

Adopting the Use of Indigenous Knowledge to Alleviate the Decline of Living Marine Resources in South Africa

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Abstract

Most living organisms found in the ocean are vital to human life. They can be used for a myriad of activities ranging from human consumption to making cosmetic products. The variety of usages attracted attention, and there was an influx of natural and juristic persons into coastal areas to exploit these resources. This resulted in declining living marine resources due to over-exploitation and over-reliance. The need to regulate the living marine resources to protect and preserve their existence became evident. Thus, a plethora of legislation related to the marine environment was promulgated. Amongst other legislation, the Marine Living Resources Act 18 of 1998 (MLRA) was promulgated to ensure living marine resources management, conservation, and preservation. However, even in its existence, living marine resources continue to decline. Under these circumstances, Indigenous knowledge could be adopted to assist in alleviating the decline of living marine resources and augmenting the MLRA. Indigenous knowledge boasts methods of managing, conserving, and preserving living marine resources. Therefore, this paper calls for the need to incorporate some of these Indigenous knowledge practices into the MLRA. In buttressing the need to incorporate Indigenous knowledge in the MLRA, this study shall adopt a non-empirical and qualitative research approach.

Keywords: indigenous knowledge; living marine resources; western knowledge; hybridisation.

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1. Introduction

South Africa is endowed with abundant living marine resources, including marine animals and plants.² These resources play a pivotal role in the lives of many South Africans. They can be used to produce seafood and pharmaceutical products. They can also contribute to recreation and tourism attraction.³ Production from living marine resources contributes immensely to the economy and employment.⁴ This is also captured by Rogerson and Rogerson who remarked that *‘[o]cean-based industries are acknowledged as making up a substantial contribution of the world economic output and employment’*.⁵ To ensure the status quo is maintained, it is important to put adequate measures in place to promote the sustenance of living marine resources.

The importance of ensuring sustenance is underscored by the Food and Agricultural Organisation (FAO) report which indicated that there has been a decline in marine living resources in Africa.⁶ Since the FAO submits this in general terms, this paper proceeds to locate the decline of marine living resources locally/domestically. In the 2023 report on the status of the South African marine fisheries resources published by the Department of Forestry, Fisheries, and the Environment (DFFE), there is evidence of the decline in the status of marine species such as abalone resource,

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² Duncan, et al. “Ocean Facts and Futures: Valuing South Africa's Ocean Economy” (2016). Retrieved September 20, 2024 from: http://awsassets.wwf.org.za/downloads/wwf_oceans_facts_and_futures_report_oct16.pdf.

³ Caroline Hattam, et al., “Marine Ecosystem Services: Linking indicators to their classification”. *Elsevier*, (2015) 49. p. 65.

⁴ Hendrik Van As, “Poaching of Marine Living Resources: Can the Tide be Turned?” *South African Crime Quarterly*, (2020) 69 p. 2.

⁵ Christian Rodgers and Jayne Rodgers, “Emergent Planning for South Africa's Blue Economy: Evidence from Coastal and Marine Tourism”, (2020) *Urbani izziv*, 30, p. 24.

⁶ Food and Agriculture Organisation “The state of World Fisheries and Aquaculture Sustainability in action”, (2020) Retrieved 14 August 2024 from: <https://digitalcommons.fiu.edu/cgi/viewcontent.cgi?article=1471&context=srhreports>.

silver kob, geelbeck, red steenbras, dageraad, dusky kob, harders, oysters, water prawns and others.⁷ The 2024 report on Ocean & Coastal Fishing, Aquaculture, Processing, and the Wholesale Fish Trade in South Africa, attributed this decline to a lack of monitoring and weak enforcement regulation in protecting living marine resources.⁸

At this stage, it is apparent that there is a decline in living marine resources despite the existence of the Marine Living Resources Act (MLRA).⁹ It is important to highlight that the MLRA was promulgated to conserve the marine ecosystem, provide for long-term sustainable utilisation of marine living resources, and to protect living marine resources.¹⁰ The existence of the MLRA and the continuing decline of marine living resources give rise to two questions i.e. (a) whether there is a need to adopt alternative forms of knowing such as Indigenous knowledge to alleviate the decline of living marine resources and (b) whether there is a need to augment the MLRA.

To properly investigate these questions, this article shall be divided into six sections. In the first section, is the introduction. In the second section, the article shall provide a scope and delimitation of the study. This is due to the broader scope of environmental law and by extension the marine field. The third section shall discuss Indigenous knowledge's position on the marine environment and the Indigenous knowledge practices that play a pivotal role in sustaining living marine resources. This section aims to explore whether Indigenous knowledge could alleviate the decline of living marine resources. The fourth one shall discuss the hegemony of Western knowledge and the consequent marginalisation of Indigenous knowledge. The aim is to expose why Indigenous knowledge was not considered in the MLRA despite its practices preceding the Act. In the fifth section, the paper shall discuss the hybridisation of Indigenous knowledge and Western knowledge to augment the MLRA, thus circumventing the decline of living marine resources. Lastly, a conclusion and recommendations shall be provided.

In this paper, I will adopt a non-empirical and qualitative research approach. In this approach, the paper shall use information sourced from primary and secondary sources such as, but not limited to, the Constitution, legislation, conventions, dissertations, journals, and other legal publications and documents.

2. Scope and delimitation of the study

By its very nature, environmental law is broad. It covers issues related to the marine environment, land, climate, water, etc. This article interrogates issues related to the marine environment. The scope of the marine environment is also broad. It comprises the conservation and management of marine species, marine transportation, marine pollution, and the blue economy. This gave rise to a plethora of legal framework promulgated to regulate the marine environment. Moreover, other legislations do not deal with the marine environment directly but incidentally, protect it. These legislations include, but are not limited to (a) the National Environmental Management Biodiversity Act, 2004 (b) the National Environmental Management Integrated Coastal Management Act, 2008, and (c) the National Environmental Management Protected Areas Act, 2003. Thus far, it is apparent that the scope of the marine environment is broad. While it has been shown that the marine environment scope is broad, Indigenous knowledge is also a broad concept.

This article deals with the marine environment and Indigenous knowledge, both of which bear a broader scope. It is, therefore, prudent to provide the scope and delimitation of this study so that it does not lack focus. For this reason, it is submitted here that this article shall limit its discussion to

⁷ Department of Forestry, Fishery and the Environment. "Status of the South African Marine Fishery Resources" (2023) Retrieved 08 August 2024 from https://www.dffe.gov.za/sites/default/files/reports/research/fisheries/statusofsouthafrican_marinefisheryresources2023.pdf.

⁸ Market Research Report. "Ocean & Coastal Fishing, Aquaculture, Processing and the Wholesale Fish Trade in South Africa 2024" (2024), Retrieved 20 August, 2024, from: <https://www.globenewswire.com/fr/news-release/2024/06/06/2894464/28124/en/South-Africa-Fishing-and-Aquaculture-Industry-Report-Fish-Canneries-Continue-to-Import-Sardines-Pilchards-to-Supplement-Locally-sourced-Fish.html>.

⁹ Act 18 of 1998.

¹⁰ Preamble, Act 18 of 1998.

the management and conservation of living marine resources under the MLRA. The study shall not deal with other legislation. On the part of Indigenous knowledge, the article shall limit its discussion to the marginalisation and subjugation of Indigenous knowledge and the Indigenous knowledge practices in capita selecta that promote the sustenance and conservation of living marine resources.

3. Indigenous knowledge practices on the protection and preservation of living marine resources: capita selecta

The Protection, Promotion, Development, and Management of Indigenous Knowledge Act 6 of 2019 (PPDMIKA) defines Indigenous knowledge as follows: „*Indigenous knowledge*’ means knowledge which has been developed within an Indigenous community and has been assimilated into the cultural and social identity of that community, and includes: (a) knowledge of a functional nature; (b) knowledge of natural resources; and (c) indigenous cultural expressions”.

Furthermore, PPDMIKA provides for the protection of Indigenous knowledge in terms of section 11. Indigenous knowledge is transmitted through various formal and informal ways which include, but are not limited to folklorisation, cosmological observations, and techniques for planting, harvesting, and hunting.¹¹ Significantly for current purposes, Indigenous knowledge endows a specialised understanding of local ecosystems.¹² Locally, Indigenous knowledge is protected and promoted in terms of the PPDMIKA as indicated above. The definition of Indigenous knowledge under the PPDMIKA makes it apparent that Indigenous knowledge and culture are intrinsically linked. Therefore, this article submits that sections 30¹³ and 31¹⁴ of the Constitution of the Republic of South Africa, 1996 also promote Indigenous knowledge because the recognition and protection of culture extend to Indigenous knowledge.

International instruments such as the Indigenous and Tribal Peoples Convention, (1989) and the United Nations Declaration on the Rights of Indigenous Peoples (2007) also promote the need to use Indigenous knowledge to manage, conserve, and control living marine resources. Article 5 of the Indigenous and Tribal People Convention, (1989) promotes Indigenous knowledge by advocating for the recognition of Indigenous people’s culture, social, religious, and spiritual values. The same convention in Article 15, provides for the rights of Indigenous people to participate in the use, management, and conservation of resources. Article 24 of the United Nations Declaration on the Rights of Indigenous People (2007) also promotes Indigenous knowledge by stating that Indigenous peoples have the right to maintain their practices, including conserving their vital medicinal plants, animals, and minerals. Article 29 of the same convention extends this intention directly to the States that ratified the Convention to ensure that they establish and implement programs that will assist Indigenous people in conserving and protecting the environment.

The PPDMIKA and international Conventions mentioned in this section, in essence, advocate for the recognition and acceptance of existing Indigenous practices used by Indigenous communities in South Africa to protect and preserve marine living resources. Some of these practices are discussed in capita selecta hereunder as follows:

3.1. African world view (cosmology)

Makgahlela explains a worldview as a ‘set of basic assumptions that a group of people

¹¹ Olghah Lerato Malapane, Nelson Chanza and Walter Musakwa, “Transmission of indigenous knowledge systems under changing landscapes within the vhavenda community, South Africa” (2024) *Environmental Science and Policy*, 161, p. 5.

¹² Margaret Bruchac, “Indigenous Knowledge and Traditional Knowledge”. In the *Encyclopedia of Global Archaeology* ed by Claire Smith, (Springer Science and Business Media) p. 3816.

¹³ Everyone has the right to use the language and to participate in the cultural life of their choice, but no one exercising these rights may do so in a manner inconsistent with any provision of the Bill of Rights.

¹⁴ Persons belonging to a cultural, religious, or linguistic community may not be denied the right, with other members of that community - a. to enjoy their culture, practice their religion and use their language; and b. to form, join and maintain cultural, religious and linguistic associations and other organs of civil society. 2. The rights in subsection (1) may not be exercised in a manner inconsistent with any provision of the Bill of Rights.

develops to explain reality and their place and purpose in the world'.¹⁵ For geographical purposes, he further explains the African worldview as '*the way in which Africans perceive their world, which in turn, influences their cultural ways of knowing and doing*'.¹⁶ For want of relevance, cosmology is pivotal in protecting and preserving living marine resources.¹⁷ The existence of practices that are observed by Indigenous communities and the acceptance of their binding effects promote the management and conservation of marine species. In South Africa, taboos form part of the Indigenous people's beliefs.

Taboo is a practice that involves a social prohibition or restrictions on something that is construed as holy or unclean by the social custom.¹⁸ The practice's binding effect emanates from the fear of supernatural punishment that may befall the Indigenous communities should they not respect taboos.¹⁹ For example, there is a taboo positing that species regarded as totems cannot be hunted for food. Examples of totems include but are not limited to crustaceans (aquatic group crustacea), animals, birds, and reptiles.²⁰ Totems and totemism typically embody specified phenomena linked to a clan. At its core, it summons the group clan to perform rituals, veneration of the ancestors, and a myriad of other complexities drawn from nature.²¹

The Nguni and Venda people are amongst other people who observe totems and totemism. For example, amongst some of the Nguni people, eating a fish is a taboo because it is classified as kin of the snake and their ancestral spirits take the form of a snake when visiting them.²² Britz *et al* also provides that: „*In Venda, the long-held perceptions that Lake Fundudzi is a sacred site have historically contributed to the conservation of natural resources within the vicinity of the lake. Cultural taboos precluded Venda people from eating fish from the lake or from any other sources... Effectively, this implies that Lake Fundudzi might not have been considered a fisheries resource by the Vhathavhatsindi group of Venda ...*”²³

The above excerpt indicates how the wide practice of taboos could contribute to conserving and preserving natural resources, including, living marine resources. This is because taboos are not only practiced in land, they are also practiced in coastal areas where marine living marine resources are typically found.

3.2. Environmental knowledge and indicators

Noyoo provides that “*before the advent of colonialism and modernity, Southern African communities had already effective ways of balancing their ecological systems*”.²⁴ They used environmental indicators such as animals, birds, and other natural atmospheric elements. These indicators were predominantly associated with seasonal change. Indigenous communities of South Africa understand seasonal changes and know how to respond to them. For example, the flowering and fruiting of other trees informed these people about the commencement of wet seasons and, thus,

¹⁵ Mpshyana Makgahlela, “The Psychology of Bereavement and Mourning Rituals in a Northern Sotho Community” (PhD Diss., University of Limpopo., 2016), p. 10.

¹⁶ Ibid.

¹⁷ Department of Forestry, Fishery and Environment, “South African History of Conservation” (2021) Retrieved 14 August, 2024 from: <https://www.dffe.gov.za/SouthAfricanhistoryofconservation>.

¹⁸ Maheshvari Naidu and Kolekile Nqila, “Indigenous Mothers: An Ethnographic Study of Using the Environment during Pregnancy” (2013) *Ethno Medicine*, 7(2), p. 130.

¹⁹ Magezi Baloyi, “The Critical Role of Selected Swiyila (Taboos) in Rural Democratic South Africa: A Theological Perspective: Church History Society of Southern Africa” (2020), *Church History Society of Southern Africa and Unisa Press*, 21, p. 3.

²⁰ Sakhiwo Bongela, “Isihlonipho among Amakhosa” (2001) (PhD Diss, University of South Africa, 2001), p. 65.

²¹ Ibid, p. 56.

²² Eric Galli, “Some Food Customs and Beliefs in South Africa” (2007) Retrieved 09 October, 2024 from: <https://www.emerald.com/insight/content/doi/10.1108/eb058557/full/pdf>.

²³ Peter Britz et al, “Scoping Study on The Development and Sustainable Utilisation of Inland Fisheries in South Africa” *Water Research Commission Report*, (2015), 1, p. 93.

²⁴ Ndangwa Noyoo, “Indigenous Knowledge Systems and Sustainable Development: Relevance for Africa, A Case of Southern Africa”. In the Indigenous Knowledge Systems and Sustainable Development: Relevance for Africa ed by Emmanuel Boon and Luc Hens, (Kamla-Raj Enterprises), p. 171.

the appropriate time for farming and harvesting.²⁵ The calling of the *Insingiza* bird²⁶, the gathering of dark clouds, and the pests increase indicated the onset of rain.²⁷ Half-moon facing east and full-moon indicated no rain would come.²⁸ Spring season is associated with the mating period of most fish.²⁹ Thus, indicators that meant the commencement of the spring season also indicated the fish spawning season. Therefore, there is a need to fish with caution because most fish have eggs and the case of *Gongqose & others v Minister of Agriculture, Forestry & Fisheries and others*, indicated that fish with eggs are not allowed to be caught or harvested to allow reproduction and sustainability.

These practices form part of Indigenous knowledge, and this article argues that recognition of these practices can augment Western knowledge's quest for protecting and preserving living marine resources. It is worth noting that, currently in South Africa, there are communities that still observe Indigenous practices. The case of *Gongqose* demonstrated that the members of the Hobeni Community still observe Indigenous knowledge practices for the conservation, sustainable utilisation, and protection of living marine resources by stating as follows: „*The first Appellant, Mr. Gongqose, a fisherman, testified in his defence by stating that “his co-accused were members of the Hobeni community, and that he is illiterate but schooled in the customs and culture of his community. From the age of 10, he had been taught the skills and traditions of fishing by his father. Part of the legacy that passed from generation to generation was an appreciation of the natural environment. Mr. Gongqose spoke of customs and traditions relating to the allocation of fishing spots and reliance on the sea for many traditional customs practiced by the men and women of his community. There were rules that small fish and fish with eggs should not be caught but left in the sea so that there could be more fish in later years. Disputes about fishing spots were settled by headmen or sub-headmen in the community...”*³⁰

„Without discounting other important points raised in this excerpt, this paper takes a keen interest in the following utterances “[t]here were rules that small fish and fish with eggs should not be caught but left in the sea so that there could be more fish in later years”. This demonstrates the existence of a mechanism that Indigenous people use to ensure the sustainability and sustenance of living marine resources. Further to the case of *Gongqose*, the Coastal Links and Masifundise Development Trust also made a submission that demonstrates that Indigenous knowledge is still used in South Africa. It was submitted as follows: „[s]ince time immemorial, communities up and down the South African coastline have depended on the sea for their lives and livelihoods. Some fishers will even tell you that “the sea is in our blood”. Not only has the sea been used as a source of food but it has also played an important role in the development of coastal communities ‘cultures, their knowledge systems, beliefs, and their customary systems of law. Many communities living along the coast depending on marine and coastal resources for their livelihoods have, over time, developed local systems of rules to guide their use of Coastal lands, forests, and waters. These local rules are part of their systems of customary law... these systems of law are passed down from generation to generation. They are not written down like Western law, but children and young adults are taught these laws by their parents and elders in their communities orally and through practice”.

The two excerpts make it apparent that the living marine resources play an important role in South African coastline communities and fishing has always been part of these communities' history. This is confirmed by Williams who submits that archival records suggest that there is evidence that harder³¹ was harvested by Indigenous communities inhabiting the Western Cape coastal regions even

²⁵ Myuri Basdew, Obert Jiri and Paramu Mafongoya, “Integration of Indigenous and scientific knowledge in climate adaptation in KwaZulu-Natal, South Africa” (2017) *Change and Adaptation Socio-ecological Systems*, 3(1), p. 60.

²⁶ This is a bird that's traditionally seen as a harbinger of rain, the southern ground-hornbill, known as 'iNsingizi' in isiZulu, occurs from Kenya, the DRC to southern Africa, where it is found in Botswana, Zimbabwe, Mozambique, South Africa, and northern Namibia.

²⁷ Ibid.

²⁸ Ibid.

²⁹ Phillippe Chemineau et al, “Seasonality of reproduction and production in farm fishes, birds and Mammals”, (2007), *The Animal Consortium*, 1 (3), p. 422

³⁰ *Gongqose & others v Minister of Agriculture, Forestry & Fisheries and others; Gongqose & others v State & others* 2018 ZASCA 87 para 27.

³¹ Harder is a South African fish also known as a mullet (*Chelon richardsonii*), harder mullet or simply harder. It is a species of mullet found in South African coastal waters from Walvis Bay (Namibia) to KwaZulu-Natal.

before the arrival of Europeans.³² These communities believe that fishing is integral to the cultural continuity of their communities and it is linked to their spiritual identity.³³ Relying on this information, this article argues that the beliefs held by these communities motivate them to protect and preserve living marine resources because their communities' cultural continuity depends on the sustenance of these species. Furthermore, the protection of living marine resources translates into an obligation and an allegiance owed to their forefathers, who protected and preserved these species for their benefit using Indigenous knowledge.

At this juncture, it is apparent that the local and international legal framework promotes the use of Indigenous knowledge. Furthermore, there are existing practices observed by Indigenous people that could contribute positively to alleviating the decline of living marine resources. However, the existence of the Western hegemony has served as an impediment to Indigenous knowledge's growth, acceptance, and full recognition. The South African Institute of International Affairs (SAII) strengthens this argument by stating in its policy briefing that Indigenous knowledge and its holders still suffer marginalisation in ocean governance.³⁴ This paper argues that the Western Hegemony, has, for the longest time, occupied a centre stage in ocean governance. This needs to change.

4. The Western knowledge hegemony and the marginalisation of Indigenous knowledge

Mutasa opined that “[f]ull utilisation of Indigenous knowledge is threatened by its marginalisation compared to Western knowledge. This is mainly because Indigenous knowledge is sometimes viewed as archaic, backward, inefficient, primitive, and uncivilised”.³⁵ Scholars such as Koopman argue that, for knowledge to qualify as Western, it should be “empirically verifiable; conform to certain ontological principles, theories, and laws; and be experimentally consistent.”³⁶ Akena, rightfully asserts that Western knowledge has for the longest time been perceived as legitimate knowledge by colonisers.³⁷ This paper argues that the self-proclaimed legitimacy of knowledge subjugated other forms of knowing. Ramose avers that the self-proclamation nurtured a colonial agenda that advanced the belief that non-Western culture cannot contribute to the development of knowledge in any discipline.³⁸ It is, therefore, unsurprising for Osman to bemoan colonialism's aggression in proclaiming Western knowledge as legitimate knowledge. He states that “[t]he colonial powers used brutal policies and devious methods to subjugate the African people to acquire full control over their lands and resources. These policies and methods included consistent inferiorization of Indigenous cultures and concerted efforts to erase existing systems of knowledge and their replacement with Western-driven belief and systems...”³⁹

Osman's utterances crisply capture how Western knowledge hegemony was driven through the formal education imparted in schools. This is underscored by Sharam who states that “[W]estern notions of learning dominance is evidenced by the use of Western textbooks, journals, and conference proceedings in the African education system...”⁴⁰ On an equal note, this article submits that this is

³² Samantha Williams, “I fish because I am a fisher”: Exploring livelihood and fishing practices to justify claims for access to small-scale fisheries resources in South Africa” (2021) *HTS Theological Studies*, 77(3), p. 2.

³³ Loretta Feris, “A Customary Right to Fish When Fish are Sparse: Managing Conflicting Claims Between Customary Rights and Environmental Rights” (2013) *Potchefstroom Electronic Law Journal*, 16(5), p. 557.

³⁴ Nina Rivers, et al, “Integrating Indigenous and Local Knowledge in Marine Spatial Planning” (2023) *South African Institute of International Affairs Policy Briefing* 268, p. 2.

³⁵ Mukundi Mutasa, “Knowledge apartheid in disaster risk management discourse: Is marrying Indigenous and scientific knowledge the missing link?” (2015) *Journal of Disaster Risk Studies*, 7(1), p. 1.

³⁶ Oscar Koopman, “Towards Decolonising Teaching Strategies: How to Domesticize and Infuse Western Science with Indigenous knowledge” (2018) *Journal of Education*, 74, p. 105.

³⁷ Adyanga Akena, “Critical Analysis of the Production of Western Knowledge and Its Implications for Indigenous Knowledge and Decolonization” (2012) *Journal of Black Studies*, 43(6), p. 600.

³⁸ M. Ramose, “In search of an African philosophy of education” (2004) *South African Journal of Higher Education* 18(3) (2004), p. 138.

³⁹ Anwaar Osman “Indigenous Knowledge in Africa: Challenges and Opportunities” (2009), *Centre for Africa Studies*. Retrieved 09 October, 2024 from: <https://www.ufs.ac.za/docs/librariesprovider20/centre-for-africa-studies-documents/all-documents/osman-lecture-1788-eng.pdf?sfvrsn=>

⁴⁰ Merriam Sharam, et al, “Challenging the Hegemony of Western Views of Learning”, (2005) *Adult Education Research Conference*, (Athens: New Praire Press).

arguably one of the most successful projects of colonialism. Colonialism propagated the belief that formal education is the one provided in schools through teaching and dissemination of academic literature.⁴¹ This propagation inevitably resulted in the marginalisation of Indigenous knowledge. Amid all this, the undocumented nature of the Indigenous knowledge and its oral passage through folklore exacerbated its marginalisation and subjugation.

As expected, the Indigenous knowledge's nature of not being endorsed as a formal education made it susceptible to Western knowledge dominance. So far as knowing and determining what counts as knowing, scholars agreed that Eurocentric discourses have had a great influence.⁴² Inevitably, this has relegated African intellectuals as buffers of Western methodologies and philosophical traditions.⁴³ A combination of hegemonic Eurocentric discourses and the relegation of African intellectuals as buffers of foreign methodologies and philosophies have conspired to produce the view that "*African Indigenous literary and philosophical traditions [are] primitive and unscientific*".⁴⁴ Against this backdrop, it is unsurprising that in the promulgation of the MLRA, the legislature continued with the culture of marginalisation and subjugation of Indigenous knowledge. Simply put, Indigenous knowledge was not considered in the drafting of MLRA. This is despite the existence of Indigenous practices practiced by Indigenous communities to conserve living marine resources.

To demonstrate how Indigenous knowledge was overlooked in the drafting of the MLRA and its Amendment Act,⁴⁵ this paper shall examine the preamble and objectives of the respective Acts. The paper shall then examine section 14 of the MLRA which deals with managing, conserving, and protecting living marine resources. In this section, the Amendment Act shall not be considered because the section was not amended. The paper shall then move to section 19 of the Amendment Act. This is because the section in the principal Act was substituted in the Amendment Act. The section moved from dealing with subsistence fishing to small-scale fishing.

Without further ado, the MLRA and its Amendment Act are primary legislation dealing with living marine resources in South Africa. They intend to ensure the conservation, sustainable utilisation, and protection of the marine resource and the ecosystem. Regrettably, the preambular and the objectives⁴⁶ of MLRA is silent about Indigenous knowledge and its role in the Act. When the Amendment Act came into effect, one would have expected an incorporation of Indigenous knowledge, much to dismay, the Amendment Act also overlooked Indigenous knowledge.

On management, conservation, and protection of living marine resources, the MLRA uses section 14 to manage, conserve, and protect living marine resources. In examining section 14(1) – (5)⁴⁷ of the MLRA, the section chiefly deals with the quantity of fish harvesting. The section gives the Minister the power to determine the total allowable catch. This paper argues that this is a narrow approach and will inevitably have a knock-on effect on the sustainability and sustenance of living marine resources. This is because the MLRA is silent on the type of living marine resources to be harvested/caught, i.e., (a) fully grown species, (b) juvenile species, (c) fish with eggs, etc.

This paper further argues the lack of equilibrium between the need to regulate the quantity of fish harvested (allowable catch) and the importance of creating room for the reproduction of marine

⁴¹ Hassan Kaya and Yonah. Seleti "African indigenous knowledge systems and relevance of higher education in South Africa" (2013), *The International Education Journal: Comparative Perspectives*, 12(1), p. 36.

⁴² Ibid, p. 34.

⁴³ Ibid, p. 34.

⁴⁴ Ibid, p. 34.

⁴⁵ Marine Living Resources Amendment Act 5 of 2014.

⁴⁶ Section 2 of Marine Living Resources Act 18 of 1998.

⁴⁷ Section 14. (1) The Minister shall determine the total allowable catch, the total applied effort, or a combination thereof. (2) The Minister shall determine the portions of the total allowable catch, the total applied effort, or a combination thereof, to be allocated in any year to subsistence, recreational, local commercial and foreign fishing, respectively. (3) In the execution of his or her powers in terms of this section, the Minister may determine that the total allowable catch, or the total applied effort, or a combination thereof, shall apply - (a) in a particular area, or in respect of particular species or a group of species of fish; and (b) in respect of the use of particular gear, fishing methods or types of fishing vessels. (4) If the allowable commercial catch in respect of which commercial fishing rights exist, increases, the mass of the increase shall be available for allocation by the Minister. (5) The provisions of this section shall not be construed to mean that the Minister is prohibited from determining that- (a) the total allowable catch; (b) a portion of the total allowable catch contemplated in subsection (2); or (c) an allocation in terms of subsection (4), shall be nil.

species (types of species to fish). This lack of equilibrium is glaring in section 14(1). In this section, the wording on the “allowable catch” is backed by a peremptory action (shall), which indicates a strong will to regulate quantity. On the contrary, there is nowhere in the section where “reproduction” is mentioned. This paper, therefore, submits that reproduction is also important and needs to be emphasised. This is because allowing fish with eggs room for reproduction and preserving juvenile species so they can reproduce in the future guarantees the sustainability and sustenance of these species.

Of importance, the wisdom of creating room for species to reproduce so there could be more species in the future is an Indigenous knowledge practice. It was indicated above in the case of *Gonqose* as follows “...[t]here were rules that small fish and fish with eggs should not be caught but left in the sea so that there could be more fish in later years...”. It cannot be emphasised enough that the traditional communities still observe certain customary practices when fishing or harvesting living marine resources. As indicated above, the practice is still practiced in the coastal areas by the Hobeni community and others. Despite its existence, this Indigenous knowledge practice was not considered in this section of the MLRA or the Act in its entirety.

Section 19 of the Amendment Act recognises small-scale fishing and provides in terms of section 19(1) (a) – (c) as follows: „19. (1) *The Minister, in order to achieve the objectives contemplated in section 9(2) and 39(3) of the Constitution by notice in the Gazette: (a) must, subject to any law relating to marine protected areas, establish areas or zones where small-scale fishers may fish; (b) may, within a prescribed period, recognise a community to be a small-scale fishing community, if the community meets requirements contained in the definition of a small-scale fishing community; (c) may declare any other fishing or related activity or the exercise of any right of access in an area or zone contemplated in subsection (1)(a) to be prohibited*”.

Let me start by mentioning that the majority of small-scale fishers are people coming from Indigenous communities. These communities are well conversant with the behaviour of the living marine species. Indigenous communities understand these species’ seasonal breeding and how they behave during this period. At times, these species migrate to different zones for reproduction. This is backed by Kotze who stated that “[l]ocally, we have about 100 Indigenous freshwater fish species that undertake annual migrations to reach better feeding grounds, avoid unfavourable conditions and to improve breeding success”.⁴⁸ The worrying part is that most juvenile fish remain in the same area when others migrate for the breeding period. This is because juvenile fish are not yet fertile. Therefore, this paper argues that failure to recognise their Indigenous knowledge practice in the Act i.e., prohibiting fishers from harvesting juvenile species places these species at risk during the breeding period. Juvenile fish may be harvested in large quantities during this period. Thus, hampering conservation and sustainability and the decline of living marine resources consequently being accelerated.

Section 19(1)(c) may tamper with the South African coastline communities’ cultural continuity and spiritual identity by prohibiting any other fishing or related activity in the given area or zone. This section fails to consider or appreciate the importance of fishing in these communities. As indicated above, fishing is integral to the cultural continuity of these communities and is linked to their spiritual identity.⁴⁹ Hence, Simonds and Christopher argue that when dealing with issues that concern, relate to, or involve Indigenous communities there is a need to investigate what these communities know before taking measures that may exclude and discard the existence of their knowledge.⁵⁰

Section 43(1) of the MLRA stipulates that the Minister may declare an area to be a marine protected area for the protection of marine species, facilitation of fishery management, and research purposes. After the minister has declared a certain area a protected area, section 43(2) provides that no person shall access that area without permission to perform any activity that may involve marine

⁴⁸ Petro Kotze, “Spare a Thought for our Migrating fish” (2014) *Biodiversity Conservation*, 13(4), p. 27.

⁴⁹ Loretta Feris, *op. cit.*, 2013, p. 557.

⁵⁰ Vanessa Simonds and Suzanne Christopher, “Adapting Western Research Methods to Indigenous Ways of Knowing”, (2013) *American Journal of Public Health*, 103 (12), p. 2188.

species protected in that area. This limitation was lamented in the case of *Gongqose* where the accused were charged and prosecuted for 'entering a Marine Protected Area (Dwesa-Cwebe Nature Reserve) without authorization and fishing or attempting to fish in a marine protected area in contravention of section 43 of MLRA. The court held that the Dwesa-Cebe communities have Indigenous knowledge practices they use to ensure that marine species are protected for the current and future generations. Denying them access will offend their right to culture as protected by the Constitution. This paper submits that the court's submission is commendable and welcomed. It portrays a liberal approach to the contention between Indigenous knowledge and Western knowledge. The paper argues that it is a step in the right direction and we should further promote this liberal attitude by integrating Indigenous knowledge in the MLRA through the hybridisation of knowledge.

5. Towards hybridisation of knowledge

Rivers et al, argue the need to integrate Indigenous knowledge with the current ocean management and governance. These scholars stated as follows: „[the] importance of recognising and integrating both Indigenous Local Knowledge (ILK) and cultural heritage in area-based ocean management in South Africa cannot be understated. Social and cultural knowledge of the ocean 'will impact ecological and economic aspects of these systems, and vice versa, and must therefore be considered on an equal basis to ensure ocean governance efforts achieve their objectives'".⁵¹

This paper concurs with these scholars and further argues that there is a need for the hybridisation of Indigenous knowledge and Western knowledge in the quest to alleviate the decline of living marine resources. As indicated above, Indigenous knowledge has practices that have sustained and protected living marine resources. However, Western hegemony has resulted in the marginalisation and subjugation of Indigenous knowledge.⁵² The cumulative effect was that Indigenous knowledge was never accepted as formal and legitimate knowledge that could be used for ocean governance neither independently nor side by side with Western knowledge. Hence, the MLRA and its Amendment Act did not incorporate Indigenous knowledge practices in their texts.

The current state is that the decline of marine species is continuing, and it would not be farfetched to attribute this decline to the Western hegemony which thwarted the application and the use of Indigenous knowledge. In alleviating the continuing decline of marine living resources, this paper argues that Indigenous knowledge needs to be afforded the same status as Western knowledge in ocean governance. Like Western Knowledge, Indigenous knowledge should also be adopted and acknowledged as part of the existing means and measures that could ensure the management, conservation, and protection of living marine resources in South Africa. This could be achieved through the hybridisation of Indigenous knowledge and Western knowledge.

In supporting the idea of hybridisation of knowledge, this contribution borrows from Mutasa who argued that '[h]ybridisation aims to achieve a state whereby Indigenous and Western knowledge condition one another. Such hybridisation does not aim to treat either knowledge as superior but builds upon the strength of both inside and outside knowledge...'.⁵³ Alexander et al also support hybridisation by arguing that there are benefits that can arise out of the hybridisation of multiple systems of knowledge. Amongst those benefits include possible innovations, an understanding of social-ecological interdependencies, and the identification of clear future desires for the environment.⁵⁴ Based on the arguments made by these scholars, this paper submits that the adoption of this approach has the potential to yield positive outcomes in alleviating the decline of living marine resources and augmenting the current methods used to manage, conserve, and protect these species. Moreover, this adoption will complement the local and international views that promote the

⁵¹ Nina Rivers, *op. cit.*, 2023, p. 2.

⁵² Heleta Savo, "Decolonizing Knowledge in South Africa: Dismantling the 'pedagogy of big lies'", (2018), *Ufahamu: A Journal of African Studies*, 40(2), p. 50.

⁵³ Mukundi Mutasa, *op. cit.*, 2015, p. 9.

⁵⁴ Steven Alexander et al, "Bridging Indigenous and Science-Based Knowledge in Coastal and Marine Research, Monitoring, and Management in Canada" (2019) *Environmental Evidence*, 8 (36), p. 2.

protection and usage of Indigenous knowledge in protecting natural resources including marine living resources.

6. Conclusion and recommendations

DFFE demonstrated that there is a decline in living marine resources. This is despite the existence of the MLRA and the Amendment Act. The study investigated two questions *to wit* (a) whether there is a need to adopt alternative forms of knowing such as Indigenous knowledge to alleviate the decline of living marine resources and (b) whether there is a need to augment the MLRA. The study showed that reliance on the Western hegemony of knowledge in the MLRA does not present optimism that the spiraling decline will be arrested. The failure to consider Indigenous knowledge in managing, conserving, and protecting living marine resources is lamented. Indigenous knowledge needs to be adopted to alleviate this decline.

This study presented Indigenous knowledge practices used by the South African communities to ensure the sustenance of living marine resources. Amongst other practices, the practice that restricts the harvest of juvenile species and fish with eggs to promote the reproduction of living marine resources so that there could be more of these species later in the years is crucial. Regrettably, this practice is not included or incorporated in the MLRA and the Amendment Act. Furthermore, the wide encouragement of the South African coastline communities to observe the Indigenous knowledge practices such as respecting taboos, observing totemism, and following the environmental indicators can continue to play a pivotal role in alleviating the decline of living marine resources.

These practices managed to maintain the sustenance of living marine resources until the emergence of Western knowledge in South Africa. This should motivate the adoption of these practices and the incorporation of all or some in the MLRA. This adoption could alleviate the decline of living marine resources and augment the current MLRA. The adoption of the use of Indigenous knowledge can take the form of marrying Indigenous knowledge and Western knowledge. In this way, living marine resources will benefit from more than one system of knowledge.

In this respect, this article recommends that the MLRA be amended further to incorporate Indigenous knowledge's practice of creating room for living marine resources to reproduce. The MLRA could incorporate this practice by explicitly stating in the Act that the harvest of juvenile species and species with eggs whether intentionally or through bycatch is strictly prohibited, any species in this category should be returned to the sea if caught. The Act should further indicate a punishment for contravention thereof to deter contravention. If this is done, the MLRA would have been augmented by using an alternative form of knowing, in this case, Indigenous knowledge, and the decline of living marine resources could be alleviated.

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