



Annual Report 2016



marinecultures.org

Aquaculture & Marine Conservation

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Message of the President

In June 2017 UN Secretary-General António Guterres inaugurated the UN Oceans Conference with an insistent appeal. The conference closes with an insistent appeal and a toothless plan... simultaneously US President Donald Trump pulls out of the Paris climate accord!

Doesn't our engagement in a small lagoon in the Indian Ocean seem like a pointless endeavor in view of such political events?

We have barely come to terms with the devastations of El Niño in early 2016 that we decided to start over again – major El Niños only hit every few decades or so – well, at least that's how it used to be. The local crew started to rebuild the coral farm using species that managed to bear up against the recent increase in water temperature.

As early as late autumn 2016 the first warnings of another strong El Niño were issued, which hit our lagoon in April 2017. The water temperatures climbed and climbed, and again large parts of our newly planted coral stock died.

Coming back to the above question – what's the point? I am convinced that our engagement is worth every bit of effort! Our activities move us very close to the scene and the people which allows us to swiftly react to changes. By expanding the sponge farms as our sponges reacted positively to higher water temperatures. Or by shifting our focus from sustainably growing corals for the aquarium trade to restocking damaged coral reefs. Or by implementing new methods for culturing seaweed.

I thank all members and sponsors for this flexibility and the never ebbing impetus and would like to particularly acknowledge the local people who work with us towards putting real solutions into practice.



Thomas Sacchi, President



Managing director's summary

In 2016 our activities have for the first time reached beyond Zanzibar (or Unguja) island. On Tanzania's Mafia Island, which is famous for its whale sharks and stunning underwater world, we have installed mooring buoys to prevent anchor damage on corals and fixed marker buoys to flag the borders of the Chole Marine Park.

Another novelty was the huge media exposure, attracting a number of visitors to our humble operations and resulting in a growing interest for our aquaculture development.

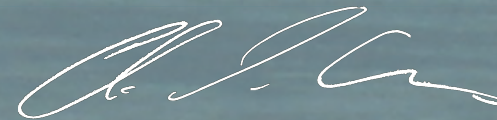
The success of our sponge farming activities was noticed by NGO's on the Seychelles, in Mozambique and a start-up in Greece whom we are assisting in setting-up test farms, while our new partners from Blue Ventures also expressed interest for Madagascar when visiting us. We are, of course, delighted that our sponge-farming initiative is spreading beyond the borders of Zanzibar.

Harsh was the backlash of a new coral bleaching event early 2017. Although the bleaching was less disastrous than the year before, we have again lost nearly half of the regrown coral cultivations. We will have to make rather large adjustments to our lagoon-based coral farm and possibly need to re-evaluate the coral farming concept in general.

Education is becoming a major part in all our activities. The numerous awareness events are bearing first fruits. The local fishers have reached a consensus regarding the management of octopus catching and elected a new committee. If the planned Octopus closing season is successful the fishers will experience the direct benefits of their actions. An expansion to managing the stocks of other over-harvested species may then become a realistic scenario.

Many time this year I have been asked about the formula for our success. My answer is always: It's the continuity and the development of trust within the communities.

Thanks to everybody who is making this happen!



Christian Vaterlaus
Managing Director

Our motivation

Tropical small-scale fisheries are crucial for the livelihood and food security of hundreds of millions of people worldwide. Yet marine ecosystems and their supporting fisheries are facing unprecedented pressure from overfishing and climate change. According to the FAO 90% of global fish stocks are either over fished or fully fished, and at least \$50 billion is lost every year through mismanaged fisheries.

The overuse of the ocean leads to the destruction of the ecological balance. Simultaneously, the coastal populations around the world will lose their source of income. This will have catastrophic short and long term impacts.

More than 50% of adults in the coastal areas of Zanzibar are fishers, gleaners or aquaculture farmers. Many families survive with an income of less than 2 US\$ per day.

The UN aims at a marine conservation area of 30% coverage worldwide to ensure reef resilience. Currently, the fully protected coverage by marine protected areas (MPA's) is less than 1% of the oceans worldwide. Many of the existing MPAs in Africa are shockingly mismanaged.



Our involvement

We strive to preserve the biodiversity of the ocean's fauna, the increase in marine stocks and the development of jobs through aquaculture. At the same time, we strive to show the local population that there is a direct relationship between poverty and the overuse of the ocean. We supply help for self-help.

Sustainable management improves food security and makes economic sense.

Through the example of its activities on the island of Zanzibar, marinecultures.org shows that in the long run active marine conservation is economically more successful than marine resource overuse.





Our approach

In fishery regions of developing countries such as Zanzibar, the assertiveness and the financial power of the governments are too weak in order to successfully implement conservation and resource management projects following a 'top down' approach.

We chose a 'bottom-up' approach and develop our activities in close cooperation with the local communities.

We believe in changes on the grass-root level.



Our goals

We aim to improve the quality of life in coastal areas, while protecting the marine environment. To achieve that we focus on:

- awareness, education and empowerment
- generating jobs via enabling locally managed small and family aquaculture businesses
- catalysing sustainable fisheries management and marine conservation



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Our guidelines

- Focus on long term changes. Always consider sustainability.
- Think ecological. Don't harm the nature with your activities.
- Think economical. What we do has to make economic sense.
- Listen, observe, be sensitive and respect local customs and culture.
- Build up trust in the community.
- Use your imagination. Be creative and resourceful.
- We are transparent and share our know-how.
- Focus on Aichi biodiversity targets and the United Nations Sustainable Development Goals (SDG's) No.1, 2, 5, 8, 10, 12, 13,14



Review of activities 2016

Sponge farming

In contrast to our coral cultures, which were mostly destroyed, our sponges have benefited from an increase in nutrient availability due to elevated sea temperatures (El Niño) in early 2016. Sponge productivity was significantly better resulting in more bath sponges than ever before. Yet, we are still far from meeting the high demand.

Our business model assumptions proved accurate. Production and sales of Key & Nasir's sponge farm keep up to the promise of financial success despite problems during the rainy season. The two single women with children are now thriving as certified and independent micro-entrepreneurs.

We only had to help Key & Nasir once after the rain season as an epidemic of cyanobacteria threatened their sponges. This allowed us to shift our focus on training instructors and adding additional farms. Our goal is to open four new farms annually resulting in 8-12 new jobs, which in turn will benefit about 80-120 people.

Such an expansion requires approximately 12'000 sponge cuttings annually. Therefore, we are planning to double the production in the nursery farm and are assessing if the nursery farm itself is suitable as an independent business generating a regular income for two farmers in the future.

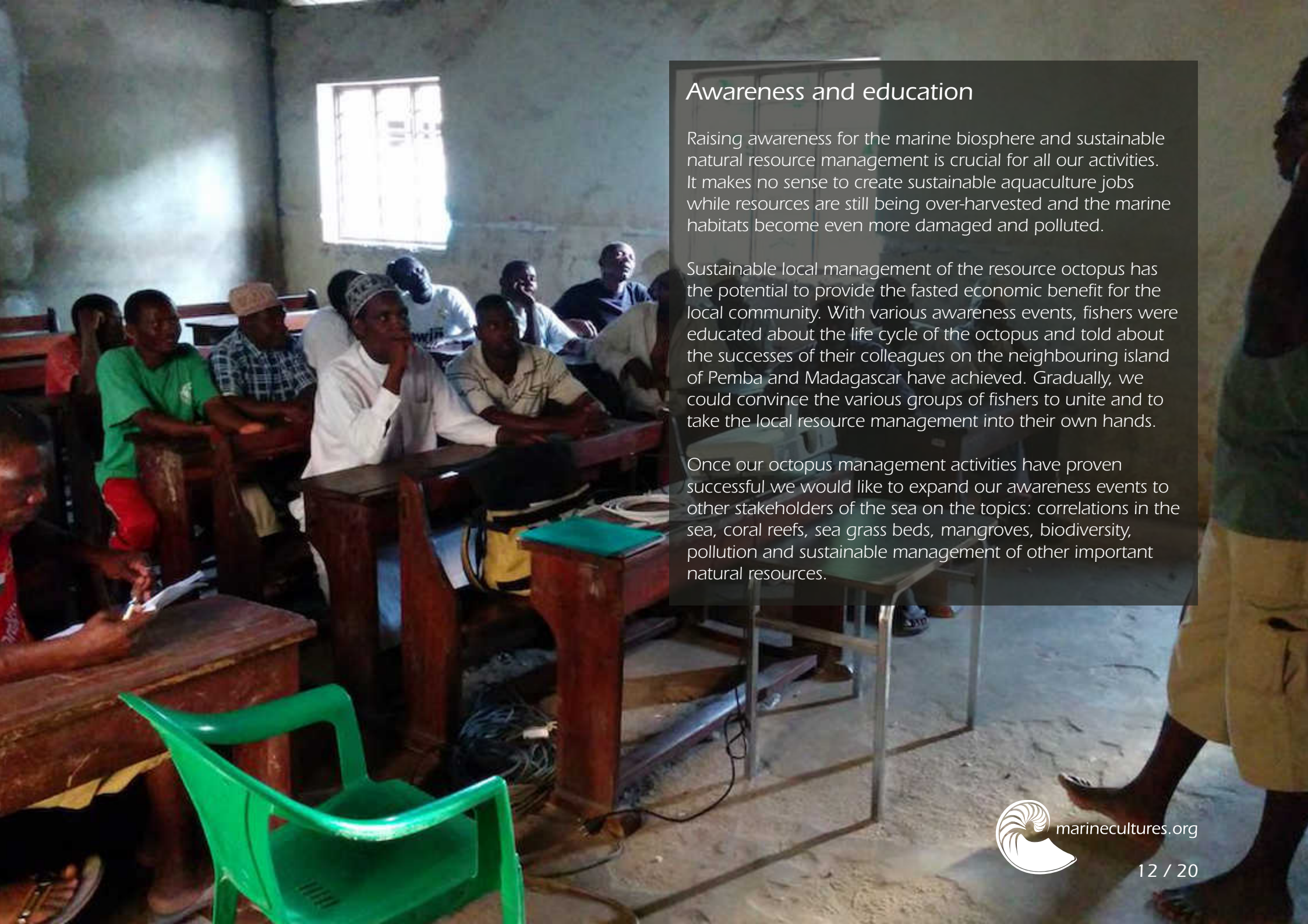
Coral farming

Our plan was to initiate coral breeding stock for the sustainable production of corals for the aquarium trade. Unfortunately, in March 2016 El Niño has wreaked havoc globally, damaging more than 90% of the Great Barrier Reef in Australia, and also the coral stock we have cultivated with great effort.

By May 2016, El Niño has luckily weakened and thanks to rains the temperatures finally declined. But almost 95% of our 3'000 cultivated corals and the entire breeding stock were destroyed.

The size of our boat and hence its ability to reach the open sea prevented us from moving the farm to cooler water. This is why we started a funding drive for a bigger boat. The money is now ready but it is difficult to find a suitable second-hand boat on the island. We hope to be more successful soon.

We managed to rebuild the brood stock and restocked our farm over the remainder of the year. But in early 2017 another bleaching event occurred, destroying half of the freshly rebuilt coral stock. So we decided to, at least temporarily, say good-bye to the idea of producing corals for the aquarium trade and to focus on coral reef reforestation. Our house reef, which has repeatedly suffered major losses, will be our first patient and testing ground.



Awareness and education

Raising awareness for the marine biosphere and sustainable natural resource management is crucial for all our activities. It makes no sense to create sustainable aquaculture jobs while resources are still being over-harvested and the marine habitats become even more damaged and polluted.

Sustainable local management of the resource octopus has the potential to provide the fastest economic benefit for the local community. With various awareness events, fishers were educated about the life cycle of the octopus and told about the successes of their colleagues on the neighbouring island of Pemba and Madagascar have achieved. Gradually, we could convince the various groups of fishers to unite and to take the local resource management into their own hands.

Once our octopus management activities have proven successful we would like to expand our awareness events to other stakeholders of the sea on the topics: correlations in the sea, coral reefs, sea grass beds, mangroves, biodiversity, pollution and sustainable management of other important natural resources.

Octopus management

In 2015 we teamed-up with our Dutch partner Coral Reef Care to jointly catalise locally-led marine conservation initiatives. Inspired by the success of Blue Ventures (BV) in Madagascar, we started planning octopus closed seasons on our coast.

The goal: we want to protect the local octopus population in close collaboration with the local fishers in a fashion that not only prevents overfishing but also increases the overall catch rates. Therefore, a closure is planned during the growth phase, in which the octopus double their weight.

BV is a science driven NGO that is very successful in the field of local marine conservation. Like marinecultures.org, BV works closely with coastal communities that are heavily dependent on the sea and promotes transformative approaches to marine protection and poverty reduction.

In August 2016, BV invited us to attend an octopus management workshop in Madagascar. BV seeks to multiply their successful model in the region of the Western Indian Ocean and has shown interest in our aquaculture techniques when visiting our sponge and coral gardens. Our mutual

goals and similar approaches have developed into a strong partnership.

It took us until the end of 2016 to get all the local fishers on board. Many have disputes about 'their' fishing grounds and distrust each other. We had detailed discussions with the local authorities as well as with all neighbouring villages. We want to assure that the agreed closed season will be respected everywhere along Zanzibar's southern east coast.

The invited fishers and local authorities were impressed by the pictures from Madagascar and wanted to join the project without delay. Almost half of Zanzibar's eastern coast is now part of the project, which is mostly driven by the local fishers. The fact that the local population is now promoting sustainable natural resource management on their own is in itself a major achievement.

In collaboration with our partners Mwambao and BV we are currently covering a lot of groundwork such as identifying and educating octopus buyers, enrolling catch monitoring before and after the closed seasons and setting-up local by-laws.

Mooring- and marker buoys for coral reef protection

Climate change, oceanic acidification, destructive fishing methods and the increasing exposure to tourism are putting the coral reefs of Zanzibar and the surrounding islands under a lot of stress. Many officially established protection zones (MPAs) in the region are inadequately marked and the fishers rarely respect them.

Rather than clearly marking and consistently monitoring protected areas, governments perhaps regard them as cash cows. For local companies offering dive and other touristic excursions to coral reefs moored buoys are expenses that would break the bank. Profit is important and anchors are often carelessly dropped on top of the reefs with devastating consequences.

We are having an ongoing discussion with our partner Coral Reef Care whether it is really up to us to intervene and to do somebody else's job. However, debating does not save our coral reefs. Action is needed.

After an epic journey from Italy to Zanzibar that lasted almost a year 41 mooring buoys and supplies had finally arrived.

In Mnemba – one of this beautiful islands in the Indian Ocean – we marked the MPA again. The original buoys had disappeared years ago and the losses have never been

replaced despite the steady income generated via the entrance fees to the marine park.

Additionally, we installed eight permanent mooring buoys to offer the daily arriving dive- and snorkelling boats an alternative to using their anchors.

On Kwale Island – also known as 'Blue Island' – the rush is equally high and we installed three mooring buoys. Time will tell if additional mooring buoys will be needed.

In Jambiani and Paje we had to replace the locally produced buoys from our pilot project in 2013.

On Mafia Island, we installed buoys in the Chole Bay. Unfortunately, the Mafia Island Marine Parks organisation (MIMP) has not shown a lot of effort in the past to install mooring buoys to prevent anchor damages despite being perfectly well equipped with a hydraulic drill. Realising that the MIMP actually lacks the skills to install buoys we trained two of their employees. Hopefully, this will trigger the instalment of other necessary buoys and the realisation that the MIMP needs to spend more time patrolling the outside reefs to protect Mafia's stunning underwater world.

We plan to install additional buoys around Zanzibar and its neighbouring island Pemba in the second half of 2017.

Monitoring reef resilience

With all the threats caused by climate change and a growing human population, it is inevitable that the state of important habitats such as coral reefs are monitored on a regular basis.

Since 2009 we have been monitoring the Crown of thorns starfish (COTS) population. Epidemic COTS outbreaks have been observed on Zanzibar's coasts since 2004 causing massive damage to the coral reefs. As soon as the COTS population reaches a size that poses a threat, we either collect or kill them by means of vinegar injections. This was again the case in 2016 after the El Niño hit Zanzibar. Together with coral bleaching and water pollution, COTS outbreaks are main threats for tropical coral reefs.

During the El Niño 2016, we started to participate in the Indian Ocean Commission's multinational coral bleaching monitoring project in order to document the extent of coral bleaching in Zanzibar. Our reports were submitted to Coastal Oceans Research and Development – Indian Ocean (CORDIO) which compiles and analyses regional data for the global NOAA Coral Reef Watch.

While monitoring cannot save the coral reefs, it will lead to a better understanding of the causes and effects of the El Niño phenomenon. Depending on the funding situation we plan to undertake 40–50 monitoring dives annually.

No take zones

The fishers of Jambiani are keen to set-up three small no take zones (NTZ's) in the highly utilised lagoon. They are committed despite the difficulties they have been facing with the initial NTZ we helped to establish in 2015. This pilot NTZ was badly managed by the fishers' delegates, which resulted in loss of all marker buoys and frequent breaches.

However, a new committee that has been elected for the octopus management which should also provide the necessary capacity for a functioning local NTZ management. The three NTZ's will be installed as soon as proper by-laws are set and their enforcement is in place.



Organization

marinecultures.org is a Swiss non-profit organisation. Since 2008 it is registered at the trade register office of the Kanton Zurich as an association based in the city of Zurich (UID CHE-114.582.081).

marinecultures.org was also registered as an NGO with the Zanzibar Revolutionary Government on March 30, 2009 (Registration No 709). Our Tax Identification Number (TIN) is: 110-483-058

The organisation is funded by the contributions of its members, by donations and project grants. Donations for the association can be deducted from taxes in Switzerland (provision 09/10 311 by the tax office of the Kanton Zurich).

Statutory auditors of the association: ARGO Revisionen GmbH, Ottikerstrasse 27, CH-8006 Zürich, Switzerland, +41 44 362 52 20, aufdermauer@argo.ch

Bank of the association: PostFinance AG, Mingerstrasse 20, 3030, Bern, Switzerland, Account No: PC: 85-51774-9, IBAN: CH77 0900 0000 8505 1774 9, BIC/SWIFT: POFICHBEXXX

The organisation is still waiting for the signature of a Memorandum of Understanding (MoU) with the Ministry of Agriculture, Natural Resources, Livestock and Fisheries of Zanzibar.

Public relations

The Swiss TV channel SRG SSR has produced and broadcasted a documentary on marinecultures.org as part of the 'Reporter' series which was also broadcasted by the 3Sat TV channel available in Switzerland, Germany and Austria.

A documentary for the KIKA program of the German TV channels ARD and ZDF will be broadcasted in July 2017 while a report was published in the Swiss magazine 'Beobachter'.

Two renowned photographers are currently working on a photo story for mostly UK based media such as The Guardian and the BBC while another documentary by an Italian team for different TV stations worldwide is scheduled to be shot in November 2017.

The international attention our work is receiving has already attracted a lot of visitors to the sponge farm, and there is a growing interest by other organisations in sponge farming.

Human resources

By the end of 2016 marinecultures.org had 5 employees: 1 managing director, 1 project manager, 2 coral farmers, 1 care keeper/guard as well as a 3 sponge farming trainees.

Changes 2016

- After completing their training the two sponge farmers Nasir and Key became independent on 1 May 2016.
- Sponge farmer trainees are generally not employed anymore. However, they receive money to cover meals during their one year training.
- Suleiman had to be dismissed due to the closure of the unproductive sponge farm in Mtende.
- The trainee Muzne left us. Her place was taken by Shemsa.
- In April 2016 Moussa has joined the group of sponge farmer trainees.
- In August 2016 Hassan has started working for us as boat captain on a casual basis.

Partnerships and memberships

- JAMABECO / Jambiani Marine & Beach Conservation, Zanzibar
- IMS / Institute of Marine Science, University Zanzibar
- Coral Reef Care, The Netherlands
- Mwambo Coastal Community Network, Tanzania
- Blue Ventures, Madagascar / United Kingdom
- Ministry of Livestock and Fisheries, Maruhubi Zanzibar
- Jambiani Tourism Training Institute, Zanzibar / Canada
- MERIP / Marine and Environmental Research Institute of Pohnpei, Micronesia
- PACRC / Pacific Aquaculture & Coastal Resources Center, University of Hawai'i
- Ozeanium Zoo Basel, Switzerland
- Buccaneer Diving, Paje, Zanzibar
- net working AG, Zurich, Switzerland

marinecultures.org is member of:

- WIOMSA, IUCN, WAS, EAS, SARNISSA & DAN

Finance Review (US \$)	2014	2015	2016
Income			
Members	10'272.11	4'386.5	5'784
Donations	incl. in members	13'111	22'639
Grants	28'049.89	70'990	19'500
Other Income	543.58	2'605	7'899
Special Reserves	0	-22'500	0
In-house efforts	0	0	81'800
Total Income	38'865.58	68'593	117'623
Expenditure			
Projects *	44'943.55	67'114.97	136'872
Governance **	5'599.41	3'716	7'062
Total Expenditure	50'542.96	70'830.97	143'934
In-/Decrease Income (Ref. 2012)	-6%	+ 76.5%	-49.6%
Percentage of governance	11.10%	5.20%	4.9%

* incl. 90% of the managing director salary and social costs

** incl. 10% of the managing director salary and social costs

Financial statements and independent auditors report 2016 >>> see Annex

Next steps

- Extension of the scaling effect of the sponge farming by doubling of the nursery farm volume to support rapid scaling of sponge farm as well as replicating the successful model in other areas of the Western Indian Ocean (such as Latham island and Pangani where other promising sponge species were found).
- Implementation of locally-led Octopus management from Bwejuu to Makunduchi on Zanzibar's east coast.
- Evaluation of partnerships for an octopus management project on Mafia island.
- Extension of the awareness event program.
- Management capacity building for three new No take zones in the lagoon of Jambiani.
- Installation of mooring- and marker buoys on Pemba Island.
- Evaluation and pilot of an alternative seaweed farming technique.
- Continuation of monitoring dives and reporting.

Head office

Verein marinecultures.org
Kalkbreitestrasse 6, 8003 Zürich
Switzerland
+41 79 479 48 01

Zanzibar branch

Association marinecultures.org
P.O.Box 210, Jambiani (Kibigija)
Zanzibar
+255 783 357 357
+255 777 430 519

Bank

Postfinance, Bern, Switzerland
Account No: 85-51774-9
IBAN: CH77 0900 0000 8505 1774 9
BIC/SWIFT: POFICHBEXXX

Contact

info@marinecultures.org
www.marinecultures.org

