



# BLUE SOLUTIONS

FROM AFRICA



On behalf of:



Federal Ministry  
for the Environment, Nature Conservation,  
Building and Nuclear Safety

of the Federal Republic of Germany

implemented by:

**giz** Deutsche Gesellschaft  
für Internationale  
Zusammenarbeit (GIZ) GmbH

**G·R·I·D**  
ARENDAL  
A Centre Collaborating with UNEP





## BLUE SOLUTIONS



## BLUE SOLUTIONS FROM AFRICA

REGIONAL FORUM ON SOLUTIONS FOR OCEANS, COASTS AND HUMAN WELL-BEING IN AFRICA

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This Regional Forum was organised by the Blue Solutions Initiative of the German Environment Ministry (BMUB), implemented by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ), GRID-Arendal, the International Union for Conservation of Nature (IUCN), and the United Nations Environment Programme (UNEP). It was convened in collaboration with the Abidjan Convention, the Nairobi Convention, the Western Indian Ocean Marine Science Association (WIOMSA) and the Sustainable Ocean Initiative (SOI) of the Secretariat of the Convention on Biological Diversity (CBD).



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**IUCN**

**UNEP**

**ABIDJAN CONVENTION**  
CONVENTION D'ABIDJAN



Convention on  
Biological Diversity

**SUSTAINABLE**  
**OCEAN**  
INITIATIVE

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COASTS AND HUMAN WELL-BEING IN AFRICA

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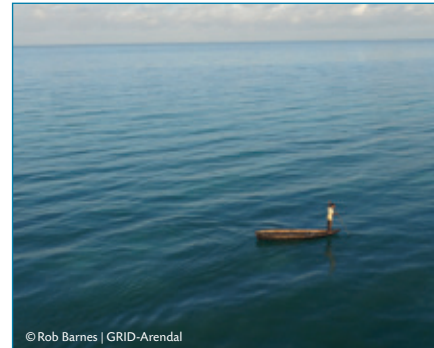
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### 8 INTRODUCTION

Zanzibari fisherman on the Indian Ocean



From outer space the earth has a remarkable, blue appearance originating from the huge amount of water on the planet. The ocean covers over two-thirds of the globe's surface and plays a crucial role in almost all natural processes. In addition to supplying people with food, clean air and climate stability, millions rely on marine and coastal biodiversity for their food security, income and socio-cultural and economic development. But the ocean and coasts are under stress from pressures such as overexploitation of resources or pollution, intensified through climatic change impacts. Response to these threats is often limited due to a lack of regulation and enforcement, insufficient management and governance or limited awareness.

By focusing on holistic, successful approaches for sustainable management and conservation of marine and coastal resources, the Blue Solutions Initiative helps to address challenges in the coastal and marine realm. The global project collates, documents and promotes so called »blue solutions« – successful case studies from all over the world – with the objective to inspire, share knowledge and support a worldwide exchange of replicable ideas to accelerate action for our ocean. Blue Solutions is funded through the International Climate Initiative (ICI) as a contribution of the German Environment Ministry (BMUB) and is being implemented jointly by GIZ, GRID-Arendal, IUCN and UNEP.

## BLUE SOLUTIONS

Participants of the Blue Solutions' Regional Forum for Oceans, Coasts and Human Well-Being in Africa



This publication is a result of the Blue Solutions' third Regional Forum for Oceans, Coasts and Human Well-Being in Africa held in spring 2016. It compiles 32 blue solutions from Africa, most of which were presented during the event. The solutions summarised in this publication focus on topics such as marine protected areas, sustainable tourism, sustainable fisheries, sustainable livelihoods, conservation of resources and biodiversity as well as mitigation of the effects of climate change. It is an inspiring guide through Africa's activities and projects towards the protection and integrated, sustainable management of its valuable and vulnerable coastal and marine ecosystems.

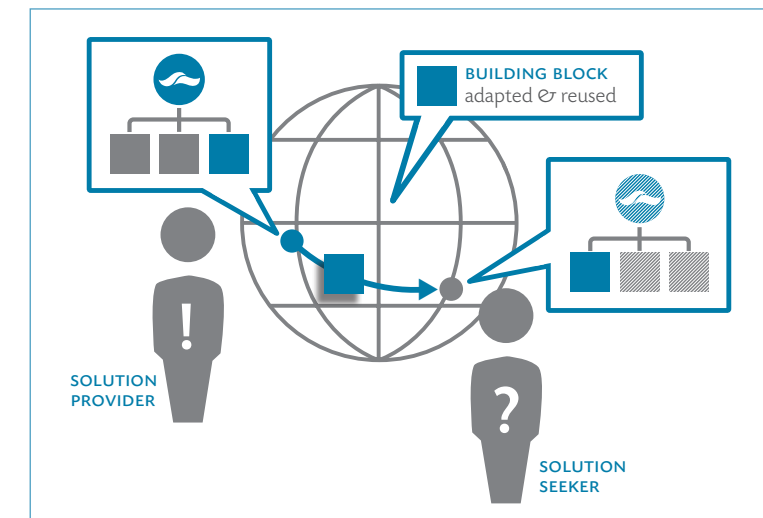
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### SOLUTIONS – APPROACHES THAT WORK

Blue solutions exist at all levels – from local to global – and address challenges in a variety of ways, from technical infrastructure or co-management approaches to policy-making or law enforcement. Thus, blue solutions are successful approaches or processes that...

- ...**address marine and coastal challenges.** They contribute to the maintenance or improvement of the health of biodiversity and ecosystems helping to achieve global sustainable development and the Sustainable Development Goals.
- ...**are effective.** They are specific, applied examples that have been implemented with a demonstrated positive impact.
- ...**are scalable.** Elements of a solution have the potential to be up-scaled and/or replicated in other geographic, social or sectorial contexts.

While a solution describes a context-specific example, we believe that every solution is composed of essential elements which determine its success – we call them building blocks. These building blocks, described as part of a solution story, may be adapted and recombined to address challenges in other socio-cultural and ecological contexts, sectors or geographies. The Blue Solutions Initiative has established building block categories according to their means of action.



A glossary of all building blocks, sorted by category, can be found at the back of this publication. All solutions contributed are published on the marine and coastal solutions portal of the Panorama platform.

The Blue Solutions approach

SOLUTIONS EXCHANGE

One of Blue Solutions’ focal areas is the provision of a global knowledge platform to collate, share and generate solutions and access a broad network of practitioners and policy-makers. The overall aim is to inspire action towards effective management and equitable governance of our planet’s marine and coastal living spaces at all social and institutional levels. The exchange around solutions is realised through bringing people together in face-to-face meetings, integrating solutions as real-life examples into various capacity development formats, as well as through an online platform.

FACE-TO-FACE SOLUTIONS EXCHANGE

Physical meetings allow participants to learn about solutions from other regions or sectors and experience how these examples can be adapted to other contexts. These workshops allow participants to establish new connections and net-



Participants discussing the adaptation of solutions to new contexts



Sonigitu Ekpe (Ministry of Agriculture and Natural Resources, Nigeria) presenting the result of a group work

works with other practitioners and policy-makers. The Blue Solutions Initiative organises face-to-face exchanges at different levels, adapting the format to its specific context. One outstanding series of events facilitated by the Blue Solutions initiative are three Regional Fora for Oceans, Coasts and Human Well-Being. The first regional event for Asia and the Pacific took place in Cebu, Philippines (2014), the second for Latin America and the Wider Caribbean Region in Cancún, Mexico (2015) and the third for Africa in Zanzibar, Tanzania (2016).

90 participants from 24 African countries attended the regional workshop in Zanzibar. The audience included representatives from government agencies, NGOs, the private sector and academia. A lively exchange took place during four days of sharing and discussing successful examples of sustainable management and conservation of marine and coastal ecosystems. 28 African case givers had the great opportunity to share their successful »blue solutions« in group sessions. Through these presentations and further discussions, a wealth of innovative ideas to facilitate the sharing and the creation of blue solutions at all scales was put forward by participants and provided the basis for many vibrant discussions and inspiring ideas.

CAPACITY DEVELOPMENT

Capacity development activities are a focal area of the Blue Solutions Initiative. Through different formats and cooperation with various partner institutions, the Blue Solutions Initiative seeks to enhance capacities for scaling up successes, provide learning opportunities and trainings on different marine and coastal themes and thus, support policy processes to facilitate action towards healthy marine and coastal systems.

Blue Solution training events are designed for practitioners, technical staff and decision makers responsible for coastal and marine planning and management from different social sectors, such as government, civil society, and academia. Documented solutions serve as real-life examples of theoretical concepts and provide a valuable input to any training workshop.

ONLINE SOLUTIONS EXCHANGE

Blue Solutions is part of the *Panorama – Solutions for a Healthy Planet* partnership and hosts the »marine and coastal solutions« portal of the online Panorama platform. This online platform serves as one tool of the partnership and Blue Solutions to capture, share and exchange around implemented solution examples. In addition to the marine and coastal solutions portal, the Panorama platform currently houses a second thematic portal on protected area solutions, hosted by IUCN’s Global Protected Areas Program. The Panorama partnership is envisioned to constantly grow with new partners and solutions from other topics to support a truly inter-sectorial learning experience.



[www.panorama.solutions/marinecoastal](http://www.panorama.solutions/marinecoastal)

Find us on Facebook (@BlueSolutionsInitiative) or follow us on Twitter (@\_BlueSolutions) and get inspired every day!

ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING

12 SOLUTION provided by Jonas Kemajou Syapze (OPED)

Every year Cameroon is currently losing more than 3,000 ha of its 250,000 ha of mangroves (400,000 ha following the handover of the Bakassi peninsula by Nigeria). 80% is used to smoke fish, an activity that many women in the coastal areas depend on for their livelihood.

The solution implemented by the Organisation for the Environment and Sustainable Development (OPED) leads to the widespread use of improved energy-efficient smokeries and alternatives to mangrove trees as energy sources for smoking fish.



Improving and adapting the smokeries

Jonas Kemajou Syapze from OPED shares: »Cameroonian women traditionally use mangrove wood to smoke fish because it gives the fish a good colour and flavour. However, it was discovered that the women who were smoking the fish were placing huge pressure on the mangroves and exposing themselves to smoke and heat (the cause of respiratory and eye diseases, fever etc.). They had a heavy workload and a low income. We began working with groups of women on activities to protect the mangroves, trying to find ways to raise their income and reduce both their workload and the adverse impact the fish smoking was having on their health. Together, the activities have modified the deforestation process, increased blue carbon stocks in the mangrove ecosystems in Kribi, raised the women's income and enhanced their well-being.«



Trained community leaders



A woman smoking fish in front of her improved smokery

BUILDING BLOCKS Solution components for replication



Participatory data collection

Data is collected at meetings attended by more than 1,000 women fish-smokers from eight different communities. Studies are carried out by three students and Master's dissertations are submitted to universities in Cameroon.



Training to empower the women

Environmental education develops the capacities of the women who smoke fish. Some women train others on the importance of the improved smokeries, their construction and use, conflict management, the Common Initiative Groups and the use of alternatives to mangrove wood.



Community management

Women smoking fish in each community set up Common Initiative Groups. This leads to the regeneration of mangrove forests and the implementation of a community savings scheme to access microfinance and enable the women to build improved smokeries.



Women filling bags for the mangrove nursery



Cassava growing and shrimp farming

Cassava growing and shrimp farming is introduced to reduce pressure on the mangroves and enhance the women's resilience. The women are taught how to create kitchen gardens to grow subsistence crops and how to rear small livestock and chickens.



Shrimp farming cage

This solution is being implemented by the Organisation for the Environment and Sustainable Development (OPED) with the World Fish Center, the United Nations Development Programme (UNDP) and the Food and Agriculture Organisation of the United Nations (FAO). It is financed by the Congo Basin Forest Fund (CBFF), the Global Environment Facility's (GEF) Small Grants Programme (SGP) implemented by UNDP, and the FAO's Sustainable Community-based Mangrove Management Project.





14 SOLUTION provided by the Net-Works team



Discarded nets polluting the shoreline around Lake Ossa, Cameroon



Nets collected from Londji village, Cameroon



Weighing the nets

Net-Works is an innovative business that empowers people in fishing communities in Cameroon and the Philippines to collect and sell discarded nylon fishing nets, thereby removing these nets from lakes and oceans where they wreak havoc with aquatic life. The nets are then sold into a global supply chain and recycled into yarn to make carpet tile.

At the heart of Net-Works are the local community banks. Run by community members they provide access to finance, enabling people to save money and take out small loans. The banks also manage the local net supply chain: they organise coastal clean-ups, facilitate sales transactions and create »environment funds« to help finance local conservation projects.

Since 2012 over 100 tonnes of waste nets have been collected through Net-Works, 900 families have been given access to finance and 60,000 people have benefitted from a healthier environment.

Fanny Djomkam is the community coordinator for Net-Works in the Lake Ossa region of Cameroon. Her role involves working with communities to set up locally-managed savings groups and net collection activities.

»Net-Works has benefitted local communities in many ways, but for me the biggest benefit has been the community banks or VSLAs (Village Savings and Loan Associations) as we call them locally. VSLAs have really helped to strengthen fisher communities. They provide a simple and effective mechanism that enables fishermen to organise themselves and manage their savings in a way that is clear and accountable. Where there may have been conflicts in the past, the VSLAs have helped communities come together in a spirit of cooperation. Fishermen committees are now working with the local administration to co-manage the lake and ensure the code of conduct for responsible fisheries is enforced. It's brilliant to see them feeling so empowered.«

BUILDING BLOCKS Solution components for replication

### Community bank infrastructure

The set-up of community banks provides local access to financial services and an infrastructure for community organising and decision-making. This empowers communities to manage and protect the marine resources.

### Cross-sector collaboration

Net-Works is a collaboration between carpet company Interface, conservation charity the Zoological Society of London, and yarn manufacturer Aquafil. Each partner brings unique expertise, essential for the success of the business.

### Environment funds

Community bank members regularly contribute a small amount of money into a dedicated Environment Fund (EF) to invest in local conservation projects such as planting mangrove forests. EFs help reduce reliance on external funding.

### Income from net sales

Local people earn a small amount of extra income by selling used nets via Net-Works. This money can be spent or saved via the community banks and invested in e.g. education choices.

### Local partnerships

The business's core teams build up solid relationships with dedicated local partners. This ensures care and consideration for local economies, customs, and relationships.



Community banking in action in the Philippines

This solution is being implemented by the Zoological Society of London (ZSL) and Interface Inc. in collaboration with yarn manufacturer Aquafil and local partner in Cameroon, the Ministry of Forests and Wildlife (MINFOF) Conservation Service. It is funded by the Darwin Initiative and the Ray C. Anderson Foundation.



REHABILITATION OF COASTAL AREAS THROUGH AGROFORESTRY  
REFORESTATION

16 SOLUTION provided by Gervais Munyororo Yade (PAEDE)



Reforestation of the shoreline

The ecosystems along the shores of the Gulf of Kabuno in the east of the Democratic Republic of the Congo are threatened by deforestation, unsustainable fishing in Lake Kivu and habitat destruction.

To address the loss of aquatic biodiversity, the Program to support Arable and Livestock Farmers for Local Development (PAEDE) has trained the local community in sustainable agricultural practices and aims to raise awareness among political, administrative and traditional authorities. The program seeks to regulate fishing, include the shoreline in the protected areas, and pass a law to manage them.

PAEDE is raising the awareness of political, administrative and traditional authorities of the need to protect the environment along the lake shore, combat deforestation, preserve biodiversity, and rehabilitate habitats and threatened aquatic species.

Large-scale reforestation projects conducted with local partners help preserve endangered bees and fingerlings. A 10-metre-wide strip of reforested land along the shores of Lake Kivu using agroforestry species (*Markhamia*, *Leceuna*, *Calliandra*, *Cedrela*) helps absorb carbon dioxide and methane gases released from Lake Kivu's waters.



Charcoal production



Beehives in reforested plantations

PAEDE has also advocated introducing other species, such as riparian sugar cane and seaweed, which provide suitable environments to protect fish and other aquatic species and enable their reproduction.

The awareness-raising is carried out in conjunction with other environmental civil society actors in the Union for the Conservation of Marine and Coastal Biodiversity (UCBMC) and the Ministry of the Environment.

17 BUILDING BLOCKS Solution components for replication



Capacity building in agroforestry

Agricultural engineers are trained to offer guidance on sustainable land use, tree planting, charcoal production and crop management.



Awareness raising of authorities

The political, administrative, traditional and local authorities are informed of the legislation governing the waters and the 10-metre statutory distance required around the shore of the lake.



Climate Change mitigation through reforestation

Since 2009, reforestation projects and the introduction of beehives are reducing local community pressure on resources along the shore. Cooperatives are set up to market products from the community reforestation projects.



Reforestation work



Tree nursery

This solution is being implemented by the Program to support Arable and Livestock Farmers for Local Development (PAEDE), in conjunction with the following NGOs in the DRC: Organisation of Naturalists for the protection of the Environment (ONDE), Association of Young Visionaries for Development in Congo (AJVDC) and the Democratic Republic of Congo's Ministry of the Environment, Nature Conservation and Sustainable Development (MECNDD).





18 SOLUTION provided by Tarek Temraz (EEAA)

In Egypt mangrove forests are of high importance, environmentally and economically. Mangrove areas cover a vast area of approximately 700 ha in total along the Egyptian shoreline. The rapid increase of coastal development and commercial activities during the last two decades lead to negative human impacts on this ecosystem.



Planted mangroves

In 2001 a degradation of the mangrove stands in Egypt was noted, mainly caused by urbanisation and unsustainable resource use due to lacking awareness. A small scale mangrove reforestation study was conducted in Sharm El-Shiek and Nabq focusing on the rehabilitation of four local mangrove stands. Working in close collaboration with the local people, the conservation and rehabilitation activities lead to a measurable regeneration of the stands. Additionally, stakeholder engagement and awareness raising campaigns support local law enforcement.

»The conservation efforts of the mangrove restoration are not only important for the mangrove stands but also to the local people. Through incentives and subsidiaries leading them towards non-destructive resource use within protected areas, local communities increase their welfare. This approach enables local people to follow the regulations, especially



Mangrove nursery



Nursery side in the Gharqana protected area in Nabq

by implementing a no-take zone within Nabq protected area. They are also more likely to comply with fishing regulations now e.g. using the right type of nets and fishing lines. This is the flagship in having a fruitful and productive cooperation in conserving natural resources,« shares Tarek Temraz of the Egyptian Environmental Affairs Agency (EEAA) on the project.

BUILDING BLOCKS Solution components for replication

### Awareness raising campaign

Participatory awareness raising approach that includes face-to-face meetings and training sessions. Local people receive information on the importance of mangroves for the environment and their livelihood.

### Mangrove ecosystem evaluation

Identification of the services and goods provided by mangroves is done through different studies e.g. a biodiversity assessment to prove that mangroves provide a habitat for various species. The investigations facilitate proper management and conservation across different sectors.

### Community engagement in mangrove restoration

To reduce the pressure on the mangrove stands community integrated conservation actions take place. The activities include putting up surrounding fences, cleaning the stands of oil and solid waste and planting of seedlings into designated nursery areas.

### Surveillance and survivals of planted mangroves

Monitoring and statistical analysis of the replanted seeds and seedlings is conducted to encounter survival and growth rates. The results serve as direct indicators for conservation success.

Mangrove seedling in the protected area

Size measurement of planted mangroves

This solution is being implemented by the Egyptian Environmental Affairs Agency (EEAA) on behalf of the Egypt National Biodiversity Strategy and Action Plan (NBSAP) and financed by EEAA.



AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH

20 SOLUTION provided by Armelle Jung (DRDH)

AfricaSaw poster in French



The sawfish, one of the most remarkable fish in West Africa, which can be found on all CFA franc banknotes, is classed as critically endangered.

The solution has created a warning network to take swift, harmonised and coordinated action to protect this ray if it is captured (accidentally or intentionally); to draw up a map showing the spatial and temporal distribution of the species (*Pristis pristis* and *Pristis pectinata*); to inform the fishers and representatives at marine institutions about the status of these species and the ban on fishing and trade in these fish; to raise people’s awareness of the ecological and cultural importance of the sawfish to West Africa. Focal points can now respond, raise awareness and provide training in all of the six countries involved.

Guinean focal points raising awareness of fishers



Salatou Sambou conducting field surveys among fishing communities in Senegal



Armelle Jung/Sharks and Humans (DRDH): «We contacted Salatou Sambou to ask him if he wanted to be the focal point for the AfricaSaw project in Casamance, a region historically important for sawfish. This gentleman, who was already working on setting up a Community Marine Protected Area, seemed to us the best person to raise the awareness of fishers in southern Senegal. The project is moving forward quickly and thanks to Sambou it’s been easier to establish contacts. One local resident mentioned seeing sawfish rostra a few years previously and Salatou managed to find the owner in a couple of days. We wanted to speak to radio station managers to record our messages, Salatou immediately found actors. Thanks to his efficiency, we were able to collect, investigate, raise awareness and train nearly 5,000 people in this important area for sawfish conservation.»

BUILDING BLOCKS Solution components for replication

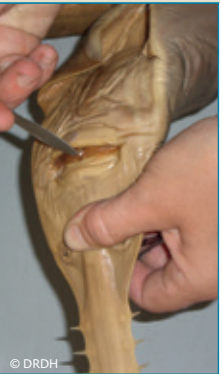
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**Network of focal points**  
Each focal point visits members of the network in their country and involves them in data collection and raising awareness among the population. Fishing equipment that is not harmful to elasmobranchs is handed over in the presence of the village authorities to thank them for releasing live sawfish.



**Gathering historical and geographical information**  
The museums have catch statistics covering the last few hundred years. This data is supplemented with more recent data from field surveys conducted at various landing places in the countries in question.



Collecting samples from a sawfish at the Natural History Museum in Hamburg



**Training of stakeholders in the maritime community**  
In each country, training is organised with institutions in the maritime community (fishing, customs, maritime surveillance, marine protected area managers or officers, seafood processing plants, nature conservation NGOs etc.).



**Raising the awareness of the fishers**  
In each country, someone is appointed to act as the project’s focal point and resource person. The focal points are responsible for raising awareness in their country using posters in the local language and messages on the radio.



Training on identifying and collecting biological material on sawfish rostra at the Institute of Biodiversity and Protected Areas, Bissau, 2013

This solution is being implemented by Sharks and Humans (DRDH) with the Sub-Regional Fisheries Commission (SRFC), the University of Florida and the sub-regional ministries of fisheries and is financed by Save Our Species on behalf of the International Union for Conservation of Nature (IUCN) and Save Our Seas Foundation.



COMMUNITY MANGROVE RESTORATION WITHIN THE MUNI-POMADZE RAMSAR SITE

22 SOLUTION provided by Jacqueline Sapoama Kumadoh (A Rocha Ghana)

The Muni-Pomadze Ramsar site, once endowed with mangroves supported fish supply for the local fisherfolk. However, due to destructive human activities the site has lost big parts of its mangrove stands affecting the livelihood opportunities of local communities.



Community engagement

To restore the site’s ecological integrity the A Rocha Ghana project replanted mangroves in the degraded areas. Additionally, beneficiaries were trained to run alternative livelihood ventures and community awareness activities on anthropogenic impacts through the radio, community discussion fora and traditional authority engagement. The communication tools used built a trustworthy environment with a renewed interest to take action on the part of both community members and stakeholders.

»I observed that although the Ramsar site was reported to be once rich in mangrove resources and supported not only biodiversity but also livelihoods, the availability of mangroves had reduced significantly leaving the lagoon shore bare,« says Jacqueline Sapoama Kumadoh, from the A Rocha Ghana project.



Jacqueline Kumadoh, from the A Rocha Ghana project



Planting mangroves along the shore

»It is heartwarming to note that communities volunteered and supported the project in replanting mangroves in 7.5ha out of 30ha of degraded areas. Furthermore, they have since initiated other actions such as planting trees on their farms as well as forming volunteer groups that carry out monitoring within the site to prevent incidents such as bushfires and use of the site by cattle grazers. It is my fervent hope that in the next 5 to 10 years the site would regain its vegetation not only through projects such as the one my organisation initiated but also through community efforts.«

BUILDING BLOCKS Solution components for replication



Communication of challenges/remedies

Different communication formats (e.g. documentaries, community durbars, door-to door visits etc.) are used to inform communities about the challenges, suggest solutions and communicate local knowledge on the site’s history.



Conservation education: radio broadcast



Participatory landscape management

In a participatory approach community members volunteer to support replanting of mangroves in degraded areas. This leads to an increase in biodiversity and the recovery of fish spawning grounds.



New sustainable decision-making skills

An analysis of community members’ and stakeholders’ needs is done to identify capacity gaps. Based on the results conservation education activities, livelihood training, communication tools and individual marketing techniques can be developed. Beneficiaries now improve their ability to balance conservation and development.



Participatory development of alternative livelihoods

To address poverty, a participatory dialogue with community members lays the base to identify feasible conservation based livelihood ventures. These options are supported by a startup capital with pay back option into a revolving fund.



Beneficiary tending his snail pen

This solution is being implemented by A Rocha Ghana in collaboration with the Wildlife Division of the Forestry Commission (FC) and financed by Global Environment Fund/Small Grants Programme (GEF/SGP) on behalf of the United Nations Development Programme (UNDP).





24 SOLUTION provided by Jose Gómez Peñate (CEM)



Baby turtles and tourists

This solution has put an end to the poaching of sea turtles at Ivory Coast's largest nesting site, Mani-Kablaké beach in the west of the country. Thanks to the project implemented by CEM (Conservation of Marine Species) since 2013, turtle-hunting and nest destruction have been eradicated. Each year, more than 1,000 turtles and their nests are now protected. Local inhabitants have benefited from a solar-powered drinking water supply, solar-generated electricity, a renovated primary school and a cassava grinder. Ecotourism is developing in the region, partly thanks to the project. A customary law on turtle protection has been drafted using participatory procedures and has been approved by all stakeholders.

Jose Gómez Peñate (CEM): «In 1995, while I was on holiday in Sassandra in the west of Côte d'Ivoire, I saw local residents poaching sea turtles at turtle nesting sites. There was no system in place to protect them even though sea turtles are listed as a protected species at national level. As a result, our association decided to make the protection of sea turtles a priority for biodiversity conservation in Côte d'Ivoire.



Leatherback turtle and local residents



Building a water tower in the village of Mani



Green turtle released from a fishing net

A program was set up to raise awareness among local communities. Initiatives were developed to improve their living conditions in return for them ending the slaughter of these turtles and helping with the conservation efforts. The locals undertook to set up turtle protection committees and are now involved in night-time surveillance of females who come to lay their eggs on the beach, nest protection and the release of hatchlings.»

BUILDING BLOCKS Solution components for replication



Building community infrastructures

To encourage the local population to support the project, solar lights and a solar-powered drinking water supply are installed; a water tower is built and standpipes are put in, the primary school in Mani is renovated and a cassava grinder is donated.



Involving locals in conservation work

The local residents do all the work on the ground: monitoring the beaches and fishing port, building and supervising the hatcheries. This reinforces the feeling that »the project belongs to the village«. All the inhabitants are committed to ending poaching and the consumption of turtle meat and eggs.



Awareness-raising and customary law

Meetings and film screenings are organised to encourage the local population to stop hunting turtles. A customary law to protect turtles is drafted and approved using participatory procedures.



Poacher arrested



Developing ecotourism

The program employs 15 young people from local villages. Efforts are made to establish partnerships with local hotels so they could contribute some of their revenue to the project. Sea turtle ecotourism activities are currently being developed.

This solution is being implemented by Conservation of Marine Species (CEM) with the Grand Bereby Marine Police and Water and Forestry Division officials (Côte d'Ivoire Ministry of the Environment) in a partnership with several local hotels (Katoum and La Flotte Hotels), with the technical and financial support of the US Fish and Wildlife Service (USFWS) and, since August 2014, the financial support of the French Global Environment Facility (FFEM) Small Initiatives Programme (PPI) and Fondation Ensemble.



COMMUNITY-BASED MANGROVE CARBON OFFSET PROJECT

26 SOLUTION provided by Salim Abdalla (MPCO) and James Kairo (KMFRI)

Mangroves, even more than terrestrial forests, capture and store carbon within their biomass and therefore function as a buffer for greenhouse gas emission. In Kenya, mangroves have been exploited for many years and the losses not only affect decrease of CO<sup>2</sup>-storage but also fisheries, resource sustainability and ecosystem integrity.



Degraded mangrove area

Mikoko Pamoja provides long-term incentives for mangrove protection and restoration within a community-managed marine area. A carbon offset payment scheme is accredited by »Plan Vivo Standards« to sell carbon credits over a period of 20 years. This has helped the community to higher their income and improved mangrove management at Gazi Bay. Generated funds benefit community projects in health, education, and marine conservation.

Mikoko Pamoja is all about the community living in harmony with a natural mangrove environment. It is the first ever community-type forest to trade and benefit from sales of mangrove carbon credits.

In southern Kenya’s Gazi Bay, researchers have explored new ways to demonstrate the mangroves’ worth and tap their carbon storage potential to benefit poor coastal communities. Earlier work in Gazi Bay, led by James Kairo of the Kenya Marine and Fisheries Research Institute and Mark Huxham of Edinburgh Napier University, demonstrated how to restore cleared mangrove stands– even in areas where salty stumps have stood lifeless for 40 years. Now, the team is



People and mangroves



Community planting mangroves

collaborating with an international »carbon credit« scheme to sell the carbon storage created through mangrove reforestation and conservation. Using lessons from Gazi Bay, many more communities can reap increasing value from healthy coastal forests.

27 BUILDING BLOCKS Solution components for replication



**Participatory Forest Management Plan**  
A Participatory Forest Management Plan is developed by a Community Forest Association. It includes a zonation map showing activities of different stakeholders in the designated areas and is approved by the government agency in charge.



**Forest Management Agreement**  
A Forest Management Agreement is a legal tool for the implementation of the designed management plan and secures the accreditation of the carbon credits. It includes frequent monitoring and evaluation of community activities in the forest area.



**Carbon know-how through strong partnership**  
Carbon-offset initiatives require a scientific basis to determine stocks and baselines supported by strong partnerships with research institutes. The data are critical for the annual report to the Plan Vivo Organisation.



**Community environmental education and awareness**  
To promote awareness and general understanding on the significance of mangrove ecosystems and the use of carbon credits various stakeholder engagement forums during all phases of the project are hold e.g. village level meetings and group discussions.



Mangrove re-search (left) and community education (right)

This solution is being implemented by the Mikoko Pamoja Community Organisation (MPCO) in partnership with the Kenya Marine and Fisheries Research Institute (KMFRI), the Kenya Forest Service (KFS), and the Association for Coastal Ecosystem Services (ACES).





MARINE CONSERVATION ENTREPRENEURSHIP – FROM TRASH TO TRADE

28 SOLUTION provided by Julie Church (Ocean Sole Foundation)

The quantity of marine debris is increasing world-wide and so is the damage caused by waste entering marine ecosystems. The main source of debris is land-based and goes back to poor waste management, lack of awareness and in small coastal communities also to limited livelihood opportunities beyond unsustainable practices.



Beach clean-up

In 1997 Julie Church, a marine conservationist from Kenya, was leading a conservation and development project and was situated on the remote Island of Kiwayu. Julie was horrified by the waste washing up onto the beaches creating an environmental disaster for the marine ecosystem and species.



Upcycling in progress



Weighing collected flip-flops

Ocean Sole is a marine conservation entrepreneurship model, which upcycles discarded flip-flops into products for sale, thus creating an economically viable enterprise, employing the skills of local artisans. Through this process Ocean Sole supports sustainable livelihood alternatives, skills improvements, waste collection and uses this to improve the establishment, management and expansion of local marine protected areas.

Inspired by the toys children were making out of the flip-flop debris, Julie encouraged their mothers to collect, wash, and cut the discarded flip-flops into colorful products. A large order from the World Wildlife Fund (WWF) Switzerland for 15,000 turtle key rings was received and the local women were empowered to create these from an estimated 1,000 kgs of discarded flip-flops. This was the first step in »commercialising the business« and provided the first trade focused initiative that support the women and conservation in the Kiunga Marine National Reserve. It also resulted in the development of high quality products for sale to tourists in Kenya and socially responsible outlets throughout the world.

BUILDING BLOCKS Solution components for replication

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**From trash to trade**

Alternative livelihoods and marine conservation entrepreneurship: a model of commercially viable conservation through repurposing and recycling discarded flip-flops. The company works in partnership with other local marine focused organisations and employs local artisans, providing training and support.

**From awareness to understanding**

Data collection is the base to develop an understanding and work on improvement: Data on collected debris to advocate responsible waste management, marine conservation area data to understand the impact of the waste on ecosystems, social data to monitor changes and qualitative data for marketing and education purposes.



Decoration, sculptures and bracelets made of recycled flip-flops

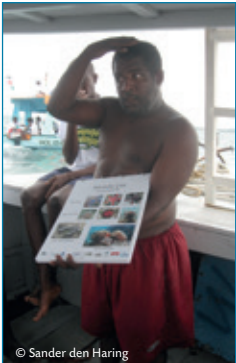
This solution is being implemented by the Ocean Sole Foundation in collaboration with the Kuruwitu Conservation and Welfare Association, the Watamu Marine Association (WMA) and the communities from Msambweni and Mkwirowi village, Kwale District, Kenya. Specific projects get funded by several different organisations.



THE USE OF INTERPRETATION TO INFLUENCE THE BEHAVIOR OF SNORKELERS

30 SOLUTION provided by Sander den Haring (JCU/ CORDIO)

Role-playing excursion: participant being the guide



Snorkeling is a fascinating activity allowing spectacular glimpses at the underwater world with minimum effort. Unfortunately, often there is no information exchange on pro-environmental snorkeling behavior, or any education on the marine ecosystem. This results in unintentional snorkeler contacts with the marine substrate, and dissatisfied visitors.

In the Mombasa Marine Park (MMP) things changed due to James Cook University (JCU) and Coastal Oceans Research and Development – Indian Ocean (CORDIO). They introduced an interpretive training scheme to the snorkel industry that encourages pro-environmental snorkel behavior, enhances visitor experience and builds sustainability. A major output of the workshops is the creation of a Code of Conduct created by members of the snorkel industry.

Sander den Haring, JCU/ CORDIO: »I recently completed a PhD researching the use of interpretation to influence the behavior of recreational resource users. The solution described made up one of the chapters of my thesis. What I remember most about this training workshop is the amount of interest shown by the audience. The snorkel operators were asked to sacrifice 3 days of their day-to-day work to attend. For the first session we struggled to get 37 participants. However, by the time the first group had graduated, word had obviously spread. The following morning we had



Workshop discussion to engage and encourage participants



Successful completion of the role-playing excursion

97 eager participants waiting outside the venue. The enthusiasm that this second group exhibited was truly inspiring. Having now seen the results of my research and how effective the training actually was, I am a firm believer in the practical applications of such interpretive efforts to protecting and conserving the marine resources.«

BUILDING BLOCKS Solution components for replication

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Salient beliefs of target audience

The beliefs that drive impact behavior must first be identified to be targeted. Therefore, structured interviews provide data on the audience’s (snorkelers’) descriptive norms, normative norms, control beliefs and attitudes. The identified salient beliefs are incorporated into an interpretive workshop.



Interpretive training workshop

Workshops to train snorkel operators through expert presentations, group discussions and role-play scenarios to deliver interpretive efforts, which target salient beliefs to influence the behavior of the audience.



Interpretive tools to influence behavior

Materials designed for snorkel operators, e.g. information on the reef, marine life identification slate and flags for boats that deliver interpretive efforts and help implement a new code of conduct.



Post training monitoring and feedback

Post training monitoring and feedback is essential to provide continued reinforcement of the success of the interpretation and an opportunity for operators to discuss challenges and success stories.



A warden of the Mombasa Marine Park honors the winner of an awareness raising competition between snorkel operators

This solution is being implemented by Coastal Oceans Research and Development – Indian Ocean (CORDIO), Green Water, James Cook University in collaboration with the Kenya Wildlife Service, the snorkel operators and the Mombasa Marine Park. The project was financed by James Cook University, the British Ecological Society, Project AWARE, the Netherlands Embassy in Nairobi and Heritage Hotels.





USING SCIENCE FOR EFFECTIVE AND ADAPTIVE MPA MANAGEMENT

32 SOLUTION provided by Jennifer O'Leary (SAM) and Arthur Tuda (KWS)

Marine protected areas (MPAs) are essential to conserve marine biodiversity. Most nations have agreed to protect  $\geq 10\%$  of coastal zones by 2020 and scientists recommend 30% protection by 2030. However, there are significant shortfalls in management effectiveness, and MPAs continue to be threatened due to local and global stressors.



Management Training Workshop

The Science for Active Management (SAM) Program works with government agencies to develop adaptive management frameworks that incorporate scientific data into decision making. SAM (1) guides staff in translating broad agency goals into measurable objectives, (2) engages staff and stakeholders in MPA monitoring and data review, and (3) provides a co-developed framework to use data to inform and evaluate management actions. Managers and stakeholders think through what information is needed for evaluation, and researchers learn about management needs.

»The results of using science to empower communities have exceeded expectations. Prior to SAM, the MPA social system felt apathetic,« remembers Jennifer O'Leary, Co-Director of the SAM Program. »Now, you can feel the excitement when entering an MPA. For six years, rangers have been collecting and analysing data, and findings are comparable to those of experienced researchers. Rangers now train their peers in monitoring and management techniques, and have taken major management actions: invasive species were removed from MPA beaches to enhance turtle nesting, corals damaged by fishing are being restored with help from fishers, harmful fishing gear have been removed from the area surrounding an urban MPA, and the public beaches that were covered in plastic trash for decades are clean. »MPA Champions« have surfaced from all sectors. For example, Champion Pascal Yaa is a fisher who keeps meticulous records of coral damage in fishing grounds and now serves as a peer trainer for fishers.«



Action to restore the corals: coral garden



Beach clean-up to restore the ecosystem

BUILDING BLOCKS Solution components for replication



Development of national targeted objectives

Ecological and social indicators are developed. They get prioritised by regional social and ecological scientists and managers. A final list of objectives focusing around each management goal gets peer reviewed by stakeholders and regional scientists.



Management objectives are discussed with local communities



Participatory regular MPA monitoring

Community members and MPA managers receive training in ecological monitoring techniques and launching an MPA-led monthly monitoring program. That helps them understand ecosystem changes and promotes collaborative problem solving.



Ecological monitoring



Data request form

The data request form is created by managers to ask researchers for the specific data most relevant to MPA management in a specific format to receive comparable datasets. To build trust, a memorandum of understanding clarifies that shared data will only be used for management.

This solution is being implemented by Science for Active Management Program (SAM) together with the Kenya Wildlife Service (KWS), Marine Parks and Reserve Unit of Tanzania, and Seychelles National Parks Authority.



# AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION

34 SOLUTION provided by Lalao Aigrette (Blue Ventures)

Although a critical habitat for threatened marine biodiversity and a vital source of food and income for millions of coastal Malagasy people, Madagascar's mangrove forests, and the fisheries they support, are at risk. Widespread degradation and deforestation of mangroves are caused by the overexploitation of wood resources for construction and commercial use (e.g. lime production, charcoal and timber).



Stakeholder groups drawing boundaries of land use types on maps

Blue Ventures is employing a participatory monitoring and management approach to address degradation and deforestation of mangroves in the Bay of Assassins, in the south of the Velondriake Locally Managed Marine Area (LMMA). By the use of participatory mangrove mapping and the formulation and enforcement of a Forest Management Plan, certain mangrove areas are placed under strict protection against mangrove logging while others are harvested under a controlled harvesting regime or replanted by community groups.

»The participatory monitoring and management approach doesn't stop communities using the mangroves but aims to promote their sustainable use. As this is a community project, benefits flow to the entire community and not just a few selected individuals. The project also provides alternative livelihoods for the community, including employment opportunities in project monitoring,« shares Lalao Aigrette, project manager at Blue Ventures.



Community participating on the theory of change



Reforestation of the degraded area during the international mangrove day



Women group taking care of the mangrove nursery

BUILDING BLOCKS Solution components for replication

**Participatory mapping for management**

Through a participatory mapping of the project area the communities understand spatial patterns and the state and use of mangrove resources. The produced maps support the management planning/zoning.

**Participatory theory of change**

In a participatory exercise the community develops a concept model including the drivers and causes for mangrove loss. Participants also work on solutions by creating a theory of change.

**Participatory Forest Management Plan**

Representatives from all involved villages meet for a validation workshop based on a participatory mangrove mapping. Each community describes the rules and regulations governing each mangrove zone. Enforcement is based on the derived Forest Management Plan.

**Participatory monitoring**

A socially integrated resource assessment is conducted by local monitoring teams. Before conducting the fieldwork, monitors receive training on simple monitoring techniques.

**Mangrove reforestation by communities**

Depending on the mangrove species, replanting is undertaken through propagules or nursery establishment. Community members are supporting the planting and are involved in monitoring activities.

This solution is being implemented by Blue Ventures, in collaboration with the Velondriake Association, validated by the Plan Vivo Foundation and funded by the Darwin Initiative, the Mac Arthur Foundation, the Blue Forests Project of the Global Environment Facility (GEF), the United Nations Environment Programme (UNEP) and several other donors.





36 SOLUTION provided by Alison Clausen and Stéphanie D'agata (both WCS)

Locally Managed Marine Areas (LMMAs) are areas managed by local coastal communities with the aim to protect marine biodiversity and resources. Shown effects are improved food security, less poverty and improved abilities to adapt to climate change.



Map showing the national network of LMMAs

This solution adopts a dual bottom-up/top-down approach to local marine resource management in a network of 26 marine reserves. The Wildlife Conservation Society (WCS) initiated the development of a seascape-scale coastal fisheries co-management plan. The plan provides formal national recognition for local fishers' rights and customary social conventions (dina) between fisher communities. Fishers were endowed to enforce regulations and the dina to manifest their role in marine resource management and support government agencies.

The LMMAs in Antongil Bay are organised into a network of 26 reserves that in turn form part of a national network of LMMAs in Madagascar – the MIHARI network. In October 2015 the communities around Antongil Bay had the honor of hosting over 150 members of the MIHARI network for the annual national forum. The fisher associations were incredibly proud to demonstrate to other local communities from around Madagascar the work that they had done and their achievements through the management plan. For many in the local communities it was the first time they had the chance to engage directly with high-level government officials. Their sense of pleasure that their work was being recognised at this level was overwhelming. As a direct result, the government launched the preparation of a new national decree on locally managed marine protected areas.



Lunch for the national LMMA network in October 2015

BUILDING BLOCKS Solution components for replication



**Fisheries co-management plan**  
A legal framework to recognise local community management rights developed jointly by the Wildlife Conservation Society, resources users and government. The plan acknowledges the role of marine reserves for resource recovery and fixes maximum levels for fishing efforts.



**The dinabe: A social convention**  
A dina is a traditional social convention with legal support in Madagascar, enabling communities to develop rules and regulations for instance in natural resource management. Dinas are created for each fishers association in Antongil Bay. For bay-wide sustainable resource use the single communities agreed upon a dinabe that federates the individual dinas.



Law enforcement: burning fishing nets



**Control and Surveillance Committee (CCS)**  
After training, volunteer community rangers, who are officially recognised by the government, enforce the rules and regulations set out in the management plan and the dinas.



Community ranger over-seeing the bay

This solution is being implemented by the Wildlife Conservation Society (WCS) in collaboration with the Ministry of Marine Resources and Fisheries (MRHP), Madagascar and the Committee for Sustainable Development of Antongil Bay (PCDDBA) and financed by the Darwin Initiative, the Helmsley Charitable Trust, the MacArthur Foundation and The Waterloo Foundation.





38 SOLUTION provided by Laura Robson (Blue Ventures) and Nantenaina Andriamalala (PHE)

People in Velondriake – a locally managed marine area in southwest Madagascar – thought that their fish stocks would collapse without improved access to family planning. The marine conservation organisation Blue Ventures not only recognised these connections between unmet family planning needs, food insecurity and environmental degradation, but also realised that they were ideally placed to address this critical unmet community health need.



Radio show discussion group addressing health and environment topics

The solution integrates community health services with local marine conservation and coastal livelihood initiatives. This holistic model allows people to choose freely the number and timing of their births, while equipping them with skills and opportunities to manage their resources sustainably. It is often referred to as the Population-Health-Environment (PHE) approach because of the way it reflects the connections between people, their health and the environment.



Client with contraceptive pills

Irene was in her final year of secondary school when she had her son, now four years old. She decided to start using family planning after the birth of her son, choosing three-monthly depo-provera injections offered by the community-based distributor of contraceptives in her village. Once Irene took control of her reproductive health, she found that her business ideas thrived, her confidence grew, and she became able to provide for her son.

To earn money, Irene grows seaweed and sea cucumbers through an initiative supported by Blue Ventures. Thanks to these efforts, she's been able to build a large house with four rooms, buy several goats

and pay for her son's school fees. She's now a passionate advocate of reproductive rights in her village, talking to other women about the benefits of making their own family planning choices.

BUILDING BLOCKS Solution components for replication



**Family planning and community health service delivery**  
Community members are provided with access to voluntary family planning and other basic health services through networks of local women. The women are trained and supported to operate as community health volunteers.



Community health worker training



**Locally managed marine areas**  
Through the use of dina – customary laws that are recognised by the Government – communities have designed effective rules that can be enforced locally. The aim is to ban destructive fishing practices and designate priority marine areas for protection.



**Temporary octopus fishery closures**  
This model involves periodic closures of portion of octopus gleaning grounds resulting in increased catches, thereby building community support for local marine management efforts. The approach depends on support from the entire seafood supply chain.



**Community-based aquaculture**  
Connecting isolated coastal communities with lucrative international markets enables families to develop their own aquaculture businesses. The approach alleviates pressure on marine ecosystems while the new income improves access to food and education.



Sea cucumber farmers

This solution is being implemented by Blue Ventures with partners including the Government of Madagascar, Population Services International (PSI), Marie Stopes Madagascar, Copefrito and Indian Ocean Trepang (IOT).



KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT

40 SOLUTION provided by Steve Roccliffe (Blue Ventures)

Declaring areas permanently off-limits to fishing all too often puts conservation at loggerheads with the needs of coastal communities, disenfranchising the people who depend on fisheries for their livelihoods.



Man catching octopus with spear

Along tropical coastlines, »Blue Ventures« works to overcome this challenge through the establishment of voluntary and temporary closures of octopus fishing grounds. They are used as a point of entry for community-based conservation. Closures typically cover 25% of a community’s overall octopus fishing area and are in place for 2–3 months at a time. There is compelling evidence that this improves fishery yields and local incomes, thereby building community support to protect natural resources through locally managed marine areas that ban destructive fishing practices and often incorporate community-enforced no-take areas.



Woman looking for octopus

Velvetine, a 60 year old octopus gleaner from Madagascar, speaking about her experience:  
»Octopus gleaning is the only way that I can earn money. Octopus is really the only seafood that we women can sell. Before we started doing octopus reserves, we were only catching two or three octopus in a day, and some days we wouldn’t catch any at all. With the reserves we make a small sacrifice, but we can still glean on other reefs, and after waiting we catch more octopus—the catch is good in the days after openings. I have more money for food and for my family. For these reasons, I want to continue with the octopus reserves.«

BUILDING BLOCKS Solution components for replication

**Community vulnerability assessment**  
Assess communities’ perception of the state of marine resources, the need for management and their motivation to take responsibility for management. It is crucial to only promote management efforts the community is motivated to enforce.

**Collaborative closure design**  
Communities select a short lived, fast growing and economically important target species. They also define the area and the timing of the closures. Commercial seafood buyers are informed to maximise their support.

**Peer-to-peer learning exchange**  
By learning directly from experiences of communities already implementing closures, target communities realise that they can adapt the approach to their own contexts.

**Collaborative regulation setting**  
Rules and regulations of the closure are decided upon in a village meeting to ensure community ownership and support. The area under closure is formalised in regional courts to ensure legality and institutional backing.

**Community-based opening of closures**  
All closures in an area open on the same day. Procedures are well communicated to ensure the participation of all villages and coordinated with buyers. Simple catch monitoring on the opening day gives rapid feedback on effectiveness.

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Peer-to-peer learning exchange

This solution is being implemented by Blue Ventures in close collaboration with numerous partners from different countries and principally financed by the Skoll Foundation.

PIONEERING CLIMATE RESILIENT MARINE PROTECTED AREA IN NOSY HARA NATIONAL PARK

42 SOLUTION provided by H. Rakotondrazafy, M. Randrianirina (both WWF MDCO), J.H. Bakarizafy (Madagascar National Parks)

Nowadays climate change (CC) is among the major threats to ecosystems, biodiversity and local communities. Lack of CC related knowledge, the absence of local climate data and the heavy dependence on small-scale fishery and traditional agriculture makes the ecosystem and local communities more vulnerable.



Fisherman pirogue in Nosy Hara

By recognising the problems associated with CC in the Nosy Hara marine protected area (MPA), the World Wildlife Fund (WWF) in collaboration with Madagascar National Parks (MNP) has provided CC related capacity building to national park managers. They receive support in undertaking a multi-target vulnerability assessment and implementing adaptation measures for coastal and marine resources as well as for local communities. A climate-smart management plan allows building a CC resilient protected area and long-term goods and services for local communities.



Community meeting in Nosy Hara (above) and community active in mangrove restoration (below)

Jean Hervé Bakarizafy, Nosy Hara Park Director, is really proud of the community commitment regarding mangrove conservation. Prior to the joint implementation of adaptation work by MNP and WWF, none of the villages surrounding the MPA was interested in mangrove restoration. The local mangrove ecosystems seasonally support 75% of the communities' livelihood. Thanks to the restoration campaign mangroves are now among the main priorities of local communities. Six of eight villages are currently closely involved in the mangrove restoration activities. E.g., in the village of Andranomavo, fishermen and women association have planted 20,000 propagules and set up a mangrove nursery. Another village has put in place a community mangrove patrol. Their strong motivation contributes to the conservation, the sustainable management of mangrove areas and to increase community resilience against climate change impacts.

BUILDING BLOCKS Solution components for replication



**Climate change capacity building**  
MPA managers receive climate change related education and training to enhance their knowledge on key concepts and potential impacts for coastal and marine areas.



**Revised climate change inclusive management plan**  
Update conservation targets status, review and revise threats and adjust MPA strategy and monitoring protocols to achieve a climate-smart MPA management plan. This ensures long-term services and guides managers.



**Climate Witness Community Toolkit**  
In a participatory approach communities monitor climate change impacts and discuss the causes. As main result, the toolkit devises an appropriate adaptation action plan.



Biological monitoring



**Climate change vulnerability assessment**  
A vulnerability assessment guided by a multi-expert and multi-partner process is conducted to identify hotspots of climate change vulnerability and adaptation options. The results help strengthen and/or maintain the site's resilience.



**Identification of adaptation options**  
Four criteria to prioritise adaptation options: The range of benefits of the option, opportunities that enable its implementation, required costs and its risks. The process includes MPA managers, stakeholders, PA experts and local people.

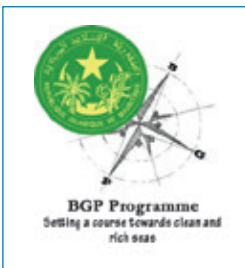
This solution is being implemented jointly by World Wildlife Fund (WWF) Madagascar Country Office and Madagascar National Parks and funded by the European Commission.





44 SOLUTION provided by the Program BGP

In the early 2000s the oil and gas sector started first exploitations in the exclusive economic zone of Mauritania. Soon after the first offshore oil field was discovered, an intense public debate started about environmental and social risks of this sector. Both, fishermen and industry now impact the marine environment and the cumulative effects increased the need for a sustainable, cross-sectorial marine spatial planning approach.



That led to the development of the Program Biodiversity Oil and Gas (BGP). Through a collaborative and integrated approach the initiative collates data of the marine environment, develops and understanding for the ecological side-effects of human uses, designs technical tools to monitor activities, and implements corresponding policies.

Clymene Dolphin observed off Mauritania (left)



»Since 2012, the Mauritanian Research Institute for Oceanography and Fisheries (IMROP), with other partners, is establishing an early warning system for micro-pollution. So far we have been sampling sediments, fish, bivalves, crabs, water four times a year and chemical as well as bioassays and biomarkers analyses,« says Moulaye Wagne, researcher from the Laboratory of Marine and Coastal Environment Studies (LEMMC) of IMROP.



»We take advantage of being in the field and all along the coastline to observe and record the stranding of cetaceans and turtles, and count sea bird populations. These moments are also an opportunity to train students and civil servants of the national parks. First of this type in Africa, this early warning system will enable the country to indirectly monitor industrial activities on the coast and at sea and make sure appropriate measures will be taken prior to any significant pollution or damage to the marine environment.«

Sampling during a monitoring campaign

BUILDING BLOCKS Solution components for replication



Dialogue between government, private sector and civil society

The dialogue between stakeholder groups is a tool to facilitate the creation of overlaps and joint-activities. It works as a multi-partner platform for mutual understanding, trust creation and as operational entity.



Capacity building for the future

A comprehensive capacity building program is necessary. It includes a Master Degree on Environmental Management of Extractive Industries, an academic documentation center, equipment and training sessions and internships.



Voluntary participation of the private sector

Partnerships with the private sector are formed through lobbying efforts to generate new sources of funding. The results are non-commercial data sharing, communication and voluntary funding activities with industries.



Scientific data for decision making

Adjust policy to the local context by using information science can provide. One way is the support of national stakeholders to consolidate existing knowledge and the creation of research programs to map vulnerable zones.



Awareness raising among challenged stakeholders

Awareness raising among e.g. civil servants, fishermen, coastal communities, local NGOs through communication tools, training courses and conferences.



Monitoring activity on the sea

This solution is being implemented by Program BGP, an initiative of the Mauritanian Ministry of Environment and Sustainable Development in close collaboration with the Mauritanian Ministry of Oil, Energy and Mines, and the Mauritanian Ministry of Fisheries and Maritime Economy. The program is supported by Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)/ProGRN Mauritania on behalf of the German Federal Ministry for the Economic Cooperation and Development (BMZ), the United Nations Development Programme (UNDP/GEF), the International Union for Conservation of Nature (IUCN) and MAVA.



# SUSTAINABLE MANAGEMENT OF MARINE RESOURCES

46 **SOLUTION** provided by Houssine Nibani (AGIR)



Fishers in Al Hoceima National Park

Al Hoceima National Park, which was previously plagued by illegal fishing and trawlers, has now entered a new era. The ospreys have returned, dynamite fishing has ceased and the fishers now earn a better living. The association has managed to gain the trust of the small-scale fishers and local communities, of stakeholders at institutional and central level, as well as major international funding agencies. International recognition came in 2014 when AGIR won the



Temsaman fisher



Analysis of impact indicators

An extensive program of participatory planning is implemented by the Integrated Resources Management Association (AGIR) along Morocco's Mediterranean coast in the Marine Protected Area (MPA) embracing the Alboran Sea, the Marchica lagoon and the Al Hoceima National Park. It follows an ecosystem approach to support 3,000 small-scale fishers. The fishers have together identified the problems posed by illegal trawling and dynamite fishing, and endeavoured to address these by setting up a committee to monitor and control the threats. The commercial management of fish products through new cooperatives has raised their overall income.

United Nations Equator prize for the management of marine and coastal resources. The confidence gained through this has allowed the association to effect change through a collective endeavour. All that remains now is to share the experience with other institutional partners and countries along the southern Mediterranean who are looking to AGIR's approach for inspiration.

**BUILDING BLOCKS** Solution components for replication



## Participatory management

The team responsible for organising implementation and the small-scale fishers are helping with a follow-up study. Furthermore they run a participatory assessment of the conservation status of resources and habitats, and a monitoring of illegal activities within the MPA.



## Participatory planning

Small-scale fishers from three cooperatives are trained in participatory planning and are involved in drawing up the resource management plan for the National Park's marine area. Strict No-Take Zones are suggested.



## Systemic sustainability analysis

A socio-cultural, economic and ecological analysis is conducted to raise all stakeholders' awareness of: the decline in biodiversity and the solutions provided by the project.



## Sustainable commercial management of marine resources

The MPA is helping to generate revenue by implementing a participatory strategy of marketing fishery products: »Fonds verts roulants« (rotating funds for fisheries) are set up to kick-start income generating activities.



## Mediterranean network of fishing cooperatives

An informal network of small-scale fishers' cooperatives is set up in the MPA. A workshop is organised to discuss MPA management, an online forum put in place to offer a platform for sharing know-how and good practices, and an extension guide on the self-management of MPAs published.

This solution is being implemented by the Integrated Resources Management Association (AGIR), with the International Union for Conservation of Nature (IUCN) and the financial support of MAVA Foundation and the Global Environment Facility Small Grants Programme (GEF-SGP) implemented by the United Nations Development Programme (UNDP).



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KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION

48 SOLUTION provided by Salatou Sambou (Kawawana/APCRM)

Kawawana («our heritage to be preserved by us all») is an estuarine territory where the ancient governance and management rules – renovated and agreed upon also by the municipal and regional governments – are finally again respected.

With no financial support and limited in-kind outside support, the local fishermen govern, manage and provide much needed surveillance operations for their own Kawawana, which has dramatically recovered in quantity and quality of bio-



Community members in Mangagoulack use wooden canoe



Radio programs in local languages allow live debates about Kawawana

diversity, fosters local food sovereignty (better diet and prosperity) and in part reversed the urban exodus. The practice of collective governance consolidates local solidarity. The community has learned sophisticated methodologies and regularly monitors fishery and socio-economic results. Local interactive radio programs allow to dialogue with all who need to know and respect the rules.

At the dawn of the new millennium, uncontrolled fishery and ecosystem exploitation in the Rural Municipality of Mangagoulack (Casamance, Senegal) had basically depleted both livelihood resources and biodiversity. Empowered by the information that their country has internationally agreed (as part of the Convention on Biological Diversity) to



Community monitoring of fish resources



Sign post of the entry into the red zone of Kawawana

support the territories and areas conserved by indigenous peoples and local communities (in short, ICCAs), a local fishermen association established one of its own. While the success of Kawawana is nothing short of inspiring, the ongoing volunteering operations are taking a tall on the most generous members of the community. Ways to generate income to sustain surveillance and management operations will – sooner than later – need to emerge.

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Rehabilitation and strengthening of traditional rules

The community's collective rights and capacity to govern and manage its heritage territory are asserted. Ancient rules are re-established and enforced. For instance, no entry in the zones where the spirits live.



Monitoring of the comeback of the «good life»

Since the establishment of the ICCA, the local community is engaged in monitoring the quality and quantity of fish in the area, overall ecosystem health and related socio-economic change.



Sharing information on ICCA rules and the «ICCA option»

Intense and diverse communication activities (exchanges, meetings, popular debates and radio shows) spread information and understanding about Kawawana. Other Community Conserved Areas emerged in Casamance and elsewhere in Senegal.



Community organisation

Realising that local fish resources had seriously degraded in quantity and quality, the fishermen found a solution: declaring their own Community Conserved Area and managing its resources for restoration and sustainable use.



Community declaration of its own Community Conserved Area

The fishermen association sought government recognition to be able to enforce its management rules. As Kawawana makes great sense and its leaders have excellent diplomatic skills, the ICCA is now recognised by municipal and regional governments.



Community solidarity

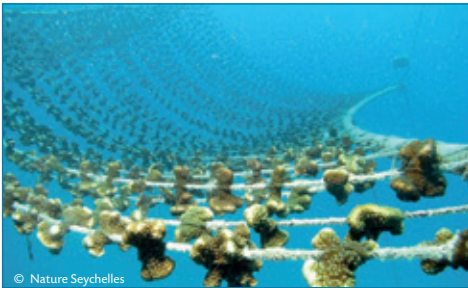
This solution is being implemented by the Fishermen association of the Rural Municipality of Mangagoulack (APCRM) in collaboration with the ICCA Consortium. In the planning phase, the ICCA Consortium has been supported by the Small Grants Programme (SGP) of the Global Environment Facility (GEF) implemented by the UNDP. Later, the International Banc d'Arguin Foundation (FIBA) supported the APCRM in kind for the ICCA's surveillance operations. Everything else of this solution is completely self-produced and self-financed.



REEF RESCUERS: RESTORING CORAL REEF ECOSYSTEM SERVICES

50 SOLUTION provided by Dr Nirmal Jivan Shah (Nature Seychelles)

The benefits humankind earns from an ecosystem are commonly known as ecosystem services. Coral reefs for instance provide food, coastline protection from erosion, jobs in fishing, recreation etc. Climate change induced coral bleaching, storm surges and sea level rise threaten reefs and minimize the provision of services. This means vulnerability to coastal risks and disasters increases, and valuable income is lost.



Coral gardening nursery

»On Friday October 23rd 2015 I received word that on the beaches of Cousin Island Special Reserve, a Marine Protected Area where our coral transplantation site is located many dead fish were washing up and that the waters had a dark green appearance,« tells Dr Phanor Montoya-Maya, Technical/Scientific Officer & Trainer at Nature Seychelles’ Reef Rescuer project. »Dr Nirmal Shah, Nature Seychelles CEO, confirmed that a harmful algal bloom (HAB) was taking place.



Baseline survey of transplantation site

We dived at the control site and saw effects of the HAB: many colonies were dead and fish numbers were lower than ever recorded in the past two years. We also found that our coral transplants responded better to the stressful conditions. No dead colonies were observed at the transplanted site. This is a very promising result that adds support to Nature Seychelles’ novel theory that transplanting bleaching resistant colonies enhances the resilience potential of coral reefs in the face of climate change.«

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Capacity development for coral reef restoration

The capacity development program comprises two phases. The first is the coral planting project and is based on the »learning by doing« concept for knowledge transfer. The second phase is a formal six-week full-time training course including field work.



Coral nursery: tying coral fragments on a rope



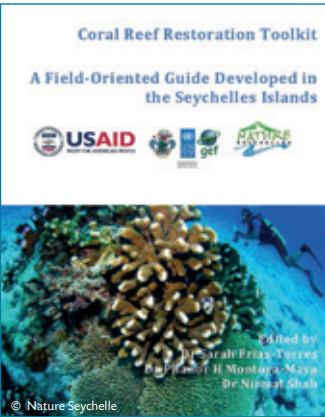
Vulnerability assessment and stakeholder plan

The plan is a prerequisite for action and uses information e.g. from the National Adaptation Plan and other reports and scientific papers. Stakeholder analysis is done to engage the right groups in the project.



Coral reef restoration toolkit

The toolkit aims to share knowledge and fill a void in the practical know-how of coral restoration. It explains what was done and how problems were solved. It is developed for scientists, managers, practitioners and local communities who are facing a similar challenge and need guidance.



Cover of the Reef Rescuers Toolkit

This solution is being implemented by Nature Seychelles, financed by the U.S. Agency for International Development (USAID) and further financial support was received under the Government of Seychelles/Global Environment Facility (GEF)/United Nations Development Programme (UNDP) Protected Area Project in 2011.





DEVELOPMENT OF A COMMUNITY-BASED MARINE TURTLE CONSERVATION PROGRAM

52 SOLUTION provided by Edward Aruna (RAP-SL)

Five of the world’s seven marine turtle species are commonly known to occur in Sierra Leone, namely loggerhead, green, olive ridley, hawksbill and leatherback turtles. These threatened and endangered species are far too often victims of accidental by-catch, sand mining, poaching for their meat, eggs and carapaces as well as destruction of nesting beaches due to construction and climate change impacts.

The Reptile and Amphibian Program – Sierra Leone (RAP-SL) reacted to the severe situation for the marine turtles and developed a community-based turtle conservation program. Locals are now supporting the surveillance of nesting beaches and by-catch. The success builds on awareness-raising through education material, seminars and workshops and the integration of the community in the active protection of the animals.

In Sierra Leone, five marine turtle species are known to occur in the country’s Atlantic coast. The Sherbro Island beach is about 52 km long and hosts the largest population of nesting leatherbacks in Sierra Leone. For the monitoring of nesting beaches and bycatches, the marine turtle conservation program annually hires members of the adjacent coastal communities.

Presently, the Reptile and Amphibian Program – Sierra Leone (RAP-SL) is engaging more than 54 monitors from the local communities to conduct nesting beach and by-catch monitoring along the beach. Since 2008, the marine turtle conservation program has recorded a total of 750 marine turtle nests on beaches. These nests resulted in the release of about 38,118 hatchlings while the by-catch monitoring has recorded around 1,000 turtles. Sierra Leone has well over 70 major coastal settlements. The involvement of locals has been considered as a key factor for the conservation success.

Education and sensitisation meeting



Locals releasing leatherback turtle



Newly hatched turtles



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**Data collection by communities**  
The program identifies and trains locals in data collection and trained monitors receive stipends for the survey of the beach. They are equipped with material to conduct nesting beach and by-catch monitoring. Collected data is fed into a database for long-term species surveillance.



Tagging captured turtle



**Awareness raising through information sharing**  
Information on the importance and benefits of biodiversity and species protection is shared through different communication material such as T-shirts, posters, calendars, etc. In regular community meetings and seminars information on the project is shared and community members can engage in program activities, creating local ownership.



On-the-spot training of monitors

This solution is being implemented by Reptile and Amphibian Program –Sierra Leone (RAP-SL) in collaboration with the Ministry of Fisheries and Marine Resources, Sierra Leone and the Wildlife Conservation Unit of the Ministry of Agriculture, Forestry and Food Security, Sierra Leone and mostly financed by the US Fish and Wildlife Service and with grant support from the United Nations Development Program (UNDP)/ Global Environment Facility (GEF) Small Grants Program (SGP) and SOS Small Grant on behalf of Marine Turtle Conservation Act of 2004, GEF and the International Union for Conservation of Nature (IUCN).





54 SOLUTION provided by Serge Raemaekers (University of Cape Town)

Small-scale fisheries are often data limited, with limited participation of fishers in management decision-making processes. As a result fishers often do not regard fisheries regulations as legitimate, arguing their local knowledge is not being considered.



A fisher using ABALOB! to record daily catch, expenses and income

The ABALOB! initiative is a transdisciplinary research and social learning endeavor, bringing together different stakeholders with traditional fishers taking center stage. It is a participatory action research project with a strong community development component. ABALOB!, as an application suite and co-design process, is aimed at social justice and poverty alleviation in the small-scale fisheries chain, transformation in the way we produce knowledge, stewardship of our marine resources, and resilience building in the face of climate change.

Niklaas Joorst, a fisherman in Struisbaai involved in the pilot of ABALOB!, puts all his data into the app when he comes back from sea, saying that it has helped him a lot as he is able look at income, expenses and his catch trends. The ABALOB! system could make the notorious paper based »blue books« obsolete. The »blue books« are where some fishers currently record data pertaining to their catch. »The ABALOB! is a much better system (than the blue books),« says Joorst. This is something that Josias Marthinus, a catch data monitor in Struisbaai agrees with. Marthinus's job is to record data from each fisher's catch, such as the weight of the catch and the species, which is then submitted to the fisheries department. Currently, he has to write everything out by hand and the data is only collected once a month. Marthinus says that the data captured on the fisher version of the app can help fishers secure bank loans to fix their boats and can also aid in paying taxes as they now have detailed data on their income and expenses. It legitimises their livelihood.



A monitor handing over a landing slip



A community-catch monitor measuring yellowtail

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**Transdisciplinary social learning**  
Stakeholders from different backgrounds work together in framing the problem and research questions in a transdisciplinary approach. This leads to the co-design of the app based on input and tests in real-life situations. A social learning program helps in further developing the tool.



Using the app



**Co-producing fisheries knowledge**  
Based on fishers' daily data, all stakeholders at the co-management table are able to talk about the same fisheries indicators and fisheries trends. Trends and improvements of the platform based on common information are discussed in regular workshops.



Discussions at ACO-design workshop

This solution is being implemented by the ABALOB! team from: University of Cape Town; Fisher communities of South Africa; Department of Agriculture, Forestry and Fisheries, South Africa in collaboration with several NGOs and private technology partners and financed by the Technology Innovation Agency (TIA), the South African Fisheries Authority and the National Research Foundation.



56 SOLUTION provided by Wilfred Chivell, Brenda du Troit (both DICT) and Manuel Bollmann (FFT)

The South African waters are famous for their rich biodiversity and environmental beauty. But the marine realm is in danger. Development pressures key species and fragile coastal habitats and lack of awareness and alternative livelihoods cause a great damage to marine ecosystems.

The Fynbos landscape: view across Cape Floral Kingdom on the Gansbaai coastline



By implementing the FFT certification, Fair Trade Tourism (FTT) and the Dyer Island Conservation Trust have joined forces to ensure that the people who contribute their land, coastal and marine resources, labor and knowledge to tourism are the ones who reap the benefits. Within the destination of the Cape Whale Coast, FTT has been working with a number of different businesses over the past 10 years and so far seven of them have been certified.

Tourists on boat excursion with Dyer Island Cruises



Today's achievements of the Dyer Island Conservation Trust (DICT) would have been impossible without Wilfred Chivell, the visionary behind the successful companies Dyer Island Cruises and Marine Dynamics. Wilfred is changing the way the shark cage diving industry is viewed and enjoys support of other conservation organisations. He has structured a business model that not only creates employment but also benefits the environment. Every day funds are raised from clients visiting the companies and this supports the work of the Trust. Three marine biologists have been supported in completing their master's degrees and Marine Dynamics also started an international marine volunteer program. These students become ambassadors for great white sharks and the more people changing the perception of this misunderstood predator the better its chances of future survival.



Great white shark



Wilfred Chivell

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**Certification, business and market development support**

Certification program: a management tool to improve businesses practices towards fair tourism. It offers for free Business Development Services, along with workshops and training, free online resources and toolkits.



**Fishing line recovery program**

The program works through community-based activities. It also includes the placement of recycling bins at local beaches and popular fishing spots to create public awareness.



**Public-private collaboration for conservation**

Tourism companies and a trust fund conduct research, conservation and education activities. The companies provide logistical and onsite support to operate, while political support is provided by the municipality and/or other authorities.



Local children return from a beach clean-up and exchange plastic waste at the »Swap Shop«



**Conservation of key flagship species**

Specific conservation actions can include: species monitoring, a seabird sanctuary, behavioral observation, the creation of safe reproduction zones for endangered species e.g. shelters for breeding pairs of the African Penguin.



**Ecosystem restoration and environmental education**

An environmental one year education program for local youth supports the linkage of tourism and conservation on a privately managed area and creates new livelihood opportunities for successful students.

This solution is being implemented by Fair Trade Tourism, Marine Dynamics Shark Tours, Dyer Island Cruises, White Shark Projects, Southern Right Charters, Whalesong Lodge and Grootbos Private Nature Reserve in collaboration with Dyer Island Conservation Trust and Grootbos Foundation and financed by various private and public sector funding sources.



CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE (CASA)

58 SOLUTION provided by Mark Proctor and Cathryn MacCallum (both Sazani)



Engagement and preparing for deliberate dialogue

The population of rural Zanzibar lives in conditions of extreme poverty, although strong social networks exist. Rural people understand the fragility of the coastal resources on which their livelihoods depend, yet lack the knowledge how to maximise their own benefits from those resources in a sustainable way. Mass tourism and population growth is exacerbating the overexploitation of natural capital assets.

Sazani has piloted an integrated community approach to supporting the establishment of sustainable livelihoods through education and training in Zanzibar. This approach includes the delivery of a formal education curriculum embedding Education for Sustainable Development into teacher training and classroom delivery on the one hand. And on the other hand, communities are trained in climate smart technologies and supported to set up sustainable enterprises.



Map of native birds on Zanzibar



Women cooking jam on rocket stoves

Sazani currently works with 51 schools, training and equipping teachers with tailored resources. Using a social learning approach, groups of students are established in all schools. In one example, students learn about biodiversity and bird identification and discuss with their families how the birds' diversity and population have changed over time.

Multi-generational feedback identifies drivers of environmental changes, such as deforestation contributing to a change in species occurrence. Linking communities to schools and valuing learning and indigenous knowledge is critical.

In parallel to the student groups, a range of vocational and business development actions have been developed. All of them support understanding and awareness of sustainability, from access to climate smart technologies and development of sustainable livelihood skills to food processing.

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<div><div>\$👤💬</div><div><b>Livelihoods analysis of assets and strengths</b> Using the Sustainable Livelihoods Framework, communities get support to analyse their capital assets (natural, social, human, physical and financial). Solutions to problems are then jointly identified.</div></div>	<div><div>👤</div><div><b>Mapping policy makers and institutional influences</b> Map institutions and policy makers that influence local realities. The key players are then included in a critical dialogue in defining problems and solutions with local communities.</div></div>
<div><div>👤🤝💬</div><div><b>Space for cross-sectoral global learning</b> Cross-sectoral global learning provides space for critical reflection on global and institutional pressures on local realities. The perspective exchange broadens one's mind and shared values are developed.</div></div>	<div><div>👤📢💬</div><div><b>Sustainable change outcomes</b> Bringing project participants together to develop sustainable change outcomes is used to define, share and develop actions to achieve communities' desired changes.</div></div>
<div><div>\$📊💬</div><div><b>Technical support</b> Negotiate and optimise opportunities for in depth engagement with communities to ensure that agreed proposals are culturally and ecologically acceptable. Then introduce appropriate innovations that support income generation.</div></div>	<div><div>📢📋💬</div><div><b>Critical reflection and review</b> Reflection and review is done through different interactive and integrative exercises e.g discussion and focus groups. The evaluation gives room for learning and change.</div></div>

This solution is being implemented by Sazani Associates in collaboration with Sazani Associates Zanzibar and the Ministry of Education in Zanzibar and financed by Comic Relief and a number of other donors.





60 SOLUTION provided by Thomas Sacchi, Christian Vaterlaus and Mohamed Mrisho (all marinecultures.org)



Coral farming

Thomas Sacchi, co-founder of marinecultures.org: »In 2007 we built our resident home in Zanzibar. Impressed by the seaweed farmers having very bad income we thought that there must be more valuable marine products. We did a research trip and found the Marine & Environmental Institute of Pohnpei (MERIP) in Micronesia cultivating sponges, corals and invertebrates together with the community. Back in Zanzibar we started our first sponge farm in 2009.



Reefball tests

The lives and livelihoods of local communities in Zanzibar are highly connected to the ocean making them vulnerable to any changes of the marine ecosystems. High unemployment, unsustainable resource management and use accompanied by lacking awareness of marine environment and conservation issues exacerbate the poverty of locals.

By installing sponge and coral farms marinecultures.org aims to enhance the living conditions of coastal communities and at the same time reduce environmental threats to marine life. The association supports local people by offering more sustainable resource management options and alternative income sources. The aqua-farming approach promotes healthy economic growth and supports the integration of women into the farming business.



Thomas Sacchi, co-founder of marinecultures.org

We had to do a lot of research to find a species that can be used as a bath sponge and cultivated sustainably. Today we have 3 productive farms and can open 1–2 new farms a year. To create even more jobs we started 2014 coral farming for the aquarium trade that allows much faster scaling. To secure the jobs and to manage their marine resources sustainably the local people need to learn more about the sea and its' biodiversity. Therefore we implemented different marine protection and education projects.«

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Participatory project development

The participatory development of the project includes communities and selected project partners. Key elements for success considered in the project development are long-term planning, the mediation of problem solving tools and continuous reporting on the progress of the project to beneficiaries.



Sponge farmer



Guidance by the 3BL model of sustainability

The 3BL model, which forms the base of the project, recommends sustainable thinking in all activities. Operations include: An evaluation of the market, developing a business plan, searching for a sustainable seed/fragment source and investigating suitable species, spots for cultivation and protection areas.



Sponge farm

This solution is being implemented by marinecultures.org in close collaboration with the local communities and authorities and more and more with scientists from the local university.



ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM

62 SOLUTION provided by Sibylle Riedmiller, Eleanor Carter and Ulli Kloiber (all CHICOP)



View of Chumbe Island with eco-lodges

Developing countries often have difficulties balancing a sustainable marine environment and communities’ needs. The problem lies with insufficient capacity for effective marine governance, poverty and lack of alternative livelihoods. In addition to rapid population growth and mass tourism, challenges include overfishing, poaching and illegal destructive fishing methods.

On Zanzibar, Chumbe Island Coral Park Limited (CHICOP) was founded to address these issues. CHICOP has developed an innovative financially sustainable model of private MPA establishment and management through eco-tourism. This approach benefits local communities by promoting food security, sustainable fisheries, alternative livelihoods and implementing environmental education programs.

A CHICOP team member telling CHICOP’s story: »After working in development aid for nearly 2 decades Sibylle Riedmiller felt disillusioned by the failure of most aid projects and was particularly frustrated by the rampant destruction of coral reefs and poor marine governance in Tanzania. Sibylle saw an opportunity to establish a privately managed marine conservation area to be used for environmental education funded by eco-tourism. Chumbe Island – at the time



The CHICOP team



Education in progress

an uninhabited island – was an appropriate site for exploration. In 1993, Sibylle registered Chumbe Island Coral Park Ltd. (CHICOP). It took another 4 years to develop the ecotourism infrastructure, recruit experts and local staff, provide training, undertake outreach with local communities and establish the conservation and education programs. Since this time Chumbe has developed into a fully ecologically, socially and financially sustainable MPA.«

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<b>Model for a private, not-for-profit MPA</b> The ecotourism business follows commercial principles for maximising revenue and promoting cost-effectiveness that make the MPA and all associated activities 100 % self-financing.	<b>Community involvement and benefits</b> Local communities and resource users are fully involved through village meetings, employment and trainings. Village leaders participate in management planning and Advisory Committee meetings.
<b>Science-based capacity building</b> Regularly conducted scientific surveys ensure robust and adaptive management. Extensive training results in rangers (mostly former fishers from local communities) leading this monitoring.	<b>MPA management and enforcement</b> Ten-yearly management plans define the projects targets and activities permitting only non-consumptive and non-exploitative actions. Daily patrols and outreach programs lead to excellent support for and compliance with MPA regulations.
<b>Eco-architecture and eco-operations</b> The award-winning lodge uses eco-architecture and technology comprising a rainwater catchment system, wastewater filtration and management, photovoltaic power generation, composting toilets etc..	<b>Multi-level education and outreach</b> Communication, education and awareness-raising on the importance of sustainable marine ecosystems are targeted to e.g. students, fishers and tourism operators.

This solution is being implemented by Chumbe Island Coral Park Limited (CHICOP).



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INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT

64 SOLUTION provided by Lindsey West and Boniventure Mchomvu (both Sea Sense)

In Tanzania waste management in coastal communities is a serious challenge. Beaches and other coastal habitats e.g. forests and mangroves are frequently used as a dumping ground for household waste and as public latrines.



Waste on the Kipumbwi beach

Through access to information citizens became increasingly aware of the impacts of poor waste management and mobilised themselves into action. A weekly village clean-up was implemented by Kipumbwi Village Council and a clean-up in Pangani Town was initiated by District Authorities. The immediate impact was dramatic and in the lead up to a World Environment Day celebration, a further fifty District Staff participated in a »Clean Up Pangani« campaign. A community fisheries management group in Kipumbwi participated in the International Coastal Clean-Up Day. The



Relaxing at a clean Kipumbwi beach



Brainstorming on bylaw formulation

group collected 66 kg of waste and data were submitted to the global marine debris database. To ensure long term sustainability the community has now prioritised the formulation of local waste management bylaws. Kipumbwi beach is now one of the cleanest in Pangani and is used by villagers as a place for socialising and relaxation.

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**Awareness raising of the impacts of poor waste management**  
An education and outreach program (e.g. theatre, radio campaign, events) raises awareness on waste management. It also stimulates an initial dialogue and influences attitude and behavior changes.



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Awareness raising through community theatre



**Building capacity for waste recycling**  
A group of community members is trained to collect data on different types of waste to identify items for recycling and reuse. They also learn to provide completed datasheets to a global marine debris database. Selling recyclable items serves as an additional income source.



Sorting and categorising waste



**Bylaw formulation and implementation**  
Community members are trained in bylaw formulation and implementation. Participants learn to conduct a situational analysis and to understand the impact of poor waste management. It also enables them to identify management and administrative gaps between different stakeholder groups.



**Documenting and sharing the success**  
Results are documented (pictures, summary, testimonies) and disseminated to capture the experience and make it available for replication elsewhere.



Result dissemination

This solution is being implemented by Sea Sense in collaboration with Pangani District Council and citizens of Pangani District. It was financed by USAID (PWANI Project) and UK AID (Department for International Development – Accountability in Tanzania Program).





OCTOPUS MANAGEMENT – AN ENTRY POINT FOR COLLABORATIVE FISHERIES MANAGEMENT

66 SOLUTION provided by Lorna Slade and Ali Khamis Thani (both Mwambao)

Zanzibar comprises the large islands of Unguja and Pemba. The majority of Zanzibar’s population depends on marine resources for their livelihoods but there is limited precedent for collaborative fisheries management and little understanding of the opportunities afforded to them under the current legislation.



Training of Fisheries Committee



Recorders discussing trends in catch

In the face of increased fishing pressure driven by export demand, Mwambao Coastal Community Network teamed with partners to implement an octopus management regime in south Pemba. The yields improved in a very short period of time through 3-month voluntary no-take zones. Mwambao uses a participatory approach in training, learning and data analysis. The rapidly improved yields give an entry point for the wider introduction of collaborative management for the benefit of all stakeholders.

»The selected pilot island of Kisiwa Panza marked a decline in octopus catch over recent years. The villagers selected a 60ha no-take zone and fisher committee members patrolled the area for three months,« report Lorna Slade and Ali Thani from the Mwambao Coastal Community Network.

»We trained school leavers to record the catch and recruited a school teacher to log the data. We worked with the committee and with Pemba Channel Conservation Area (PECCA) staff to create bylaws and to carry out awareness-raising campaigns locally. Women fishers suggested lifting the closure in the expensive month of Ramadhan – in effect, the reserve would be an octopus »bank«. Only two cases of poaching were detected. On opening day, more than 600 fishers arrived and one woman caught an 8kg giant. Eight months of monitoring showed that immediate post-opening catches increased by more than 100% per fishing period (8 days). 4 months later, catches had not yet dropped back to pre-closure levels and increased average octopus size is also suggested.«



Measuring octopus length to monitor closure effectiveness



Re-opening day of the no-take zone

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Participatory videos for documentation and lesson sharing

Trainees are coached in basic filming techniques and are responsible for the content and the editing of a short film. The final trainee/community product is a visual output in local language that is used to share lessons and experiences about octopus management.



Storyboarding for the participatory video



Community data collection and analysis

Trained villagers record and analyse basic data on total octopus catch and size. They then present the outcome to the local government and the Fisheries Department to discuss management implications.



Fisheries Committee capacity building

Village Fisheries Committees receive training on standard operating procedures. To build trust and enable collaborative management the Fisheries Department officers are involved in the training process. A manual has been compiled for further guidance.



Value chain analysis for key fisheries

To see through the market it is essential to elaborate the supply chain for the species, to identify key players and establish links. Interviews with fishers and buyers gain insight into often »locked« relationships by asking about number of buyers, prices, processing and export destinations.

This solution is being implemented by Mwambao Coastal Community Network in collaboration with and funded by the Indian Ocean Commission (IOC)-SmartFish Programme and Fauna & Flora International.



»TAGGING« FISHING VESSELS TO IMPROVE COMPLIANCE AND REVENUE GENERATION

68 SOLUTION provided by Marcel Kroese (SmartFish)

Triggered by a lack of funding and therefore low enforcement successes, fisheries management in Tanzania struggles with challenges like illegal fisheries activities and low compliance of artisanal fishermen with fisheries legislation.



Cable ties with license information printed on tab

SmartFish interferes by supporting local management bodies to identify and ensure that legal fishing vessels pay their license fees to district authorities. This is important as the fees fund fisheries management and enforcement efforts of local government structures. It uses a color coded small plastic zip-lock cable tie to identify licensed vessels, enabling fisheries officers and local community-based structures to determine if a vessel is legal and has paid the relevant fees for a particular district.

»The challenge for Tanzania is that almost the entire artisanal fisheries' management has been devolved to local district government authorities,« tells Marcel Kroese, IOC-SmartFish Monitoring, Control and Surveillance Key Expert. »Their main revenue stems from vessel registration and licenses for both fishing vessels and fishing activities. The challenge was to find a cheap, effective, tamperproof and unique visual indicator that could immediately inform if the vessel is licensed to fish in that particular district. Color coded (cable tie) tags were piloted, using two colors per district: one purple for registration and one orange for the annual fishing vessel license. A briefing session was undertaken with the Beach Management Units, vessel owners and fishers to explain the tagging purpose, and the legal premise for vessel and fisher registration and licensing. In almost all districts there was a marked increase in revenue between 20% and 200%.«



Marcel Kroese, IOC-SmartFish MCS Key Expert



Attachment of the tag to the boat

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**Strengthening management abilities**  
Fisheries officers get support to travel to fish landing sites and explain the tagging purpose and implications of non-compliance. Their audience includes the local Beach Management Unit, vessel owners and fishers.



**Cable tie tags for licensed vessels**  
Color coded cable tie tags serve as visual indicators and are attached to licensed fishing vessels. Two colors per district are used: one for registration with an alpha numeric number, and one for the annual fishing vessel license.



Vessel is registered (orange tag) and licensed to fish in a particular district (blue tag)



**Financing through vessel licensing**  
Fishing vessels need to be registered by the Department of Surface, Tanzania before they can obtain a fishing vessel license from the local government's fisheries department. The fee for the license is used to fund fisheries management activities.

This solution is being implemented by SmartFish Regional Program for Fisheries in Africa in collaboration with the Ministry of Livestock and Fisheries Development, Tanzania and financed by the European Union on behalf of the Indian Ocean Commission, based in Mauritius.





CONTRIBUTION TO IMPROVING RESILIENCE TO COASTAL EROSION

70 SOLUTION provided by Pessièzoum Adjoussi (Université de Lomé) and Tchannibi Bakatimbè (MERF)

For decades, Togo’s coast has been exposed to erosion and pollution, which pose a threat to the safety of the population. The worsening situation has forced fishermen to resort to other activities, which has resulted in the over-exploitation of



© Dieudonné Adjoussi

Unprotected coastline in Baguida

natural resources (e.g. unregulated extraction of gravel and sand from beaches) with an adverse impact on marine and coastal ecosystems. The solution raises the awareness of the inhabitants of the coastal areas to the issues of vulnerability to erosion and marine pollution. Redevelopment work has directly reduced the impacts of coastal erosion on the town of Aného. The west bank of the embouchure into Lake Togo has been restored; the road running along the shoreline rehabilitated and threatened homes and hotels along the river protected.

»Aného is the second largest coastal town in the southeast of Togo. It is low-lying, situated between the ocean and the coastal lagoons,« reports Pessièzoum Adjoussi from the University of Lomé. »Following intense erosion, the mouth of lagoon channel was left open creating a permanent link between the ocean and the lagoon. While carrying out work in the field, one family was found in a house that had been completely destroyed by flooding. We asked them why they had not moved inland. They told us that they preferred to remain in that bungalow and carry on worshipping their gods in the same place where their ancestors had done so. This family has now moved, as we managed to explain to them that they could continue to worship their gods in their new home. They moved to an unfinished house belonging to a relative.«



© Dieudonné Adjoussi

Abandoned houses in Aného

BUILDING BLOCKS Solution components for replication

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Use of information and communication technologies

A vulnerability map is produced using GPS surveying methods. Through cooperation with a telecoms company, text messages can now be sent in real time to the people in charge of groups organised in the various target communities.



© Dieudonné Adjoussi

A primary school under threat in Agbodrafo



Repairing the banks of the river mouth

The banks of the embouchure are protected. Rip-rap is used to shore up the banks, providing stability and preventing sand from being washed away. A 10-metre wide road is paved and a parking area created. Fishers can now moor their larger boats off the finished structure.



© Dieudonné Adjoussi

© Dieudonné Adjoussi

Protective structure on the southern shore of Lake Togo and fishing boats moored against the new bank

This solution is being implemented by the University of Lomé, the High Council for the Sea and the Togo Ministry for the Environment and Forest Resources (MERF), in collaboration with Aného City Hall and the Lacs prefecture, and financed by the West African Economic and Monetary Union (UEMOA) on behalf of the Government of Togo.

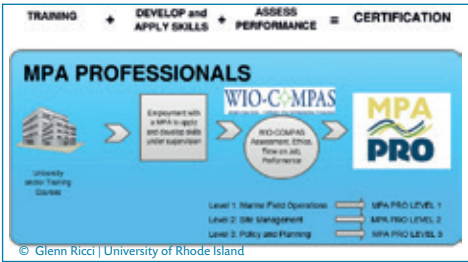




COMPETENCE-BASED CAPACITY DEVELOPMENT FOR EFFECTIVE MPA MANAGEMENT

72 SOLUTION provided by Julius Francis, Lilian Omolo (both WIOMSA) and Lawrence Sisitka (University of Rhode Island)

Marine protected areas (MPAs) manage human activity in dedicated marine regions and are typically installed for conservation purposes. Unfortunately not all MPAs show this positive impact. In many regions ineffective MPA management and lack of dedicated, qualified MPA personnel are big challenges to the protection of the marine environment.



Concept of the certification process

The Western Indian Ocean – Certification of Marine Protected Area Professionals (WIO-COMPAS) is a competence-based approach for individual and organisational capacity development to address the problem of ineffective MPA management in the region. To date it has certified 68 MPA personnel in 8 countries and has been integrated into the human resource management of 2 agencies, the Kenya Wildlife Service, and in South Africa, CapeNature.

In Kenya the coastal and marine environment is critical to the survival of species including human beings. Competent professionals with a wide range of skills and abilities are important to the proper management of marine and coastal resources.

Mr Arthur Tuda is one of those marine and coastal professionals. He is in charge of five marine protected areas (MPAs) and six terrestrial parks, and oversees a staff of more than 350 people. The responsibility that Mr Tuda has is not given lightly. He has earned it, proving his leadership abilities and job capabilities in part through certification as an MPA PRO



WIO-COMPAS partners at the review of Phase 1 of the program in 2012



MPA PRO candidates hold discussions with coastal community members

(Marine Protected Area-Professional) in the WIO-COMPAS. He constantly tries new ideas, improves strategies and works to keep his staff motivate. And he shares his MPA PRO-certified expertise every day by mentoring his staff, which he calls a favorite part of his work.

73 BUILDING BLOCKS Solution components for replication



Critical competence requirements

Identify the critical competence requirements for effective MPA management at all levels. One can now assess existing competence, identify competence gaps, inform and shape trainings and other capacity development intervention needs and certify MPA personnel meeting the required competences.



Certification tools and instruments

A number of assessment tools provide opportunities to assess the different MPA management competences of a MPA PRO candidate. Tools for scoring used by WIO-COMPAS are e.g. an application form for initial screening, a portfolio of evidence, practicals, written tests and interviews.



MPA PRO candidates complete their patrol reports



Certification events

To evaluate their competence appropriate candidates are invited to an interactive evaluation. It involves professional development components and integrates the established interactive assessment instruments. The final decision on certification is with the Certification Board.

This solution is being implemented by Western Indian Marine Science Association (WIOMSA) and Coastal Resource Center, University of Rhode Island: Certification of Marine Protected Area Professionals (WIO-COMPAS) Programme.



FISH-I AFRICA

74 SOLUTION provided by Kristín von Kistowski (FISH-i Africa) and Mark Ssemakula (NFDS)

Illegal fishing is a massive worldwide problem as it highly contributes to the depletion of fish stocks especially in the coastal waters of developing countries. The most aggrieved parties are small coastal communities as the illegal activities not only cause environmental, but also economic and social harm to the society.



Participants of the 4th FISH-i Africa Task Force Meeting, Zanzibar

FISH-i Africa is a partnership of eight East African countries, regional organisations and international experts that gathers, analyses, shares and strategically uses information to take action against illegal fishing operators. It has shown that enforcement against those operators can happen, even if capacity is low and the ocean areas to monitor are vast. Key factors have been access to timely and relevant information, effective information sharing and close regional cooperation.

Comoros, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, Somalia and Tanzania joined forces to tackle illegal fishing through an innovative approach. The countries work as the FISH-i Africa Task Force through national fisheries enforcement officers who collect and share information, and take actions against those identified as illegal fishing operators. FISH-i Africa has already worked on more than twenty concrete cases.



Food and Agriculture Organisation of the United Nations (FAO) Award

In 2015, the concept of FISH-i Africa was adapted for replication in a partnership of West African countries, funded by Norway. The development of a Task Force is also being discussed in Central Africa and the concept has received much interest in East Asia and in Latin America. FISH-i Africa and its Task Force have been presented at various fora including at the UN FAO, the African Union and the Our Ocean Conference of the U.S. Department of State.

75 BUILDING BLOCKS Solution components for replication



Information sharing and regional cooperation

Sharing and discussing information on fishing vessels active in the fishing zones through a web-based communication platform is one key element. Interagency cooperation at country level to take enforcement actions against illegal fishing is another.



Technical support and research

A team of experts and institutional partners provides information, skills and networks to assist national enforcement officers. Using satellite technology, vessels are tracked and profiles of the ships, the owners and the operation networks are analysed and fed into a database.



PREMIER under previous name MEN GOE



Raising awareness and promoting successes

Concrete cases of illegal, unreported and unregulated (IUU) fishing are provided to support discussions. Political champions and Task Force members bring the issues to a global audience and promote actions both domestically and internationally.



Hon. Kassim Juma – Permanent Secretary Ministry of Live-stock and Fisheries Zanzibar

This solution is being implemented by the FISH-i Africa members and Stop Illegal Fishing in collaboration with the Indian Ocean Commission (IOC), the Indian Ocean Tuna Commission (IOTC), Nordenfjeldske Development Services (NFDS) and Trygg Mat Tracking (TMT), and supported by The Pew Charitable Trusts.



76 GLOSSARY OF BUILDING BLOCKS

A solution describes a context-specific example and we believe that it is composed of essential elements which determine its success – »building blocks«. These building blocks may be adapted and recombined to address challenges in other contexts, sectors or geographies.

In this glossary we have listed all building blocks described in this publication. The building blocks are sorted by categories referring to their means of action and include reference to the solution they are part of.



ALTERNATIVE LIVELIHOODS:

includes income diversification, skills training

- 10 Cassava growing and shrimp farming | [ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING](#)
- 12 Community bank infrastructure | [NET-WORKS™](#)
- 60 Community involvement and benefits | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 36 Community-based aquaculture | [INTEGRATING COMMUNITY HEALTH SERVICES WITH LOCAL MARINE MANAGEMENT EFFORTS](#)
- 50 Data collection by communities | [DEVELOPMENT OF A COMMUNITY-BASED MARINE TURTLE CONSERVATION PROGRAM](#)
- 22 Developing ecotourism | [SEA TURTLE CONSERVATION AND IMPROVING THE WELL-BEING OF RESIDENTS](#)
- 54 Ecosystem restoration and environmental education | [RESPONSIBLE MARINE AND COASTAL TOURISM BUSINESS CLUSTER DEVELOPMENT](#)
- 26 From trash to trade | [MARINE CONSERVATION ENTREPRENEURSHIP – FROM TRASH TO TRADE](#)
- 58 Guidance by the 3BL model of sustainability | [COMMUNITY-BASED AQUACULTURE DEVELOPMENT AND MARINE PROTECTION](#)
- 40 Identification of adaptation options | [PIONEERING CLIMATE RESILIENT MARINE PROTECTED AREA IN NOSY HARA NATIONAL PARK](#)
- 12 Income from net sales | [NET-WORKS™](#)
- 56 Livelihoods analysis of assets and strengths | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 32 Mangrove reforestation by communities | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 44 Mediterranean network of fishing cooperatives | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 20 Participatory development of alternative livelihoods | [COMMUNITY MANGROVE RESTORATION WITHIN THE MUNI-POMADZE RAMSAR SITE](#)
- 68 Repairing the banks of the river mouth | [CONTRIBUTION TO IMPROVING RESILIENCE TO COASTAL EROSION](#)
- 44 Sustainable commercial management of marine resources | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 56 Technical support | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)



CAPACITY DEVELOPMENT:

the process of strengthening the abilities of individuals, organisations and societies to make effective use of the resources, in order to achieve their own goals on a sustainable basis, e.g. through trainings, e-learning, strengthening institutions

- 62 Building capacity for waste recycling | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 42 Capacity building for the future | [SUSTAINABLE GOVERNANCE OF MARINE AND COASTAL RESOURCES AND TERRITORIES](#)
- 14 Capacity building in agroforestry | [REHABILITATION OF COASTAL AREAS THROUGH AGROFORESTRY REFORESTATION](#)
- 48 Capacity development for coral reef restoration | [REEF RESCUERS: RESTORING CORAL REEF ECOSYSTEM SERVICES](#)
- 24 Carbon know-how through strong partnership | [COMMUNITY-BASED MANGROVE CARBON OFFSET PROJECT](#)
- 10 Cassava growing and shrimp farming | [ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING](#)
- 70 Certification events | [COMPETENCE-BASED CAPACITY DEVELOPMENT FOR EFFECTIVE MPA MANAGEMENT](#)
- 54 Certification, business and market development support | [RESPONSIBLE MARINE AND COASTAL TOURISM BUSINESS CLUSTER DEVELOPMENT](#)
- 40 Climate change capacity building | [PIONEERING CLIMATE RESILIENT MARINE PROTECTED AREA IN NOSY HARA NATIONAL PARK](#)
- 14 Climate Change mitigation through reforestation | [REHABILITATION OF COASTAL AREAS THROUGH AGROFORESTRY REFORESTATION](#)
- 12 Community bank infrastructure | [NET-WORKS™](#)
- 10 Community management | [ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING](#)
- 38 Community-based opening of closures | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 34 Control and Surveillance Committee (CCS) | [EMPOWERING LOCAL COMMUNITIES TO MANAGE SMALL-SCALE FISHERIES](#)
- 50 Data collection by communities | [DEVELOPMENT OF A COMMUNITY-BASED MARINE TURTLE CONSERVATION PROGRAM](#)
- 36 Family planning and community health service delivery | [INTEGRATING COMMUNITY HEALTH SERVICES WITH LOCAL MARINE MANAGEMENT EFFORTS](#)
- 64 Fisheries Committee capacity building | [OCTOPUS MANAGEMENT – AN ENTRY POINT FOR COLLABORATIVE FISHERIES MANAGEMENT](#)
- 28 Interpretive training workshop | [THE USE OF INTERPRETATION TO INFLUENCE THE BEHAVIOR OF SNORKELERS](#)
- 22 Involving locals in conservation work | [SEA TURTLE CONSERVATION AND IMPROVING THE WELL-BEING OF RESIDENTS](#)
- 16 Mangrove ecosystem evaluation | [COMMUNITY-BASED APPROACH TO MANGROVE RESTORATION AND CONSERVATION](#)
- 32 Mangrove reforestation by communities | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 18 Network of focal points | [AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH](#)
- 20 New sustainable decision-making skills | [COMMUNITY MANGROVE RESTORATION WITHIN THE MUNI-POMADZE RAMSAR SITE](#)
- 10 Participatory data collection | [ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING](#)



- 32 Participatory monitoring | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 58 Participatory project development | [COMMUNITY-BASED AQUACULTURE DEVELOPMENT AND MARINE PROTECTION](#)
- 32 Participatory theory of change | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 64 Participatory videos for documentation and lesson sharing | [OCTOPUS MANAGEMENT – AN ENTRY POINT FOR COLLABORATIVE FISHERIES MANAGEMENT](#)
- 18 Raising the awareness of the fishers | [AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH](#)
- 68 Repairing the banks of the river mouth | [CONTRIBUTION TO IMPROVING RESILIENCE TO COASTAL EROSION](#)
- 60 Science-based capacity building | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 56 Technical support | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 18 Training of stakeholders in the maritime community | [AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH](#)
- 10 Training to empower the women | [ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING](#)
- 52 Transdisciplinary social learning | [A SUITE OF MOBILE APPLICATIONS TOWARDS TRANSFORMATION OF SMALL-SCALE FISHERIES](#)
- 68 Use of information and communication technologies | [CONTRIBUTION TO IMPROVING RESILIENCE TO COASTAL EROSION](#)



**COLLECTION OF DATA AND INFORMATION:**

tools, surveys, assessments or research applied in the inception phase of project/intervention, can include biodiversity & socioeconomic information; used in order to create baseline, define intervention area, generate information on gaps/needs

- 62 Awareness raising of the impacts of poor waste management | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 24 Carbon know-how through strong partnership | [COMMUNITY-BASED MANGROVE CARBON OFFSET PROJECT](#)
- 40 Climate change vulnerability assessment | [PIONEERING CLIMATE RESILIENT MARINE PROTECTED AREA IN NOSY HARA NATIONAL PARK](#)
- 40 Climate Witness Community Toolkit | [PIONEERING CLIMATE RESILIENT MARINE PROTECTED AREA IN NOSY HARA NATIONAL PARK](#)
- 64 Community data collection and analysis | [OCTOPUS MANAGEMENT – AN ENTRY POINT FOR COLLABORATIVE FISHERIES MANAGEMENT](#)
- 38 Community vulnerability assessment | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 38 Community-based opening of closures | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 54 Conservation of key flagship species | [RESPONSIBLE MARINE AND COASTAL TOURISM BUSINESS CLUSTER DEVELOPMENT](#)
- 52 Co-producing fisheries knowledge | [A SUITE OF MOBILE APPLICATIONS TOWARDS TRANSFORMATION OF SMALL-SCALE FISHERIES](#)
- 70 Critical competence requirements | [COMPETENCE-BASED CAPACITY DEVELOPMENT FOR EFFECTIVE MPA MANAGEMENT](#)
- 50 Data collection by communities | [DEVELOPMENT OF A COMMUNITY-BASED MARINE TURTLE CONSERVATION PROGRAM](#)

- 30 Data request form | [USING SCIENCE FOR EFFECTIVE AND ADAPTIVE MPA MANAGEMENT](#)
- 18 Gathering historical and geographical information | [AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH](#)
- 22 Involving locals in conservation work | [SEA TURTLE CONSERVATION AND IMPROVING THE WELL-BEING OF RESIDENTS](#)
- 56 Livelihoods analysis of assets and strengths | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 16 Mangrove ecosystem evaluation | [COMMUNITY-BASED APPROACH TO MANGROVE RESTORATION AND CONSERVATION](#)
- 32 Mangrove reforestation by communities | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 56 Mapping policy makers and institutional influences | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 46 Monitoring of the comeback of the »good life« | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 32 Participatory Forest Management Plan | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 44 Participatory management | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 32 Participatory mapping for management | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 32 Participatory monitoring | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 30 Participatory regular MPA monitoring | [USING SCIENCE FOR EFFECTIVE AND ADAPTIVE MPA MANAGEMENT](#)
- 32 Participatory theory of change | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 28 Salient beliefs of target audience | [THE USE OF INTERPRETATION TO INFLUENCE THE BEHAVIOR OF SNORKELERS](#)
- 60 Science-based capacity building | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 42 Scientific data for decision making | [SUSTAINABLE GOVERNANCE OF MARINE AND COASTAL RESOURCES AND TERRITORIES](#)
- 56 Space for cross-sectoral global learning | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 16 Surveillance and survivals of planted mangroves | [COMMUNITY-BASED APPROACH TO MANGROVE RESTORATION AND CONSERVATION](#)
- 44 Systemic sustainability analysis | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 64 Value chain analysis for key fisheries | [OCTOPUS MANAGEMENT – AN ENTRY POINT FOR COLLABORATIVE FISHERIES MANAGEMENT](#)
- 48 Vulnerability assessment and stakeholder plan | [REEF RESCUERS: RESTORING CORAL REEF ECOSYSTEM SERVICES](#)

**CO-MANAGEMENT BUILDING:**

development of institutional, legal, operational and administrative components for effective co-management, including community members and groups, governmental authorities at levels concerned, non-governmental organisations and partners, private sector and any other stakeholder

- 62 Building capacity for waste recycling | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)



- 38 Collaborative closure design | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 60 Community involvement and benefits | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 10 Community management | [ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING](#)
- 52 Co-producing fisheries knowledge | [A SUITE OF MOBILE APPLICATIONS TOWARDS TRANSFORMATION OF SMALL-SCALE FISHERIES](#)
- 30 Data request form | [USING SCIENCE FOR EFFECTIVE AND ADAPTIVE MPA MANAGEMENT](#)
- 64 Fisheries Committee capacity building | [OCTOPUS MANAGEMENT – AN ENTRY POINT FOR COLLABORATIVE FISHERIES MANAGEMENT](#)
- 34 Fisheries Co-Management Plan | [EMPOWERING LOCAL COMMUNITIES TO MANAGE SMALL-SCALE FISHERIES](#)
- 22 Involving locals in conservation work | [SEA TURTLE CONSERVATION AND IMPROVING THE WELL-BEING OF RESIDENTS](#)
- 44 Participatory planning | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 30 Participatory regular MPA monitoring | [USING SCIENCE FOR EFFECTIVE AND ADAPTIVE MPA MANAGEMENT](#)
- 56 Sustainable change outcomes | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 36 Temporary octopus fishery closures | [INTEGRATING COMMUNITY HEALTH SERVICES WITH LOCAL MARINE MANAGEMENT EFFORTS](#)
- 34 The dinabe: A social convention | [EMPOWERING LOCAL COMMUNITIES TO MANAGE SMALL-SCALE FISHERIES](#)
- 10 Training to empower the women | [ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING](#)



## COMMUNICATION, OUTREACH AND AWARENESS BUILDING:

includes resource documents as knowledge products for stakeholders' reference, translation of resource documents into other languages, sharing of experiences to disseminate best practices; cross visits to exchange experiences; specific events tailored to inform and change behavior

- 42 Awareness raising among challenged stakeholders | [SUSTAINABLE GOVERNANCE OF MARINE AND COASTAL RESOURCES AND TERRITORIES](#)
- 16 Awareness raising campaign | [COMMUNITY-BASED APPROACH TO MANGROVE RESTORATION AND CONSERVATION](#)
- 14 Awareness raising of authorities | [REHABILITATION OF COASTAL AREAS THROUGH AGROFORESTRY REFORESTATION](#)
- 62 Awareness raising of the impacts of poor waste management | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 50 Awareness raising through information sharing | [DEVELOPMENT OF A COMMUNITY-BASED MARINE TURTLE CONSERVATION PROGRAM](#)
- 22 Awareness-raising and customary law | [SEA TURTLE CONSERVATION AND IMPROVING THE WELL-BEING OF RESIDENTS](#)
- 22 Building community infrastructures | [SEA TURTLE CONSERVATION AND IMPROVING THE WELL-BEING OF RESIDENTS](#)
- 14 Capacity building in agroforestry | [REHABILITATION OF COASTAL AREAS THROUGH AGROFORESTRY REFORESTATION](#)
- 70 Certification events | [COMPETENCE-BASED CAPACITY DEVELOPMENT FOR EFFECTIVE MPA MANAGEMENT](#)

- 54 Certification, business and market development support | [RESPONSIBLE MARINE AND COASTAL TOURISM BUSINESS CLUSTER DEVELOPMENT](#)
- 20 Communication of challenges/remedies | [COMMUNITY MANGROVE RESTORATION WITHIN THE MUNI-POMADZE RAMSAR SITE](#)
- 24 Community environmental education and awareness | [COMMUNITY-BASED MANGROVE CARBON OFFSET PROJECT](#)
- 56 Critical reflection and review | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 62 Documenting and sharing the success | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 36 Family planning and community health service delivery | [INTEGRATING COMMUNITY HEALTH SERVICES WITH LOCAL MARINE MANAGEMENT EFFORTS](#)
- 26 From awareness to understanding | [MARINE CONSERVATION ENTREPRENEURSHIP – FROM TRASH TO TRADE](#)
- 58 Guidance by the 3BL model of sustainability | [COMMUNITY-BASED AQUACULTURE DEVELOPMENT AND MARINE PROTECTION](#)
- 28 Interpretive training workshop | [THE USE OF INTERPRETATION TO INFLUENCE THE BEHAVIOR OF SNORKELERS](#)
- 12 Local partnerships | [NET-WORKS™](#)
- 60 Multi-level education and outreach | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 18 Network of focal points | [AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH](#)
- 10 Participatory data collection | [ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING](#)
- 32 Participatory Forest Management Plan | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 32 Participatory mapping for management | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 32 Participatory monitoring | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 64 Participatory videos for documentation and lesson sharing | [OCTOPUS MANAGEMENT – AN ENTRY POINT FOR COLLABORATIVE FISHERIES MANAGEMENT](#)
- 38 Peer-to-peer learning exchange | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 72 Raising awareness and promoting successes | [FISH-I AFRICA](#)
- 18 Raising the awareness of the fishers | [AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH](#)
- 68 Repairing the banks of the river mouth | [CONTRIBUTION TO IMPROVING RESILIENCE TO COASTAL EROSION](#)
- 46 Sharing information on ICCA rules and the »ICCA option« | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 56 Sustainable change outcomes | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 18 Training of stakeholders in the maritime community | [AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH](#)
- 68 Use of information and communication technologies | [CONTRIBUTION TO IMPROVING RESILIENCE TO COASTAL EROSION](#)
- 48 Vulnerability assessment and stakeholder plan | [REEF RESCUERS: RESTORING CORAL REEF ECOSYSTEM SERVICES](#)

GLOSSARY OF BUILDING BLOCKS



ENFORCEMENT:

efforts leading to enforcement of laws, regulations and activities

- 16 Awareness raising campaign | [COMMUNITY-BASED APPROACH TO MANGROVE RESTORATION AND CONSERVATION](#)
- 62 Bylaw formulation and implementation | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 66 Cable tie tags for licensed vessels | [»TAGGING« FISHING VESSELS TO IMPROVE COMPLIANCE AND REVENUE GENERATION](#)
- 38 Collaborative regulation setting | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 10 Community management | [ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING](#)
- 64 Fisheries Committee capacity building | [OCTOPUS MANAGEMENT—AN ENTRY POINT FOR COLLABORATIVE FISHERIES MANAGEMENT](#)
- 54 Fishing line recovery program | [RESPONSIBLE MARINE AND COASTAL TOURISM BUSINESS CLUSTER DEVELOPMENT](#)
- 72 Information sharing and regional cooperation | [FISH-I AFRICA](#)
- 36 Locally managed marine areas | [INTEGRATING COMMUNITY HEALTH SERVICES WITH LOCAL MARINE MANAGEMENT EFFORTS](#)
- 46 Monitoring of the comeback of the »good life« | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 60 MPA management and enforcement | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 32 Participatory theory of change | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 28 Post training monitoring and feedback | [THE USE OF INTERPRETATION TO INFLUENCE THE BEHAVIOR OF SNORKELERS](#)
- 46 Rehabilitation and strengthening of traditional rules | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 68 Repairing the banks of the river mouth | [CONTRIBUTION TO IMPROVING RESILIENCE TO COASTAL EROSION](#)
- 34 The dinabe: A social convention | [EMPOWERING LOCAL COMMUNITIES TO MANAGE SMALL-SCALE FISHERIES](#)
- 68 Use of information and communication technologies | [CONTRIBUTION TO IMPROVING RESILIENCE TO COASTAL EROSION](#)



FINANCE SCHEME:

includes micro finance plans and institutions, payment for ecosystem services schemes, other sustainable financing options such as entrance fees, funding support, financial incentives and offsets, diversification of funding sources, development of financial plan

- 12 Community bank infrastructure | [NET-WORKS™](#)
- 60 Eco-architecture and eco-operations | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 12 Environment funds | [NET-WORKS™](#)

- 66 Financing through vessel licensing | [»TAGGING« FISHING VESSELS TO IMPROVE COMPLIANCE AND REVENUE GENERATION](#)
- 36 Locally managed marine areas | [INTEGRATING COMMUNITY HEALTH SERVICES WITH LOCAL MARINE MANAGEMENT EFFORTS](#)
- 44 Mediterranean network of fishing cooperatives | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 60 Model for a private, not-for-profit MPA | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 58 Participatory project development | [COMMUNITY-BASED AQUACULTURE DEVELOPMENT AND MARINE PROTECTION](#)
- 44 Sustainable commercial management of marine resources | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 44 Systemic sustainability analysis | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 36 Temporary octopus fishery closures | [INTEGRATING COMMUNITY HEALTH SERVICES WITH LOCAL MARINE MANAGEMENT EFFORTS](#)
- 42 Voluntary participation of the private sector | [SUSTAINABLE GOVERNANCE OF MARINE AND COASTAL RESOURCES AND TERRITORIES](#)



LAW AND REGULATIONS:

includes codes of conduct, definition of user rights, drawing up legislation

- 22 Awareness-raising and customary law | [SEA TURTLE CONSERVATION AND IMPROVING THE WELL-BEING OF RESIDENTS](#)
- 62 Bylaw formulation and implementation | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 38 Collaborative regulation setting | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 46 Community declaration of its own Community Conserved Area | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 46 Community organisation | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 66 Financing through vessel licensing | [»TAGGING« FISHING VESSELS TO IMPROVE COMPLIANCE AND REVENUE GENERATION](#)
- 24 Forest Management Agreement | [COMMUNITY-BASED MANGROVE CARBON OFFSET PROJECT](#)
- 36 Locally managed marine areas | [INTEGRATING COMMUNITY HEALTH SERVICES WITH LOCAL MARINE MANAGEMENT EFFORTS](#)
- 60 Model for a private, not-for-profit MPA | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 60 MPA management and enforcement | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 32 Participatory Forest Management Plan | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 24 Participatory Forest Management Plan | [COMMUNITY-BASED MANGROVE CARBON OFFSET PROJECT](#)
- 46 Rehabilitation and strengthening of traditional rules | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 66 Strengthening management abilities | [»TAGGING« FISHING VESSELS TO IMPROVE COMPLIANCE AND REVENUE GENERATION](#)



GLOSSARY OF BUILDING BLOCKS



LEARNING AND EDUCATION:

includes pilot projects and sites that serve as demonstration and learning platforms for multiplying successful solutions, addressing a wide range of beneficiaries from managers, community groups, tourists, students, governmental and policy makers to persons involved in research and science

- 28 Interpretive tools to influence behavior | [THE USE OF INTERPRETATION TO INFLUENCE THE BEHAVIOR OF SNORKELERS](#)
- 28 Interpretive training workshop | [THE USE OF INTERPRETATION TO INFLUENCE THE BEHAVIOR OF SNORKELERS](#)



MONITORING/EVALUATION/OVERSEERING IMPLEMENTATION:

used to understand long-term development of interventions; used to measure progress and impact of project/activity

- 64 Community data collection and analysis | [OCTOPUS MANAGEMENT – AN ENTRY POINT FOR COLLABORATIVE FISHERIES MANAGEMENT](#)
- 46 Community organisation | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 38 Community-based opening of closures | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 56 Critical reflection and review | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 26 From awareness to understanding | [MARINE CONSERVATION ENTREPRENEURSHIP – FROM TRASH TO TRADE](#)
- 18 Gathering historical and geographical information | [AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH](#)
- 22 Involving locals in conservation work | [SEA TURTLE CONSERVATION AND IMPROVING THE WELL-BEING OF RESIDENTS](#)
- 44 Mediterranean network of fishing cooperatives | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 46 Monitoring of the comeback of the »good life« | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 44 Participatory management | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 32 Participatory monitoring | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 44 Participatory planning | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 30 Participatory regular MPA monitoring | [USING SCIENCE FOR EFFECTIVE AND ADAPTIVE MPA MANAGEMENT](#)
- 32 Participatory theory of change | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 28 Post training monitoring and feedback | [THE USE OF INTERPRETATION TO INFLUENCE THE BEHAVIOR OF SNORKELERS](#)
- 46 Rehabilitation and strengthening of traditional rules | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 42 Scientific data for decision making | [SUSTAINABLE GOVERNANCE OF MARINE AND COASTAL RESOURCES AND TERRITORIES](#)

- 46 Sharing information on ICCA rules and the »ICCA option« | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 16 Surveillance and survivals of planted mangroves | [COMMUNITY-BASED APPROACH TO MANGROVE RESTORATION AND CONSERVATION](#)
- 44 Sustainable commercial management of marine resources | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 44 Systemic sustainability analysis | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 72 Technical support and research | [FISH-I AFRICA](#)

PARTNERSHIP:

develop and/or strengthen (multi-stakeholder) partnerships and cooperation

- 38 Collaborative closure design | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 24 Community environmental education and awareness | [COMMUNITY-BASED MANGROVE CARBON OFFSET PROJECT](#)
- 38 Community vulnerability assessment | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 52 Co-producing fisheries knowledge | [A SUITE OF MOBILE APPLICATIONS TOWARDS TRANSFORMATION OF SMALL-SCALE FISHERIES](#)
- 12 Cross-sector collaboration | [NET-WORKS™](#)
- 30 Data request form | [USING SCIENCE FOR EFFECTIVE AND ADAPTIVE MPA MANAGEMENT](#)
- 42 Dialogue between government, private sector and civil society | [SUSTAINABLE GOVERNANCE OF MARINE AND COASTAL RESOURCES AND TERRITORIES](#)
- 36 Family planning and community health service delivery | [INTEGRATING COMMUNITY HEALTH SERVICES WITH LOCAL MARINE MANAGEMENT EFFORTS](#)
- 24 Forest Management Agreement | [COMMUNITY-BASED MANGROVE CARBON OFFSET PROJECT](#)
- 72 Information sharing and regional cooperation | [FISH-I AFRICA](#)
- 12 Local partnerships | [NET-WORKS™](#)
- 56 Space for cross-sectoral global learning | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 52 Transdisciplinary social learning | [A SUITE OF MOBILE APPLICATIONS TOWARDS TRANSFORMATION OF SMALL-SCALE FISHERIES](#)



GLOSSARY OF BUILDING BLOCKS



POLICY ADVOCACY:

includes campaigns to get support from influential people; gain political support; identify and »use« champions

- 62 Building capacity for waste recycling | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 46 Community declaration of its own Community Conserved Area | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 62 Documenting and sharing the success | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 60 Model for a private, not-for-profit MPA | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 54 Public-private collaboration for conservation | [RESPONSIBLE MARINE AND COASTAL TOURISM BUSINESS CLUSTER DEVELOPMENT](#)
- 72 Raising awareness and promoting successes | [FISH-I AFRICA](#)
- 46 Sharing information on ICCA rules and the »ICCA option« | [KAWAWANA COMMUNITY CONSERVED AREA: GOOD LIFE RECOVERED THROUGH CONSERVATION](#)
- 52 Transdisciplinary social learning | [A SUITE OF MOBILE APPLICATIONS TOWARDS TRANSFORMATION OF SMALL-SCALE FISHERIES](#)



REVIEW:

includes revisions of processes, management plans...; management cycles to adapt to changing circumstances and influences

- 62 Documenting and sharing the success | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 26 From awareness to understanding | [MARINE CONSERVATION ENTREPRENEURSHIP – FROM TRASH TO TRADE](#)
- 40 Revised climate change inclusive management plan | [PIONEERING CLIMATE RESILIENT MARINE PROTECTED AREA IN NOSY HARA NATIONAL PARK](#)
- 44 Systemic sustainability analysis | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)



STAKEHOLDER DIALOGUE:

details various approaches to stakeholder consultation and involvement, including community engagement

- 14 Awareness raising of authorities | [REHABILITATION OF COASTAL AREAS THROUGH AGROFORESTRY REFORESTATION](#)
- 62 Awareness raising of the impacts of poor waste management | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 14 Climate Change mitigation through reforestation | [REHABILITATION OF COASTAL AREAS THROUGH AGROFORESTRY REFORESTATION](#)

- 40 Climate Witness Community Toolkit | [PIONEERING CLIMATE RESILIENT MARINE PROTECTED AREA IN NOSY HARA NATIONAL PARK](#)
- 38 Collaborative regulation setting | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 16 Community engagement in mangrove restoration | [COMMUNITY-BASED APPROACH TO MANGROVE RESTORATION AND CONSERVATION](#)
- 60 Community involvement and benefits | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 38 Community vulnerability assessment | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 56 Critical reflection and review | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 42 Dialogue between government, private sector and civil society | [SUSTAINABLE GOVERNANCE OF MARINE AND COASTAL RESOURCES AND TERRITORIES](#)
- 56 Livelihoods analysis of assets and strengths | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 12 Local partnerships | [NET-WORKS™](#)
- 60 Multi-level education and outreach | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 32 Participatory Forest Management Plan | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 32 Participatory mapping for management | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 44 Participatory planning | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 32 Participatory theory of change | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 38 Peer-to-peer learning exchange | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 54 Public-private collaboration for conservation | [RESPONSIBLE MARINE AND COASTAL TOURISM BUSINESS CLUSTER DEVELOPMENT](#)
- 18 Raising the awareness of the fishers | [AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH](#)
- 56 Space for cross-sectoral global learning | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 56 Sustainable change outcomes | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 44 Systemic sustainability analysis | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 56 Technical support | [CLIMATE CHANGE ADAPTATION, SUSTAINABLY AWARE \(CASA\)](#)
- 36 Temporary octopus fishery closures | [INTEGRATING COMMUNITY HEALTH SERVICES WITH LOCAL MARINE MANAGEMENT EFFORTS](#)
- 34 The dinabe: A social convention | [EMPOWERING LOCAL COMMUNITIES TO MANAGE SMALL-SCALE FISHERIES](#)
- 10 Training to empower the women | [ALTERNATIVES TO MANGROVE DEGRADATION AND IMPROVEMENT OF WOMEN WELL-BEING](#)
- 48 Vulnerability assessment and stakeholder plan | [REEF RESCUERS: RESTORING CORAL REEF ECOSYSTEM SERVICES](#)

GLOSSARY OF BUILDING BLOCKS



STRATEGY AND PLAN:

process of developing reference / guiding documents; combines information from various sources, e.g. local & scientific knowledge

- 62 Bylaw formulation and implementation | [INFLUENCING COMMUNITY ATTITUDES TOWARDS WASTE MANAGEMENT](#)
- 38 Collaborative closure design | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 48 Coral reef restoration toolkit | [REEF RESCUERS: RESTORING CORAL REEF ECOSYSTEM SERVICES](#)
- 30 Development of national targeted objectives | [USING SCIENCE FOR EFFECTIVE AND ADAPTIVE MPA MANAGEMENT](#)
- 34 Fisheries Co-Management Plan | [EMPOWERING LOCAL COMMUNITIES TO MANAGE SMALL-SCALE FISHERIES](#)
- 72 Information sharing and regional cooperation | [FISH-I AFRICA](#)
- 28 Interpretive tools to influence behavior | [THE USE OF INTERPRETATION TO INFLUENCE THE BEHAVIOR OF SNORKELERS](#)
- 32 Mangrove reforestation by communities | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 24 Participatory Forest Management Plan | [COMMUNITY-BASED MANGROVE CARBON OFFSET PROJECT](#)
- 32 Participatory Forest Management Plan | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 44 Participatory management | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 32 Participatory mapping for management | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 32 Participatory monitoring | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 32 Participatory theory of change | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 40 Revised climate change inclusive management plan | [PIONEERING CLIMATE RESILIENT MARINE PROTECTED AREA IN NOSY HARA NATIONAL PARK](#)
- 44 Systemic sustainability analysis | [SUSTAINABLE MANAGEMENT OF MARINE RESOURCES](#)
- 64 Value chain analysis for key fisheries | [OCTOPUS MANAGEMENT—AN ENTRY POINT FOR COLLABORATIVE FISHERIES MANAGEMENT](#)



TECHNICAL METHOD, TECHNIQUE AND TOOL:

related to technical efforts; can be used for different purposes throughout projects/efforts

- 22 Building community infrastructures | [SEA TURTLE CONSERVATION AND IMPROVING THE WELL-BEING OF RESIDENTS](#)
- 66 Cable tie tags for licensed vessels | [»TAGGING« FISHING VESSELS TO IMPROVE COMPLIANCE AND REVENUE GENERATION](#)
- 70 Certification tools and instruments | [COMPETENCE-BASED CAPACITY DEVELOPMENT FOR EFFECTIVE MPA MANAGEMENT](#)
- 16 Community engagement in mangrove restoration | [COMMUNITY-BASED APPROACH TO MANGROVE RESTORATION AND CONSERVATION](#)
- 34 Control and Surveillance Committee (CCS) | [EMPOWERING LOCAL COMMUNITIES TO MANAGE SMALL-SCALE FISHERIES](#)

- 48 Coral reef restoration toolkit | [REEF RESCUERS: RESTORING CORAL REEF ECOSYSTEM SERVICES](#)
- 60 Eco-architecture and eco-operations | [ESTABLISHMENT OF A FINANCIALLY SUSTAINABLE PRIVATE MPA THROUGH ECOTOURISM](#)
- 18 Network of focal points | [AFRICASAW – WARNING NETWORK TO PROTECT THE SAWFISH](#)
- 20 Participatory landscape management | [COMMUNITY MANGROVE RESTORATION WITHIN THE MUNI-POMADZE RAMSAR SITE](#)
- 32 Participatory mapping for management | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 32 Participatory theory of change | [AN INCENTIVISED, PARTICIPATORY APPROACH TO MANGROVE CONSERVATION](#)
- 38 Peer-to-peer learning exchange | [KICK-STARTING MARINE CONSERVATION THROUGH LOCAL FISHERIES MANAGEMENT](#)
- 68 Repairing the banks of the river mouth | [CONTRIBUTION TO IMPROVING RESILIENCE TO COASTAL EROSION](#)
- 72 Technical support and research | [FISH-I AFRICA](#)
- 68 Use of information and communication technologies | [CONTRIBUTION TO IMPROVING RESILIENCE TO COASTAL EROSION](#)



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Ilona Porsché

EDITORS

Myriam Perschke, Pishum Migraine, Janina Korting

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