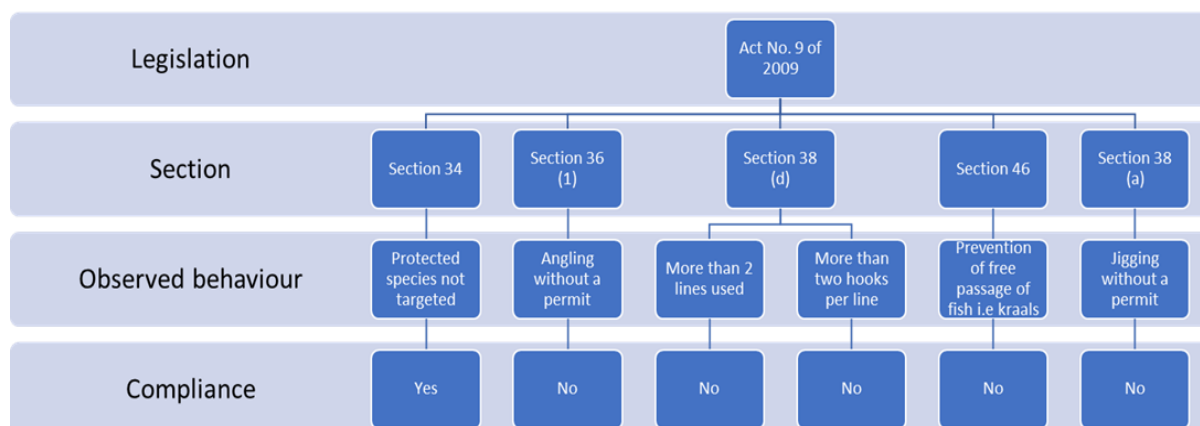


Figure 25. Schematic representation of fishing laws in Northern Cape province in comparison with on the ground practices by small-scale fishers observed operating at Vanderkloof dam.

5.3 Legislation review summary

The reviewed national legislation covers various aspects related to management of the environment, biodiversity and inland waters. None mention small-scale fisheries specifically but certainly the laws affect the activities related to the sector in different ways. The National Environmental Management Act is empowering in terms of operationalising the requirements of section 24(b)(iii). The subordinate National Environmental Management: Biodiversity Act provides clear direction in terms of management and regulation of biodiversity in the country; therefore the act has a significant impact on the sector particularly on issues related to protected or threatened species. The National Water Act empowers recreational anglers and provides them with recognised access to public waters. However, the small-scale fishers do not have the same privileges afforded to them as their activities are not recreational in nature but aligned to livelihoods support and income generation.

The regulation of inland waters through the provincial legislation in the study areas only acknowledges recreational angling activities. These laws are clear on the allowed fishing method, which is angling and according to the legislation in the provinces where the studies were conducted, a person is required to have a licence or a permit to legally angle on public waters. The legislation in each province also provides conditions which are allowed for angling purposes. Generally, the small-scale fishers who participated in this study did not comply with most of the requirements except for the Lake Gariep participants who were observed to be compliant with the majority of the provisions of the Nature Conservation Ordinance.

6 DISCUSSION

Fisheries development is relevant to rural communities where unemployment and food security are major challenges to the society. However, such development is constrained by a lack of appropriate management structures and the fragmented institutional responsibility required for management of the waterbodies (Weyl, et al., 2007). To address these challenges and for further development of the sector, research covering the biological, social, economic and governance factors is required (Britz, et al., 2015). Accordingly, this study aims to address the knowledge gap in the sector especially within the context of the governance of inland fisheries.

The main objective of the study was to identify the relevant legislation and analyse the impact of the regulatory framework on the inland small-scale fisheries sector. The study investigated the legislative environment in South Africa where inland fishers operate. A high-level

legislative review was undertaken focusing on national legislation of significant importance to the inland fisheries sector. There are many other national statutes that are relevant to the sector. However, owing to time and logistical constraints, only the Constitution, National Environmental Management Act, National Environmental Management: Biodiversity Act and National Water Act were reviewed.

The provincial legislation regulating fishing activities in Limpopo, Free State and Northern Cape provinces were analysed as part of the specific objectives of this study. The legislative analysis focused on the daily activities undertaken by the fishers as affected by specific provisions of the provincial legislation. The daily practices of the fishers were further scrutinised to determine compliance with specific provisions of the applicable legislation in their respective provinces. The clauses that deal with responsibilities of government or any other organisation or individual were not part of the scope of this study. Through a qualitative interview survey, small-scale fishers' perceptions of the laws governing inland fisheries sector were investigated. These surveys were conducted at Nandoni Dam, Lake Gariep and Vanderkloof Dam.

6.1 Legislation governing inland fisheries

Several pieces of national legislation regulate certain aspects of inland fisheries in South Africa but none of these address inland fisheries in particular. The two acts reviewed, the National Environmental Management Act and National Environmental Management: Biodiversity Act are concerned with the management of the environment and biodiversity control respectively. National Water Act is concerned with the management of water in the country as implemented by the Department of Water and Sanitation.

At provincial level, Environmental Management Act regulates fishing activities in Limpopo Province. In Free State and Northern Cape provinces, fishing activities are regulated through Nature Conservation Ordinance and Nature Conservation Act, respectively. The provisions of the three provincial statutes are concerned with regulation of recreational angling, in as far as fishing is concerned. A comparison with survey results shows that there is general lack of compliance with these laws, and this could be due to the fact that the laws are not suitable for the regulation of small-scale fishing activities.

6.2 Citizenship, race, age and gender composition of small-scale fishers

The majority of the survey participants across the three study areas were South African nationals. The results shows that Nandoni Dam was the only study area which had representation of foreign nationals (15%), with 45% of the participants electing not to disclose their citizenship. This could be due to the proximity of the dam to Zimbabwe and Mozambique. Understanding the citizenship composition of the fisheries resource users is important as this aspect will have an implication on authorisations required to access the resources. The National Freshwater (Inland) Wild Capture Fisheries Policy states that all South African citizens have the right to fish on inland waters subject to necessary authorisation. This policy position will need to be carefully considered and the authorisation system will need to be clear on the requirements for foreign citizens during the recommended legislative reform process.

In this study, only two of the four racial groups were represented in survey areas, with 90% being male. Nationally, people belonging to the African racial group are a majority followed by the Coloured racial group. These were the only racial groups represented across the study areas. However, in Nandoni, only African participants were represented. Lake Gariep and Vanderkloof Dam had representatives from both Coloured and African racial groups. These results are consistent with the findings of the previous study conducted on Lake Gariep, where

it was found that subsistence fishers belonged to coloured (84%) and African (16%) racial groups (Ellender, et al., 2009).

6.3 Importance of inland fisheries

The National Freshwater (Inland) Wild Capture Fisheries Policy defines small-scale fishers as “persons that fish or are engaged in small-scale fishing and ancillary activities to meet food and basic livelihood needs. They predominantly employ traditional low technology or passive fishing gear, usually undertake single day fishing trips, and are engaged in sale or barter or are involved in commercial activity.” According to this definition, a small-scale fisher would usually participate in fishing in order to consume or trade the catch. Accordingly, the study investigated the division of small-scale fishers based on their reason to partake in fishing and the results indicated that the majority of the participants were selling most of their fish. A previous study undertaken on Lake Gariiep indicated that the majority of subsistence anglers had sited personal consumption as their main reason for fishing, with only surplus fish being sold. The aforementioned study concluded that 53% of the catch is eaten and 41% is sold by subsistence anglers (Ellender, et al., 2009). However, in this study, after further questioning, the participants at both Lake Gariiep and Vanderkloof Dam indicated that the fish was equally important for personal consumption and as a source of income.

In South Africa, small-scale fishers are fishing mainly for livelihood purposes (Britz, et al., 2015). This statement is supported by the findings of this study. The majority of participants from all study areas were unemployed and resided within 10km from their study site. The demand for fish is mostly within the communities where the participants reside, as most of the participants reported selling their catch in their own or neighbouring villages, with the exception of Nandoni Dam where most of the catch was sold near the dam. The study areas are surrounded by rural communities where unemployment rate and poverty are high. As a result, the communities utilise the dams for fishing activities to generate income and as a source of food security (Hlungwani, 2020). Through income generated from selling the fish, the participants are able to take care of their families’ financial needs and support their households.

6.4 Gear type used by the fishers

Different types of fishing gear are used by small-scale fishers. The results of the surveys showed that certain gear types or in some cases, fishing methods, are popular on one dam and not on other dams. At Nandoni Dam, the fishers used mainly two types of fishing gear. Some fishers used rod and line while others used gillnets. The use of rod and line is allowed but gillnets are technically illegal. The participants are generally aware of the legality of different fishing gear, especially the prohibition of gillnets. However, there is a reported increase in the use of gillnets at Nandoni Dam. The locals are concerned by this as they believe that the increase of fishers on the dam, particularly the presence of “outsiders” who use gillnets excessively, is unsustainable. Members of neighbouring communities and those from farther away are generally regarded as outsiders (Britz, et al., 2015).

Various fishing methods are deployed at Vanderkloof Dam. The participants indicated that they use angling, kraal fishing and jigging methods. The majority of the fishers are involved in kraal fishing. This fishing method was only observed on this dam. The participants indicated that they occasionally used rod line and a hook or only line and a hook. Sometimes they used the “jigging” method especially when they were unable to fish using the kraals during the kraal fishing close season or when the kraal fishing zone is flooded as a result of heavy rains. The majority of the participants in this study area indicated that they would prefer to use gillnets, particularly on the days when they are unable to use the kraals. They indicated using gillnets they would catch more fish in comparison to using other methods such as angling and jigging.

Lake Gariep was the only study area where no illegal fishing methods were recorded. All the participants reported using the angling method i.e. rod, line and a hook. In terms of alternative preferred fishing gear, the majority of participants at Lake Gariep and Nandoni Dam were not interested in using any other gear besides what was popular in that particular study area. This could be because the popular gear type at Nandoni Dam was illegal gillnets, and therefore the fishers were able to catch more fish than they would likely be able to with a hook and line. Lake Gariep is one of the top three impoundments with high productivity in South Africa (Barkhuizen, 2015) and these survey results indicated that the daily sales and catches were the highest at this site. The comparatively larger catch might be the reason why the fishers here were not interested in any other fishing gear as they are not finding it difficult to catch the desired quantity of fish with a rod, line and hook.

6.5 Perceptions of current laws

The enforcement of legal requirements for recreational angling has largely fallen away in most provinces and there is not much visibility of law enforcement agencies at the dams. The results of the surveys indicated that there is uncertainty around the government agency responsible for monitoring compliance on the public dams, but that small-scale fishers are able to get instructions from fellow resource users and government officials. The survey participants further indicated that they feel “harassed” by officials from various government law enforcement agencies, private security companies, and fellow resource users, which is consistent with the findings of a study undertaken by Britz et al., 2015, which indicated that there were reported cases of private security companies confiscating nets and other equipment belonging to small-scale fishers. Recreational anglers also confiscated and destroyed fishing gear belonging to small-scale fishers as they believed the usage of gillnets is unsustainable (Britz, et al., 2015). These actions contribute towards the growing conflict between the resource users in the lack of effective resource management systems.

There is a clear sense of dissatisfaction regarding the laws governing inland fisheries. Issues such as permitting and access to fishing sites were said to be the main concerns for the small-scale fishers. However, the general perception on the laws varies from one study area to another. At Vanderkloof Dam, the majority of participants remained neutral on the fairness of the current laws. The majority of the users on this dam were also neutral on the likelihood of improving the laws in the future. This group of participants indicated that they were not familiar with the laws and therefore, were unable to formulate an opinion on legal issues. At Lake Gariep, most of the participants found the laws to be fair. However, many other participants felt that the laws needed to be improved, especially to allow them access to all parts of the lake. One participant commented that the current law favours the rich people (recreational anglers) as they are allowed to fish anywhere on the lake. At Nandoni Dam, the majority of participants were clearly dissatisfied with the current laws. Similar to Lake Gariep, the participants at Nandoni Dam felt that the laws should be changed to allow them access to all parts of the dam.

7. CONCLUSION

There are a number of environmental management laws that apply to fishing activities on inland public waterbodies. Some of the provincial laws were amended since the country transitioned into democratic governance. However, the small-scale fisheries are still not recognised in the legislation as was the case pre-democracy. The legislative analysis showed that there is general lack of compliance with the provincial laws at Nandoni Dam and Vanderkloof Dam. The general perception of the participants is that the current laws are unfair and must be improved (repealed). The fact that the laws were not designed for regulation of

the small-scale fisheries sector could make it difficult for small-scale fishers to comply with the laws. Comprehensive research needs to be conducted at a national level to determine the impact of the legislation and perceptions of small-scale fishers nationwide. Such information will be valuable to provide direction on legislative reform.

8. RECOMMENDATIONS

The scope of this study was limited to only three provinces due to time and logistical constraints. To understand the full extent of the legislative framework regulating the inland fisheries sector, it is recommended that the study be replicated in the remaining six provinces (Gauteng, North West, Kwa-Zulu Natal, Eastern Cape, Mpumalanga and Western Cape).

A nationwide legislative analysis should be done comprehensively to include the laws with direct and indirect impact on the inland fisheries sector. Such an analysis should consider the impact of the regulations in terms of national and provincial legislation governing water and the environment. This national legislative audit should be conducted alongside broad stakeholder surveys to understand the needs of the various resource users prior to legislation formulation.

User-friendly information on legal requirements related to inland fishing practices (like that provided in Appendix 1) should be made available and easily accessible to small-scale fishers through awareness campaigns. South Africa is a culturally diverse country with 11 official languages, however in many cases information is disseminated only in English, making it inaccessible to many. Therefore, it is imperative that this information be translated to all official languages to make it easy to understand for all resource users.

The legal non-recognition of small-scale fishers should be addressed as a matter of urgency. In the meantime, national governmental departments with a role to play in the management of the inland fisheries sector should engage in negotiations to allow the small-scale fishers an equal opportunity to access natural resources.

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APPENDICES

Appendix I: Summary of national laws affecting inland fisheries

Law/Policy	Applicable provision	Application/relevance	Competent authority
Constitution of the Republic of South Africa, 1996	Section 2	This is one of the founding provisions of the Constitution and declares its supremacy. In the context of inland fisheries, the laws governing the sector must be aligned to the Constitution as the Supreme Law of the country.	Department of Justice and Correctional Services
	Section 9	Chapter 2: Bill of Rights is the cornerstone of the democratic South Africa. The rights as enshrined in the Constitution are to be enjoyed by all people in the country. In the context of inland fisheries, the laws regulating the sector must be “pillared” by the democratic values of human dignity, equality and freedom.	
	Section 22	This provision affords the fishers a right to freely participate in their trade, occupation or profession. However, the right may be regulated by law.	
	Section 24 (b) (iii)	In the context of inland fisheries, the state is required to promote the sustainable management of the sector by incorporating the environmental management, social and economic aspects. The management of the sector must be done in such a way that through legislation and government plans, all resource user groups are supported and afford equitable access to natural resource.	
National Freshwater (Inland) Wild Capture Fisheries Policy	The policy in its entirety is applicable as it was developed and dedicated for inland fisheries.	This policy serves as one of the initial steps towards achieving the aims of section 24 (b) (iii) of the Constitution.	Department of Forestry, Fisheries and the Environment

National Environmental Management Act, 1998 (Act No. 107 of 1998)	Section 2 (2)	Section 2 of Act No. 107 of 1998 sets out the principles of which must be applied by the state in relation to the actions that may significantly affect the environment. Section 2 (2) provides that the management of the environment must put the people and their needs at the forefront of its concern by taking into consideration factors such as cultural and social interests equitably.	Department of Forestry, Fisheries and the Environment
	Section 2 (3)	In terms of this section, the Act provides that development must be socially, environmentally and ecologically sustainable. For the development of the inland fisheries sector, government needs to ensure that not only the environment is sustainable but also the social and ecological aspects are sustainable particularly the small-scale fishers whose rights are not recognised by the current laws.	
	Section 2 (4) (a)	This section sets out various factors that must be considered concerning sustainable development. The section provides that the disturbance of the ecosystem and the loss of biodiversity must be avoided. In the case where the avoidance of ecosystem disturbance and biodiversity loss is not possible, such consequences should be minimised and remedied.	
	Section 2 (4) (d)	In terms of this section, to ensure sustainable development, the state must ensure equitable access to environmental resources, benefits and services to meet basic human needs. The section further provides that special measures may be taken to ensure access to resources, benefits and services to categories of persons disadvantaged by unfair discrimination.	
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	Section 3	The organs of state are entrusted with biodiversity management in order to achieve the rights enshrined in section 24 of the Constitution through implementation of legislation.	Department of Forestry, Fisheries and the Environment

	Section 7	The Act No. 10 of 2004 must be applied as guided by section 2 of Act No. 107 of 1998 which deals with the principles that must be complied with in managing the environment.	
	Section 56	This section empowers the Minister to publish a list of species that are critically endangered, endangered, vulnerable or protected. Species on critically endangered, endangered and vulnerable are listed based on their risk of extinction in the wild. Protected species are listed as such based on their high conservation status or national importance.	
	Section 57 (2)	Without a permit, this section prohibits undertaking of restricted activities that involves species listed as threatened or protected.	
	Section 64 (1) (c)	Through sustainable development of fisheries sector, alien and invasive species may be targeted and captured to meet the objectives of this provision.	
	Section 65 (1)	Without a permit, this section prohibits undertaking of restricted activities that involves alien species.	
	Section 70	Without a permit, this section prohibits undertaking of restricted activities that involves invasive species.	
	Section 87	The section provides for issuing of permits authorising undertaking of restricted activities involving species listed as threatened or protected, alien or invasive species.	
National Water Act, 1998 (Act No. 36 of 1998)	Section 4 (1)	<p>In terms of this section, a person is entitled to use water in or from a water resource for purposes among others, recreational use. This is the only usage of water resource specified on this section that closely relates to fishing, although only for recreational angling.</p> <p>The Act explicitly states that people are also entitled to use water from a water resource, for reasonable purposes such as domestic use, domestic gardening, animal watering and firefighting.</p>	Department of Water and Sanitation

	Section 113	This section provides for the Minister responsible for water to control access to and use of government waterworks for recreational purposes. In terms of this Act, water storage dams, water transfer schemes and flood attenuation works are examples of waterworks. It further empowers the Minister to make reasonable charges for recreational resource users to access the waterworks. This section, in the context of inland fisheries has great impact as it is directly linked to access to fishing grounds.	
	Section 116 (2) (b)	This clause makes it mandatory for the Minister when making regulations, to consider the safety and security of the people using the government waterworks for recreational purposes.	
	Section 151 (1) (i) (ii)	In terms of these provisions, it is an offence to commit or omit an action that is likely to result in pollution of the water resource regardless of whether such commission or omission of an act was intentional or negligent.	

Appendix II: Summary of regulations with an impact on inland fisheries

Regulations published in terms of national legislation		
Regulation	Purpose	Competent authority
Threatened or Protected Species Regulations, 2007	The regulations declare certain species, both flora and fauna, as 'listed threatened or protected species' in terms of section 56 (1) of Act No. 10 of 2004. The regulations specify restricted activities in relation to the listed species.	Department of Forestry, Fisheries and the Environment
Alien and Invasive Species Regulations, 2014	The regulations declare certain species, as Aliens or invasive species and provide certain prohibitions regarding the use of alien and invasive species. However, certain exemptions may be applicable depending on a particular listed species and the area of such activity.	Department of Forestry, Fisheries and the Environment

Appendix III: Summary of provincial laws regulating inland fisheries

Provincial Laws			
Law/Policy	Applicable provision	Application/relevance	Competent authority
Limpopo Environmental Management Act, 2003 (Act No. 7 of 2003)	Section 54 (1) (a)	It is prohibited, without a permit, to catch a fish using any other method besides angling.	Limpopo Department of Economic Development, Environment and Tourism
	Section 54 (1) (b)	This provision makes it an offence to place any item which may cause an obstruction preventing free passage of fish in the aquatic system, unless the activity is done as authorised by a permit.	
	Section 54 (1) (d)	Fishing during closed season without a permit is prohibited. The closing period is declared by the Member of the Executive Council in a notice issued in terms of section 56.	
	Section 54 (1) (f)	Without authorisation expressed in the permit, this section prohibits the catching of fish by hooking on any part of its body other than in the mouth.	
	Section 54 (1) (g)	No person may, without a permit, angle with more than two lines. Each line may not have more than two single hooks attached to it with either natural bait or a line to which more than one artificial lure or spoon is attached.	
	Section 54 (1) (h)	Without a permit, catching of fish using a set line is prohibited.	
	Section 54 (1) (k)	This provision prohibits the placing of any animal matter, vegetable matter or other substance which serves as feeding area with an intention to attract fish without a permit.	
	Section 54 (1) (l)	Prohibits angling in the provincial park, a Site of Ecological Importance or a Protected Natural Environment without a permit.	
	Section 56	The Member of Executive Council is empowered to declare	

		a closed season by a notice in the Provincial Gazette.
	Section 57 (1) (b)	Prohibits the release of live aquatic biota in any aquatic system without a permit except in a case where the live aquatic biota is released immediately by the person who caught it in the same waters it was caught.
	Section 57 (1) (g)	Prohibits catching of fish in an aquatic system in a Protected Natural Environment or Resource use area without a permit.
	Section 57 (2) (a)	This provision prohibits the transport through the province any live aquatic biota without a permit. Species exempted by the MEC by a notice in the Provincial Gazette are exempted.
	Section 60	Empowers the Member of Executive Council to make regulations related to:
	Section 60 (a)	Sizes and weight of aquatic biota that can be caught and kept
	Section 60 (b)	Control of catching fish
	Section 60 (e)	Sale of aquatic biota
		Importation into, exportation or removal of aquatic biota from the province
	Section 60 (f)	Possession, keeping, conveyance or removal of aquatic biota.
	Section 60 (i)	Specifications of fishing tackle or any equipment used to catch aquatic biota.
	Section 69	This section prohibits the movement of species listed on Appendix I (endangered species), Appendix II (rare species) and Appendix III (intermediate species) to CITES between the province and another country or conveying through the province such species listed under Appendix I, II or III without a CITES permit.

Nature Conservation Ordinance, 1969 (Act No. 8 of 1969)	Section 23	This section prohibits any person from angling without a licence issued in terms of section 37 (2). The section also makes it compulsory for the angler to have a licence on him while he is angling. This requirement is only applicable for people angling on public waters.	Free State Department of Economic, Small Business Development, Tourism and Environmental Affairs
	Section 25 (1)	Empowers the Administrator to prohibit any person by proclamation from catching certain fish species in the waters within the province during a certain period. This period is called the closed season.	
	Section 26 (1)	In terms of this provision, catching of fish without an authorisation granted in a form of a permit, using any method other than angling is prohibited.	
	Section 26 (2) (a)	Prescribes the fishing gear allowed for angling. A person is allowed not more than two (2) lines. Each one of the lines may only have not more than two (2) single hooks with natural bait or one or more non-spinning flier or not more than one artificial lure/spoon.	
	Section 26 (2) (b)	Catching of fish using a method with an intention to hook a fish on any part of its body other than in the mouth is prohibited.	
	Section 26 (2) (c)	It is illegal to catch or attempt to catch fish using a set line.	
	Section 26 (2) (d)	Prohibits the placing of markers in the water to indicate an angling place or feeding place for fish.	
	Section 27 (1)	This section prohibits the possession of a fishnet or trap unless that person is authorised to catch fish using fishnet or trap in terms of section 26 (1). Only nets used for landing or keeping fish caught with a line and hook may be possessed.	

		This prohibition does not apply to a licence holder authorised to operate a business with fishnets and traps. The licence holder is required to keep record of fishnets and traps sold by him.	
	Section 28	The importation of any live fish into the province and selling of live freshwater fish is prohibited except if authorised by a permit issued by the Administrator. Placing or releasing of any live fish in the waters is prohibited except in the case where fish is caught and immediately released in the same water it was caught.	
Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009)	Section 32	This section provides for restriction of certain activities involving specially protected fish.	Northern Cape Department of Agriculture, Environmental Affairs, Rural Development and Land Reform
	Section 32	In terms of this section, it is prohibited to angle and not immediately release, catch, import, export, transport, keep, possess, breed or trade in specimen of a specially protected fish without a permit.	
	Section 33	In terms of this section, it is prohibited to angle and not immediately release, catch, import, export, transport, keep, breed or trade in specimen of a protected fish without a permit.	
	Section 34 (1)	Prohibits the catching of wild fish in the public inland waters without a permit.	
	Section 34	In relation to fishing on public inland waters, no person may catch a protected fish species without a permit.	
	Section 35	Deals with angling seasons as declared by notice in the Provincial Gazette.	
	Section 35 (1)	This clause prohibits the angling of protected fish species in public inland waters outside the angling season.	

Section 35 (2)	Empowers the Member of Executive Council responsible for nature conservation in the Northern Cape province to declare angling season for protected fish species.
Section 36	This section deals with licencing of angling activities.
Section 36 (1)	This clause prohibits fishing on public inland waters in Northern Cape without a licence issued in terms of this Act. This prohibition is not applicable to a permit holder.
Section 37	This section makes it an offence to catch more than the permitted number of species of fish as per notice published in terms of section 35 of this Act.
Section 38	This section sets out prohibited methods of catching fish in the province.
Section 38 (a)	This clause prohibits fishing by means of jigging, snatching or spearing without a permit
Section 38 (b)	This clause prohibits the usage of a cast net, crab net, staked net, trek-net or fyke net without a permit.
Section 38 (c)	The use of any equipment that would guide fish towards an opening which will make it difficult for fish to escape is prohibited if the operator is not holding a permit authorising such activity.
Section 38 (d) (i)	This clause prohibits angling without a permit using more than 2 lines to catch fish.
Section 38 (d) (ii)	This clause prohibits the usage of more than two (2) single hooks attached to the same line without a permit.
Section 38 (d) (iii)	This clause prohibits the usage of a set line or long line with more than two (2) hooks attached to it without a permit.
Section 38 (d) (iv)	This clause makes it an offence to fish without a permit, using

		two or more artificial lures attached to one line.
	Section 38 (e)	The provision allows for the use of landing net to land fish that was caught by angling but prohibits the usage of landing net, without a permit to catch fish.
	Sections 38 (f) and (g)	These sections prohibit the use of explosives or shocking devices to catch fish without a permit.
	Section 41	The introduction or placing of live fish into an aquatic system without a permit is prohibited. However, this prohibition does not apply to the returning of indigenous fish species into an aquatic system immediately after it is caught.
	Section 43 (1)	Prohibits the possession, importation, exportation, transportation of live fish or the spawn of any fish in the Northern without a permit.
	Section 44 (a)	Without a permit, the selling or buying of specially protected fish species or its carcass or spawn is prohibited in terms of this section.
	Section 44 (b)	Without a permit, the selling or buying of the following live fish species are prohibited in terms of this section: carp, bluegill sunfish, trout, black bass, banded tilapia and exotic invertebrate freshwater fauna.
	Section 44 (c)	This section makes it unlawful to sell or buy fish that was caught in contravention of any provision of the Act 9 of 2009.
	Section 45	Prohibits the selling or buying of live or dead invertebrate removed from aquatic system for the purpose of using such an invertebrate as bait except if authorised by a permit.
	Section 46	The placing of any article or thing in an aquatic system which may prevent free passage of fish

		is prohibited. This excludes the use of nets which may only be used as authorised by a permit.	
	Section 55	Prohibits the importation, exportation, transportation, possession and trading in invasive species including the specimen, carcass or derivative of such species.	
	Section 56	Fish species including their carcass or derivative may not be imported into Northern Cape province from another country or exported from the province to another country without a permit if that particular species is listed in Appendix I, II or III of Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES).	

Appendix IV: Survey questionnaire

IMPACT OF CURRENT LEGISLATIVE FRAMEWORK ON INLAND SMALL-SCALE FISHERIES IN SOUTH AFRICA: A CASE STUDY OF LIMPOPO, FREE STATE AND NORTHERN CAPE PROVINCES

Student: Tshepo Josephat Sebake

Introduction

Background

This questionnaire is for a study on “*Inland small-scale fishers’ perception on current laws regulating the sector*”. The questionnaire will be used to compile a research report for GRO – Fisheries Training Programme under the auspices of United Nations Educational, Scientific and Cultural Organisation (UNESCO). The training is a programme under the partnership between Marine and Freshwater Research Institute (MFRI) and the University of Akureyri, Iceland. The programme is aimed at strengthening capacity within fisheries and aquaculture sectors in developing countries including South Africa. The study seeks to determine the perception of the inland small-scale fishers with focus on the current laws regulating the freshwater systems and fishing activities on these waterbodies based on their experiences. The study is conducted at Nandoni Dam (Limpopo Province), Lake Gariep (Free State Province) and Vanderkloof Dam (Northern Cape Province), South Africa. The interview requires approximately **25 minutes of your time** to be completed.

Participation

Taking part in this questionnaire is a voluntary exercise. The questionnaire and your responses will not be used to your disadvantage. You will be treated with anonymity. As such, the researchers will not attempt to identify you with the responses to this questionnaire, or to name you as having taken part in this research. All responses will be treated with confidentiality and used for research only. You have an option not to answer any question or respond to any part or aspect of this questionnaire. **Please limit your answers to the dam where the interview is being conducted.**

Interviewer:Name of the dam:

Gender of the Interviewee.....

Section 1: Personal Information

1.1 Where do you live in terms of distance from the dam?	A. 10 km or less C. 31 km to 50 km E. 70 km or more	B. 11 km to 30 km D. 51 km to 70 km F. I prefer not to answer
1.2 What is your age rank?	A. 17 or younger C. 26-34 E. 45-54 G. I prefer not to answer	B. 18-25 C. 35-44 F. 55 or older
1.3 Which race group do you belong to?	A. African B. Indian/Asian E. I prefer not to answer	C. Coloured D. White
1.4 What is your citizenship status?	A. South African (SA) C. Dual (including SA)	B. Foreign citizen D. I prefer not to answer
1.5 How many individuals are in your household?	
1.6 What is your employment status?	A. Unemployed C. Employed (Seasonal) E. Self-employed	B. Employed (Part-time) D. Employed (Full-time) F. I prefer not to answer
1.7 How many people in your family are involved in fishing?	

Section 2: Catch and sales information

2.1 Which fish species do you usually catch?	List fish species:
2.2 How many days do you usually fish in a week?
2.3 What is your main motivation/reason for fishing?	A. Own consumption B. Sale N.B Option A includes people in your household
2.4 Why?	Please provide a reason if you chose option B on question 2.3:

2.5 How many kilograms (Kgs) of fish do you sell per day if your main motivation/reason is to sell the fish?	A. 10 kg or less C. Between 21& 50 kg	B. Between 11& 20 kg D. 51 kg or more
2.6 How much do you charge per Kg in South African Rand if your main motivation/reason is to sell the fish?	A. R10/kg or less C. Between R21& R50/kg	B. Between R11& R20/kg D. R51/kg or more
2.7 Where do you sell most of your fish?	A. 500m or less from the landing site C. Outside my village	B. In my village D. Outside my province
2.8 Do you export any of the fish you catch to other countries?	A. Yes	B. No
2.9 How important is fishing for you personally? A=Very important; B= Important; C=Neutral; D= Slightly important; E= Not important	Choose 1 option: A; B; C; D; E	
2.10 Why? Please motivate answer given on 2.9.	Provide reason/s.....	
2.11 How important is fishing for your community? A=Very important; B= Important; C=Neutral; D= Slightly important; E= Not important	Choose 1 option: A; B; C; D; E	
2.12 Why?	Provide reason/s.....	
2.13 How many small-scale fishers do you know, who are fishing on the dam?	
2.14 How many of the small-scale fishers you know fishing on this dam are selling their catch?	A. 25% or less C. 50% to 75%	B. 26% to 50% D. 75% to 100%
2.15 How much do you catch on average in comparison to most of the other fishers?	A. Significantly higher C. Equal E. Significantly less	B. Slightly more D. Slightly less

2.16 Have you noticed any decrease in catches since you started fishing on this dam?	A. Yes B. No
2.17 What do you think the reason for decreases in catches may be if the previous answer is yes?	Provide reason/s.....
2.18 From your experience, which species are declining in stocks? This is only applicable if your answer to question 2.16 is yes.	List fish species:
2.19 Do you think there should be limitations on quantity of fish allowed to be caught?	A. Yes B. No
2.20 Why?	Provide reason/s.....

Section 3: Access, Permits and Compliance

3.1 Do you know if you need a permit to fish on this dam?	A. Yes B. No
3.2 Do you have a permit to fish on this dam?	A. Yes B. No C. Prefer not to answer
3.3 If previous answer is yes, where was the permit obtained?	
3.4 Do you know If there are any rules for fishing on this dam?	A. Yes B. No
3.5 Are you familiar with the rules if previous answer is yes?	A. Yes B. No

3.6 Do you know if there is anyone who monitors compliance with the rules?	A. Yes B. No
3.7 Who monitors compliance with the rules if the previous answer is yes?
3.8 Have you ever been denied access to the dam?	A. Yes B. No C. I prefer not to answer
3.9 Why were you denied access if the previous answer is yes?	Provide reason/s.....
3.10 Who denied you access to the dam if the answer to question 3.7 is yes?
3.11 Which gear type do you use to catch fish?	A. Rod, line and a hook B. Gillnet C. Other (please specify)
3.12 Why do you use the gear type specified above?	Provide reason/s.....
3.13 Would you choose a different gear type if you had an option?	A. Yes B. No C. I prefer not to answer
3.14 Which gear type would you prefer to use if previous answer is yes?	Specify preferred gear type/s.....
3.15 Why would you choose the gear type specified above?	Provide reason/s.....

3.16 Have you ever had conflict with law enforcement officers?	A. Yes B. No C. I prefer not to answer
3.17 What caused the conflict if the previous answer is yes?	Provide reason/s.....
3.18 Have you ever had conflict with other people who are using this dam (e.g., for tourism, recreational anglers, other small-scale fishers etc.)?	A. Yes B. No C. I prefer not to answer
3.19 From which stakeholder category does the resource user/s above belong to (e.g., tourism, recreational anglers, small-scale fishers etc.)?	Specify resource user/s category.....
3.20 What caused the conflict if the answer to question 3.17 is yes?	Provide reason/s.....
3.21 Please indicate your perception on the current laws regulating fishing practices on the dam. Choose one answer in the next column according to guidelines below. A=Strongly agree; B= Agree; C=Neutral; D= Disagree; E= Strongly disagree	The laws are fair (circle one of the possible answers below): A; B; C; D; E
3.22 Please indicate your opinion on the potential future laws for fishing practices on the dam. Choose one answer in the next column. A=Strongly agree; B= Agree; C=Neutral; D= Disagree; E= Strongly disagree	The laws should be changed, and future laws should be better than the current laws (circle one of the possible answers below): A; B; C; D; E
3.22 Any specific changes you would want to see in case the laws are changed? List preferred priority changes.	Provide reason/s.....