Issue 14 showcases voices of experience in marine conservation offering lessons learnt and best practices from various marine conservation settings in the Western Indian Ocean.

East Africa's first Blue Park: Kisite Mpunguti Marine Park awarded Gold Level Blue Park status!
<table>
<thead>
<tr>
<th>Page</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>EDITORIAL</td>
<td>By Claire Ward</td>
</tr>
<tr>
<td>6</td>
<td>EAST AFRICA’S FIRST BLUE PARK: KISITE-MPUNGUTI MARINE PARK AND RESERVE</td>
<td>By Paul Wambi</td>
</tr>
<tr>
<td>10</td>
<td>MIXING THINGS UP IN BETTYS BAY.</td>
<td>By Pierre de Villiers and Marienne de Villiers</td>
</tr>
<tr>
<td>14</td>
<td>CONSERVATION WITH COASTAL COMMUNITIES</td>
<td>By Lorna Slade</td>
</tr>
<tr>
<td>18</td>
<td>MANGROVE RESTORATION IN MAFIA ISLAND MARINE PARK</td>
<td>By Maria Pentzel</td>
</tr>
<tr>
<td>20</td>
<td>RESTORING CORALS IN RODRIGUES. WORKING WITH THE TOURISM INDUSTRY.</td>
<td>By Anielle Espiegle</td>
</tr>
<tr>
<td>24</td>
<td>DESIGNING AND IMPLEMENTING AN EXPANDED MARINE PROTECTED AREA NETWORK IN SOUTH AFRICA</td>
<td>By Kerry Sink</td>
</tr>
<tr>
<td>28</td>
<td>WHERE GIANTS ROAM.</td>
<td>By Marcos AM Pereira</td>
</tr>
<tr>
<td>32</td>
<td>A NEW ORGANIZATION IS STEERING SEYCHELLES’ MARINE NATIONAL PARKS</td>
<td>By Allen Cedras</td>
</tr>
<tr>
<td>36</td>
<td>PARTNERSHIPS FOR IMPROVED OCEAN PROTECTION. THE WILD OCEANS JOURNEY.</td>
<td>By Jean Harris and Lauren van Hijkerk</td>
</tr>
<tr>
<td>40</td>
<td>CHILDREN AS AMBASSADORS FOR CORAL REEF PROTECTION.</td>
<td>By Pascale Chabanet and Karine Pothin</td>
</tr>
<tr>
<td>44</td>
<td>GIVING HAWKBILL TURTLES A FIGHTING CHANCE</td>
<td>By Nirmal Shah and Liz Mwambu</td>
</tr>
<tr>
<td>48</td>
<td>CROSS-BORDER COLLABORATION FOR CONSERVATION AND DEVELOPMENT.</td>
<td>By Milali Machumu and Arthur Tuda</td>
</tr>
<tr>
<td>52</td>
<td>CO-MANAGEMENT IS AT THE HEART OF RODRIGUES’ SOUTHEAST MARINE PROTECTED AREA</td>
<td>By Jean Rex Pierre Louis</td>
</tr>
<tr>
<td>58</td>
<td>RESOLVING CONFLICT OVER NATURAL RESOURCES.</td>
<td>Q&amp;A with Housseni Houssayzyn</td>
</tr>
<tr>
<td>60</td>
<td>KNOWING THE DIFFERENCE BETWEEN POLICIES, REGULATIONS AND ACTS.</td>
<td>By Tamara Christen</td>
</tr>
</tbody>
</table>
**Creative and inspiring work is taking place**

**I BY CLAIRE WARD**

In September, I had the wonderful opportunity to dive at Sodwana Bay which forms part of the iSimangaliso Marine Protected Area in South Africa.

The weather was Septemberish – very blustery and a little grey – but on the reefs at 18 m, the abundance and bustle of spring was very much in evidence. At one point on the dive we were engulfed in a cloud of sea goldies, while a very large tomato rock cod looked on, aloof and unimpressed. I remember thinking at the time how alive the reef was, and how lucky I was to be part of that life, just for a moment.

As I completed editing the varied and intriguing articles featured in this edition of the WIOMSA Magazine – People and the Environment, I felt myself lucky once again; this time to be working, even tangentially, with the people who are occupied with ensuring that the marine protected areas of the western Indian Ocean preserve the marine life I was so privileged to witness and enjoy at Sodwana Bay. For instance, in the Cousin Island Special Reserve in Seychelles, a record 1,621 critically endangered hawksbill turtles emerged during the 2020/21 breeding season to nest on the beaches of the island. Remarkably, this number is up from 23 turtles recorded on the same island in 1972, principally because of the protection the Special Reserve has afforded nesting turtles since 1974. Today, tourists are allowed limited access to the spectacle of the nesting turtles, providing conservationists with an ideal opportunity to raise awareness about the dire status of hawksbill and other types of marine turtles which are classified as “vulnerable”, “endangered” or “critically endangered” on the Red List of the International Union for Conservation of Nature.

Very far south of Cousin Island, the South east marine Protected area of Rodrigues, where conservationists are working with tour operators to restore coral reefs. Some technical articles on the role of policies, regulations and laws in environmental protection; the role of conflict resolution in environmental management; and the importance of educational, environmental education, are included in the mix. Collectively, this issue provides the reader with unique insight into the creative and inspiring work that is taking place in the marine protected areas of the western Indian Ocean. Dive in!
“This award only serves as motivation for us to work even harder to make Kisite-Mpunguti a sustainable MPA that benefits both nature and humanity.” Lilian Ajuga, Assistant Director, Coast Conservation Area, Kenya Wildlife Service.

The Blue Park Award recognizes outstanding efforts by nations, MPA managers, and local community members to effectively protect marine ecosystems now and into the future.

“The award elevates these astonishing places and their vibrant marine life.

It is also intended to motivate other nations to strive for strong and effective MPAs that conserve marine wildlife. Blue Park Awards support international progress towards the Convention on Biological Diversity Aichi Target 11, UN Sustainable Development Goal 14, and the longer term goal of protecting 30% of the ocean by 2030.

“We are excited to see new Blue Park designations accelerating the protection of the most important places in our oceans. It is the first Blue Park award in Kenya which has a coastal area that supports so much important marine biodiversity.” Dr. Lance Morgan, President of Marine Conservation Institute.

Kisite-Mpunguti is a perfect example of an important and richly biodiverse place to protect while at the same time providing local communities with food.
The Kisite-Mpunguti MPA, now 43 years old, protects several of the region’s distinctive ecosystems: mangroves, seagrass meadows, and coral reefs. This diverse area shelters a rich biodiversity of marine mammals, fish, seabirds, and sea turtles (five vulnerable, endangered, and critically endangered sea turtle species forage and breed in the park). Kisite Island is recognized as an Important Bird Area by the Birdlife International because it provides an important, remote breeding area. It is also an important marine mammal area. Among the marine mammal species found in these waters are dugongs, whale sharks, sperm whales—all considered vulnerable or endangered species. Kisite Marine National Park is also home to huge number of dolphins with 5 different species found here.

Another unique attraction of the park is the coconut crabs which are the largest land anthropods and are endemic to the twin Islands of Mpunguti.

We hope that Kisite-Mpunguti becomes an MPA that others in East Africa are modeled after as it truly protects this unique place.*

Dr. Sarah Hameed, Senior Scientist and Director of the Blue Parks Initiative

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Community outreach

Community outreach is also an important part of the KWS’s role in the management of the Kisite-Mpunguti MPA, with the organization collaborating with more than 15 beach management units on Kenya’s south coast to raise marine environmental awareness, promote responsible natural resource management, and assist in the establishment of community-managed marine areas.

The Kisite-Mpunguti has largely restored the natural function of its marine ecosystem through the use of a holistic strategic adaptive management approach that takes into account the complex interactions between the various elements of the marine ecosystem. As a result, we have a magnificent marine environment that captivates our tourists while also empowering our MPA management model, which promotes conservation, sustainable tourism, and community engagement.

WIOMSA and Kenya Wildlife Service have produced a video to mark the Blue Park Award announcement. View it here: https://youtu.be/ZDukplfe5To

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*Dr. Sarah Hameed, Senior Scientist and Director of the Blue Parks Initiative
In the centre of this mixing zone is the Betty’s Bay Marine Protected Area (MPA), declared in 1973. CapeNature is responsible for coastal and marine conservation in the Western Cape and thus also for the management of the MPA, which is situated within the Kogelberg Biosphere Reserve. Covering over 100 000 ha, the biosphere reserve stretches from mountains to sea and is recognized by UNESCO for its exceptional biodiversity in the Fynbos and marine biomes. The MPA lies adjacent to the coastal town of Betty’s Bay, and the ocean and its resources form a critical component of the livelihoods of many of the people living in this town, as well as the adjacent towns of Rooiels, Pringle Bay and Kleinmond. The four towns fall into what is known as the “terrestrial zone of influence”, since human activities there impact the MPA.

Below: The Betty’s Bay MPA (light blue) is situated in the Kogelberg Biosphere Reserve adjacent to Betty’s Bay. While relatively small, the MPA is characterised by great habitat and species diversity. Other towns in the zone of influence are Rooiels, Pringle Bay and Kleinmond.

CapeNature, like many conservation organizations, has limited resources and is limited in what it can accomplish in terms of MPA management. A small core CapeNature team is based at Stony Point in Betty’s Bay and forms the nucleus upon which partnerships are developed. The establishment and implementation of the Kogelberg Biosphere Marine Working Group (KBmWG) has been central to the successful development of an effective partnership mix. The aims of the working group were to facilitate communication between stakeholders and to identify monitoring and management gaps that could be addressed through dedicated partnerships. First, the working group identified stakeholders and potential partnerships. Then all stakeholders were included in the planning and implementation of projects in an inclusive and transparent manner. Through regular meetings, communication channels were kept open and project momentum was maintained.

Partnerships are therefore critical to ensure sustained monitoring, management and education programmes.
Long-term monitoring is critical for understanding the impact of management regimes on MPA objectives, namely the conservation of priority species and habitats.

To this end, a valuable partnership was formed between CapeNature, the KBMWG, the Worldwide Fund for Nature (WWF-SA), Moving Sushi and the South African Shark Conservancy (SASC) and local fishers.

One of the objectives of the Betty’s Bay MPA Management Plan is to conserve commercially important fish species. Baited remote underwater video (BRUV) was identified as a technique for monitoring these species.

In addition to developing and implementing BRUV methods, local fishers were also trained to deploy the BRUV rigs. This had never before been attempted and initially came in for criticism. For example, the concern was raised that some fishers involved in monitoring might be poachers.

The rebuttal was that a poacher will not remain a poacher if he/she is a part of conservation actions and made aware of the role these actions play in sustainable fisheries management. The SASC played a vital part in the BRUV project, ensuring scientific rigour in all monitoring and reporting processes. The project was successfully implemented in 2017 and 2018, and summer sampling with local fishers also took place in April 2021.

The BRUV project was successful on many levels, not only for collection of long-term monitoring data but also in terms of community participation, education and awareness raising.

Enforcement operations targeted the illegal harvesting of abalone and west coast rock lobster. These high-value species create instant wealth for poachers and the money generated is used to support other illegal activities in the Betty’s Bay area and in South Africa as a whole. Poaching of these species goes hand-in-hand with gangster syndicate operations, drug trade and human trafficking, and local conservation officials cannot address this level of organized crime on their own. MPA law enforcement was therefore included in provincial and national joint operations such as those of Operation Phakisa and the South African Defence Force. CapeNature officials served on all planning and implementation platforms.

Because of these partnerships, enforcement in and around the MPA has improved considerably and is having a major positive impact on marine conservation and human wellbeing.

In conclusion, the declaration of new MPAs along the South African coast has been critical for achieving the Convention on Biological Diversity’s target to protect 10 percent of the world’s marine areas by 2020. Effective monitoring and management of these MPAs now relies on government funding and a mix of strategic partnerships.
Conservation with coastal communities in the Pemba Channel

The octopus closure is in effect a community bank!

The octopus closure is in effect a community bank!

It is Sunday 28 March 2021 and I am looking for Halima Ali* on Fundo Island in the northwest of Pemba Island. For Halima, the date is immaterial, but the fact that it is the thirteenth day of the lunar month of Sha’ban helps me to know exactly where to find her!

Many coastal people in Tanzania depend on the sea to earn a living. For Halima, the thirteenth day of Sha’ban is the third day of the spring tide and this means she will be out fishing on foot on the reef flats between 9 am and 1 pm, when the tide starts to come in.

Her brother Bakari can start fishing earlier because he fishes in deeper water using a mask and snorkel and he doesn’t need to wait for the lowest tides which occur during the eight-day spring tide period or “bamvua”.

Halima and many others were bound to go out harvesting the bounty that a closure brings. The four reefs were chosen by Fundo fishers because they are good feeding and breeding grounds for octopus (see the map).

The closures generate quick returns because of the life cycle of the octopus. Octopus (in this case the Day Octopus octopus cyanea) grow very rapidly, doubling in size in just six weeks. Both males and females die after breeding and only live for 18 months. Fishers are well aware of this and the closure of the octopus fishery is a traditional practice in some areas. In the past, the octopus fishery would be closed for two months leading up to religious festivals. This was managed by the village elders but the practice ceased some 30 years ago. Its revival in Zanzibar and northern mainland Tanzania has been undertaken over the past seven years by the MWAMBAO Coastal Community Network in collaboration with government fisheries departments and with the support of partners such as Smartfish, Fauna and Flora International, Indian Ocean Commission, Blue Ventures and others.

This year the thirteenth day of Sha’ban was especially exciting in Fundo Island because it marked the opening of the reefs that had been closed for the previous three months.

In a period of just six months, a community fisheries committee can gain the confidence and ability to implement an octopus closure and earn revenue to help cover its costs at the same time. Few other fisheries offer this unique opportunity.

Working with interested communities, MWAMBAO spends two months building up the confidence of the committee to plan the closure, including drafting by-laws, carrying out patrols (often on foot) and managing their finances.

Once the reef area that is to be closed has been agreed, local “catch recorders” are trained to measure a sample of the daily octopus harvest. This commences at least one month before the closure begins and continues throughout the closure and during opening times.

While the closure is in place, MWAMBAO works with the committee to map the market chain and contact buyers and neighbours to support the closure.

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*Not her real name
People and the Environment

Halima caught three octopus on 28 March 2021. Her catch amounted to 2.3 kg and was worth about USD 5. Bakari caught four octopus weighing on average 1.8 kg per individual, with a total value of USD 14.

The average octopus brought to Fundo landing sites in normal times is just 550g; an octopus of 1.8 kg is over three times the average individual size, a size at which most males and females are of breeding size, enhancing the recovery of the octopus fishery.

Closures drastically increase the catch

This was Fundo’s thirteenth closure. The practice of closing the octopus fishery began in September 2017, with the fishery opening for just a few days before closing again.

The committee adds a small levy (about 25c) on each kilogram sold at opening time. Part of this fee goes to cover the cost of patrols and another portion is contributed to community development initiatives. The octopus closure is in effect a community ban! Fundo Fisheries Committee began keeping financial records in November 2017 and since then has earned a total revenue of USD 5,256 USD (including USD 607 from fines). Sharing the revenue with the Development Committee in Fundo, funds have contributed towards the nursery school and Madrasa school.

MWAMBAO is currently introducing a community eco-credit scheme known as the “MIKUBA” fund to Fundo Island to further incentivize compliance with sustainable marine management. Five groups of 30 fishermen are granted a total amount of USD 4,500 from which they can take loans of USD 60 on a rotating basis. Training on setting up a business helps beneficiaries to use the loans to establish and run small enterprises such as seaweed farming, for instance. MWAMBAO has introduced this scheme to four communities in Zanzibar so far and plans to extend it to others.

Collaboration is crucial

A successful start with managing the octopus fishery paves the way for wider marine resource management planning of Fundo’s fishing grounds.

It also helps in coordinating with other neighbouring communities to support each other’s management initiatives (the joint areas are known as “collaborative fishery management areas”). This collaboration is crucial because fishers are highly mobile, migrating and setting up temporary camps depending on the moon, season and the direction of the monsoon winds.

In addition, Fundo itself forms part of the Pemba Channel Conservation Area which covers the entire western coast of Pemba, an area of 1,100 km² with high coral and associated species’ diversity, as well as being a hotspot for cetaceans. Its marine resources are vital for artisanal fishing, supporting livelihoods and food security for 191,588 people in 34 coastal communities. Each community that engages in sustainably managing their fishing grounds helps to build the integrity and efficient operation of the Marine Conservation Area.

Halima is also a seaweed farmer – in October she plans to take her first eco-loan to buy ropes and ties for her farm. She is a member of the Fundo Fisheries Committee and has her say on decisions that are made. She says: “we need to look after the sea; everyone” and she notes that there are challenges:

We only fish to our knees – men fish first in the deeper water. They do not follow the protocol of waiting to all fish at the same time at the opening” Halima believes the committee needs to be stronger and control the poachers who are coming from other villages.

The Fundo fisher committee recognizes that through their implementation of reef closures, the octopus population started to be restored within a short period, illegal fishing was reduced and the price of octopus increased. COVID-19 impacted both the market and the price of both, but slowly there are signs of recovery.

MWAMBAO believes a community-based approach to marine conservation is a crucial part of effective marine management. People’s needs are real and it is critical to involve and empower them in planning and management. It is only in this way that the pieces can be put in place to build successful and sustainable marine conservation areas.

Temporary reef closures do not work for all species or habitats; they are only part of the solution, but they represent an important start.

Average total catch per day (kg) Ndooni landing site, Fundo Island Pemba 2017-2021

The impact of reef closures on octopus weight on Fundo Island, Pemba 2018 - 2021 (n=93,843 individuals)

Since September 2017, 93,843 octopus have been weighed and measured, totalling 51.6 metric tonnes (an average of 12.6 tonnes per year). The closures drastically increase the average daily catch (see chart) as well as catch per fisher.

Photo above: On average, caught octopus only weigh 550g - too small to breed. © Lorna Slade, Mwambao

Photo below: Temporary reef closure areas for octopus on Fundo Island © Mwambao

MWAMBAO currently works with 33 different fishing communities in Zanzibar and Tanga region in Zanzibar it operates as MCCU. It was established in 2010 and its work is guided by the Food and Agriculture Organization of the United Nations’ Voluntary Guidelines for Securing Sustainable Small-scale Fisheries. MWAMBAO also engages in community-led in-water biodiversity monitoring, fishing gear trials, reef restoration using “reefballs”, mangrove restoration, establishing participatory marketing systems, as well as running a Tanzanian knowledge and advocacy network for coastal communities.

For more information: www.mwambao.or.tz.
Mangrove restoration
in Mafia Island Marine Park

In the 1980s, the villagers of Mafia district, in the Pwani region of Tanzania, had a desire to establish a marine protected area (MPA) in their waters. This led to the establishment of the first Marine Park in Tanzania – the Mafia Island Marine Park – in 1995.

Some of the park’s main attractions for visitors are healthy coral reefs with high biodiversity, offering good diving sites; the occurrence of whale sharks and marine mammals such as humpback whales; and bird and sea turtle nesting sites.

All the nine mangrove species found in Tanzania are present in the Mafia Island Marine Park, namely Sonneratia alba, Bruguiera gymnorrhiza, Avicennia marina, Rhizophora mucronata, Xylocarpus granatum, Ceriops tagal, Heritiera littoralis, Lumnitzera censosa and Pemphis acidula. There is a sustainable level of subsistence mangrove harvesting by resident communities for boat-building and repair and the construction of houses. Dead mangrove branches are collected for firewood and the leaves, fruits, and bark are used for medicine and dyes.

Around 240 mangroves (most are Rhizophora mucronata, supplemented by Avicennia marina and Bruguiera gymnorrhiza) have been planted by staff of the Mafia Island Marine Park, working with members of the local community (beach boys) along Utende beach near the Park’s office.

The activity started in June 2021 and will continue until the selected areas are well restored. This activity goes hand in hand with awareness creation among fisherfolk, including handline fishers who have been educated and discouraged from digging for worm bait in mangrove areas because this destroys mangrove root systems, leading to the death of the trees.

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The introduction of alternative bait sources, such as earthworm farming and the use of first catch or fish offal, should also be promoted so that Mafia Island continues to maintain its high biodiversity, fisheries productivity, beach stability and impressive beauty for eco-tourism.
Rodrigues, an organization working quarters of the 23 sites surveyed, surveys found that at over three-environment through education, People for the protection, preservation the 23 sites surveyed by shoals average of just 15 percent live three-quarters of the coral at and the envIronment through education, Training and research. Coral resilience is created by resistant coral colonies. this is achieved reef as well as to protect and sustain resistant coral colonies. This is achieved through sensitization, education and research. Coral resilience is created by transplanting resistant coral colonies from a healthy donor site to degraded sites.

What is being done?

In the years following the 2016 event, the coral reefs of Rodrigues have not been able to regenerate because of additional pressures such as overfishing, destructive practices and land-based pollution.

In 2012, Shoals Rodrigues and other organizations started a community-based coral rehabilitation project whereby more than 3,000 coral nubbins were planted in the north of Rodrigues to attempt to rehabilitate areas of reef degraded by octopus fishing. Initial funding was provided by Oak Society and Duke University in the United States of America, and Shoals Rodrigues was awarded a second round of funding (2018 to 2021) to initiate a larger scale community-based coral restoration and monitoring programme to address more recent damage caused by coral bleaching. These projects aimed to restore degraded areas of reef as well as to protect and sustain resistant coral colonies. This is achieved through sensitization, education and research. Coral resilience is created by transplanting resistant coral colonies from a healthy donor site to degraded sites.

Surveys found that at over three-quarters of the 23 sites surveyed, more than half the corals had died. Overall, an average of three-quarters of the coral at each site had died. There was an average of just 15 percent live coral cover remaining across the 23 sites surveyed by Shoals Rodrigues, an organization working for the protection, preservation and promotion of the marine environment through education, training and research.

The Tourism Alternative Livelihood Project recognized the work previously conducted by Shoals Rodrigues and provided a great opportunity for the organization to further the recovery of coral reefs in Rodrigues. The team from the South East Marine Protected Area (SEMPA) collaborated with Shoals Rodrigues and more than 14 people participated in the initiative, including various tourism companies such as Osmowings Kite Center, Nite Kite Surfing Center, Bouba Diving Center and Eco-Fusion Diving Center, Nest Kitesurfing, La Collinère, Cyril Faure and Hedley Marcel Vurdapanakan, a tour operator.

The project aimed to provide an alternative income for tour operators whose businesses had been impacted by the pandemic and the shut-down of international travel.

In 2020, at the peak of the COVID-19 pandemic, the Commission for Tourism of the Rodrigues Regional Assembly introduced the Tourism Alternative Livelihood Project.

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The scheme was reactivated in May 2021 and coral restoration was initiated in June. All restoration sites were surveyed to assess the survival rate. By 10 September 2021, more than 16,000 corals nubbins had been transplanted to over 22 sites both in the north and south (within SEMPA) of Rodrigues.

The Tourism Alternative Livelihood Project, mainly because he had no income during the travel restrictions relating to COVID-19, but also because he has personally experienced the bleaching of corals over 25 years in Rodrigues. He was the dive leader for the southern region. His role was to support and guide Shoals Rodrigues during the planning of dives and dive expeditions. He found the experience to be very positive and is now well acquainted with the concept of coral restoration and the techniques used. He has also acquired more knowledge of corals. Although the scheme has ended, Benoit looks forward for more collaboration with Shoals Rodrigues and he will be happy to help with other restoration projects and monitoring. Benoit De Baize, 48, lives at Mourouk and has 30 years of experience as a diver. He began diving with his father in Mauritius and later moved to Rodrigues where he got married and established the Bouba Diving Center. He is a dive instructor and the current President of the Rodrigues branch of the Mauritian Scuba Diving Association. Benoit enrolled for the Tourism Alternative Livelihood Project mainly because he had no income during the travel restrictions relating to COVID-19, but also because he has personally experienced the bleaching of corals over 25 years in Rodrigues.

Our heroes

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The first Tourism Alternative Livelihood scheme started on June 2020 and ran until 10 December 2020. Tour operators form a number of companies were trained by Shoals Rodrigues staff in coral restoration techniques such as the use of nails for transplantation, site identification and monitoring.

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What is being done?

In the years following the 2016 event, the coral reefs of Rodrigues have not been able to regenerate because of additional pressures such as overfishing, destructive practices and land-based pollution.

In 2012, Shoals Rodrigues and other organizations started a community-based coral rehabilitation project whereby more than 3,000 coral nubbins were planted in the north of Rodrigues to attempt to rehabilitate areas of reef degraded by octopus fishing. Initial funding was provided by Oak Society and Duke University in the United States of America, and Shoals Rodrigues was awarded a second round of funding (2018 to 2021) to initiate a larger scale community-based coral restoration and monitoring programme to address more recent damage caused by coral bleaching. These projects aimed to restore degraded areas of reef as well as to protect and sustain resistant coral colonies. This is achieved through sensitization, education and research. Coral resilience is created by transplanting resistant coral colonies from a healthy donor site to degraded sites.

On 10 September 2021, more than 16,000 corals nubbins had been transplanted to over 22 sites both in the north and south (within SEMPA) of Rodrigues.

The first Tourism Alternative Livelihood scheme started on June 2020 and ran until 10 December 2020. Tour operators form a number of companies were trained by Shoals Rodrigues staff in coral restoration techniques such as the use of nails for transplantation, site identification and monitoring.

The scheme was reactivated in May 2021 and coral restoration was initiated in June. All restoration sites were surveyed to assess the survival rate. By 10 September 2021, more than 16,000 corals nubbins had been transplanted to over 22 sites both in the north and south (within SEMPA) of Rodrigues.

The Tourism Alternative Livelihood Project, mainly because he had no income during the travel restrictions relating to COVID-19, but also because he has personally experienced the bleaching of corals over 25 years in Rodrigues. He was the dive leader for the southern region. His role was to support and guide Shoals Rodrigues during the planning of dives and dive expeditions. He found the experience to be very positive and is now well acquainted with the concept of coral restoration and the techniques used. He has also acquired more knowledge of corals. Although the scheme has ended, Benoit looks forward for more collaboration with Shoals Rodrigues and he will be happy to help with other restoration projects and monitoring. Benoit De Baize, 48, lives at Mourouk and has 30 years of experience as a diver. He began diving with his father in Mauritius and later moved to Rodrigues where he got married and established the Bouba Diving Center. He is a dive instructor and the current President of the Rodrigues branch of the Mauritian Scuba Diving Association. Benoit enrolled for the Tourism Alternative Livelihood Project mainly because he had no income during the travel restrictions relating to COVID-19, but also because he has personally experienced the bleaching of corals over 25 years in Rodrigues. He was the dive leader for the southern region. His role was to support and guide Shoals Rodrigues during the planning of dives and dive expeditions. He found the experience to be very positive and is now well acquainted with the concept of coral restoration and the techniques used. He has also acquired more knowledge of corals. Although the scheme has ended, Benoit looks forward for more collaboration with Shoals Rodrigues and he will be happy to help with other restoration projects and monitoring. Benoit De Baize, 48, lives at Mourouk and has 30 years of experience as a diver. He began diving with his father in Mauritius and later moved to Rodrigues where he got married and established the Bouba Diving Center. He is a dive instructor and the current President of the Rodrigues branch of the Mauritian Scuba Diving Association. Benoit enrolled for the Tourism Alternative Livelihood Project mainly because he had no income during the travel restrictions relating to COVID-19, but also because he has personally experienced the bleaching of corals over 25 years in Rodrigues.
Over the years the shallow reef and lagoon and its resources have been seriously damaged by overfishing, destructive fishing practices, pollution and coral bleaching.

Rodrigues is the smallest island in the Mascarene Archipelago, a recognized global biodiversity hotspot. The island covers an area of only 108 km², but it is surrounded by a wide lagoon twice its size and encircled by a fringing reef.

The population of Rodrigues is 43,000 and the island is somewhat less developed than Mauritius. The economy is mainly based on fisheries, livestock and agriculture, with almost one third of the labour force employed in these sectors. Although the remote location and isolation of Rodrigues contributes to an unusual and unique marine assemblage, the sustainability of the local societies and economies is under threat from the current population increase and the effects of climate change.

The desire to vary his professional activity and the need to make the restoration, conservation and propagation of coral in Rodrigues sustainable, Jerome created Blue Ocean Project Ltd. In addition to its environmental role of furthering the Tourism Alternative Livelihood Scheme started by Shoals Rodrigues and the Rodrigues Regional Assembly, it is also employing tourist operators such as divers to relieve the tourism sector hurt by the Covid crisis in Rodrigues.

The organization collaborates with the Rodrigues Regional Assembly and the South East Marine Protected Area.

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Shoals Rodrigues was established in 2001 to promote the conservation of Rodrigues’ marine biodiversity and to improve the sustainability of the local fisheries. Shoals Rodrigues replaced the Shoals of Capricorn Programme, a three-year marine research and education initiative run by the Royal Geographical Society and Royal Society in the United Kingdom. The specific objectives of Shoals Rodrigues are to:

- Promote marine environmental awareness amongst all sectors of the community, with a long-term view of ensuring the understanding and sustainable exploitation of marine ecosystems.
- Conduct research to evaluate and monitor the local marine ecosystems and fisheries and to aid the development of resource management strategies.
- Provide training in practical techniques to ensure local people have the capacity to study and monitor their shore, lagoon and reef habitats and populations; and give training to teachers, other educators and trainers to ensure the long-term local sustainability of the aims of the Association.
- Shoals Rodrigues has close to 20 years of experience in designing and implementing projects to address the problems of marine biodiversity loss; supporting conservation and marine resource management, research, education and training and the development of sustainable alternative livelihood initiatives for local stakeholders in Rodrigues, in particular the fisher community.

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Well designed and well-managed MPAs can deliver many benefits to society in terms of managing biodiversity, supporting fisheries and tourism and safeguarding oceans for future generations. However, to establish MPAs requires challenging negotiations for ocean space. This is particularly difficult in developing countries where governments are focused on economic development, job creation and many other social and service delivery priorities. Previous efforts to establish offshore protection in South Africa were thwarted by powerful industry interests, claims of a lack of consultation and uncoordinated planning.

To address the inshore bias in South Africa’s MPA network, a dedicated Offshore MPA project was developed in 2006. Using an approach known as systematic conservation planning and a flexible stakeholder engagement process, focus areas for offshore protection were identified. Systematic conservation planning uses software that draws from many layers of maps (557 in this case) to identify optimal areas to achieve multiple objectives.

South Africa set out to develop a representative (i.e. including all marine ecoregions and ecosystems types) and spatially efficient MPA network that supported both biodiversity and fisheries management objectives with the least impact on ocean industries. Stakeholder engagement is the most important predictor for MPA success and other practitioners have emphasized the need for stakeholder engagement from the outset. South Africa co-developed objectives for the MPA network, held meetings to review input maps and targets, revise planning scenarios and identify key concerns. When the focus areas were identified, changes in government – including the splitting of the previously integrated Marine and Coastal Management branch of the Department of Environmental Affairs into separate departments for environment and fisheries – posed a major implementation challenge.

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In 2014, Operation Phakisa or “Hurry-up”, a presidential oceans economy initiative, provided an opportunity to push the work of the Offshore MPA project into implementation. During the Offshore MPA project, an offshore environment forum was established to maintain stakeholder relationships and facilitate dialogue across all sectors (fisheries, petroleum, mining, shipping, defence, environment and biodiversity). These discussions helped develop cooperative research projects where industry and scientists could collaborate to expand the offshore knowledge base to support spatial planning and decision making. Such cooperative research initiatives are critical in countries with limited access to the deep sea. The use of systematic conservation planning, which deliberately seeks to minimize the “costs” of protection, enabled alignment of protected area expansion with the goals of an ocean economy initiative.

The implementation of the new MPAs took longer that the work to design them and shows the need for long-term coordinated planning involving multiple government departments. Mature stakeholder relationships were a critical ingredient for the challenging negotiations that underpinned the final network. Similarly, strong support from local scientists and international reviewers (in our case through the work to support the identification of ecologically and biologically significant areas) were further key ingredients. In 2016, government published a proposed network covering about 7 percent of ocean area for public comment. Between then and 2018, the Phakisa technical team had to achieve balanced compromises that fairly addressed key concerns across sectors, right holders and stakeholders while maintaining core MPA objectives and the 5 percent area target committed through Operation Phakisa. A dedicated communications campaign, a short film “Mzansi sea” and a website supported efforts. In October 2018, the proposal to gazette 20 new MPAs was presented in Cabinet and the Minister of Finance remarked “South Africa has to do this – this is an investment in South Africa’s future”, reflecting the success of this initiative.

Funders need to ensure that they account for the marathon effort required and practitioners should keep getting ready while being alert for opportunities to link to government priorities, collaborate with industry and keep building the capacity and knowledge base for effective offshore management and protection.

The result of this process is an expanded MPA network that represents 87 percent of South Africa’s 150 marine ecosystem types in just 5.4 percent of ocean area. The declaration of more than 95 percent of the country’s MPA estate in a single step shows that it was indeed a hot moment for MPA establishment, noting the 13 year process underpinning proclamation. South Africa demonstrates that integrated spatial planning, along with an adaptive stakeholder process that is alert to opportunities, can support MPA networks aligned to ocean economy goals. Other countries in the western Indian Ocean wanting to increase ocean protection can draw from this experience in design, engagement and alignment with a developing ocean economy.

South Africa’s key lessons include:

- early and clear communication on MPA benefits
- recognition that stakeholder relationships are equally important to data in the planning process
- accounting for stakeholder complexity in engagement and planning
- the need for strong scientific support
- the value of integrated systematic planning to achieve multiple objectives.

Photo below: The new MPAs also aim to protect important commercial fish species like this knysnapper and associated essential fish habitat which helps meet fisheries eco-certification goals in alignment with ocean economy benefit. The new Port Elizabeth (Oopecal) Corals MPA helps protect cold water corals and part of the area where knysnappers gather to spawn. © ACEP Deep Forests project.

Photo below: South Africa’s expanded MPA network provides the first protection to SI ecosystem types including muddy ecosystem types that support valuable crustacean and sole fisheries. The UlithaULA MPA, the Addo Elephant National Park MPA, the Agulhas Muds and the Benguela Muds MPA all contribute to protection of mud habitats. © ACEP Deep Forests project.

Photo above: New MPAs in South Africa are providing reference areas for marine science and new offshore research opportunities for emerging researchers who are building the knowledge base to understand, map and describe offshore ecosystem types and their associated biodiversity. MSc student Shona Stewart from the ACEP Deep Forests project is studying seapens and benthic epifaunal assemblages from remotely operated vehicle (ROV) footage from multiple MPAs. © ACEP Deep Forests project.
The POMR is the most important nesting site for marine turtles in Mozambique. Around 800 loggerhead and leatherback turtles a year make their nests here. Incredible subtidal reefs with vibrant soft and hard corals, sponges and a plethora of other invertebrates, including endemic sea slugs, well-developed mangroves, seagrass beds, intertidal muddy and sand flats as well as estuaries, make this a fully packed tropical microcosm. Being located in a climatic transition zone affords the area a fantastic admixture of species. More than 1 000 species of fish have been identified in the waters of the POMR. The mighty black and blue marlins, the whale shark, manta rays and several species of sharks (including the great white shark on occasion) all make this their home. Marine mammals abound and common visitors or residents include humpback whales, a small population of the endangered dugong, dolphins (more commonly the bottlenosed, humpback and spinner) and, occasionally orcas. One can even spot elephants (or crocodiles or even hippos) on the beach, as the Maputo Special Reserve (MSR) is located adjacent to the POMR. This really is a place where giants roam!

The Maputo Environmental Protection Area, which was proclaimed in August 2009 after long being recognized as an important area for marine biodiversity. Having completed my studies in these waters, one could say that this MPA is my “stomping ground”. Contrasts in scenery, dynamic seas and multiple ecosystems and habitats make this area a true natural gem.

None of these is closer to my heart than the Ponta do Ouro Partial Marine Reserve (POPMR).

Located on the border with South Africa, it is the southernmost marine protected area (MPA) in Mozambique and covers 678 km² from the high tide mark to 3 NM out to the Indian Ocean and 1 NM into Maputo Bay.

The MPA was proclaimed in August 2009 after long being recognized as an important area for marine biodiversity. Throughout my career I have been fortunate to visit most of the Mozambican coastline. Spanning almost 2 500 km, it is full of interesting and magical spots.

More than 600 000 people benefit directly or indirectly from opportunities arising from the Kosi Bay–Ponta do Ouro Transfrontier Conservation Area.

800 loggerhead and leatherback turtles a year make their nests here.
Given its uniqueness, the POPMR, along with the adjoining MSR was inscribed in the UNESCO World Heritage Site tentative list in 2008. The process for inscription is in full swing and currently public and community consultations are underway to put together the full dossier for submission. This will complement the South African iSimangaliso MPA, a UNESCO World Heritage Site since 1999, and thus ensure the conservation of this wonderful part of the world.

UNESCO World Heritage Site

Spearheading these efforts and leading a team of dedicated rangers is Miguel Gonçalves. A marine biologist by training and a passionate award-winning conservationist, Miguel started off with a team of three rangers and a Land Cruiser vehicle. Vicente Matshimbe heads the law enforcement team and is as passionate as Miguel is – and he has a soft spot for baby turtles! With time the team, the fleet of vehicles and boats, and the challenges have grown, but the commitment and passion to conserve the area remains the same.

In a new development, the Government of Mozambique, through a cabinet decision on 7th December 2021, approved the creation of Maputo National Park. The new park effectively joins Ponto do Ouro Partial Marine Reserve and the Maputo Special Reserve with Miguel Gonçalves retaining the warden position.

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The marine area of the Kosi Bay–Ponta do Ouro TFCa encompasses regionally important nesting grounds for loggerhead and leatherback turtles and some of the most southerly coral communities in Africa. Along with the adjacent terrestrial conservation areas, the area features highly diverse ecosystems (vegetated parabolic dunes, grasslands, floodplains and coastal barrier lakes) with biodiversity and endemism. More than 600 000 people benefit directly or indirectly from opportunities arising from the TFCa, either through involvement in the tourism and associated industries, community-based development projects or sustainable use of natural resources. The establishment and operation of the Kosi Bay–Ponta do Ouro TFCa type of fought-out important lessons and experiences to share in terms of marine and coastal conservation. Several aspects (including political and cultural differences and availability of and access to resources) need to come together and this takes time to materialize. Perhaps one of the most important lessons learned is that such collaboration does not happen overnight.
A new organization is steering Seychelles’ marine national parks

By Allen Cedras and Isabelle Ravina

Main photo: Coral Nursery in Curieuse Marine Park

In January 2021, the President of Seychelles, Mr Wavel Ramkalawan, appointed Mr Allen Cedras as chief executive officer of a new authority – the Seychelles Parks and Gardens Authority (SPGA). This newly formed authority is to manage the protected sites that were previously under the jurisdiction of the Seychelles National Parks Authority (SNPA) and the National Botanical Gardens Foundation. Therefore, the SPGA will continue to manage the marine national parks of Curieuse, Ile Cocos, Port Launay, Baie Ternay, Silhouette and Sainte Anne which now form part of the 30 percent of marine protection areas under the Seychelles Marine Spatial Plan.

Allen Cedras

Cedras has the backing of an expert team consisting of 134 employees working in six marine national parks, one special reserve, two terrestrial parks, and three botanical gardens.

The Seychelles Marine Spatial Plan initiative commenced in 2014 and ended in 2020 and as a result, Seychelles has been able to establish 13 new marine protected areas, spanning an area of more than 1,100 kilometers from the Mahé Plateau to the UNESCO World Heritage Site at the Aldabra Atoll.

When Seychelles became the first country to designate 30% of its exclusive economic zone (EEZ) for marine protection in 2020, the world stood in awe of the remarkable commitment a small island developing state could make, but with this awe came the question: who was going to take up the monumental task of managing an ocean area larger than Germany?

Photo top left: An aerial view of Curieuse Marine Park.
Photo left: Baie Ternay Marine Park.
Impressively, the Seychelles’ Marine Spatial Plan (MSP) is the second-largest area of ocean in the world (after one in Norway) and the first of its kind to be established in the Indian Ocean. The new SPGA is now the largest marine protected area management agency in the country in terms of workforce size. As the main marine conservation agency, it has a huge role to play in the operationalization of the MSP since it now houses the most experience in the field of marine protected area management. The SPGA automatically becomes a key player in the implementation of the country’s MSP.

Chief executive officer Cedras is a former employee of the Seychelles National Parks Authority (SNPA), managing the Inner islands from 2012 to 2018. As such, he has first-hand experience and is very familiar with the operations of the Veuve Reserve, Curieuse and Ile Cocos Marine Parks; and Praslin National Park. With the management of protected areas sharing similar fundamentals of conservation, Cedras is now on a steep learning curve, familiarising himself with management of gardens.

“My plan is to effectively manage marine and terrestrial areas as well as gardens, ensuring sustainable use and protection and to provide better experiences for visitors.”

Cedras says, adding he has an intrepid plan to tackle his new responsibilities:

“I want to put more emphasis on and create new ways of conducting research and monitoring. With my team, I want to ensure that we raise the visibility of SPGA in the media, both locally and internationally. Strengthening collaborations with park stakeholders is extremely important in ensuring effective management of parks and gardens and much effort will be placed there.”

He also believes that participation in education and awareness programmes is extremely important in order to gain the support of the public. SPGA will develop its commercial activities sustainably and will diversify the experiences it offers to tourists.

Management of nature trails is the responsibility of the authority and trails are big attractions in Seychelles. Cedras’ plan is to offer visitors a different trail experience. SPGA will in the near future make available marine trails, which visitors can discover by kayaking or snorkeling.

Rather than being intimidated by the challenges ahead, the new CEO is both excited and confident that he can steer the SPGA to become a model for how protected areas can be financially sustainable. He acknowledges the price tag of conservation but does not consider it to be a limiting factor to creating protection for resources, while obtaining monetary gains.

Cedras has the backing of an expert team consisting of 134 employees working in six marine national parks, one special reserve, two terrestrial parks, and three botanical gardens. The mandates of the two prior authorities combine and cover all aspects associated with protected areas, from research to sustainable forestry practices; eco-tourism to ex-situ plant conservation and protection of biodiversity. A board appointed by the President of Seychelles governs the SPGA.

Perhaps the only disappointment is that Mr Cedras has to be the person who confines his beloved SNPA to the history books, but as a past employee of the organization he has this to say:

“SPGA will improve on the successes and weaknesses of SNPA and turn the challenges into opportunities.”

It seems the answer to the question about who will take on the monumental task of managing Seychelles’ vast marine protected areas is that Seychelles has a plan and there is a remarkable man with a mission aimed dead center at protected areas management.
It is within this context that WILDOCEANS, a programme of the WILDTRUST launched in 2017, has developed and is working alongside several key partners, to increase ocean knowledge, expand protection and improve management effectiveness in South Africa and other parts of the western Indian Ocean.

Impetus has now accelerated, with overwhelming support by IUCN members at the World Conservation Congress for Motion 101 in Marseille this year advocating for area protection targets of between 30 percent and 70 percent. This is ahead of the Conference of the Parties 26 of the Convention on Biological Diversity’s Global Biodiversity Framework, which also outlines “30x30” as part of an ambitious suite of targets for ratification in Kunming early in 2022.

The important but ambitious target has raised concern, particularly in the global south where historical inequality has resulted in indigenous people and local communities being excluded from management decisions, and the challenges with ensuring effective management of marine protected areas (MPAs). However, despite these challenges, many opportunities exist to achieve protection goals within effectively managed areas in ways that are owned by and relevant to the people of Africa.

A youth movement – Youth4MPAs – emerged and was a strong and pervasive force. The Youth4MPAs movement was catalysed by the WILDOCEANS Ocean Stewards initiative – a platform to introduce young scientists to applied marine work – and has a vision of generating awareness about ocean protection. Youth4MPAs has recently received funding from the World Surf League and Pew Environment Group, enabling it to host a successful virtual African Youth Summit (Our Africa, Our Ocean, Our Future) in August 2021 attended by over 500 youth delegates from 18 countries.

With a membership of 437, and growing, Youth4MPAs is now an independent group, but continues to receive some support from WILDOCEANS.
Cameras have yielded novel insights, including the discovery of a previously undocumented >30 km-long dense kelp-bed in the 40 to 60m depth zone.

The follow-up “Ocean IMPAct” campaign now underway is focused on helping South Africa achieve its next 5 percent protection, taking it to 10 percent ocean protection. WILDOCEANS has driven two innovative campaigns in South Africa over the last months: the controversial “We don’t need our oceans” campaign which used shock tactics to demonstrate just how much we do need them and reached over 18 million people in three weeks, and the striking “Listen to the Ocean” campaign which reached over 25 million people in three weeks with an advertisement placed on national television during President Cyril Ramaphosa’s visit to the G7. The advert was directed at the president, with youth carrying the message that South Africa needs to support ambitious targets and increase ocean protection.

Such challenges persist and can undermine the achievement of positive outcomes. They include capacity, knowledge and awareness gaps, tangible benefits not reaching communities and a lack of inclusivity. The WILDOCEANS Oceans Alive Simangaliso MPA Project underway in the Simangaliso Wetland Park World Heritage Site has provided an opportunity to implement interventions at scale on the ground and to initiate a regional case study for improving MPA management effectiveness, while working to deliver sustainable benefits to local communities. The project is funded by the Blue Action Fund and implemented in partnership with Ezemvelo KZN Wildlife and the Simangaliso Park Authority. It is actively working to improve management by providing equipment, training and operational resources, including support for the long-term (>60 years) community loggerhead and leatherback turtle monitoring programme, and to support MPA zonation and planning by generating knowledge of deeper offshore areas and previously unprotected critical habitats for threatened grouper, ray and shark species. Partnering with the South African Institute for Aquatic Biodiversity (SAIAB), surveys of the deeper mesophotic ecosystems are underway for fish (using stereo baited underwater videos) and benthic biodiversity using SAIAB’s remotely operated video (ROV) and drop-cameras. Expanding into the greater western Indian Ocean region, in collaboration with Coastal Oceans Research and Development East Africa, SAIAB, the University of Comoros and local NGOs ADIE and UMAMA, WILDOCEANS has now completed a three-year project funded by the Critical Ecosystems Partnership Fund that was aimed at building knowledge of the mesophotic biodiversity of Comoros.

Building on this work, WILDOCEANS, with the same partners and supported by Oceans5, has just started a new three-year project in Comoros to support the National Parks Agency and to work with the local communities to strengthen ocean protection.

Key insights from the WILDOCEANS short journey so far:

When advocating for ambitious global targets for ocean protection and their achievement within-country, simultaneous local level site interventions and actions are essential tools to anchor approaches and demonstrate the value of ocean protection, and to yield regionally relevant case-studies. Key blocks to increasing ocean protection in the western Indian Ocean region need to be named and confronted, be they rooted in industrial economic interests, capacity and resources, past injustices, or poor management. And lastly, the power of the youth should not be underestimated.

While rapid expansion of ocean protection is clearly needed, WILDOCEANS is mindful of the significant challenges in achieving effective management of MPAs.

Photo left: Listen to the Ocean Campaign © Mqobi Zuma. Photo below: Listen to the Ocean Youth Campaign © WILDOCEANS

Turtle Monitor, Oceans Alive Project. © Casey Pratt
Children as ambassadors for coral reef protection

Environmental education is one of the most essential tools to amaze, sensitize and promote new behaviors among children, the citizens of tomorrow.

The islands of the Indian Ocean have in common an exceptional reef heritage which unfortunately deteriorates under human pressure, resulting in consequent losses of biodiversity. However, these ecosystems are a source of many advantages for local fishing, coastal protection, and the development of leisure and tourism. In the interests of all, coral reefs require enhanced protection and awareness programmes that ensure their continued conservation.

In Reunion Island, the children are involved in the protection and management of the coral reefs through awareness programmes conducted by the French Institute for Sustainable Development (IRD) and the Reserve Marine of Reunion island (RNMRR).

The programmes aim to enhance knowledge of coral reefs and encourage subsequent changes in day to day behavior.

Because of the complexity of coral reefs, scientific knowledge about this ecosystem is difficult to transmit, but innovative environmental education programmes that communicate knowledge in a fun way, using new technologies, networking with stakeholders and concrete conservation actions, can overcome this difficulty.
These two projects have the same purpose – to build a bridge from knowledge to active conservation, with children becoming the ambassadors of coral reef protection.

An “Educational Managed Marine Area” (EMMA) coordinated by the Marine Reserve is a small area within a marine protected area that is managed in a participatory way by primary school students. It is an educational and eco-friendly project to help young people better understand and protect the marine environment. The children become part of a local project that draws on the expertise of the school and local municipality, along with the local communities and non-governmental organizations.

In parallel, IRD held the PAREO project “the reef heritage of the Indian Ocean in our hand” which aims at transmitting the scientific knowledge in a fun and stimulating way through games designed by scientists (e.g. MARECO teaching toolbox) on the one hand, and connecting the children to the coral reef through underwater activities, 360° underwater vision, live diving and artistic creations, on the other.

Within the EMMA project, the children establish a children’s sea council to discuss the actions to be implemented, which can include stakeholders and elected officials; this has proved to be a good way to connect science to decision-making. Through these ecological and cultural projects, children became actors of change and are better prepared to protect their marine environment in the future.

The project is coordinated and led by Lola Masse (PAREO) and Bruce Cauvin, Pierre Petit Jean, Christelle Morel, Tevamie Rungassamy and Matthieu Vayeratta (EMMA).
Every day, dozens of hawksbill turtles come ashore to lay their eggs. As ecotourism returns to the island after the lifting of Covid-19 travel restrictions, turtle and human interactions are inevitable. We follow a set of international best practices to ensure that the animals nest undisturbed, while providing visitors with a rare opportunity to observe them as they do so.

Seychelles hosts one of the five largest nesting populations of Hawksbill turtles in the world and Cousin Island Special Reserve is the region’s most important rookery for the species. It is estimated that about 1,230 to 1,740 female Hawksbill turtles nested annually in Seychelles in the early 1980s. However, during the 30 years prior to 1994 – the year that turtle harvesting was banned completely – populations decreased sharply due to the hunting of nesting females. A notable exception to this decline was Cousin Island. Until 1971, most of the turtles nesting on Cousin Island were killed. But, when BirdLife International purchased the island in 1968, it began a conservation programme to reduce turtle catches. In 1974, the Seychelles Government declared the island and marine area 400 m from the shore a “Special reserve”, securing complete protection for nesting turtles.

In the last season, 1,621 hawksbill turtles emerged onto Cousin Island to nest, compared to 23 in 1973.

If you visit Cousin Island Special Reserve in Seychelles between October and April, we can almost guarantee that you will see a Hawksbill turtle (Eretmochelys imbricata) on the beach or nesting. The turtle season on Cousin is currently in full swing.

Hatchlings should be allowed to go to the sea unhindered © Nature Seychelles - April Burt.

Every day, dozens of hawksbill turtles come ashore to lay their eggs. As ecotourism returns to the island after the lifting of Covid-19 travel restrictions, turtle and human interactions are inevitable. We follow a set of international best practices to ensure that the animals nest undisturbed, while providing visitors with a rare opportunity to observe them as they do so.

Seychelles hosts one of the five largest nesting populations of Hawksbill turtles in the world and Cousin Island Special Reserve is the region’s most important rookery for the species. It is estimated that about 1,230 to 1,740 female Hawksbill turtles nested annually in Seychelles in the early 1980s. However, during the 30 years prior to 1994 – the year that turtle harvesting was banned completely – populations decreased sharply due to the hunting of nesting females. A notable exception to this decline was Cousin Island. Until 1971, most of the turtles nesting on Cousin Island were killed. But, when BirdLife International purchased the island in 1968, it began a conservation programme to reduce turtle catches. In 1974, the Seychelles Government declared the island and marine area 400 m from the shore a “Special reserve”, securing complete protection for nesting turtles.

In the last season, 1,621 hawksbill turtles emerged onto Cousin Island to nest, compared to 23 in 1973.

If you visit Cousin Island Special Reserve in Seychelles between October and April, we can almost guarantee that you will see a Hawksbill turtle (Eretmochelys imbricata) on the beach or nesting. The turtle season on Cousin is currently in full swing.
Cousin Island’s special reserve status restricts human impact on hawksbill turtles; Seychelles law states that in special reserves all activities are secondary to biodiversity conservation. Thus, all activities related to turtles must meet the highest international standards. We strictly adhere to the following guidelines for human and turtle interactions.

In spite of the protection offered by Cousin Island, hawksbill turtles are still listed as “Critically Endangered” on the Red List of the International Union for Conservation of Nature. In fact, all global populations of marine turtles are on the Red List and require protection. Seychelles and international law protect turtles from harm, but turtles are still poached, especially in the granitic islands, and they face other threats including destruction of breeding and foraging habitat and climate change.

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The first is not to approach a turtle until she starts laying eggs - otherwise, she might be spooked and return to the ocean. During laying, a turtle enters a trance-like state and is unlikely to be disturbed by humans. This is when data collection is conducted. Tourists view turtles from behind and from a distance. There is always a staff member between the turtle and the visitors. They explain data collection for educational purposes and to help create awareness of turtle conservation. They may dig a small channel at the back of the egg chamber so that visitors can watch the turtle deposit its eggs, but visitors may not handle the eggs, so as to ensure no foreign agents enter the egg cavity.

Tourists view a nesting turtle in one small group at a time. They are asked to stay quiet, move slowly, and move away if the turtle shows signs of distress. Flash photography is not allowed. Tourists are prevented from trampling existing nests. Once hatchlings start to appear, they must be allowed to go to the sea unhindered and without aid so that they can pick up navigation cues important for their survival, and which they use in adulthood to return to their natal beach.

During nesting season, turtles mate close to shore. Staff are on high alert to avoid startling them. Because of our method of boat landing, where the boat is driven straight onto the beach, staff also take care to avoid boat strikes. We discourage getting too close or touching turtles while swimming, snorkelling or diving, unless it is to provide assistance. We also keep our beaches clear of marine litter through regular clean-ups.

Additionally, people can keep nesting beaches free from trash or large objects such as beach chairs, refrain from activities that would inhibit nesting, keep dogs away from turtles and hatchlings, keep beach lighting to a minimum, and leave nests undisturbed.

These best practices can be used elsewhere in Seychelles and in the western Indian Ocean region to protect nesting female turtles.
Cross-border collaboration for conservation and development

BY MILALI E. MACHUMU AND ARTHUR TUDA

Crossing borders for nature

Marine ecosystems, resources, and species do not follow man-made limits such as national borders. Consider humpback whales, which migrate from South Africa to the East African coast each year to reproduce and give birth in warmer waters. On their voyages, they cross international borders and must be protected. However, no single country can fully protect something that is not entirely under their control. To protect and manage marine ecosystems, ecosystem-based management and governance approaches are required since individual states cannot do it alone. Multiple countries must work together to conserve and sustainably use their oceans, coasts, and marine resources. Marine transboundary conservation means countries that share marine ecosystems and species work together to manage them wisely, for the benefit of all.

Tanzania and Kenya are working together to improve cross-border management of their common marine resources. It is home to some iconic marine wildlife like the dolphins, the coelacanth, marine turtles, and whales. This area is also home to mangroves, coral reefs, seagrass meadows, and sandy beaches. Communities on both sides of the Tanzania-Kenya border rely heavily on the ecological services of the transboundary marine ecosystem.

These vital resources, as well as their ecological and cultural worth, are increasingly threatened by unsustainable fishing, logging, and climate change, which is causing biodiversity loss. The rapid maritime expansion of northern Tanzania and southern Kenya, as well as the growing human population, pose a possible threat to the already overexploited marine resources. Fishing is the main livelihood for coastal communities in Kenya and Tanzania and, as the demand for marine resources grows, the marine resources in the Kenya-Tanzania transboundary system may come under pressure from users with conflicting interests.

To address existing and potential threats to the Tanzania-Kenya transboundary seascape, the two countries have taken the bold step of cooperating in the management of their shared marine resources. Tanzania and Kenya agreed in 2015 to establish a marine transboundary conservation area (TBCA) in the Tanzania-Kenya transboundary seascape under the auspices of the UNEP-Nairobi Convention. Tanzania and Kenya, both signatories to the Nairobi Convention, have recognized the value of biological diversity in the Tanzania-Kenya transboundary marine seascape. The establishment of the marine TBCA is also consistent with the aims of the East African Community (EAC), which focuses on fostering synergies in regional projects for economic, social, and conservation advantages among member states. The environmental and natural resources management protocol of the EAC obliges member states to develop mechanisms that will ensure sustainable utilization of TBCA ecosystems. The proposed TBCA region extends from Kenya’s Diani-Chale Reserve to Tanzania’s Mkinga District.

The Tanzania-Kenya marine TBCA is meant to protect more cross-border species, promote sustainable socioeconomic development, and promote cooperation. The TBCA reflects state-to-state collaboration in marine resource management, which is also an important in attaining goal of United Nations Sustainable Development Goals (SDGs) 14 “Life Below Water” and SDG 17 - “Revitalize the Global Partnership for Sustainable Development”.

The Tanzania-Kenya marine area has a high degree of biodiversity with strongly connected ecosystems.

Tanzania-Kenya marine conservation cooperation

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Main photo: Small scale fishers at a fishing landing site in Tanzania. © SOLTICE WIO

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The Tanzania-Kenya marine area has a high degree of biodiversity with strongly connected ecosystems.
It may appear to be a no-brainer but planning for the TBCA is difficult when precious resources, behaviour change, and politics are involved. Marine resource management in Kenya and Tanzania has taken two distinct pathways because of differing government philosophies, socioeconomic realities, and accompanying policies. There may be conflicting national priorities or differences about how to proceed. Different laws and socio-economic conditions in the two countries can create a range of difficulties in practical cooperation.

The whole of the Tanzania-Kenya transboundary marine systems is changing fast and marine resources remain pressure. Thus, there is continued need for coordinated and effective management and operational plans at an implementation level and for more formal cooperative agreements between the various institutions and communities involved. Funding remains a challenge although the planning process is currently supported both by partners and the two governments and local and international NGOs.

Various partners have also launched projects to aid in the planning and implementation of the TBCA. With funding from the Blue Action Fund, the Wildlife Conservation Society (WCS), and the Western Indian Ocean Marine Science Association (WIOMSA) launched a project in 2020 to help develop various components of the TBCA, including building the knowledge base for planning, building capacity of marine protected area managers and communities, and developing the TBCA conservation plan.

A conservation planning portal and database has been developed to provide a platform to systematically compile and provide access to key information about the TBCA planning and thus contribute to exchanging scientific information, tools, and lessons learned. WCS has already conducted many community trainings on fisheries objective setting, which resulted in the development of fisheries management priorities, as well as assessments of corals, seagrass biodiversity, and fish populations to provide status reports.

The enhancement of community benefits is a critical component of the planning process. These efforts will be supplemented by the establishment of governance structures and engagement strategies for the various marine uses, as well as the development of a TBCA joint management plan.

Institutions, non-governmental organizations, and government agencies on both sides of the Tanzania-Kenya border have been collaborating on various areas of the TBCA establishment, such as information gathering, research, and planning. KWS and MPRU have organized several multi-stakeholder engagement meetings on both sides of the border, to establish a shared TBCA vision and objectives.

Stakeholders from all levels are involved in the process to promote a common vision, including governments (national, regional, and district), the private sector, and local communities. A series of stakeholder meetings are being held to explore the status of the resources and what stakeholders would like to see in the next two to three decades to develop a common vision and understanding. As the TBCA planning progresses, on-the-ground cooperation among stakeholders is growing, including joint research activities, more regular interaction, and dialogue between the two MPA agencies, NGOs and communities, joint training and exchanges, and cooperation with border security, as well as cross-border community activities.

KWS, MPRU and WIOMSA with the technical support from the University of Macquarie in Australia are leading the TBCA conservation planning process.

The Kenya Wildlife Service (KWS) and the Marine Parks and Reserve Unit (MPRU) of Tanzania, the government agencies in Kenya and Tanzania responsible for marine protected areas, are the key agencies in the TBCA planning process.
Co-management is at the heart of Rodrigues’ South East Marine Protected Area

BY JEAN REX PIERRE LOUIS

Following the consultations, the community expressed a wish for the expansion of the proposed protected area beyond its original size.

Rodrigues, an autonomous island of the Republic of Mauritius with a population of some 43,000 inhabitants, is the most isolated and easterly island in the Indian Ocean. It forms part of the Mascarene Island group and is believed to be youngest and smallest of the three islands. Its terrestrial and marine diversity displays a high degree of endemism.

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Traditional fishing includes basket trap, octopus fishing on foot, net fishing and line fishing. Statistical data indicate that various commercial marine species are on the decline as a result of over exploitation, destructive practices, erosion, climate change and habitat loss. Fisheries management has been conducted largely through traditional methods, including closed seasons, and size limits, with allowable catches determined through fish stock assessments. However, these methods have been largely ineffective and traditional fishers have voiced their concern about the decline of the fisheries resources which represents a threat to their livelihoods.

The implementation of the United Nations Development Programme/Global Environment Facility (UNDP/GEF)-supported project “Partnerships for Marine Protected Areas in Mauritius and Rodrigues” provided the impetus for Rodrigues to work towards fulfilment of Aichi Target 11 of the Convention for Biological Diversity: by 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, are conserved.

The project was implemented from 2005 to 2012 and aimed to create a marine protected area (MPA) at a demonstration site in Rodrigues.
Following the enactment of the “Fisheries and Marine Resources South East Marine Protected Area (SEMPA) Regulation 2009”, SEMPA became the largest proclaimed MPA within the Republic of Mauritius, with a surface area of 43 km² extending from the 20 m isobath outside the lagoon to the high watermark on the coastline. Subsequent regulations in 2012 entrusted statutory powers to the management structures and set up the zoning plan for the MPA. Thirty percent of SEMPA’s waters are conservation zones and legally protected from extractive use, while the remaining 70 percent are open for multiple use and exploitation by villagers/fishers.

Community involvement was enhanced by the recruitment of nine Field Rangers from among the fisher community, to ensure further education of their peers, and for enforcement. Additionally, 50 fishers were recruited from 10 SEMPA coastal villages to work as Community Resource Observers (CROs) for further engagement and ownership of the community in this co-management structure. The CROs were the community’s eyes on the works and activities conducted within the coastal villages and at sea. Data were also collected by the CROs through the Participatory Resource Monitoring Programme, after their intensive training. Fishers were also trained and encouraged to venture into more sustainable alternative economic activities such as agroforestry, food processing, ecotourism and seaweed culture.

Monitoring, control and surveillance is one of the main challenges for ensuring the proper functioning of SEMPA and the equitable sharing of its benefits to the community. Ownership of the MPA was at its pinnacle with the active participation of the community and members of non-governmental organizations during the process of defining the zoning of the MPA.

The co-management principle was at the heart of the South East MPA from the start. Co-management is a process in which government shares power with resource users (fishers, divers, kite surfers, hoteliers, tour operators and villagers), with each given specific rights and responsibilities relating to information and decision-making. The centrality of co-management was a novel approach because previously most MPAs in Rodrigues adopted the top-down approach, with the government being central to the decision-making, without consulting the community.

In 2005, an extensive consultation process was launched to raise awareness about marine ecosystem conservation and MPAs within the community. This was carried out across four villages within the project area. Following the consultations, the community expressed a wish for the expansion of the proposed protected area beyond its original size. A community participation campaign was extended to include all ten southern villages within the southern catchment area.

The consultations were undertaken at each village and fish landing station and a Community Resource Committee (CRC) was constituted for each village. Each CRC elected two representatives to be members of the Community Advisory Council, where decisions are made with inputs from each village community. The aim was to include the views and perceptions of the community within the main objectives of the project, to find consensus among the different stakeholders and to generate greater ownership by the community to support the design of the zoning, regulations and management for the MPA, among other things.

Various activities were organized to that end, including football competitions which provided a platform for further consultation with the community.

Photo below: Commissioner Payendee with SEMPA community during the octopus season opening.
**The South East Marine Protected Area**

The vision is for SEMPA to be a model of sustainable and collaborative coastal and marine biodiversity management, resulting in a prosperous local economy and good quality of life.

The goal for SEMPA is “To restore a healthy ridge to reef ecosystem functioning within the marine protected area and its watershed.”

The Board of SEMPA includes three representatives of the Community Advisory Council, a representative of Fisheries Protection Services, a representative of the Fisheries Research and Training Unit, a representative of the Environment Unit and five members of non-governmental organizations, supporting stakeholders in the marine environment and tourism industries.

A management plan was developed in 2011 that provided the roadmap for proper management and development of the MPA and this was reviewed in 2019 under the UNDP/GEF supported project “Mainstreaming Biodiversity into the management of the coastal zone in the Republic of Mauritius.” As such, mooring buoys have been installed in marine ecologically sensitive areas to prevent wild anchoring of boats that damages corals and adjacent flora.

To complement the MPA and with the objective of making of Rodrigues an ecological Island, the Rodrigues Regional Assembly has taken some bold measures, including the introduction of closed seasons for the octopus fishery since 2012, the banning of plastic bags in 2014 and the planned seasonal closure of the crab, shrimp and lobster fisheries.

Joseph Jean Maurice Ravina, 36, is a marine and coastal resources management professional with a wealth of knowledge and experience in environmental management. He is scientific advisor of Marine Analytics & Research, the only local environmental consultancy firm in Rodrigues. In 2016, Jean Maurice was appointed by the Rodrigues Regional Assembly as the chairman of SEMPA. In this role, he highly values the community-based management system and strives to create a balance between government policies and the community stakeholders within the SEMPA jurisdiction.

Joseph Christian Clair, 46, is an ex-fisherman who made the choice to provide his knowledge and experience to support SEMPA in the capacity of Field Ranger. “I joined SEMPA in 2011 and over the past 10 years I have gained much awareness on marine conservation and helped with the sensitization of the youth, fishers and the villagers,” he says. “As Field Rangers, we are entrusted with powers of enforcement and we work on a 24-hour roster system shared by three patrol shifts. Illegal fishing is currently our main challenge and this has been compounded by the COVID-19 pandemic which is having a huge economic impact in Rodrigues, despite the island presently being COVID-free.”

Marie Mirella Manan, 52, is a fisherwoman from SEMPA region, is presently working as Community Resource Observer, helping in education and awareness of community. It has been a very fruitful experience for me learning more about the marine environment, the need and the challenges for marine conservation. “Working for SEMPA has helped me grow personally and economically and be in a better position to sustain my family and improve our standard of living,” she says.
Resolving conflict over natural resources

Q&A with Housseni Houssoygni

Nonviolent conflicts and disputes can hinder community-level efforts to manage natural resources sustainably. Housseni Houssoygni, a founding member of the Comoran national agency Parcs Nationaux des Comoros, explains the development of a reference tool for managers, stakeholders and staff of marine protected areas. The tool is called “Negotiating for the conflict resolution over natural resources”.

HOUSSENI HOUSSOYJNI was born on Mohéli Island in the Comoros. He works as executive manager of the Shisimani National Park, through the Comoros Protected Areas National Network Project, funded by the Global Environment Facility and implemented by the United Nations Development Programme. Housseni is a member of the Western Indian Ocean Marine Protected Areas Management Network and is devoted to ensuring that this large regional network is a success so that Comoros learns from the experiences of other countries.

Q: Briefly explain the problem of conflict. Do you see it as a big challenge for the co-management of marine protected areas in Comoros?
A: It is obvious that marine protected areas (MPAs) and their biodiversity, both terrestrial and marine, are under increasing pressure from the users who benefit from them. In the Comoros, the dependence of predominantly rural communities on natural resources generates strong human pressure on resources, ecosystems and biodiversity. We are witnessing an intensification of the global degradation of the environment, which affects all natural resources and weakens the capacity of these resources to regenerate. In the case of fishery resources for example, scientific studies have shown that it is not the harvest, but rather the speed of extraction, that poses a challenge to regeneration. Other factors such as stress (climatic or not) also play a leading role in the loss of biodiversity. The rise in sea level and the supply of sediments from the watersheds cause erosion and sedimentation of coastal areas. For example, deforestation for agricultural purposes results in the progressive silting of coral reefs, and the extraction of sand from beaches for construction purposes leads to the disappearance of marine species that are less resilient to these new changes. The MPAs of the Comoros have always been under pressure from the various actors who directly or indirectly benefit from the coastal and marine areas. The riparian communities are almost all rural, with a predominantly poor population; they have no alternatives other than the extraction or exploitation of resources.

Q: Why is it important to manage conflict in Comorian MPAs? A: The responsibility for ensuring the conservation and sustainable use of marine and coastal biodiversity and fishery resources lies with professionals in MPAs, managers, park co-management committees, island and local authorities. Since the creation of the country’s first MPA in 2001 – which was followed by the creation of five other National Parks, two of which are terrestrial and three are MPAs – biodiversity has become the cornerstone of the Comoros economy. For the riparian populations in particular, efforts to conserve biodiversity and the sustainable use of natural resources have become a priority for the stakeholders of the protected areas. MPAs in Comoros are rich in fishery resources and to ensure the sustainable management of natural resources, MPA managers must apply the regulations on fishing. However, since the demand for resources is high, fishers are sometimes tempted to use fishing practices that are prohibited or disrespectful of the environment in order to achieve a higher catch. The coastal communities, although sensitized to the importance of conservation of biodiversity, put pressure on the local authorities to induce MPA managers to alleviate the measures on fishing, citing subsistence sustenance as a justification. For a lasting and effective resolution to the conflict between access and the sustainable management of fishery resources, there is always a need to negotiate between the various stakeholders in a MPA to find common ground.

Q: How has the tool that you developed helped to address the problem of such conflicts related to the management of natural resources in the MPAs of the Comoros, because it offers avenues and solutions for the resolution of conflicts in protected areas? – whether marine or terrestrial – based on the tool of mutual gains negotiations (MGA). The roles and responsibilities of the different stakeholders in the negotiation process are well detailed and the negotiation process is adapted to the local Comorian context. The tool gives the parties different scenarios, with graphic illustrations, on the possible evolution of fishery resources and the consequences of socio-economic conditions that would be occasioned by a lack of consensus.

Q: What lessons can you share about your experience in managing conflicts that other MPAs in the western Indian Ocean can learn from?
A: The lesson to be shared is that the MGA process is a versatile tool that can be used to bring different stakeholders in protected areas together to find consensus for the sustainable management of natural resources. For the negotiation process to be successful, an analysis of all the actors is necessary, and it is important to note that the MGA approach is a great incentive for the participation and involvement of stakeholders in conflict resolution. The tool allows MPA stakeholders to have a tool to sustainably manage their disputes over the management of MPA natural resources. Mastering the four stages of MGA is essential for building consensus; for the effective management of conflicts the actors must be prepared to clearly explain their interests, define their aspirations (the result that leads to the best possible way to satisfy their interests), and the best alternative to a negotiated agreement (BATNA).
For government, good policies are reasonable measures taken in the public’s interest and are the mechanism for developing good governance principles. However, policies are not enforced by law and therefore should be regarded as strategies formulated to shape practices within existing laws. This includes management plans for MPAs. For a document to become enforceable through law it must be approved by parliament. A policy itself is applicable only if it does not contradict anything written in law. This principle is true for government and other public and private actors, including civil society – if the policy is in contravention of law, and this inconsistency is proven in court, the court has the power to strike down the policy.

By way of Example

The Seychelles Constitutional Court ruled in 2019 in favour of a landowner when a government policy prevented him from building an accommodation establishment on his coastal property. The Constitutional Court ruled that the person’s Constitutional land ownership rights can only be limited by a law and that law can only take effect for prescribed motivations, such as for the purpose of public interest. As the policy was not yet passed as law by parliament, the judgment went in favour of the landowner. Even though the prescribed motivations may have been met by the policy, neither those prescribed motivations nor the policy can be applied to limit the landowner’s Constitutional rights because those rights are law.*

Unlike laws, policies are not automatically required to become available to the public before they are enforced. A law is required to be processed through parliament and requires the public to be officially notified of its existence (usually through official publication in a gazette, for example) before becoming enforceable. In most jurisdictions, an Act requires the further assent of the president. As a consequence, a risk with policy is that it can take effect without it having been made available to the public.

A further distinction associated with policy is the enforcement thereof. A court has no authority adjudicating policy decisions unless the policy contravenes a law. In circumstances when the protection of the law is not directly available, all that is left is the hope that the policy was applied fairly and indiscriminately. Policy does not offer an appeal process because there should not be anything to appeal. However, society is not so symmetrical and it happens that policy overlaps with existing rights, such as licensing, creating controversy for policymakers and the public to reconcile over. Policymakers should therefore question the ments and practicality of policy in anticipation of the controversy that may surround it.

Acts and regulations

Acts and regulations are both law and enforceable in court. Acts and regulations are proposed by government and approved or dismissed by parliament before being enacted as law. A new law is printed in the official government gazette as public information so that a country may have knowledge of the laws enforceable in its jurisdiction. Both Acts and regulations must be in harmony with the Constitution.

In terms of hierarchy of law, an Act is similar to the trunk of a tree and serves as the principal law from which regulation – or branches from the trunk – can form. An Act explains the purpose of that particular law, the agencies involved and their objectives, among other important details. An Act further includes the provisions under which regulations can be created and approved by parliament, with the purpose of becoming law.

Regulations are rules that structure behaviour within a given context. They are enforced by agencies such as ministries of environment, national parks authorities, financial services authorities, departments of tourism and licensing authorities. In some cases, as is the case with regulations under the Seychelles National Parks and Nature Conservancy Act, power can be delegated to other entities, even non-governmental organizations.

Policy planning

Purpose-driven policymakers will prudently ensure that policies are not in contravention of the law. Policy planning that ensures policies are in good standing with the law, ensures the longevity and vitality of policy. Poor policy planning may risk the discrimination of constitutional rights, stakeholder controversy and diminishing trust. It is good practice to replace policies with laws where possible so as to enhance the trustworthiness of the institution. A policy that is not openly accessible to employees and the public, regardless of the reason and timeframe, should not be in place and is a sure signal of poor planning and intent. A policy with valid intent takes into consideration, before all else, the rights of citizens represented by the constitution and other laws already in existence.

Good policies provide direction and understanding of the vision, mission and values of a marine protected area (MPA).
About WIOMSA:
The Western Indian Ocean Marine Science Association promotes the educational, scientific and technological development of all aspects of marine sciences throughout the Western Indian Ocean region with a view towards sustaining the use and conservation of its marine resources.

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About WIOMPN:
The Western Indian Ocean Marine Protected Area Management Network aims to shape the future of MPA practitioners by providing opportunities for development, fostering valuable connections, and facilitating member success through learning, mentorship and career growth.

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