

# Namibia's way to Marine Spatial Planning – Using existing practices or instigating its own approach?

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## ABSTRACT

The territorial waters and EEZ of Namibia are part of the Benguela Current Large Marine Ecosystem in the South-East Atlantic. Growing demands and conflicts emerge although the area is not as intensely used as marine areas elsewhere. Namibia has chosen Marine Spatial Planning (MSP) as an integrated approach to facilitate sustainable ocean development and improved ocean governance. The paper explores the reality of the Namibian MSP process to date by investigating two guiding research questions: (1) What makes the Namibian approach to MSP distinct? and (2) What are the opportunities and difficulties of the Namibian MSP process in that particular context? The country's approach to MSP features a series of distinct attributes, not least due to its unique environmental and socio-economic context. Namibian MSP is highly precautionary and forward-looking given the relatively low intensity of current uses, has a strong ecosystem-based perspective due to the fairly pristine environment, is driven by a social equity and distributive justice agenda, and features a strong collaborative process governance. Whilst challenges such as limited financial resources, lacking legislation and weak links to broader ocean governance exist, the MSP process, which was linked to a systematic conservation planning process from the outset, has however resulted in a clear framework for the development of the first marine plan.

## 1. Introduction

Like many countries, Namibia is increasingly turning to its ocean in recognition of the rich marine resources and the inherent economic potential it offers. Although the specific geography and history of the country have long prevented the development of distinct maritime traditions, Namibia regards itself as a maritime nation.

The “turn to the ocean” became more pronounced in the years following independence in 1990, expressed for instance in 2009 when Namibia put forward a submission to extend its continental shelf by over a million km<sup>2</sup> [1]. In terms of living resources, the Benguela Current upwelling system, one of the most productive ocean systems in the world, has enabled Namibia to build up a successful fishing industry with fishing now considered a cornerstone of the economy [2]. The country is also (re)discovering the social, cultural and economic values of its ocean.

Namibia's marine area is vast and, with the exception of fisheries and shipping, large parts of the ocean still receive comparatively little human use. This, however, is changing, as existing uses are growing and concentrate around the growing economic hub and port of Walvis Bay in the central part of the country, and new uses are developing. Like many

other countries, Namibia has come to recognise that single sector management is no longer sufficient and that an integrated approach is required to coordinate the growing range and intensity of uses. Given existing commitments for the conservation and sustainable use of biodiversity, for example within the context of the Convention on Biological Diversity (CBD), there is recognition that a sustainable blue economy also requires safeguarding the living marine resources and biodiversity that many human benefits depend on.

Following the lead of European countries, but also encouraged by direct neighbours South Africa and Angola where similar processes have been instigated, Namibia has chosen Marine Spatial Planning (MSP) as an integrated approach to facilitate sustainable ocean development [3]. This makes Namibia one of the first countries in Africa and among the first developing countries worldwide to seek to strategically manage where and when human activities occur in the ocean.

The purpose of this paper is to examine the country's approach to MSP through the following guiding research questions: (1) What makes the Namibian approach to MSP distinct?, and (2) What are the opportunities and difficulties of the Namibian MSP process in that particular context? In order to do so, the paper traces the origin of MSP in the Namibian context, reviews the country's MSP process to date, analyses

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the practical experiences gained, and concludes with a discussion of the Namibian case in light of the guiding analytical questions.

The study is based on first-hand experience and active participation of the authors in the Namibian MSP process as planners and technical advisors. Extensive interactions with the members of the national technical working group on MSP have informed this retrospective analysis. In addition, a literature review and document analysis were carried out to complement the research.

## 2. Context

Namibia is an arid country situated in the south-west of Africa. It is considered an upper-middle-income developing country with a Gross Domestic Product (GDP) of 14.522 billion US\$ in 2018 [4] and an economy that has grown on average by 4.6% per year between 2012 and 2016 [3]. Yet poverty, unemployment and high social inequalities prevail: according to the latest official figures of 2016, nearly 18% of the population lived in poverty and 28% of the labour force was unemployed. The Gini coefficient, a statistical measure that estimates income inequality by assessing the distribution of income across income percentiles in a population, was 0.57, making Namibia one of the most unequal countries in the world. An economic downturn since 2017, a drought in 2019 and the impacts of the most recent SARS-CoV-2 pandemic in 2020 are further challenges to achieving national and international sustainable development goals. Overall, the economic situation is static rather than dynamically evolving, which results in slow progress in addressing social issues such as employment or income inequalities.

Namibia has a coastline of 1572 km stretching along the South-East Atlantic. Its marine environment is shaped by the cold Benguela Current wind-driven upwelling system. The high primary production of the Benguela Current Large Marine Ecosystem (BCLME) generates a rich wealth of biomass and unique biodiversity [5]. The territorial waters and exclusive economic zone (EEZ) of Namibia extend over an area of 562,431 km<sup>2</sup>, which is approximately two-thirds the size of its land territory.

With an estimated population of approximately 2.3 million in 2016, Namibia has the lowest population density of any country on the African continent, second-lowest worldwide after Mongolia. This distinct Namibian characteristic links well with the country's name, Namib itself, which is of Nama origin and means "vast place".

Although archaeological remains indicate the presence of people along the central coast for at least 700,000 years, Namibia's society has had little opportunity to develop strong historical and traditional relationships with its marine environment. Very few permanent settlements existed because of the harsh living conditions along the coast and the lack of freshwater [6]. It was with the arrival of the seafarers in the 15th century that economic development intensified along the coast, driven by Portuguese, Dutch, British and German interests e.g. in whaling and guano. In the 1960s, the fishing industry became prominent in Walvis Bay; fish factories opened and contributed to the growth of the town. The discovery and exploitation of geological resources (diamonds in the south and uranium in the central part) led to more intensive economic development along the coast in the 1970s, contributing also to the growth of Swakopmund as a coastal resort.

The majority of the estimated 200,000 people living on the coast (around 8.7% of the entire population) are concentrated in the towns of Walvis Bay, Swakopmund and Henties Bay in the central section of the coast and Lüderitz and Oranjemund in the south of the country. Despite this growth and accelerated coastal development, until today, Namibia's coastline has remained a "vast and empty place", largely remote and in most parts uninhabited. Known as the place where the desert meets the ocean, Namibia's marine territory is far from the country's capital Windhoek where it is administered, and distant to the majority of the population, which mainly resides inland and, to a large extent, cannot afford to travel to the coast. Many Namibians have never seen the sea,

and some of the more than ten languages indigenous to Namibia even lack a term for ocean or coast.

Today, Namibia's ocean and coastline is both a place with a unique and pristine natural environment where people come for recreation and experience of wildlife, and in some parts an intensely used space for trade and economic activities, which constitute a valuable source of income for many Namibians. No systematic assessment has been undertaken so far to estimate the value of the Namibian blue economy in relation to the total Namibian GDP or in terms of employment. Nevertheless, the socio-economic significance of multiple industries that make demands on marine space (see Table 1) can be described in terms of their overall contributions to the Namibian economy.

Maritime transport is critical for the country's access to neighbouring economies and international markets. Namibia has two ports, one in Lüderitz and the other in Walvis Bay, the latter of which has been expanded into a large container terminal and a dedicated cruise-vessel berth that opened in mid-2019. About 2,250 ships call at Walvis Bay and Lüderitz annually, and around 350,000 twenty-foot-equivalent units (TEUs) are handled by Walvis Bay port per annum [7]. Major transport routes connect the two ports with its neighbouring countries Angola and South Africa and direct access to international shipping routes exists. The ports and linked land transportation corridors highlight the strategic position of the country as a transport hub for all regional and international trade between the countries of the Southern African Development Community (SADC), Europe, the Americas, and Asia. The ports of Walvis Bay and Lüderitz also represent critical infrastructure for the country itself, e.g. by providing landing facilities, storage space or space for processing industries. As such they ensure employment for a large and growing number of coastal residents [8].

Fishing is the oldest and most widespread human activity in Namibian waters. Namibia's highly productive fishing grounds are all accessed from the two ports and Walvis Bay in particular with its 18 fish processing factories. Fisheries contributes around 4.5% to the country's GDP [2] and is the largest employer of all marine industries with approximately 15,000 direct jobs [3]. 97% of all fisheries products are exported [9], which equates to about 15% of total exports. Fishing occurs generally throughout the entire territorial waters and EEZ. Commercial fishing is currently restricted in some sections and at certain times of the year. For example, trawling is restricted in waters shallower than 200 m depth to protect juvenile fish. In parts of the Namibian Islands Marine Protected Area (NIMPA), purse seining is also prohibited. Recreational fishing takes place mainly in the central part of the Namibian coast, with seasonal and permanent closure of sites throughout the coastline. Seals are harvested at Atlas Bay, Wolf Bay, Cape Cross, and Torra Bay and processed for pelts, oil and other health products.

Mariculture production is estimated to have generated a market value of around 1.6 million US\$ in 2018 [10]. Constrained by environmental conditions, mariculture mainly occurs in the sheltered bays of Lüderitz and Walvis Bay. In 2018, four farms were operating in Walvis Bay and five in Lüderitz.

Marine diamond mining in the south of Namibia takes place between the low water mark to 500 m depths [11]. Diamond mining contributed more than 188 million US\$ in royalties, taxes and dividends in 2013 and is Namibia's biggest foreign exchange generator, contributing 20% of foreign earnings [12]. The exceptional biological productivity of the BCLME leads to the formation of biogenic sediments; mineable deposits of phosphorus are known to occur south of the Kunene river mouth in the north and between Swakopmund and Lüderitz [13]. Despite the discovery of the Kudu Gas Field in 1973 off the Orange River about 170 km from Oranjemund, currently, Namibia has neither gas nor oil producing fields. As of 2018, more than 120 legal entities held exploration and exploitation licences in the sea, distributed throughout Namibia's entire marine jurisdiction [14].

The entire coastline, excluding municipal townlands and village councils, from the Orange River to the Kunene River is managed as a

**Table 1**

Activities and interests accessing and using space in the Namibian territorial waters and EEZ.

Use/interest		Spatial extent <sup>a</sup>
Cables	Telecommunication cables	Four cables (WACS, WASACE, ACE, SAT-3) cross Namibia's waters and EEZ running South-North. Only WACS reaches the shore in Swakopmund.
Defence	Military training	No delineated areas, territorial waters only 373 km <sup>2</sup> ; 0,06%
Environmental protection	Historic ammunition dump site Marine protected areas	9,453 km <sup>2</sup> ; 1,68% Namibian Islands' Marine Protected Area (NIMPA) 117,946 km <sup>2</sup> ; 20,97% Cape Fria, Namib Flyway, Namibian section of the Walvis Ridge, Namibian section of the Orange Cone shared with South Africa, Namibian section of the Orange Shelf Edge shared with South Africa, Namibian section of the transboundary Namibe shared with Angola, Namibian Islands
Fishing	Nine commercial sectors targeting the key species hake, monk, horse mackerel, rock lobster, crab, orange roughy, large pelagics, sardine, snoek Recreational fisheries	Throughout territorial waters and the EEZ, except areas closed for conservation in the MPA and for fisheries resources protection.  Mainly around Lüderitz and at the central coast at approximately 300 km length from Sandwich Harbour to the Skeleton Coast Park southern boundary.
Geological resource exploitation	Active diamond mining licence areas (semi-/precious stones) Kudu gas field	16,232 km <sup>2</sup> ; 2,89% 329 km <sup>2</sup> ; 0,058%
Mariculture	Active phosphate mining licence areas The main species cultured are pacific oysters, clams, mussels, abalone, and red seaweed.	3,874 km <sup>2</sup> ; 0,69% Two small areas in Lüderitz and Walvis Bay within the sheltered areas.
Marine and coastal tourism	Sea-based (e.g. marine wildlife cruises) and land-based recreation (e.g. shore angling and beach driving)	Mainly Lüderitz and Walvis Bay areas and at the central coast, particularly at approximately 300 km length from Sandwich Harbour to the Skeleton Coast southern boundary.
Maritime transport	Shipping	Throughout territorial waters and the EEZ but mainly along the coast between the two ports of Lüderitz and Walvis Bay, South Africa and Angola. A major international shipping route with high density traffic crosses the EEZ in the south-western section. No dedicated shipping lanes except for one new traffic separation scheme in and out of Walvis Bay port.
	Anchorage areas & spoilgrounds for dumping dredged material	Several small areas in Lüderitz and Walvis Bay within the sheltered bays.

<sup>a</sup> Spatial extent is given in approximate km<sup>2</sup> and in % relative to the size of the entire marine area under Namibian jurisdiction (territorial waters and EEZ).

protected area. There are four terrestrial national parks extending from the low water mark to between 35 and 200 km from the coastline. Namibia's only marine protected area (the Namibian Islands MPA) extends alongshore for about 400 km between the latitudes of 24°S and 28°S and, on average, 30 km offshore from the high-water mark. The NIMPA encompasses all natural seabird breeding islands in Namibia, and protects fish spawning and nursery grounds, and breeding grounds and migratory routes of whales and other cetaceans [15]. The NIMPA area is part of a set of seven marine areas that have been identified as high priority areas for conservation and sustainable use with features relating to one or more of the scientific criteria in relation to Ecologically or Biologically Significant Marine Areas (EBSA), as defined by the CBD. Although the majority of recreational activities are concentrated inland, marine and coastal tourism are an increasingly important component of the country's recreational offer.

The environmental, social and economic character of Namibia makes it a unique case in comparison to other African states and its direct neighbours Angola and South Africa, where the coastal population density is generally higher, human uses of the marine environment are more intense and traditional relationships with the ocean have developed over hundreds of years. Nevertheless, the services provided by Namibia's marine area and the resources it contains are critical for the country's economic prospects. This is recognised in the country's 5th National Development Plan (NDP5), which is Namibia's development policy framework for the period 2017–2022. All government actors are required to work towards the development priorities the National Development Plan states. The NDP5 introduces the concept of a “blue economy” as a means of supporting structural transformation, and includes more equitable marine wealth distribution as one of the goals [3]. The blue economy is understood to comprise existing maritime industries such as fisheries and mariculture, shipping and transport, tourism and minerals, as well as prospective uses such as marine renewable energy, the utilization of genetic resources for bio-prospecting and other sea-based products such as seaweeds for pharmaceutical and cosmetic uses. The NDP5 also highlights the need for a governance framework that minimises conflicts and strengthens

synergies between the various maritime sectors, and the need to balance economic growth with the sustainable management of natural resources.

### 3. MSP in Namibia

#### 3.1. Origin of MSP

Since its independence from South Africa in 1990, Namibia has aimed at coordinating the intensifying uses and human activities taking place along its coastline. With the support of international development partners such as the Global Environment Facility (GEF), integrated coastal zone management initiatives resulted in establishing the framework conditions that enable better ecosystem-based management of the coastal zone including the territorial waters, inter alia through a national coastal management policy [16]. Although this policy was not developed further into coastal management plans, it did support the elaboration of management plans for the terrestrial protected areas along the coast and for the NIMPA. However, overall, little to no progress was made in terms of a similarly integrated approach for the entire ocean space.

In 2010, government increasingly saw that intensifying sea use might result in greater conflict between users in the future. MSP became the mechanism of choice as a result of the confluence of several developments. In 2013, Namibia recognised that ecosystem-based MSP could play a role in implementing the CBD's ecosystem approach, which led to its inclusion in the 2<sup>nd</sup> National Biodiversity Strategy and Action Plan [17]. Simultaneously, Namibia's neighbouring country South Africa unleashed a government initiative called Operation Phakisa: Oceans Economy, which includes MSP as a mechanism to unlock the economic potential of the country's marine area [18]. Internationally, the African Union (AU) recognised and promoted the blue economy as a new frontier for Africa and also promoted MSP as an enabler for transformation and growth [19]. The Benguela Current convention (BCC), which brings together Namibia and its neighbouring countries Angola and South Africa, aims to achieve sustainable management of the BCLME; it came into force in 2015. Just prior to this, in 2014, interest in

MSP gained momentum in each of the three parties to the BCC and collectively at this intergovernmental level. This resulted in the inclusion of MSP as a strategic goal in the BCC's 2015–2019 Strategic Action Programme (SAP) to stimulate ecosystem-based management and enhance the economic development potential of the BCLME [20]. Namibia thus consolidated its view that a more coherent and strategic approach to ocean use would be beneficial in order to achieve sustainable blue growth.

Around the same time, a new interest emerged in Namibia to mine phosphate in the marine environment. This initiative led to one of the most controversial conflicts to-date in Namibia's history of marine exploitation, even reaching cabinet level. An initial moratorium was put in place, followed by the issuing of an environmental clearance and its subsequent withdrawal on the basis of an appeal. There is strong opposition from the fisheries sector, which questions the validity of the mining licence in court and claims that phosphate mining would destroy key fishing grounds and spawning areas of commercially harvested species; there is also opposition from the conservation community. As a result, phosphate mining is currently on hold (as of mid 2020), pending court decisions.

Irrespective of its judicial status, this conflict made clear that without an integrated approach, conflicts between marine users and uses and the marine environment would likely increase and that economic opportunities, which are needed to achieve economic and social development objectives, would be lost. MSP, understood primarily as a spatial management process, seemed to hold the promise of balancing different sectoral needs and coming to more strategic and beneficial decisions concerning marine use. In addition, MSP was seen as a means of introducing multi-use as a normative concept in planning and a way to actively promote co-existence to anticipate and ideally avert future spatial conflicts. Marine plans were also seen to give more certainty to developers and sectoral decision-makers. Simultaneously, government – bound by its international commitments under the CBD and based on previous work carried out under the BCC [21] – chose to inform and enhance the MSP process through a systematic conservation planning process which focused on the country's EBSAs. It is on this basis that government included MSP, as well as the EBSA process, as development priorities in the NDP5 in 2017 [3].

### 3.2. Understanding of MSP

While the introduction of MSP was driven by a strong economic agenda, a particularity of the Namibian approach is that it is also linked to critical conservation and social objectives. In terms of environmental objectives, MSP is seen as a means of protecting key biodiversity areas, which in turn is considered a prerequisite for delivering social objectives. This particular focus is derived from the country's constitution, which provides that the state “shall actively promote and maintain the welfare of the people by adopting, inter alia, policies aimed at the maintenance of ecosystems, essential ecological processes and biological diversity of Namibia and utilization of living natural resources on a sustainable basis for the benefit of all Namibians, both present and future” [22]. The main social objective of Namibia's blue development, the fair and equitable distribution of ocean wealth to all Namibians [3], also goes back to the country's constitution. In this context, the intention is to use MSP to support another core national policy, which is to achieve structural transformation of the economy and society in order to overcome the historic legacy of social inequalities based on race, inherited from Namibia's colonial and apartheid history [23,24]. Last not least, MSP is understood as an opportunity to improve ocean governance by enhancing cooperation across sectors, stakeholders and government authorities, and by streamlining processes such as licensing and making them more transparent to potential developers.

The current definition of MSP in Namibia is aligned with international definitions [25] and of a participatory decision-making process that guides where and when human activities occur in marine space

[26]. It is seen as bringing together all relevant ministries and stakeholders to minimise conflicts in the sea and agree on the best, shared use of marine space. The process of MSP is understood to consist of the development, implementation and regular monitoring and review of binding marine plans [26].

## 4. The Namibian MSP process to date

### 4.1. Actors and arrangements

Given the integrated nature of MSP, the government has pursued a collaborative approach from the beginning. The Ministry of Fisheries and Marine Resources (MFMR) was given the mandate to coordinate and guide the process of institutionalising MSP due to its existing marine competencies. An inter-ministerial and cross-sectoral national working group on MSP (NWG) was established by MFMR in 2016. Its role is to initiate and guide the country's first practical planning process and to draft the first marine plan on the basis of solid stakeholder engagement. The NWG consists of technical experts representing the following bodies:

- Ministry of Fisheries and Marine Resources
- Ministry of Mines and Energy
- Ministry of Works and Transport
- Ministry of Environment, Forestry and Tourism
- Ministry of Defence and Veteran Affairs
- Ministry of Urban and Rural Development
- Ministry of Agriculture, Water and Land Reform
- Ministry of Industrialization, Trade and SME Development
- National Planning Commission
- National Commission on Research, Science and Technology
- University of Namibia
- Namibia University of Science and Technology

The NWG has established task teams on an ad-hoc basis to assist with work on specific items such as EBSAs, data and information or to develop a stakeholder engagement strategy. The work of this NWG is supported technically and financially by the German Development Cooperation Agency (GIZ)<sup>1</sup> under the framework of the Benguela Current Marine Spatial Management and Governance (MARISMA) project.

### 4.2. National framework for MSP implementation

In order to implement MSP in a manageable and meaningful way, the waters under Namibian jurisdiction have been divided into three sub-national planning units: the northern, central and southern ocean space (see Fig. 1). Although their delineation is somewhat arbitrary, these planning areas are based on administrative considerations, the distribution of ecosystem types and key biodiversity areas, as well as the distribution of existing uses and emerging interests.

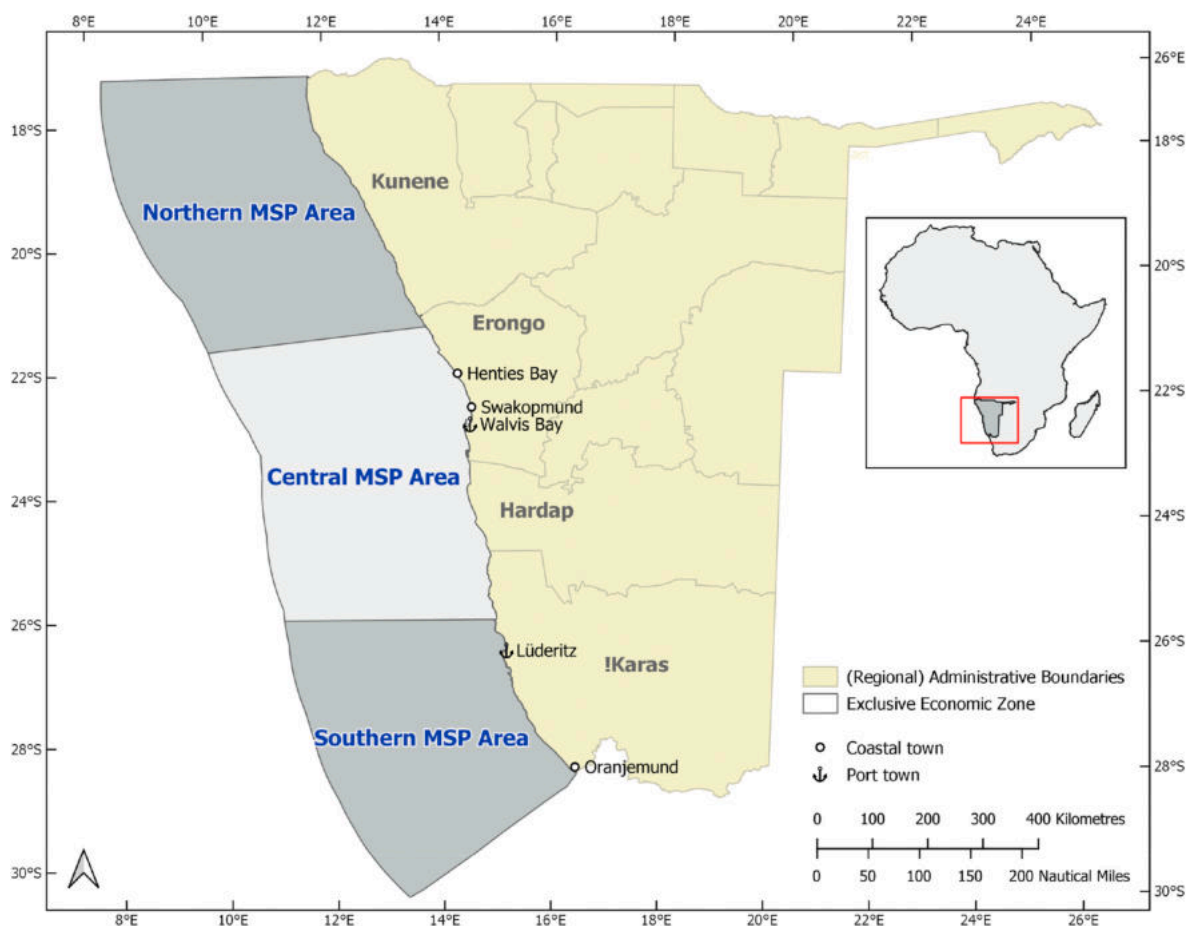
The marine planning areas cover both Namibia's territorial waters and waters within its EEZ, with the landward limit being the high-water mark. The central planning area has been selected as pilot area for the development of the country's first marine spatial plan as most of the economic activities are concentrated there.

A draft national framework was developed by the NWG to provide high-level guidance and direct sub-national MSP processes in such way that consistency and coherence in MSP is achieved [26]. Following international guidance for MSP [27], an overriding vision for the ocean and high-level MSP goals were developed, setting out the aspirations Namibia seeks to achieve through the process, as well as the principles for delivering MSP (see Table 2).

Also in line with internationally recognised approaches to MSP, the

<sup>1</sup> Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH.





Map 1. The Namibian MSP areas.

NWG suggested a process for the preparation and approval of marine plans, including implementation, monitoring and review procedures. Guidance to decision-makers and planners is still being developed by the NWG on how to consider and apply the plan's regulations in practice. A monitoring and evaluation strategy is also being drafted to support the revision of the Namibian plans, which will take place every 10 years or earlier if needed.

The core of the approach is a spatial management regime [26] which was developed by the NWG and which will form the basis of all marine spatial plans in Namibia. After reviewing other country's approaches, such as MSP in the Netherlands, Germany, and Scotland, and considering Namibia's system of terrestrial planning, a mixed approach was chosen which is neither solely policy led (such as the UK system) nor foresees detailed zones for the entire planning area (such as the Polish approach). It consists of a) general development guidelines, b) sector development guidelines, and c) a zoning scheme where each zone is associated with distinct spatial regulations. The latter builds on Namibia's spatial planning approach on land that also foresees defined zones for particular uses.

General development guidelines are broad-level policies that apply to all developments and licensing decisions in the sea. Their aim is to ensure that prospective developments are in line with the strategic goals of MSP, and that environmental, economic and social objectives are taken into account in decision-making. To help deliver social objectives for example, the presumption is that marine development proposals should be favoured that result in a net increase of marine related employment, or develop skills related to marine activities, or provide strong economic and social benefits to Namibians. The general development guidelines work in tandem with requirements for environmental impact assessments and apply throughout the planning area irrespective

of additional zoning schemes.

Sector development guidelines reflect the specific development aspirations of the maritime sectors. Unlike the general development guidelines, they may vary between plans to accommodate the specific social, economic and ecological context of each of the planning areas and to meet distinct marine plan objectives (Table 3).

Zones go beyond the general and sector development guidelines in that they pre-define desired combinations of activities in certain places. They will mostly apply where there is already a degree of spatial competition and potential conflict between activities. Similar to priority areas in other countries, zones restrict activities that would impede the primary function of a zone. Each zone can be treated individually in the sense of specific regulations that apply. The primary objectives of the zones are to enable preferred access to key areas and resources for marine users, a safe operating environment for industries, protection or enhancement of the resources or features the sector or interest requires, and sustained provision of marine and coastal ecosystem services. Not the entire sea area is zoned, and areas not zoned are considered general use areas where no priority is given to a specific use.

Overall, the Namibian planning approach can be described as a nested and inter-linked system of high-level and specific objectives that sits within the broader blue economy context (see Fig. 2). A vision for the ocean establishes the overriding aspiration that guides marine developments and the management and governance processes this entails. MSP is aligned with this vision through high-level goals, while the planning process itself is guided by MSP principles. More specific objectives then guide each plan, reflecting overall sector development priorities (which cut across all three planning areas) and more detailed sector development goals for each respective planning area. The general and sector development guidelines, as well as the provisions of the

**Table 2**

The Namibian ocean vision, strategic MSP goals and planning principles.

Ocean vision	High-level MSP goals	Planning principles
A healthy, safe and well understood marine and coastal environment that is governed sustainably and transparently and delivers optimised social and economic benefits to Namibia.	<p><b>Ecosystem health:</b> A healthy, robust and productive coastal and marine ecosystem in the long term.</p> <p><b>Social and economic benefits:</b> A safe marine and coastal environment that provides for the well-being of people, and a productive marine and coastal environment that enables blue growth and leads to empowerment and equality for people.</p> <p><b>Responsible research and monitoring:</b> Responsible research and monitoring of resources and ecosystems that provide accessible marine spatial data and information to facilitate decision-making.</p> <p><b>Good spatial governance:</b> Effective legislation, policies and guidelines that ensures transparent coordination and integration of interests, enabling equitable access and sustainable management of marine and coastal resources.</p>	<p><b>Spatial efficiency:</b> MSP will ensure marine space and related resources are used as efficiently as possible. This means optimising the use of ocean space, in a way that ensures the best possible co-existence of sectors and uses in the same space. MSP will promote compatible uses in sea spaces, and minimise spatial competition and conflict by taking a holistic approach to allocating space.</p> <p><b>Holistic approach:</b> The process of MSP, including plan implementation, will be holistic in that it balances economic, social and ecological goals and objectives. Marine plans will take account of the needs of all sectors and all ocean uses in a complementary way. This requires cooperation and involvement of all relevant stakeholders.</p> <p><b>Maximising benefits to sectors:</b> The MSP process will ensure that benefits to all maritime sectors are maximised, in a way that is sustainable and also serves the environment and society. This will be achieved, inter alia, by ensuring greater certainty of access to investors to desirable marine areas.</p> <p><b>Evidence-based use of resources and space:</b> Marine plans will be developed on the basis of the best available and shared information and data to enable knowledge-based decision-making in the MSP process to the largest extent possible, particularly when allocating marine space to uses. Transparency on the knowledge and evidence gathered and used during the entire MSP cycle will be ensured.</p> <p><b>Precautionary principle:</b> The process of MSP requires sufficient and reliable information and data. All decisions and recommendations to be made during the planning process will depend and be based on the adequacy of knowledge/evidence. In the absence of such knowledge or evidence, the requirement is that the safest choices are made to avoid significant, irreversible harm to environmental health and/or society.</p> <p><b>Cooperation:</b> The MSP process will promote cooperation and encourage collaboration among all relevant stakeholders and sectors using the ocean. Achieving cooperation and collaboration will also assist in minimising conflicts and enhancing understanding among different sectors.</p> <p><b>Broad engagement:</b> MSP will be carried out in a participatory manner that actively involves all relevant stakeholders in the process to ensure long-term and coordinated support for planning, management and good governance. Active stakeholder participation will assist in addressing conflicts between different users and aid the decision-making process.</p> <p><b>Coherent marine and coastal planning:</b> MSP will consider relevant land-based activities that affect the marine and coastal environment. This will result in planning that is coherent across the land-sea interface.</p> <p><b>Adaptability:</b> Good understanding of and long-term research on marine ecosystems is required to be able to accommodate changing conditions. MSP must also make provision for the growing and changing needs of the nation. The MSP process will therefore be iterative, respond to the best available scientific knowledge and flexible to accommodate adaptive planning and ocean use. Periodic monitoring, evaluation and review of the MSP process and marine plans are required.</p>

zoning scheme, translate the various objectives into practice by guiding licensing decisions. The zoning scheme is as specific as possible in space and time for the various uses and interests that occur in each of the planning areas. As such, the more specific regulations are guided by the higher-level goals and principles.

#### 4.3. Planning process

The first step in the planning process was to draw together an

evidence base that identifies the key issues and opportunities for MSP to be addressed [14]. This was done through formal and informal single- and multi-sector meetings and other means of consultation that took place in 2017 and 2018 [28]. The data and information collated contains relevant ecological, economic and social knowledge, information relating to all human uses and interests in Namibia and particularly the central marine area, including existing and projected uses, as well as information on uses and developments on land in the area adjoining the marine planning area.

**Table 3**  
National sectoral priorities to be achieved through MSP.

Spatial claim	Sectoral priorities
Biodiversity	Protecting the high priority areas which possess key biodiversity features of national, regional and global significance, and managing human impacts on them, with a focus on the country's EBSAs
Fisheries	Ensuring continued access to fishing grounds, particularly areas of priority to the sectors, and protecting key fisheries habitats from adverse effects by human uses, including fishing activities
Mariculture	Securing the existing mariculture locations and identifying appropriate sites for future mariculture development and use
Geological resource exploration and exploitation	Enabling exploration activities to establish reliable knowledge about resource deposits which may merit future exploitation, and securing key areas in the sea to promote extraction of known resources
Maritime transport	Guaranteeing safe and efficient navigation through a system of areas that ensure safe passage, anchoring, and handling of vessels in need of assistance, and the disposal of dredge material
Defence	Allocating space for military training activities as well as naval bases and ensuring that dumped ammunition does not become a danger for other users and the marine environment
Marine and coastal tourism	Enabling continued and improved access to marine and coastal resources for responsible tourism activities
Underwater infrastructure	Protecting existing submarine cables and other linear infrastructure, whilst reducing risks to other seabed users and the marine environment

Given the conflicts that triggered MSP in the first place, the central marine spatial plan not surprisingly focuses on the conflicts between fisheries, mining and conservation. In addition, the busy Walvis Bay area has a number of smaller scale conflicts between the developing port and expanding transport needs, tourism activities that depend on a healthy natural environment and iconic marine species, existing and future mariculture operations, and specific conservation interests that seek to ensure healthy and resilient bay and lagoon ecosystems. In addition to the generic benefits of MSP, Namibia's marine plans were deemed to offer opportunities to exploit synergies between fisheries management and biodiversity conservation, e.g. through protecting areas that are of particular biological or ecological importance for both uses, whilst not significantly restricting fishing in these places.

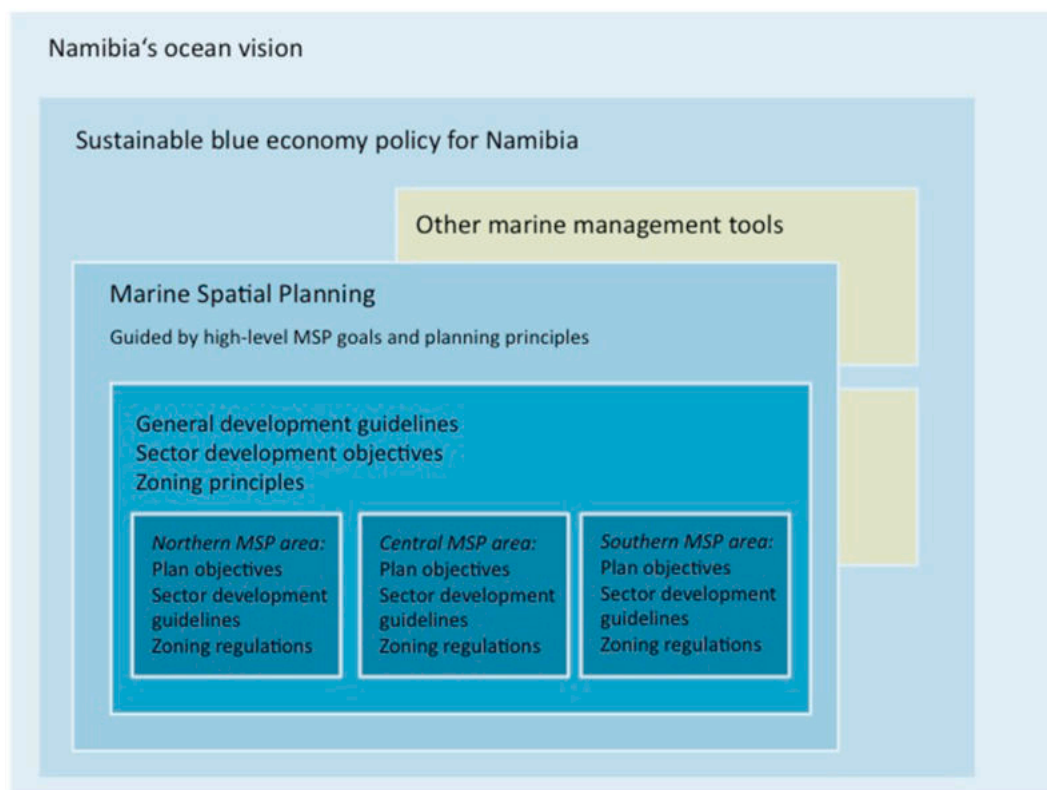
In parallel to the MSP process described above, Namibia undertook a systematic conservation planning process through a dedicated EBSA task team. This aimed to update the existing CBD-recognised EBSAs in the marine areas under Namibian jurisdiction and to identify and delineate

additional areas, which would meet the scientific EBSA criteria. As a result of this MSP-linked expert-driven scientific and technical process, a consolidated set of EBSAs was described and delineated [29]. Together with proposed management measures and suggestions for zoning and regulations, this process informed and supported marine plan development.

#### 4.4. Next steps

At the time of writing, the NWG is in the process of drafting the first plan for the central area based on the collated evidence and further supported by the EBSA process. Extensive consultation with relevant ministries and stakeholders will follow to discuss and adjust the provisions made by the draft plan. The final plan is expected to be submitted to government for approval in 2021.

The draft national MSP framework is expected to be underpinned by MSP legislation. Different options are currently being discussed in terms



**Fig. 2.** The Namibian approach to MSP

of legislating MSP, including the development of new legislation dedicated solely to MSP (building on South Africa's approach) or amending existing acts to include MSP. The leading ministry and prospective MSP authority, the MFMR, is furthermore engaged in developing a blue economy policy. Although this policy development and the MSP process are not fully integrated due to the broader scope of the blue economy agenda, the composition of the technical expert groups involved is almost identical. The 2019 draft of the policy establishes MSP as a key mechanism to enable policy implementation, in line with the NDP5 goals. Once adopted by government, this policy will therefore be a key part of the puzzle of Namibia's strategic policy goals in relation to its ocean and the sustainable development of this asset.

## 5. Discussion

### 5.1. Generic ingredients of Namibian MSP

Namibia's theoretical and conceptual approach to MSP is similar to MSP processes in other countries [26]. MSP is understood as a planning cycle, although the steps undertaken so far have, like in other cases around Europe, not necessarily been linear and sequential [30]. The anticipated benefits and goals of MSP in Namibia are also similar to those of other countries, as are the overall environmental, economic and social aspirations. Like its neighbour South Africa [31], but also like Scotland [32] or The Netherlands [33] for example, Namibia is purposely pursuing MSP to enhance ocean governance.

### 5.2. Distinct characteristics of Namibian MSP

Nevertheless, Namibia's approach to MSP also shows some distinct attributes that are derived from the particular national context. These bring with them certain opportunities for the future direction MSP could take.

#### 5.2.1. Namibian MSP is precautionary and forward-looking

In Europe, high levels of use and the advent of new, spatially intense uses in the North Sea and Baltic Sea are generally credited with initiating MSP as a means of addressing user-user, and (partially) user-environment conflicts [30,34,35]. To some degree, the introduction of MSP in Europe has thus been reactive, although it is also forward-looking in that it seeks to prevent future conflicts and balancing competing interests. The context in Namibia is rather different, with a relatively pristine marine and coastal environment, relatively low intensity of use and few acute and spatially confined conflicts. A case could thus be made that Namibia does not need to introduce MSP at this stage of its ocean development [36]. However, MSP in Namibia is driven by anticipation of blue growth and the desire to provide a suitable framework for facilitating and managing future developments. The prevailing interest is to use MSP proactively, i.e. before there is high intensity of use and before competition for space becomes more pronounced. To some degree, the approach to MSP can thus be described as precautionary and forward-looking.

#### 5.2.2. The social agenda as a driving force

Another feature is that marine spatial plans are understood as sustainable development plans for the sea. As such they clearly go beyond a zoning scheme or even the idea of balancing competing interests. The blue growth agenda in Namibia, and with it MSP, is driven by social aspirations and the desire to use marine resources to benefit as many Namibians as possible, helping the country to overcome historical societal inequalities. This includes the desire to protect and where possible enhance marine resources in the long term, mainly preserving use values but also the bequest value of the marine environment and its resources. Distributive justice is an important consideration, and MSP attempts to contribute to it by providing dedicated decision-making criteria for licensing authorities. For example, it is foreseen that those

implementing the plan will be required to favour those development proposals that maximise local job generation (rather than foreign employment for instance) or contribute to skilling the workforce.

#### 5.2.3. Using systematic conservation planning to support MSP

Whilst other countries, such as Sweden, Seychelles or Australia, have also identified areas of high ecological value as one of the first tasks of the MSP process, the Namibian case is distinct in that it has linked MSP to a systematic conservation planning process from the outset [29]. Systematic conservation planning was a dedicated sub-process to MSP, designed to identify areas with high biodiversity, ensuring that targets for biodiversity conservation can be met but also taking into account other human activities and interests within the planning area where possible by preferably selecting those areas where fewer conflicts with existing or projected uses exist [37]. Although this process could, in future, be used for identifying and designating MPAs (in line with the commitment to designating 10% of the country's EEZ as MPA [38]), it has not been carried out with this as the primary intention. Instead, it has led to the definition of two MSP zones, one a strict biodiversity conservation zone and the other a biodiversity management zone. While the former gives priority to the strict protection of biodiversity features, the latter prioritises management and minimisation of human impacts on biodiversity features. This dual approach is distinct from a purely conservation-led approach in that it acknowledges human use as inevitable in some areas while also identifying those features where stricter protection may be desired. Systematic conservation planning can therefore be seen as an attempt to optimise socio-economic and conservation objectives at the same time. This approach ensures that spatial regulations, future MPA designation and biodiversity conservation can go hand in hand and reinforce one another from the very beginning through complementary measures in MSP and conservation management.

#### 5.2.4. A collaborative approach from the outset

The MSP process has been organised through a collaborative governance approach with an inter-ministerial planning team that comprises nine sector ministries, two government commissions and two research organisations. Such an inter-ministerial approach is the first of its kind in terms of integrated marine planning and management across sectors in Namibia. Although an inter-ministerial approach to MSP is not new in itself with other countries following the same approach (e.g. Denmark [39]), Namibia has profited from this setup by engendering trust and collaboration between sectors and by working towards institutionalising MSP within the responsible ministries and levels of government. Willingness to share knowledge, data and information openly within the NWG, willingness to listen to other perspectives with an open mind and accepting different points of view, and the desire to find a practical solution for specific problems, such as the first plan's key spatial conflict between the interests of phosphate mining, fisheries and conservation, are initial examples for such process outcomes which have been directly observed at NWG meetings.

#### 5.2.5. MSP as part of wider ocean policy processes

A particular feature is that the Namibian MSP process is developing hand in hand with other ocean policy and governance processes. While some of these processes are mutually reinforcing, it also makes for a complex and emergent situation where much depends on the political support of key ministries and figures in government. For example, MSP has stimulated a political debate on developing ocean-related legislation; there is also an ongoing debate on how to further improve linkages between MSP and the emerging blue economy policy. At the same time, MSP can only prepare the ground so far and is ultimately dependent on the interest and goodwill of policy-makers to push for appropriate legislation and a cohesive and integrated policy environment.



### 5.2.6. *MSP as a joint learning process*

The emergent policy context and lack of prescriptive legislation has enabled a relatively open, gradual and experimental MSP process to take place. The fact that all stakeholders have started from the same zero baseline has facilitated a joint learning experience, leading to better and shared understanding of MSP and the gradual adaptation of international MSP practice to local conditions. The vision for the ocean, the high-level MSP goals and planning principles, which were developed jointly in this process, have assisted in creating a common purpose. The commitment of the various line ministries and individual members of the NWG has been strong, and their understanding of the opportunities and constraints of MSP as a mechanism, and of themselves as a team of experts, has grown significantly over the three years of the NWG's existence. This also includes understanding that MSP is no silver bullet that will automatically resolve all conflicts of interest, such as the conflict surrounding phosphate mining. However, political choices can now be made based on more refined technical knowledge and more honest debate of the consequences of different development options.

### 5.2.7. *MSP as an ocean literacy exercise*

Maturing political support for MSP, engaging stakeholders and building appropriate institutions, such as establishing basic structures (e.g. the NWG), processes (such as for the approval of the marine plans and their implementation) and legislation, is particularly demanding in the Namibian context where the ocean is sometimes far away spatially, emotionally and economically for decision-makers and where the majority of the electorate is residing inland. The MSP process to date, which resulted in an evidence base where all sectors and stakeholders were committed to contributing their knowledge and views, has however enabled a growing understanding of the many benefits provided by Namibia's ocean. This has resulted in reducing the emotional distance of decision-makers to the ocean, as reflected by the parallel development of Namibia's blue economy policy and international commitments in terms of ocean protection targets. As such, the MSP process has generated an improved appreciation of the value of the Namibian marine environment for society. At the same time, it resulted in improved knowledge about what needs to and can be done through MSP to achieve the vision for the ocean, and related high-level goals and aspirations for the marine area.

### 5.2.8. *MSP as a timely opportunity for the Namibian government*

MSP is a new process for Namibian government authorities and stakeholders. Although it can be based on experience and capacities relating to other planning and management processes, such as integrated coastal management or land-use planning, introducing MSP in Namibia would have been more challenging if it had been introduced at a different time. MSP began in a cycle of budget cuts and an economic downturn, which limited the government's planning and implementation ability. This, combined with the financial and technical support from international partners, such as the German government through GIZ and the MARISMA project, was catalytic (and remains crucial) in that it enabled government experts to focus time and effort on MSP as a funded activity.

## 5.3. *Challenges for MSP in Namibia*

### 5.3.1. *Long-term funding constraints*

One of the most critical aspects is that much of the current development is dependent on external funding. This makes MSP a precarious process as government is unlikely to be able to set aside a dedicated budget for MSP in the near future. Much has so far depended on the goodwill and support of the relevant ministries and research institutions to delegate their staff to the NWG, which also would have been more difficult without external travel funding for example. However, options are now being screened to embed MSP functions and processes within the current government structure by expanding existing positions and

using related budgets, thereby minimising the need for dedicated and additional funding.

### 5.3.2. *Lacking MSP legislation*

Another challenge is that Namibia does not have dedicated MSP legislation. Unlike South Africa, where the statutory planning process only began once MSP legislation was in place, Namibia has pushed ahead on the basis of the commitment of all actors to implement national policy objectives as specified in the NDP5 – but without supporting legislation. Although positive aspects are related to this lack of MSP legislation as described above, there is a danger that the central plan as the first of its kind in the country will not be implemented as intended and that the institutionalisation of MSP will not progress as well as it could for lack of proper authority. Some initial steps have already been taken and the more the practical MSP process evolves the more it stimulates discussions on and awareness for the need for MSP legislation. For example, MSP has been identified as a key mechanism in the draft blue economy policy, which may constitute the precursor for legislation. However, at the time of writing the outcomes in terms of legislation are unclear.

### 5.3.3. *Knowledge and data gaps*

A critical issue is also that there are distinct knowledge and data gaps in the marine environment. In part, this is a problem of resources, e.g. in the context of environmental monitoring, but there is also insufficient "ocean awareness" among key decision-makers, research institutes and sectors, translating into a lack of basic investigation of marine activities and articulation of sectoral needs. Future iterations of marine plans will undoubtedly benefit from better data, ideally publicly available, as well as greater sector involvement and inter-ministerial cooperation in collecting and providing the necessary information. If MSP is to continue as a participative and inclusive exercise where stakeholders can make a meaningful and critical contribution, enhancing ocean literacy in Namibia is a crucial task at all levels, including among the general public. Although the engagement of stakeholders in the MSP process is already an ocean literacy exercise in itself, raising awareness and knowledge about the ocean clearly needs to extend beyond MSP.

### 5.3.4. *Weak ocean governance links*

While the above issues mostly relating to practicalities, there is a more fundamental issue in that MSP has been taken on board rather uncritically and, at higher political levels, without sufficiently considering how MSP could be linked to wider dimensions of governance. Although MSP has made its mark as an integrated approach to marine management internationally [25,40], and despite the availability of a large body of literature on what constitute elements of successful MSP practice (e.g. Refs. [41–43]), some general criticism is also being levelled at MSP, often from the perspective of distributive and process-related justice [44]. It has been described as a process that cannot address uneven power relations among stakeholders [45,46], even reinforcing or privileging those groups that are powerful already [30,47,48]. Also, there is little available evaluation to date of existing MSP processes or plans against stated objectives, and how they affect the distribution of costs and benefits of marine use – in other words, little evidence of the actual ecological or socio-economic impact of MSP. Some of these issues may certainly come into play in the Namibian context, especially since there are few NGOs with a maritime focus and some small sectors with only limited lobbying power against the dominant economic or political interests.

At the same time, given that Namibia is starting from very low levels of marine activity and with a small number of sectoral stakeholders, some of these issues may not apply to the same degree as they do elsewhere. Nevertheless, given the country's history and current socio-economic situation, it is particularly the social strategic goals of MSP that are of critical significance. Aspects such as wealth distribution, which is considered essential to contribute to transformation towards a

more just and equitable society, and stakeholder representation and participation, will require careful consideration in the future [43].

Most importantly, though, MSP can only be successful if it is embedded into a broader approach to ocean governance. Although MSP can be considered contributing to strengthening ocean governance [49], a comprehensive framework for ocean governance would be useful to tackle those issues that cannot be addressed through spatial planning alone. Such holistic framework would also be beneficial in terms of anchoring good ocean governance principles within other sector planning and management processes, e.g. in terms of allocating use rights and equitable sharing of the benefits generated by the ocean. Both are critical in progressing towards sustainable ocean development. This, however, would require a description and evaluation of good governance at the level of the national ocean governance system to build on. In turn, assessing in how far MSP contributes to enhancing the quality of ocean governance would be useful to determine the good governance outcomes of the process itself.

## 6. Conclusions

Given that Namibia is among the first African countries and among the first developing countries worldwide to introduce MSP, this paper explores the reality of the Namibian MSP process to date. On the one hand, it focuses on the attributes that make Namibian MSP distinct and which provide opportunities for future MSP implementation; on the other, it highlights some of the challenges the process is currently faced with.

The Namibian case shows that the country pursues MSP in response to increasing demands for access to marine space and resources. A key aim is to strategically organise use of the sea in such a way that conflicts are avoided and a sustainable blue economy can be developed. As such, Namibia recognises its marine area, the services it provides and the resources it contains as a crucial contribution to development and transformation.

The Namibian approach to MSP to-date shows that the country has adapted existing MSP practices to fit its specific context, thereby developing its own, customized approach. The country's process exhibits integrated and holistic attributes and can be seen as a successful joint learning process for all those involved, bearing in mind that the number of relevant stakeholders is relatively low due to the size of the Namibian population and considering that ocean awareness amongst the general public is also low. A key aspect is that the process was able to develop at its own speed and without external pressure, leading to gradual development of knowledge and trust among the involved technical experts. This represents a good but still tentative grounding that will need to stand the test of finalising and then implementing the country's first marine spatial plan. As such, the planning process has also led to broader ocean awareness and understanding of the issues MSP needs to and can address. Nevertheless, in line with the experience of other countries, weaknesses are also evident: the currently low levels of funding call into question the long-term future of the process, and the lack of a suitable legal base for MSP also raises doubts with respect to future authority, plan implementation and enforcement. Another key difficulty is the low level of ocean literacy and understanding of MSP at the higher administrative and political level, which makes it difficult to establish MSP institutionally. Given the continuing economic downturn in the country, considerable political investment will be required to bring MSP to full fruition and to implement plans as a means to achieving sustainable blue growth. Considering that MSP in Namibia is strongly tied to the social dimension of sustainable development, especially in terms of more equitably sharing ocean wealth, it will be important to monitor and evaluate how MSP can make a real contribution in this particular context. This will strongly depend on Namibia's economic development and whether or not investment takes place, but also on how the plans are actually used to influence marine development. Future research will be required to determine the impact of

Namibian MSP on the delivery of social aspirations or to assess the distribution of costs and benefits of MSP across society.

The Namibian example also shows that MSP has the potential to contribute to improving Namibian ocean governance in that it can lead to enhanced governance quality, for example in terms of robust stakeholder participation in the process, strengthened cooperation and co-ordination across sectors and ministries. At the same time, the Namibian case makes clear that more work is needed to determine in how far MSP contributes to stimulating good ocean governance. In addition, MSP must be linked to a more comprehensive governance framework for the ocean to secure sustainable development of the sea for the long term.

The Namibian MSP process is a timely case for exploring the reality of MSP in a country whose environmental, social, economic and governance setting is quite distinct from countries that have more mature national ocean governance systems. As such, it might provide a stimulating experience for other developing countries that are only now beginning to introduce MSP.

## CRedit authorship contribution statement

**Gunnar Finke:** Conceptualization, Methodology, Investigation, Writing - original draft, Writing - review & editing, Visualization, Supervision, Project administration. **Kira Gee:** Conceptualization, Writing - review & editing. **Anja Kreiner:** Investigation. **Maria Amunyela:** Investigation. **Rodney Braby:** Investigation.

## Declaration of competing interest

None.

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