



BY
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GOLDEN FORESTS

THE PERCEIVED VALUE OF SOUTH AFRICAN KELP

South Africa's Western coastline boasts a forest that not many know about. From Koppie Alleen on the southern tip of South Africa extending all the way into southern Namibia, this forest, with its golden glow is unique — for it is a kelp forest.

Kelp are large seaweeds that belong to the Order Laminariales. They provide a variety of contributions to humans and the environment. In South Africa, kelp forests are comprised mainly of two species, *Ecklonia maxima* and *Laminaria pallida*, which occur over about 1,000 km of coastline in the cool nutrient-rich waters of the Benguela Current Large Marine Ecosystem. Today, due to changing climatic conditions, dramatic changes in kelp abundance and distribution are being witnessed across the globe. In contrast to other regions, there is some evidence that South African kelp forests are expanding, possibly as a result of the increased intensity and duration of the south-easterly wind causing an upwelling of cool, nutrient-rich water.

Kelp is a prominent feature of our coastline that provides both direct and indirect benefits to us as humans. Understanding how the value of our Great African Seaforest is perceived is therefore important. Further, at a time when changing climatic conditions could trigger unexpected consequences in our oceans, we need to ensure that this important resource is managed sustainably and suitably cared for.

An economic valuation of kelp ecosystems in South Africa estimates their annual value to be [US \\$434 million](#), considering the monetary value generated from kelp-dependent fisheries, ecotourism, and indirect ecosystem services like coastal protection and carbon fixation. However, the true value of kelp forests extends far beyond economic value. Assigning dollar values to nature's myriad contributions is only one way to contextualize the value of nature and runs the risk of reducing value to quantifiable indicators. As a result, less-easily quantified facets such as cultural and relational value remain overlooked. Unfortunately, research on the values of kelp has rarely ventured outside the economic valuation framework. Considering the plurality of values towards nature is necessary to yield a more encompassing and inclusive idea of its importance to people. To this end, my research explored how the value of kelp is perceived in the Western Cape, beyond only its economic worth. Through this process, key issues around kelp utility and management were also unearthed.

ASSESSING VALUE

My study considered a sample population of actors identified through a literature review of the kelp sector in the Western Cape, including consideration of government reports by the Department of Forestry, Fisheries and the Environment (DFFE), as well as through consultation with other individuals engaged in seaweed-related research in South Africa. In total, 74 actors participated in the study. Actors were classified into three broad groups based on their relationships with kelp: *Recreational Users and/or Coastal Community Members*, *Environmental Managers and Conservationists*, and *Kelp and/or Abalone Industry Actors*. Data were collected in two stages: first, through the use of questionnaires and second, through semi-structured key informant interviews. Data were analysed through basic statistical tests as well as thematic coding and analysis.

BOX 1: IPBES' gradient of values

The questionnaires were modelled on the [Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services' \(IPBES\) conceptual framework](#), as one of the many ways to contextualize the interactions between people and nature. With this in mind, the IPBES conceptual framework is centred around three foci of value: Nature, Nature's Contributions to People, and Quality of Life. Each of these foci of value correspond to different types of value, as shown in the figure.

| FOCI OF VALUE | TYPES OF VALUE | EXAMPLES |
|--|---------------------------------|--|
| NATURE | Non-anthropocentric (Intrinsic) | Animal welfare/rights |
| | | Gaia, Mother Earth |
| | | Evolutionary and ecological processes |
| | | Genetic diversity, species diversity |
| NATURE'S CONTRIBUTIONS TO PEOPLE (NCP) | Anthropocentric | Habitat creation and maintenance, pollination and propagule dispersal, regulation of climate |
| | | Instrumental |
| | | Food and feed, energy, materials |
| | | Physical and experiential interactions with nature, symbolic meaning, inspiration |
| GOOD QUALITY OF LIFE | Anthropocentric | Relational |
| | | Physical, mental, emotional health |
| | | Way of life |
| | | Cultural identity, sense of place |
| | | Social cohesion |

Most respondents valued kelp for its ability to create and maintain a healthy marine and coastal environment (89%), and its provision of habitats for abalone, rock lobster, and other fish or invertebrates (81%). These would fall under what the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) calls “regulating contributions”, based on nature’s biophysical and ecological abilities to regulate the environment. As such, kelp’s regulating contributions were perceived to have the most value. While it comes as no surprise that Environmental Managers and Conservationists would value kelp for its ecological properties, both the Kelp and/or Abalone Industry Actors and Recreational Users and/or Coastal Community Members *also* primarily valued kelp for its regulating services:

“Kelp has also got its importance as an ecosystem regulator. Maybe I'm using the wrong words, but because we [abalone farm] are a flow-through operation, we rely on the water that's coming out from the sea, and that the water is of good quality. So you know, the kelp and the kelp beds then form an important part of protecting the water in front of us and ensuring that the water is as healthy as it can possibly be. So it's got huge direct and indirect benefits to us.”
- Kelp and/or Abalone Industry Actor, June 2021.

Kelp’s “material contributions” such as its use as raw material in food, feed, and plant growth stimulant were not valued as highly as its regulating contributions. However, Kelp and/or Abalone Industry Actors valued kelp for its contributions to their livelihoods and/or job satisfaction. This theme of kelp as an enabler of livelihoods also manifested in statements like “kelp keeps my family living,” “It [kelp] is important because it helps keep the doors open,” “it [kelp] is how I put food on the table every day,” and “for it [kelp] is my daily bread” (Kelp and/or Abalone Industry Actors, May 2021).

“Nothing like the joy of floating through a golden forest.”

— RECREATIONAL USER AND/OR COASTAL COMMUNITY MEMBER, APRIL 2021

“Non-material contributions” from kelp were also assigned value, with 64% of all respondents stating that kelp increased their enjoyment of the sea and coast. On further probing, it was seen that many of these actors had what could be defined as a nostalgic and sensorial relationship with kelp forests, as illustrated by responses like:

“Kelp and the smell of kelp is one of the first memories of my childhood, it is synonymous with holidays and fun. When I watch the kelp moving in the waves, it brings me so much calmness.” - Recreational User and/or Coastal Community Member, April 2021.

KEY ISSUES AROUND KELP MANAGEMENT

It is worth noting that these findings did not indicate any significant negative perceptions toward kelp. However, 15% of the sample population believed that issues of power and inequality existed in the kelp sector. On further analysis, this response emerged largely from respondents within the Kelp and/or Abalone Industry group, with 27% of individuals within this group indicating that issues of power and inequality in the kelp sector resulted in their reduction of appreciation of kelp. While these actors did not elaborate on why they felt this way, interviews yielded insights about possible drivers of inequality:

"Inequality in South Africa can be regarded as a 'wicked problem.' Therefore, there will always be South African persons perceiving that they are treated unfairly, regardless of the measures put in place to ensure that everyone is given the opportunity to apply for seaweed rights and participate in the seaweed rights allocation process to some degree. Hence, some would be granted the rights, and some would not. Those that are not granted the rights or did not apply for them would always regard themselves as being treated unfairly."

- Environmental Manager and/or Conservationist, May 2021.

Another key informant from within the Environmental Managers and Conservationists group provided details about the manifestations of the power inequalities between local government officials tasked with clearing kelp off the beach and kelp concession holders, resulting in friction between kelp user groups:

"So, there's still a point of friction between the way that we manage kelp and, specifically rights holders removing kelp from our 'no kelp clearing' areas. And I do believe there's still some friction there that's almost unresolved. The discussion surrounding that exact point is always really difficult... But business carries on and we carry on doing our own thing. And every now and again, the problem does crop up when we do find rights holders removing kelp from beaches where they're not meant to. And that's problematic for us because those beaches are erosion hotspots."

- Environmental Manager and/or Conservationist, June 2021.

An issue brought to light was the struggle for inclusivity in terms of kelp management, even across different spheres of government. The problem seems to stem from the fact that while provincial and local spheres of government have no mandate in the management of kelp collection concessions, these two spheres are involved in the management of coastal areas which entails the clearing of kelp from beaches). As a result, provincial and local government bodies often run into problems with kelp concession holders when clearing kelp off beaches, unaware of newly issued concession permits. This is because concession permits are only issued at the national level through DFFE and are not always communicated to the local and provincial spheres of government. One key informant from within the provincial government elaborated on this lack of communication amongst different spheres of government and the resulting frustrations:

"...And that was our biggest frustration—permit allocation has been done in isolation and there was no proper communication to say, 'Mr. X just received a permit,' or 'there is an application, are you against it? Are you agreeing to the issuing of a permit for this specific area?' And then no further communication to anybody. And we say that if we can contribute—not to dictate to the department—but we would like to have an opportunity to provide some comments on the effectiveness of the permit allocation and monitoring process, since we are the ones to clear up the kelp on the beach and usually encounter the right's holders..."

- Environmental Managers and/or Conservationist, June 2021.

The resolution of such issues could assist in fostering transparent, consistent and efficient kelp governance, and should be kept in mind during decision-making with regard to concession allocations and concession area management. Although power dynamics in the kelp sector are important, when considered in the context of value, most respondents felt these factors did not reduce the value of kelp. As such, the value assigned to kelp and its contributions were seen to far outweigh any negative perceptions.

LOOKING FORWARD

We are lucky that kelp forests in South Africa remain stable in an era of rapid climate change. Other kelp forests, such as [Australia's Great Southern Reef](#) or the [bull kelp off the coast of California](#) haven't been as fortunate. These serve as a stark warning of what could happen to our Great African Seaforest in the face of large-scale warming events. And while the kelp in Southern Africa continues to thrive, many kelp-dependent organisms like abalone (*Haliotis midaea*) and rock lobster (*Jasus lalandii*) have [not fared as well](#).

My research sheds light on the perceived value of kelp in the Western Cape, and shows that kelp is highly valued for its ecological, economic, and social-cultural contributions. It also unearthed issues around how kelp is managed, although these do not overshadow the high value assigned to kelp. Yet, these concerns are worth heeding in order to further improve kelp management so that it is both sustainable and equitable. From its high value as a resource to its undeniable social and cultural importance in coastal communities, we need to ensure that our kelp forests remain intact for generations to come, and continue to positively contribute to our quality of life.



How easy it is to lose oneself
in a kelp forest. Between
canopy leaves, sunlight filters
thru
the water surface; nutrients
bring life where there'd
other-
wise be barren sea; a vast eco-
system breathes. Each
being being
being's link.

- JEFFREY YANG,
An Aquarium.

DISCLOSURE STATEMENT

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