

HOW SUPPORTIVE ARE EXISTING NATIONAL LEGAL REGIMES FOR MULTI-USE MARINE SPATIAL PLANNING? – THE SOUTH AFRICAN CASE

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Abstract

Over the past six years international interest in multi-use marine spatial planning (MSP), as a practical process to launch integrated coastal management (ICM), exploded. This paper explores the extent to which existing national legal frameworks can support this process, focusing on the coastal marine environment. First the characteristics of an appropriate legal regime for multi-use MSP are explored by interrogating secondary data sourced from literature reviews and case studies. Key paradigms are distilled as a means of dissecting this complex process into a suite of characteristic determinants that disclose the underpinning environmental management approaches or principles. These criteria are then used to assess the compatibility of national legal regimes for multi-use MSP - in this instance the South African legal framework. Although multi-use MSP has not been explicitly adopted as a process within South Africa's broader ICM implementation, existing legislation does reveal support. The department responsible for the environment is viewed as the most appropriate agency to house the statutory mechanism for multi-use MSP at national and provincial levels, but delegating local multi-use MSP processes to local government agencies. The political will to deploy and dedicate duties and resources to effective implementation of multi-use MSP, however, remains critical. Finally, the approach adopted here is proposed as a means to assess the compatibility of other national legal regimes for multi-use MSP, although the suite of characteristic determinants may need to be reviewed from time to time, as new learning emerges from practice.

Keywords: multi-use marine spatial planning; integrated coastal management; legislation; South Africa

1. Introduction

“Marine biodiversity loss is increasingly impairing the [coast and] ocean's capacity to provide food, maintain water quality, and recover from perturbations” – an alarming conclusion recently reached by a group of leading international scientists [1]. Yet, the authors argue, these trends may still be reversible. Moving away from the traditional sectoral approach toward a more holistic ecosystem-

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based approach may be one avenue to reverse such trends [2]. However, the management of complex coastal ecosystems – as in integrated coastal management (ICM) – is a demanding process facing numerous barriers [3]. Apart from measures that control specific (sector-based) activities (e.g. setting targets for wastewater disposal), ICM also requires collective planning and regulation of the spatial and temporal scales of different human activities within a defined space [2,4]. As a result ICM remains largely a concept with few practical successes. Operational tools are viewed as means to launch the concept of ICM into practice [2]. Here multi-use marine spatial planning (MSP) offers a potential solution.

Ehler and Douvère [5] define MSP as “*a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that are usually specified through a political process*”. Since the UNESCO workshop on MSP in 2006, interest in this process as a practical, ecosystem-based approach to ocean and coastal management exploded [5,6,7]. MSP is not an entirely new concept but traditionally it is mostly applied in a sector-based manner, for example in the demarcation of shipping routes, marine disposal areas, military security zones, mineral extraction concessions, mariculture sites and marine protected areas [8]. With burgeoning demand for coastal space and resources, and increased commitment to biodiversity conservation, multiple-use conflicts have emerged [4]. Coordinated and comprehensive management of coastal resources was no longer an option but a necessity, paving the way for multi-use MSP [9,10]. Initially the concept of MSP was stimulated by interests in developing marine protected areas, for example the Great Barrier Reef Marine Park [2,11]. More recently this process has moved beyond conservation planning seeking balance between social and economic development, and commitments to biodiversity and habitat protection [2,12] – evolving into multi-use MSP.

Multi-use MSP is not an end in itself. Rather the process provides a practical, rational way to establish use of coastal space, and interactions between uses, to balance demands and to achieve environmental, social and economic objectives. This is done in an open and planned way within a broader ICM framework that includes implementation, enforcement, monitoring, evaluation, research, public participation, and financing [12,13].

Multi-use MSP is a complex process. Smith et al. [14] emphasise two characteristics that increase complexity significantly from land-use planning. The first is the three-dimensional nature of the marine environment compared with the two-dimensional characteristics of land-use planning. Secondly, from the beginning multi-use MSP is associated with the complex ecosystem-based approach. Knowledge of marine ecosystems, with few exceptions, remains relatively limited and expensive to acquire further compounding the difficulties of introducing this process. Although multi-use MSP may represent a novel approach to launch ICM into practice, Halpern et al. [6] argue that by

necessity this process will have to be implemented within existing policy and legal structures. This process will predominantly be supported (or constrained) by existing laws and regulations, and implemented by existing regulatory bodies. Crowder et al. [4] warn that the transition to multi-use MSP will not be easy. It will be a politically sensitive issue to those actors with a developmental agenda who have been used to less ‘interference’ in the past [14]. Proper authority therefore is required, both to plan for and enforce multi-use MSP [5].

Therefore, understanding how best to navigate multi-use MSP into a country’s existing legal regime would benefit from a critical evaluation of the place-based legal framework [6]. This paper aims to explore the extent to which existing national legal frameworks can support this process, focusing on the coastal marine environment. Here the coastal marine environment is defined as the gradient from the ‘dry’ to the ‘wet’ coastal environments, including terrestrial systems such as dunes and mangroves, the sea shore, estuaries, marine waters and sub-surfaces beyond the shore roughly to the edge of the continental shelf, excluding the distant oceanic domain. Specifically a suite of criteria is derived to assess compatibility which is then applied to the South African case.

2. Approach and method

The approach adopted in this study first explores what constitutes a supportive legal regime for multi-use MSP. This question is addressed from two angles. First global progress in the understanding and development of legal frameworks for multi-use MSP is explored by interrogating secondary data sourced from literature reviews and case studies. Thereafter, the key paradigms characterising multi-use MSP are examined as a means of dissecting this complex process into a suite of characteristic determinants that disclose the underpinning environmental management approaches or principles [15,16].

The focus then shifts to the South African case. First, key legislation pertaining to the coastal marine environment are discussed briefly. Thereafter the key principles and aims of these legislations are compared with the characteristic paradigms of multi-use MSP to assess compatibility. The paper concludes by proposing opportunities for best navigating multi-use MSP into South Africa’s legal regime – or countries with similar legal regimes – and posits the approach adopted here as a generic means of assessing compatibility of national legal frameworks to multi-use MSP as an operational tool within broader ICM.

3. Lessons learnt: Legal regimes for multi-use MSP

While MSP globally is still a fairly new and emerging area [14], some of the existing initiatives can provide some key lessons related to the legal regimes required for multi-use MSP. The main international legal framework for MSP consists of two international conventions, namely the 1982 United Nations Convention on the Law of the Sea (UNCLOS) and the 1992 Convention on Biological Diversity (CBD) [17]. UNCLOS provides the international legal basis for exploitation at sea, the right to allocate activities and the duty to protect the marine environment within seven maritime areas, namely internal waters, archipelagic waters, territorial seas, contiguous zones, continental shelves, exclusive economic zones and fishery zones [2,17]. The CBD has conservation of biological diversity and the sustainable use thereof as its primary objectives and is the most important international convention supporting ecosystem-based management [17]. Although Agenda 21 and the 2002 World Summit on Sustainable Development (WSSD) Plan for Implementation only have the status of ‘soft law’, they also address substantive frameworks for the allocation of marine space [2,17]. Agenda 21 (specifically Chapter 17) sets out a framework of actions to achieve protection and sustainable development of the marine environment and its resources, strongly advocating an integrated (ecosystem-based) approach and strengthening of international and regional cooperation and collaboration [2]. The 2002 WSSD Plan for Implementation specifically called for coastal and watershed planning tools as a means of promoting conservation and management of ocean areas. Specific commitments relevant to multi-use MSP include (i) improving efficient use of water resources; (ii) allocating resources among competing uses such that basic human needs are balanced with preserving or restoring of ecosystems; and (iii) establishing representative networks of marine protected areas [2]. Although none of these international conventions and ‘soft laws’ advocate explicitly the process of multi-use MSP, they provide a sound basis for the development thereof as a practical tool to advance ecosystem-based management in the marine environment [2,17].

Ever increasing user conflict among different countries is demanding more integrated and strategic sea use management at a regional scale. This demand is specifically evident in densely populated regions bordering semi-closed or closed seas, such as in Europe and the United Kingdom (UK). As a result the legal frameworks supporting multi-use MSP in these regions are becoming much more explicit and are developing fast. Driven by international and European regional legislation and the need to meet biodiversity conservation commitments in the face of increasing marine uses, several countries in these regions have become global leaders in taking multi-use MSP forward, for example Belgium, The Netherlands and Germany [2].

At national level, Ehler and Douvere [5] found different countries to follow different approaches in establishing legal frameworks for multi-use MSP. One way is through the establishment of new legislation as is the case in China. In 2002, the country promulgated the Law on the Management of Sea Use [8]. This legislation establishes three principles, namely (i) the right to a sea-use authorization system where the seas are owned by the State and anyone intending to use the sea must apply in advance and obtain the right to do so; (ii) a marine functional zoning system where any use of sea areas must comply with the marine functional zoning scheme established by the State. This scheme divides the sea into different types of functional zones (according to criteria related to ecological functions and priority use); and (iii) a user-fee system which requires anyone who uses the sea to pay a fee in accordance with the regulations of the State [8]. A second way is to use existing legislation. This can be achieved either by re-interpreting, or slightly modifying, existing legislation to accommodate multi-use MSP. Ehler and Douvere [5] argue that existing legislation such as those for ICM, exploitation and exploration of territorial seas and protection of the marine environment can often be easily adapted to provide authority for multi-use MSP. Here Germany can be used as an example. In 2004 the country's Federal Spatial Planning Act was amended by extending the setting of objectives and principles for spatial planning to the exclusive economic zone [2]. The third option to establish authority for multi-use MSP is to add provisions to legislation already under development or legislation that is being considered for development in the near future. For example, during the development of the UK Marine and Coastal Access Act 2009 (then referred to as the Marine Bill), this legal avenue was used to investigate the benefits and a process for multi-use MSP in the United Kingdom [18]. Being in a developmental stage this provided the opportunity for adding provisions derived from recent international learning and best practice.

Boyes et al. [19,20] analysed the ability of an existing statutory framework in achieving multi-use MSP in the Irish Sea. The Irish Sea supports various users and uses which compete for space, such as shipping, aggregate extraction or disposal, military use areas, offshore oil and gas exploration, cables and pipelines, wind farms, various forms of marine protected areas, and nature reserves for fisheries and conservation purposes. Here existing jurisdictions governing different uses are largely sectoral, each demarcating or licensing use zones independently. Based on the existing sectoral-based spatial controls a scheme was proposed suggesting four zones, namely (i) a general use zone –subdivided into a minimal management zone and a target management zone; (ii) a conservation priority zone; (iii) an exclusion zone – subdivided into limited exclusion and significant exclusion; and (iv) a protection zone [20]. While this type of *a posteriori* zoning scheme does provide a 'benchmark' from where to initiate future multi-use MSP, it was not considered representative of a 'true' zoning scheme where zones are based on a common vision and objectives for a specific area, taking into account economic, environmental and social aspects. Further, a true *a priori* zoning scheme seeks to minimise or avoid

conflict between different uses and between uses and the marine environment. Boyes et al. [20] argue that for the Irish Sea such an *a priori* approach was not possible given the existing sector-based licensing system. They also warned that this *ad hoc* sectoral and *a posteriori* approach to coastal management - already in existence for many years – were non-strategic and would increasingly limit the implementation of a more coherent multi-use MSP policy. Based on their experience, Boyes et al. [19, 20] conclude that in a sector-based statutory system it is unlikely to achieve the goals of a comprehensive multi-use MSP system - including an effective enforceable zoning scheme - on a voluntary basis. Rather a ‘true’ MSP process will require a statutory mechanism where the duties and resources are set up to plan and enforce the scheme effectively. Further, this statutory mechanism should be housed in a suitable agency or department.

Douvere et al. [18] and Douvere and Ehler [2] explored new learning from three MSP initiatives in Europe (Belgium, Germany and the Netherlands). In this region MSP initiatives are driven mainly by international and European legislation [2]. In Belgium, the national legal regime for multi-use MSP centres around a permit system linked with environmental impact assessments (EIAs), although it is by far not sufficient to deal with the burgeoning demand for marine space and resources and increased conflicts [18]. Although the progress in multi-use MSP in Belgium shows that a spatial approach to sea use management is possible despite the lack of an overarching legal zoning framework, it was recognised that such overarching legislation, in addition to the current permit system and EIAs, would provide a more strategic and integrated framework for multi-use MSP. Prior to developing its plans, the German government decided to first adopt a strong legal basis for the development of marine spatial planning which was done in 2004. MSP initiatives, however, are still in early stages of development. Douvere et al. [18] stress that in multi-use MSP the final desirable structural plan is a political, not a technical decision. This is possibly a reason for multi-use MSP being at a more advanced stage in the Netherlands, where demands for ocean space have been subject to political debates for a long time [2]. Also, the Dutch government considers MSP as a means of fostering sustainable use while simultaneously providing scope for private sector development initiatives. This is achieved by defining designated use zones only where necessary (e.g. shipping routes and marine protected areas) and allowing considerable freedom for development initiatives but within certain constraints [21].

Calado et al. [22] view conceptual ambiguities as a key challenge for multi-use MSP based on lessons learnt from their Portuguese case study: confusion often arises regarding terminology such as maritime versus marine, strategy planning versus zoning-based planning. Subsequently the authors suggest a glossary of terms to be developed to facilitate efficient communication among stakeholders.

An effective step by step approach to identify and resolve conflicts was also a key learning point from the Portuguese evaluation.

Evaluation of the above reviews and case studies reiterates a number of important considerations. First, the multi-use MSP process must be an ecosystem-based approach where the valuation of social and economic aspects are integrated systematically with science-based ecological valuations [2,18]. Second, multi-use MSP requires a nested approach where national or local planning must consider larger (regional or international) planning and vice versa [13,14]. Finally, stakeholder participation is essential for the successful operationalisation of multi-use MSP [18].

4. Key paradigms underpinning multi-use MSP

The process of multi-use MSP derives its character from a combination of paradigms [16] within the broader framework of integrated environmental management of which six paradigms feature prominently in the literature.

- (i) The most prominent paradigm is *spatial planning* [e.g. 14], viewed in its simplest form as spatial or temporal zoning of use areas to pro-actively manage and control use within a specific space. Significant challenges remain in understanding the specifics of how different combinations of activities interact cumulatively and where the non-linearities exist in how activities affect ecosystems, and how these must be accounted for in the process [23].
- (ii) Multi-use MSP reflects strongly *objectives-based management* [5,24], a concept that was introduced to environmental management with the aim of integrating ecological concerns with political structures and governance processes. Stakeholders determine a common vision and objectives considering environmental, economic and social aspects which are then implemented and assessed by civil servants in national, regional, and local contexts [25,26].
- (iii) Multi-use MSP follows an *ecosystem-based approach* [e.g. 27] adopting a holistic method for managing human activities [e.g. 4]. This approach considers all the links among living and nonliving resources rather than single aspects in isolation. The ecosystem defines the boundaries of the management unit, not artificial, jurisdictional boundaries [4,28,29]. Nevertheless while the ecosystem defines the boundaries of the management unit, planning and management focuses on human activities within the unit, not on the ecosystem or components thereof [5].
- (iv) Multi-use MSP is a dynamic, *adaptive management* process [e.g. 30] that continuously adapts over time as learning evolves [5]. It is not a once-off plan.
- (v) Multi-use MSP is a *participatory rational-decision-making* process [e.g. 31] that aims to achieve consensus among all sectors or actors operating in a designated management unit based on valid

scientific knowledge. This requires a cross-sectoral, participatory approach that is distinctly different to the traditional single sector-based planning approach [8]. However, multi-use MSP does not replace single-sector planning. Rather the process provides a mechanism to coordinate efforts across sectors, to define areas within which compatible activities could occur and to guide single-sector management toward integrative decision-making [4,5,8].

- (vi) Finally, multi-use MSP spans different geographical scales ranging from international, national through to regional and local scales, each driven by different tiers of governance [6,14] where *cooperative environmental governance* [e.g. 32] is crucial. Here a nested approach have been proposed where nodes of local coastal (or estuary) plans designed for intensely used inshore areas are nested within larger plans covering broader jurisdictions at the regional, national and international scales [13,14]. Such a nesting approach has been adopted in the Canadian ocean action plan comprising large ocean management areas (LOMAs) covering relatively large sections of ocean space each with a network of smaller coastal management areas (CMAs) nested within [33,34].

5. South Africa's legal framework for coastal management

South Africa chose a power-sharing (consociational) democracy as the basis for its political system post-1994 [35]. Consequently, the political system supports pluralist theory which is viewed as a key pillar of cooperative environmental governance. The adoption of a more pluralistic slant to environmental issues is clearly evident in South Africa's post-1994 legislation. For example, the Constitution of the Republic of South Africa Act [36] gives everyone a right to an environment that is not harmful to their well-being and to have the environment protected, for the benefit of present and future generations. Specifically, the Constitution requires the security of ecologically sustainable development and use of natural resources while promoting justifiable economic and social development through reasonable legislative measures. The National Environmental Management Act (NEMA) [37] is another example providing for co-operative environmental governance through the establishment of national environmental management principles and procedures that are incorporated into decisions affecting the environment. Within the context of the NEMA, the National Environmental Management: Biodiversity Act (Biodiversity Act) [38] specifically provides for the conservation of biological diversity and gives legal status to the CBD.

In addition to the overarching, enabling environmental legislation, South Africa's legal system specifically governing the coastal marine environment is extensive [13], including at least 19 international obligations and agreements, 11 national policies (White Papers) and approximately 46 national acts [39,40,41]. South Africa's Maritime Zones Act [42] complies with UNCLOS and

specifies the limits of the territorial sea, contiguous zone, exclusive economic zone and continental shelf. A pivotal document relevant to ICM is the *White Paper for Sustainable Coastal Development in South Africa* (hereafter referred to as the Coastal Policy) [43]. The Coastal Policy aims to transform coastal management in the country from a predominantly biophysical and bureaucratic approach (i.e. a purely scientific approach [e.g. 44]) into a participatory approach (i.e. a pluralistic approach [e.g. 45]) driven by human development imperatives and the need to promote sustainable livelihoods [46]. Promulgation of the National Environmental Management: Integrated Coastal Management Act (ICM Act) [47] gave legal status to the Coastal Policy within the framework of the NEMA. Another key piece of legislation is the Municipal Systems Act [48] that sets out the core principles, mechanisms and processes for local government (municipalities) relating to strategic, integrated development planning (IDP) and an associated spatial development framework (SDF). With specific reference to the coastal marine environment, these local planning processes currently only include coastal ‘dry’ land (a term used here to describe the area between the high water mark and the landward boundary allocated to the coastal zone in the ICM Act). Finally, the National Water Act [49] is a key piece of legislation, albeit only relevant to estuaries. One of its key objectives is the protection and sustainable use of South Africa’s water resources. Apart from the above-mentioned cross-sectoral legislation, the rest of the legislation applicable to the coastal marine environment is largely sector-based, i.e. different sectors (e.g. conservation, fisheries, water supply, waste and wastewater, coastal infrastructure development, mining and exploration, shipping and agriculture) are governed under different acts and by different government departments [13,39]. To demonstrate the complexity, and the sectoral nature of South Africa’s legal framework in particular, Taljaard [13] provided an overview of the key national acts and responsible departments. In most sectors, the legislation governs activities through permitting or licensing systems, and in some cases, the geographical demarcation of such activities.

While a sector-based approach to spatial planning provides opportunities for a *posteriori* cross-sectoral zoning scheme, Boyes et al. [20] argue that it is unlikely to achieve the objectives of a comprehensive multi-use MSP system that includes enforceable, multi-use zoning. Multi-use MSP is based on an overarching common vision and objectives for a specific coastal space, taking into account cross-sectoral economic, environmental and social aspects. This requires a strategic, *a priori* approach seeking to minimise or avoid conflict between different uses and between uses and the coastal marine ecosystem. Further, a multi-use MSP system requires an overarching statutory mechanism housed in a suitable agency or department where the duties and resources are available to plan and enforce zoning schemes effectively [5,20].

6. Comparison of legislation key principles with key paradigms of multi-use MSP

Taking the stance of Boyes et al. [20], South Africa's overarching, cross-sectoral legislation pertaining to coastal management (namely the Constitution of South Africa, NEMA, ICM Act, National Water Act and the Municipal Systems Act) is viewed as more appropriate legal routes to support 'true' multi-use MSP than sector-based policies and acts. Table 1 summarises the key principles and aims of these overarching, cross-sectoral statutes potentially supportive to multi-use MSP and highlights, in brackets, the key paradigms that are supported by each principle or aim. From Table 1, the strong pluralistic slant to post-1994 environmental legislation is evident, where most statutes reflect participatory decision-making and co-operative environmental governance in their key principles or aims. Also, balancing between environmental protection, social and economic well-being, and the equitable distribution of environmental resources are common principles. Most of these legislations are also strong on setting a vision and clear objectives for the environment, or components thereof. Further, regular review of management plans and programmes (interpreted as supporting adaptive management) is also evident in several of the key principles and aims of these acts.

Table 1

Table 2 illustrates the extent to which the key principles and aims of the different acts support the key paradigms of multi-use MSP. From the assessment the Biodiversity, ICM and Municipal Systems acts show the strongest alignment with the underpinning paradigms. So, while currently these acts do not explicitly refer to the term 'multi-use MSP' as a process, the building blocks to potentially embed this process in these acts exist.

Table 2

In the following section the opportunities for practically embedding a statutory mechanism for multi-use MSP within South Africa's existing legal regime are explored further.

7. Opportunities for multi-use MSP in South Africa

The ICM Act is viewed as the most suitable legal route to embed a statutory mechanism for multi-use MSP in South Africa. While both the ICM Act and Biodiversity Act have all the key building blocks to potentially support multi-use MSP (Table 2), the ICM Act has the coastal marine environment as its focus. The Municipal Systems Act, however, holds potential for supporting multi-use MSP at local (municipal) level.

The concept of *coastal planning schemes* in the ICM Act appears synonymous with the concept of *spatial zoning schemes* referred to in multi-use MSP literature [e.g. 20]. Further the ICM Act views coastal planning schemes as a means of facilitating the attainment of objectives within coastal management programmes. Similarly, the literature views multi-use MSP as a rational way to establish use of coastal space and interactions between uses to balance demands and to achieve environmental, social and economic objectives [e.g. 12]. Therefore the so-called ‘missing link’ in establishing multi-use MSP as a recognised process under the ICM Act resides mostly in terminology – a similar concept but with different names [22]. Thus, better alignment with multi-use MSP could be achieved, for example, by issuing regulations or guidelines under the ICM Act, explaining differences in terminologies and drawing on international learning to establish best practice [e.g. 2].

A specific place-based issue within the South African context relate to the incorporation of *existing national spatial planning processes*. Biodiversity spatial planning processes are currently being developed for South Africa under the Biodiversity Act [38], including plans for the coastal marine environment. In biodiversity planning the spatial configuration of use areas is often space bound, and frequently unique. Similarly, planning and spatial configuration of ecosystem services linked to the fisheries sector as determined under the Marine Living Resources Act [50] is typically space bound, for example the nursery areas of specific fisheries. To protect important fisheries this act allows for the demarcation of marine protected areas. Biodiversity and fisheries planning thus may dictate non-negotiable *no-go* or *limited access* zones within the coastal space and are therefore especially critical considerations in the country’s multi-use MSP process. A nested approach could be applied where nodes of detailed local coastal (or estuary) spatial planning schemes, designed for intensely socially and economically used inshore areas, are developed within the bounds of larger spatial planning schemes developed at national and regional scales. Typical aspects incorporated at the larger scales would include biodiversity protection, fisheries, navigation routes, and exploration and exploitation zones. A useful approach for regional and national marine spatial planning is that adopted by the Dutch for the North Sea [21]: In order to foster sustainable use while simultaneously providing scope for other private (and public) sector development initiatives, they defined designated ‘use zones’ only where necessary (e.g. shipping routes and marine protected areas) and allowed considerable freedom for other develop initiatives (e.g. at local level) but within certain constraints [21].

Further, similar to many other countries South Africa has *well-established land-based spatial planning processes*. An example is the local IDP process mandated under the Municipal Systems Act [48]. Smith et al. [14] elude the importance of integrating land and marine spatial planning and the need to facilitate such integration at the strategic planning stages. The ICM Act provides for coastal management programmes to be incorporated in these local planning processes. Thus, the

incorporation of multi-use MSP into municipal IDPs provides a wise route to facilitate integration between land and marine planning at local level [48].

Boyes et al. [20] argue that a statutory mechanism for multi-use MSP must be housed in an appropriate agency or department. In South Africa, the department responsible for the environment is viewed as the most suitable agency. The department is the appointed custodian of the coastal marine environment, and also responsible for the implementation of the ICM Act and other relevant environmental legislation, such as the NEMA and the Biodiversity Act. Specifically, the ICM Act requires the establishment of a national coastal committee, as well as provincial coastal committees [47]. However, suitability of the national and provincial coastal committees as a house for multi-use MSP will depend on whether the department views these as enabling institutions to facilitate cross-sectoral cooperative governance in the coastal marine environment or whether these will be tasked only to integrate management of activities explicitly mandated under the ICM Act. While the department responsible for the environment is possibly best suited as lead agency for multi-use MSP at national and provincial levels it may, however, be more practical to delegate the statutory mechanisms for local multi-use MSP processes to local government agencies (or municipalities) and to link these to the IDP process. Again the ICM Act provides opportunity, allowing for the establishment of municipal coastal committees that could link into local land-use planning institutions [47]. In all of the above, the political will to deploy and dedicate duties and resources to effectively plan, implement and enforce multi-use MSP, however, remains critical. A step in the right direction may be the national's government recognition - in its Programme of Action for the Environment - that fragmented spatial planning and spatial development decisions are a key threat towards meeting the environmental rights promulgated under the Constitution [51].

8. Conclusions

While multi-use MSP has not been explicitly adopted as a process within South Africa's broader ICM implementation, this paper demonstrates that existing legislation is supportive of this process. Reflecting on South Africa's legal framework, the ICM Act is viewed as the most suitable legal route to embed a statutory mechanism for multi-use MSP in the coastal marine environment, provided that strong links are established with other spatial planning processes (for example conservation, fisheries and land-based spatial planning). The suitability of the ICM Act, however, depends on whether the government views this Act as enabling legislation to achieve co-operative, integrated coastal management, or whether it chooses only to integrate management of activities explicitly mandated under the Act. A nested approach is proposed where nodes of local coastal (or estuary) spatial planning schemes, designed for intensely used inshore areas, are developed within bounds of larger spatial planning schemes covering broader jurisdictions at national and regional scales.

The department responsible for the environment is viewed best suited as lead agency for multi-use MSP at national and provincial levels, but delegating responsibility of local multi-use MSP to local government agencies. The political will to deploy and dedicate duties and resources to effectively planning, implementation and enforcement multi-use MSP, however, remains critical.

Finally, the approach adopted here is proposed as a means to assess the compatibility of other national legal regimes for multi-use MSP although the suite of characteristic determinants or key paradigms may need to be reviewed from time to time, as new learning emerges from practice.

Table 1. Summary of key principles and aims of national legislation pertaining to coastal management (corresponding paradigm/s are indicated in brackets)

LEGISLATION	KEY PRINCIPLES AND AIMS
Constitution of South Africa [36]	<p>Focussing on aspects related to environmental governance, the following are key principles apply:</p> <ul style="list-style-type: none"> • Right to an environment that is not harmful to the health or well-being and protected for the benefit of present and future generations (ecosystem-based management) • Reasonable legislative and other measures that prevent pollution and ecological degradation, promote conservation and secure ecologically sustainable development and use of natural resources while promoting justifiable economic and social development (ecosystem-based management) • Co-operative government between all spheres of government and organs of state that are effective, transparent, accountable and coherent (participatory rational-decision-making; effective cooperative governance)
NEMA [37]	<p>The primary focus of this act is to enable co-operative environmental governance in accordance with various key principles, including:</p> <ul style="list-style-type: none"> • Development must be socially, environmentally and economically sustainable (ecosystem-based management) • Integrated management that acknowledges that all elements of environment are linked and interrelated and must take into account the effects of decisions on the environment and all people in the environment (ecosystem-based management) • Participation of all interested and affected parties in environmental governance (participatory rational-decision-making; effective cooperative governance) • Decisions must take into account the interests, needs and values of all interested and affected parties (ecosystem-based management; participatory rational-decision-making) • All forms of knowledge must be recognised, including traditional and general knowledge (participatory rational-decision-making) • Social, economic and environmental impacts of activities must be assessed and considered in decision-making (ecosystem-based management) • Decisions must be taken in an open and transparent manner with access to information in accordance with the law (participatory rational-decision-making) • Intergovernmental co-ordination and harmonisation of policies, legislation and actions relating to the environment (effective cooperative governance) <p>The act requires the national department executing functions which may affect the environment, and every province to prepare environmental implementation and management plans subject to regular review (adaptive management).</p>
Biodiversity Act [38]	<p>The act declares the State as custodian of biological diversity and commits to respect, protect, promote and fulfil the constitutional rights of its citizens guided by NEMA and its principles of ecosystem-based management, participatory rational-decision-making and cooperative governance focusing on biodiversity. Specific objectives include:</p> <ul style="list-style-type: none"> • Use of indigenous biological resources in a sustainable manner (ecosystem-based management) • Fair and equitable sharing among stakeholders of benefits arising from bioprospecting involving indigenous biological resources (ecosystem-based management; participatory rational-decision-making). <p>Specifically the act requires:</p> <ul style="list-style-type: none"> • Setting of norms and standards for biodiversity management and conservation (objective-based management) • A national biodiversity framework providing for an integrated, co-ordinated and uniform approach to biodiversity management by organs of state in all spheres of government, nongovernmental organisations, the private sector, local communities and the public (ecosystem-based management; participatory rational-decision-making; effective cooperative governance)

LEGISLATION	KEY PRINCIPLES AND AIMS
	<ul style="list-style-type: none"> • Cooperative governance in biodiversity protection and use (effective cooperative governance) • Identification of priority conservation and protected areas (spatial planning) • Indicators to measure compliance and regular review (adaptive management).
ICM Act [47]	<p>This act also functions within the framework of NEMA and its principles of ecosystem-based management, participatory rational-decision-making and cooperative governance, specifically focussing on the coastal zone (or coastal marine environment). It requires the development and implementation of national, provincial and municipal coastal management programmes that are hierarchically aligned and reviewed every five years (adaptive management).</p> <p>General requirements for coastal management programmes include a vision and coastal management objectives, priorities and strategies to achieve the coastal management objectives and performance indicators to measure progress (objectives-based management).</p> <p>Also, the act allows for the establishment of “coastal planning schemes” to facilitate the attainment of coastal management objectives by defining areas within the coastal zone or coastal management area which may be used exclusively or mainly for specified purposes or activities, not be used for specified purposes or activities or prohibiting or restricting activities or uses of areas that do not comply with the rules of the scheme (spatial planning).</p> <p>At provincial and municipal level coastal management programmes may be incorporated into existing land-use development or integrated development plans (spatial planning).</p>
Municipal Systems Act [48]	<p>This act governs local planning and development. With specific reference to local, strategic development planning, the act requires planning that gives effect to the principles of the Constitution, reflecting participatory rational decision-making and effective cooperative governance.</p> <p>Strategic integrated development plans must address, amongst other aspects:</p> <ul style="list-style-type: none"> • Vision for long term development (objectives-based management) • Priorities, objectives and strategies aligned with any binding national or provincial sectoral plans and planning requirements (effective cooperative governance) • A spatial development framework (spatial planning) • Key performance indicators and performance targets (objectives-based management). <p>Regular reviewing of integrated plans is also an explicit requirement of the act (adaptive management).</p>
National Water Act [49]	<p>This act governs the country’s freshwater resources, including estuaries. Fundamental principles include:</p> <ul style="list-style-type: none"> • Sustainability and equity in the protection, use, development, conservation, management and control of water resources (ecosystem-based management) • Sharing of some water resources with other countries (effective cooperative governance) • Promotion of social and economic development through the use of water (ecosystem-based management) • Establishment of suitable institutions (effective cooperative governance). <p>In term of water resources protection, the act requires the development of a classification system whereby water resources are allocated a class and resource quality objectives, seeking a balance between protection and sustainable use of the resource and the need for development and use the resource. Once the class of a water resource and the resource quality objectives have been determined these are binding on all authorities and institutions when exercising any power or performing any duty under this act (objective-based management).</p>

Table 2. Comparison between different legislations and the key paradigms underpinning multi-use MSP

LEGISLATION	KEY PARADIGMS					
	Spatial planning	Objectives-based management	Ecosystem-based management	Adaptive management	Participatory rational-decision-making	Cooperative environmental governance
Constitution [36]			●		●	●
NEMA [37]			●	●	●	●
Biodiversity Act [38]	●	●	●	●	●	●
ICM Act [47]	●	●	●	●	●	●
Municipal Systems Act [48]	●	●		●	●	●
National Water Act [49]		●	●			●

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