
RISK AWARD

RISK Award First-hand news Best project proposals 2019 “Coastal Resilience”



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The first project in this brochure
is the 2019 RISK Award winner.
The further projects appear
in alphabetical order according
to the names of the applying
organisations.



Disaster Risk Management in the face of climate-induced environmental change, population growth and urban development

Adaptation to environmental change becomes more and more important. Also, because global climate change is a fact. Island states belong to the top-priority countries at risk in most parts of the world. Along with other coastal areas, they are exposed to a number of risks. Today, around 40% of the world's population live in coastal areas (defined as living within a distance of 100 kilometres off the geographical coastline). And: The number of exposed people is growing rapidly. What are the most useful approaches to build coastal resilience? Which innovative ideas can help reduce risks?

The combination of rising sea levels, increasing weather extremes, population growth and ecological degradation will inevitably increase risk: for ecosystems, lives and livelihoods. States, communities and the people at risk must act early to align environmentally and human induced developments with sustainability goals in order to keep risks within reasonable and manageable limits. Besides the stressors mentioned above other challenges exist, e.g. sedimentation or degradation of coral reefs or beaches, and soil salinization. Further, we even observe the removal of reefs for the mining of construction materials or to create space for infrastructures such as piers, harbours or settlements.

The 2019 RISK Award searched for projects dedicated to improve risk reduction, risk management or adaptive capacities in regards to the special situation in coastal areas. Projects included eco-system services or infrastructural approaches, capacity building or awareness raising measures, sustainable and risk-sensitive land use planning, adequate building codes and many more. The alignment of the projects to the Sendai Framework for Disaster Risk Reduction was of high importance. The RISK Award First-hand news describe ten outstanding projects which were chosen by the RISK Award Jury, a group of international renown experts.

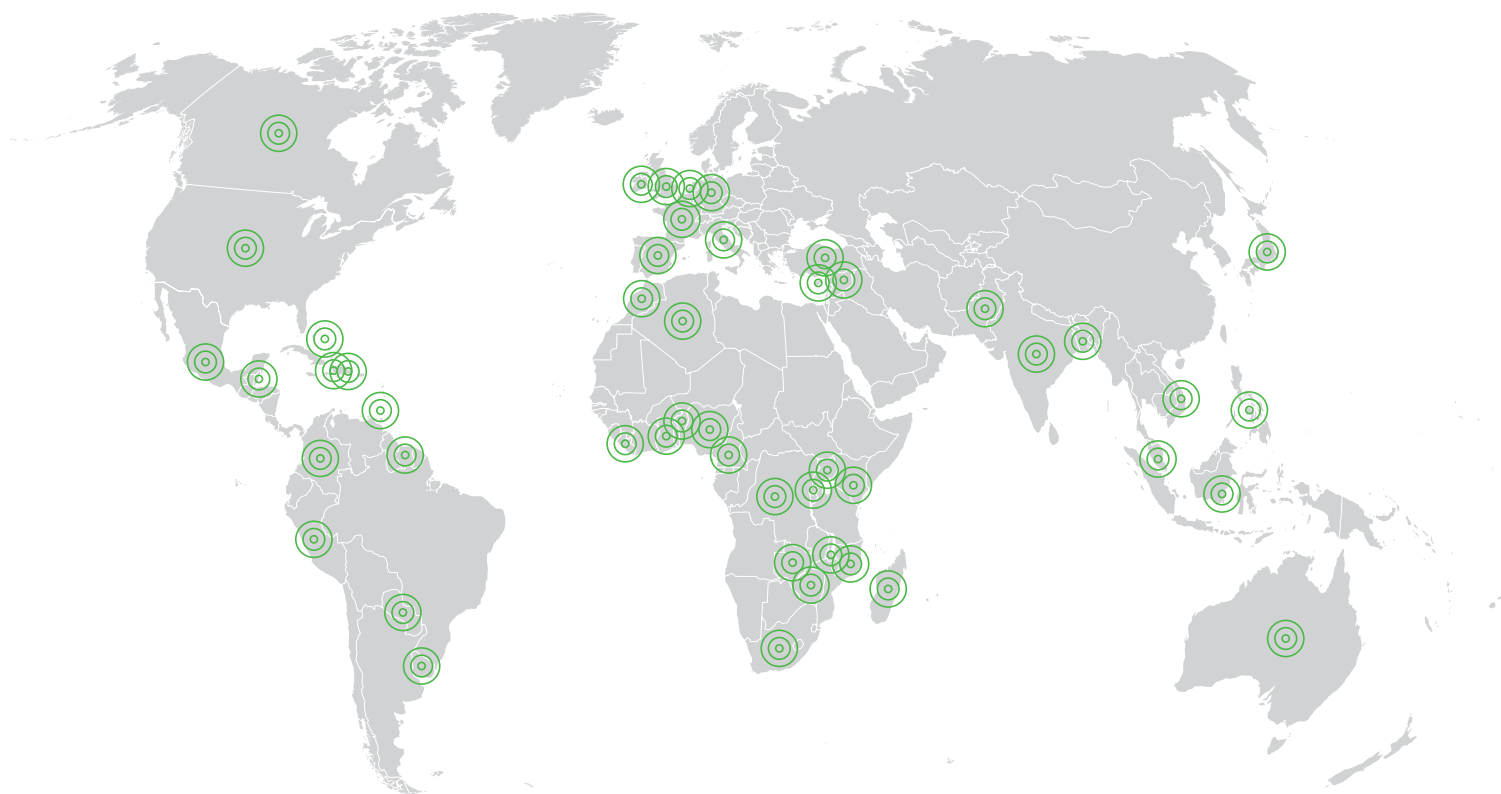
We wish you a pleasant read,
Christian Barthelt
Project Lead RISK Award

The 2019 RISK Award applications

The call for proposals for the "Coastal Resilience" RISK Award ended on 30 November 2018. The RISK Award consortium received 109 applications from 48 countries which address the issue from different perspectives. The high number of proposals from all over the world clearly proves the necessity for countries and people living in coastal areas to act in order to adapt to and cope with climate and environmental changes.

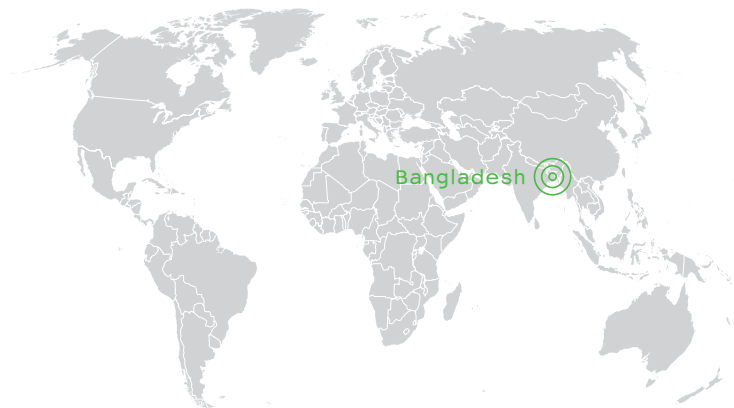
For this publication we received photographs and reports of different quality and types. The presentations may therefore vary in style. We hope for your understanding that wording and language in this publication may differ from project to project since they come from a wide variety of countries. The most sincere thanks of the RISK Award partners UNDRR, GRF Davos, and Munich Re Foundation go to the project owners and contributors for their efforts and dedication.

The map shows the 48 countries from which we received applications during the 2019 RISK Award process.





Designs for upscaling implementation of disaster resilient floating homes in coastal Bangladesh



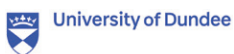
Disaster resilient floating homes along the Bangladeshi coast are an example of sustainable living in an environment affected by climate change. Innovative solutions such as these are critical to building resilience of communities around the world to intensifying climatic stressors and climate variability.

Co-designed flood resilient home in Bangladesh that can float on a flood, provides safe water and nutritious food, energy, sustainable livelihood and the impact on the environment is kept to a minimum.

University of Dundee (UK)

Resilience Solution
(Bangladesh)

www.dundee.ac.uk



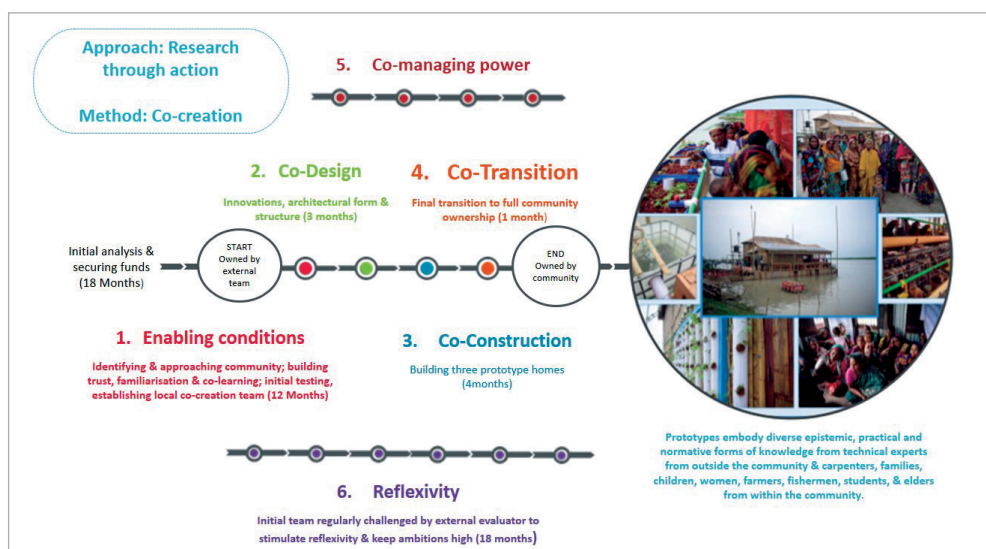


"We don't want to live the life of nomads; home gives us the sense of establishment against all the odds."

Amatunnesa, a resilience ambassador who lost everything during a coastal storm, except for her strong will.
Shariatpur, Bangladesh

The project's aim is to develop new designs for a massive upscaling of the implementation of disaster resilient floating homes in coastal regions of Bangladesh. The project builds on recent work funded by the Global Resilience Partnership that co-created disaster resilient floating homes. These homes have the potential to contribute to 13 of the 17 UN Sustainable Development Goals and have received widespread attention from the Bangladeshi media. The prototype homes are unique because they are less vulnerable to earthquakes and floods, address wellbeing and livelihood issues in an integrated way, and are built in a way that empowers disadvantaged families and challenges mindsets in communities and at national levels about resilience building. This new project takes previous work to the next level by developing designs for a massive upscaling of the disaster resilient floating homes in coastal regions. This project will lay the foundations for programmes to be implemented that have the potential to improve the lives of millions. The work will improve structural designs, and develop toolkits for co-construction of homes that empower the most disadvantaged families. It will develop theories of change to ensure that the large-scale implementation can have transformational impacts and appropriate business models for increasing the scale of the project. Further, appropriate public-private partnerships and high quality outputs will be developed and freely and widely disseminated.

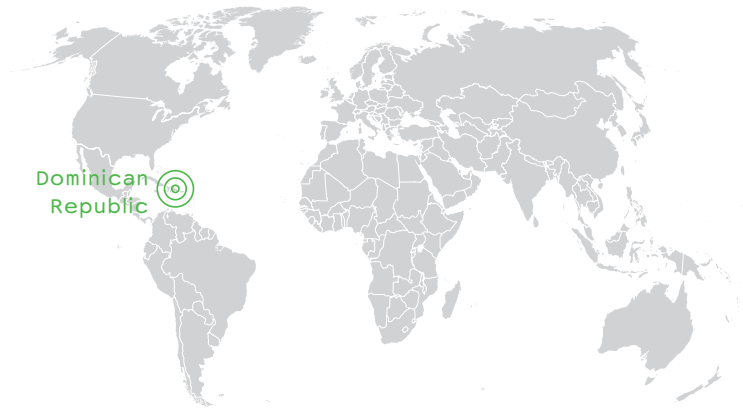
The project is led by a team from the University of Dundee (UK) and the non-profit company Resilience Solution (Bangladesh). Diverse government and non-government organisations, including private sector ones, have already agreed to take part in discussions to upscale the plans and develop partnerships. Participating communities will also take part in the project to help improve the designs and to develop locally based finance models. The not-for-profit project will create free and accessible blueprints, so that other initiatives can benefit from the work.



Methodology for designing the upscaling of disaster resilient floating homes.



Reducing hurricane risks by restoring mangroves in the Caribbean: Identifying barriers to successful restoration in the hurricane-damaged mangroves of the Dominican Republic

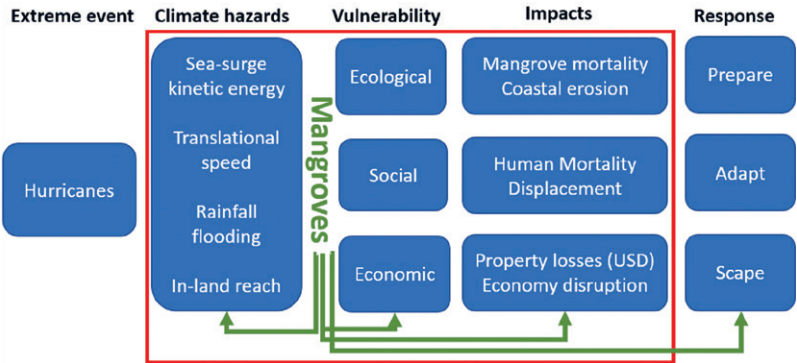


As a consequence of global warming, the frequency and intensity of the hurricane seasons in the Caribbean has increased and will continue to do so in the future. The 2017 and 2018 hurricane seasons showed the dramatic disruption hurricanes can have over coastal societies, economic assets, and the environment. Mangroves are considered green infrastructure capable of protecting against the effects of hurricanes (wind, surges, flooding, erosion). This project will analyse the damaging effects of the 2017 hurricanes over Caribbean mangroves and initiate two restoration pilot projects in the Dominican Republic to extract lessons learnt on the barriers for successful mangrove restoration and scaling up.



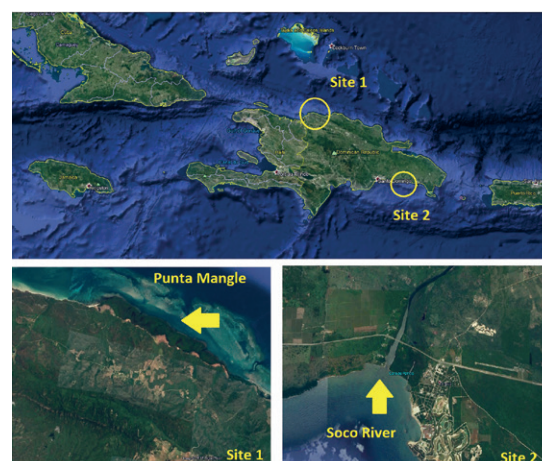
“We understand the problem. We are aware of the consequences. Now it’s the time to act. Mangrove restoration offers win-win responses to risk reduction.”

Rosa Maria Roman Cuesta, Project focal point, CIFOR (Centre for International Forestry Research)



Mangroves can be a strong response to extreme weather events and can reduce hurricane related risks.

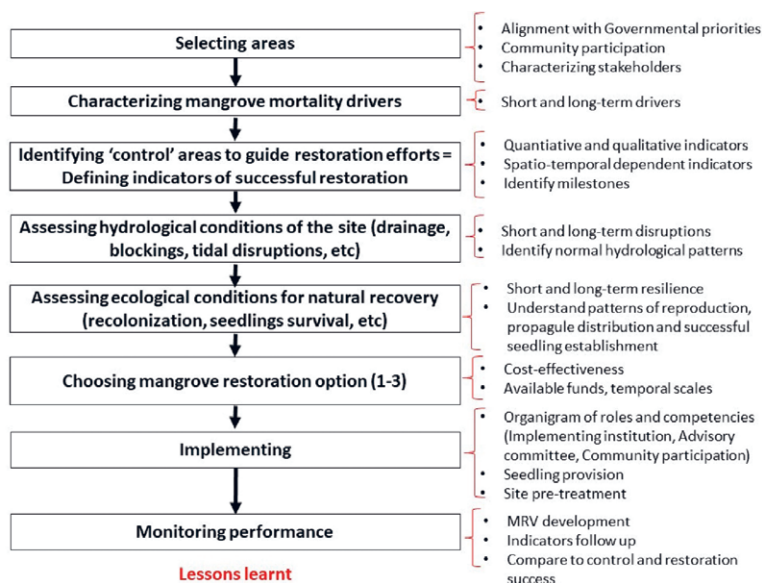
Global warming has increased the frequency and impact of tropical hurricane seasons in the Caribbean by altering four key climatic hazards: atmospheric moisture, translational speed, ocean temperature, and rising sea-levels. Because all these hazards relate to increasing global temperatures, their associated impacts will only increase in the future. In the Caribbean region, the hurricane seasons 2017 and 2018 saw record-numbers of named storms, simultaneously active storms, and extra-tropical landing. Some islands like Barbuda, Dominica, Virgin Islands, Saint Kitts and Nevis, Turks and Caicos, Antigua or Puerto Rico suffered such severe socio-economic and ecological damages from the 2017's hurricanes, that their economies still remain disrupted one year later. From a risk reduction perspective, mangroves are considered green infrastructure and are expected to provide an initial line of defense against the destructive effects of hurricanes, which include wind, flooding and coastal erosion. They also counteract sea level rise by promoting sedimentation and avoiding subsidence, they protect the coast against wave erosion and prevent aquifers from sea-water intrusion. Mangrove restoration can, therefore, be a cost-effective action to reduce future risk and to support reconstruction of ecosystems and livelihoods. In line with the Sendai Framework for Risk Reduction, this proposal focuses on the value of mangroves in supporting coastal communities to adapt to increasingly extreme hurricane events in the Dominican Republic. We will run a small restoration pilot project in two hurricane-affected sites on the island to extract lessons on the economic, ecologic, and social issues to consider when rebuilding green infrastructure for risk reduction and livelihood support.



Google Earth zoom-in of the proposed pilot project sites. Punta Mangle and the mouth of the Socó River.



CIFOR
(Centre for International
Forestry Research)
www.cifor.org



Step-wise approach
in a mangrove restoration
project.



Developing the next generation of infrastructure for coastal resilience

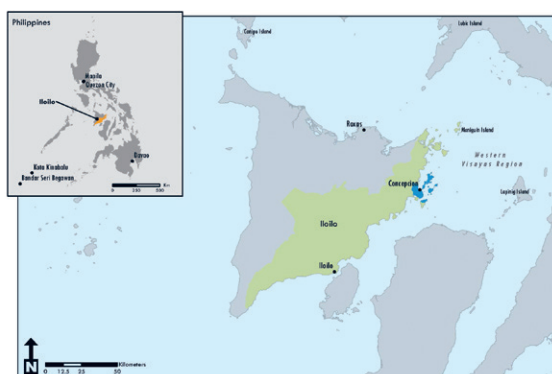


“Developing the next generation of infrastructure for coastal resilience” advances green-gray infrastructure, combining conservation and restoration of ecosystems with selective use of conventional “gray” engineering approaches to reduce risk to vulnerable communities in the Philippines. The project includes developing a spatial prioritisation tool, implementing green-gray designs in priority areas and conducting training to build local capacity.



“With 50% or more of the 1,500 cities and municipalities in the Philippines lying along the coast and 62% of the country’s population living in coastal zones, there is a critical need to find pre-emptive, innovative and scalable solutions to mitigate the risks of typhoons and storms that increase with climate change. Green-gray infrastructure has the potential to be one such solution, especially for the most isolated and vulnerable of the coastal communities in the Philippines.”

Emily Corwin, green-gray Infrastructure Fellow,
Conservation International



Top: The coastal fishing community of Concepcion, Iloilo, is one of the target areas for piloting green-gray infrastructure solutions as a climate adaptation strategy with potential application to over 60% of the Philippines population that lives in the coastal zone.

Bottom: The project will be conducted in the Iloilo province on Panay island.

In the proposed project, Conservation International (CI) will expand its green-gray infrastructure program in the Philippines. A spatial prioritisation framework will prioritise highly vulnerable coastal communities suitable for green-gray infrastructure solutions. The spatial prioritisation results will inform site selection and development of new green-gray infrastructure concept designs. CI will work with communities to implement green-gray infrastructure solutions in the Province of Iloilo, in communities that suffered severe impacts during Typhoon Haiyan and other storms and where their isolation makes extensive engineering solutions (such as seawalls) economically and socially unviable. These communities are also highly dependent on mangroves and related ecosystems for their livelihoods, since they are primarily fishing communities, and mangroves serve as nurseries for young fish. Given these conditions, green-gray solutions for climate resilience are particularly well-suited and essential for the sustainability of these communities.

The project will leverage CI's green-gray infrastructure experience to expand and accelerate implementation of green-gray approaches to climate resilience within the Philippines and globally. The lessons learnt at all the green-gray project sites will be incorporated into a practical guide, training and other communications that will be used to build capacity and support in the local and national government to implement green-gray infrastructure projects across the country. These materials will also be used globally to expand awareness and implementation of green-gray solutions for the world's most vulnerable communities.

Volunteers help to plant mangroves in a coastal zone.





Coral Vita: Large-scale commercial coral farming



Coral Vita grows climate change resilient corals to restore dying reefs. We are building the world's first commercial land-based coral farm in Freeport, Grand Bahama, where we are using breakthrough methods to grow corals up to 50x faster while strengthening their resiliency to warming and acidifying oceans.

Coral Vita is launching our pilot coral farm in partnership with the Grand Bahama Port Authority and GB DEVCO. This farm will restore local reefs while serving as both an eco-tourism attraction and an education center for Bahamian students. Using innovative methods pioneered by the Mote Marine Lab and Hawaii Institute of Marine Biology, we can increase coral diversity and resiliency while executing unprecedented large-scale restoration projects.

Over half of global coral reefs have died since the 1970s. By 2050, that number is projected to reach over 90%. This ecological tragedy is also a serious socio-economic catastrophe. Coral reefs support 1 billion people and 25% of marine life and generate US\$ 30 billion annually via tourism, fisheries, and coastal protection.

Coral farming has been proven to revive reef health. But restoration has largely been limited to localised ocean-based coral farming projects. Relying on grants and donations, such initiatives grow limited species, can do little to enhance coral resiliency to climate change, and must be established near each restoration site.

Coral Vita is developing a mission-driven business model to sustain large-scale restoration. Given reefs' tremendous value, we're transitioning restoration to a commercial industry capable of injecting the capital needed to solve this global problem. After completing our pilot, we plan to launch scalable coral farms in every country with reefs to sustain these ecosystems for generations to come.



"Coral reefs are one of Earth's most important ecosystems. Failure is not an option for protecting reefs, and Coral Vita is ready to do whatever it takes to preserve these ecological treasures."

Sam Teicher, in water,
Co-Founder and Chief Reef
Officer of Coral Vita



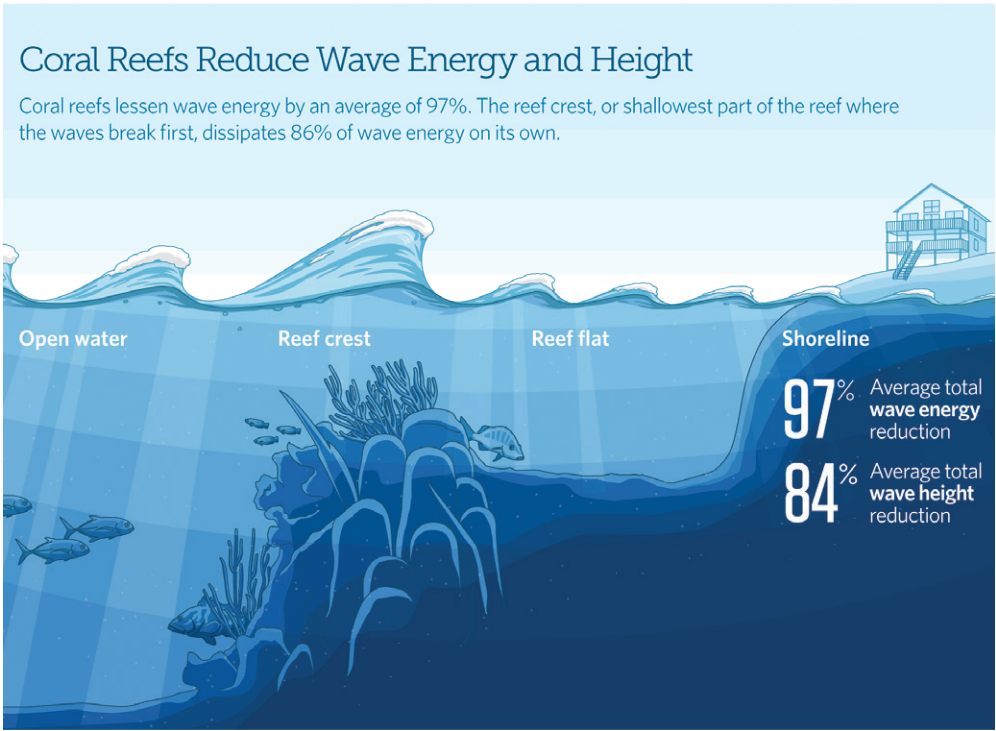
Top: Artistic rendering of Coral Vita's Grand Bahama coral farm, which is scheduled to launch in June 2019. Visible here are our coral production lines along with a touch tank for tourists and students.

Bottom: Construction on the coral farm is entering its latter stages. Seen here from the roof of the Welcome Center are raceway tanks for coral production, the Lab, and the Grand Lucayan Waterway.



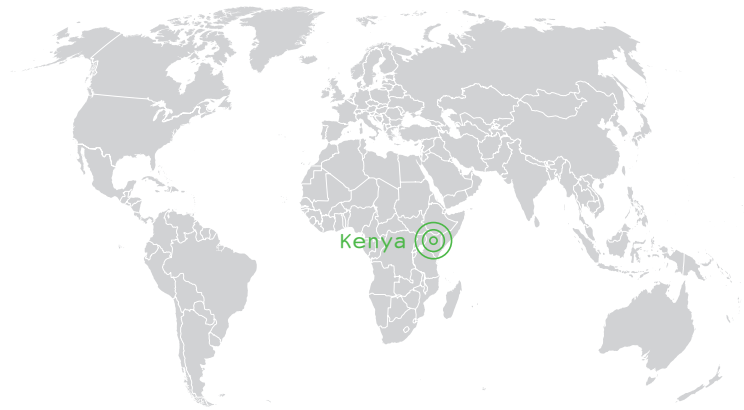
Coral Vita
www.coralvita.co

Coral reefs are incredibly valuable. In addition to sustaining tourism economies, feeding hundreds of millions, and providing compounds for medicines, they offer critical protection from storm surge.





Saving for resilience building along the coastal region of Kenya



Community members take centre stage in financial literacy and management that promote coastal natural resource management and increase utilisation of blue based assets with an integrated climate based advocacy. The project focuses on resilience building through promoting disaster risk reduction programming in the Tana River Delta.



Left: In 2018, floods destroyed houses and infrastructure. People had to flee and were in dire need of assistance.



Right: A provisional camp in which people had to live for many months after flooding.



Church World Service
(CWS)

www.cwsglobal.org

The main goal of the proposed project is to ensure that coastal communities in Kenya prone to climate induced disasters become more resilient and the impacts of climate change are mitigated. New approaches for enhanced resilience building as well as adaptation measures for 150 households and an estimated 1,000 direct beneficiaries will be tested.

CWS will achieve this through five sets of components:

- 1) Organising communities into working groups and enabling them to develop and use early warning mechanisms
- 2) Enhancing an integrated participatory approach in natural resources management for disaster risk reduction
- 3) Supporting modern apiculture for productive coastal ecosystem conservation and management
- 4) Village Savings for Resilience Building leveraging on the proliferation of the mobile technology, to reach vast numbers of previously excluded people
- 5) Climate based advocacy and policy hub.

The project will incorporate socio-economic well-being and livelihood improvements for communities as they undertake environmental conservation and protection. Looking at environmental management from different areas, namely environmental awareness raising, capacity building of local community groups in natural resources management, catchment conservation, water resources management, and soil conservation, this integrated approach is important because it recognizes different environment elements and their interlinkages.



“Nothing was left behind, we relocated to the camps and life has been very hard. We have gone for days without food, we are grateful to CWS for the food that was very critical for our survival.”

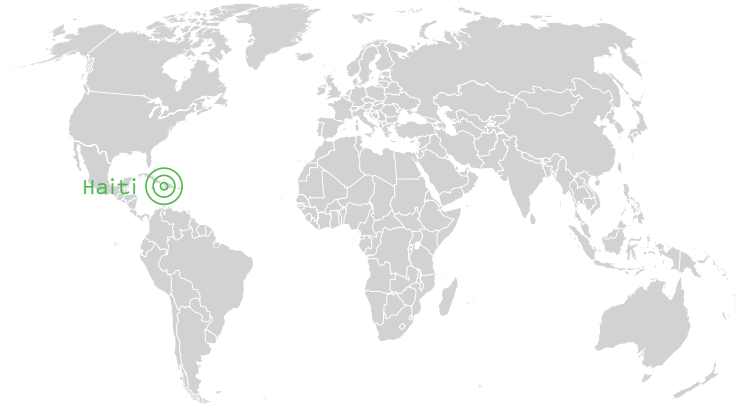
Mzee Warera,
Beneficiary



Ujoma village submerged in water, people lost livelihoods, crops and animals – May 2018.



Strengthening of coastal zone management initiatives for the 3Bays Marine Managed Area, Haiti

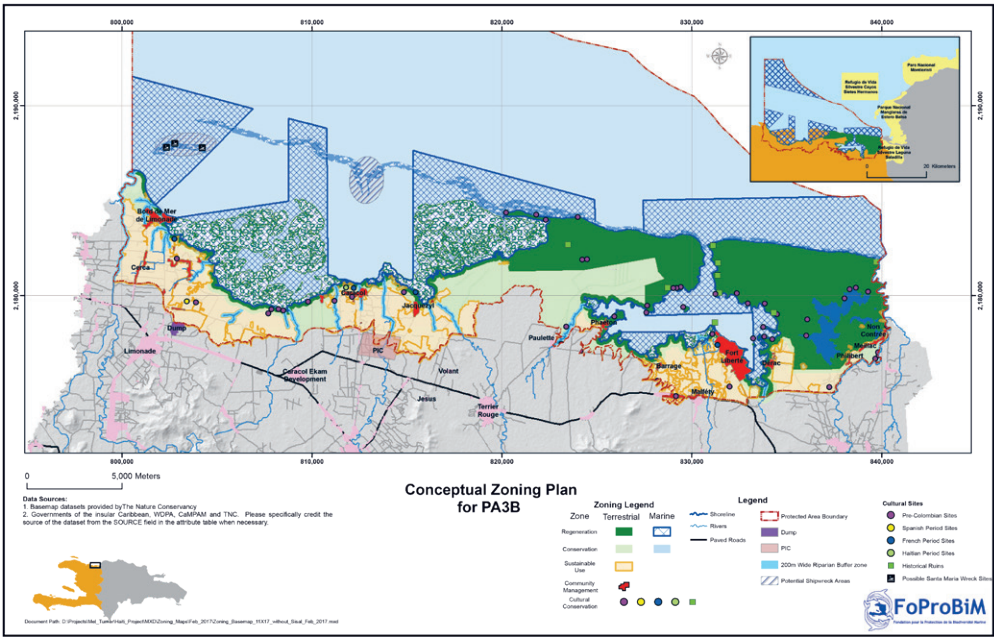


This project supports protection and management efforts targeted at the fisheries, mangrove forests and coral reefs in the 3Bays Marine Managed Area in NE Haiti by directly engaging and strengthening local community stakeholder capacities to undertake these initiatives, by:

- 1) Increasing the capacities of the Environmental Surveillance Agents (ASE)
- 2) Providing livelihood alternatives to replace/reduce unsustainable resource extraction activities.



Fondation pour la Protection de la Biodiversité Marine (FoProBiM)
www.foprobim.org



The map shows the conceptual zoning plan of the project.



"The socio-economic situation in Haiti is extremely difficult; however, through our activities we are able to protect our environment, use it sustainably, and provide new sources of income for disadvantaged communities."

Daniel Dubois,
FoProBiM team member

The AP3B is under constant direct threats from the cutting of mangroves for fuel wood and charcoal production, unsustainable and extremely damaging fishing practices, coral exploitation for construction material, and marine pollution. The project goal is to ensure that by 2025 the AP3B is protected through a co-management approach involving a combination of community and government-based managing, monitoring, educational/outreach activities, and patrolling. A minimum of 50 rangers and 1,000 community members actively engaged in sustainable alternative/supplemental income generating activities shall be trained. And 1,000 ha of mangrove forest shall be rehabilitated.

Healthy and sustainably managed marine and coastal ecosystems provide the best approach for increasing resilience to environmental stresses and degradation. The maintenance of critical ecosystem services for extremely vulnerable coastal communities which depend on them is vital for protection of both their lives and livelihoods.

Local stakeholders and government will be engaged in:

- 1) Educational and game warden specific strengthening activities for ASE, and an expansion of ASE to include members from all of the counties within the AP3B, increasing their ability to engage in participative monitoring and stewardship activities
- 2) Environmental education classes/field activities for 2,000 participants from 10 local communities
- 3) Mangrove-linked apiculture activities for local fishers/charcoal producers as alternative and sustainable income generating activities while exploring the possibilities of new activities such as eco-tourism, algae production (for car-rageenan), shellfish production and hydroponics.

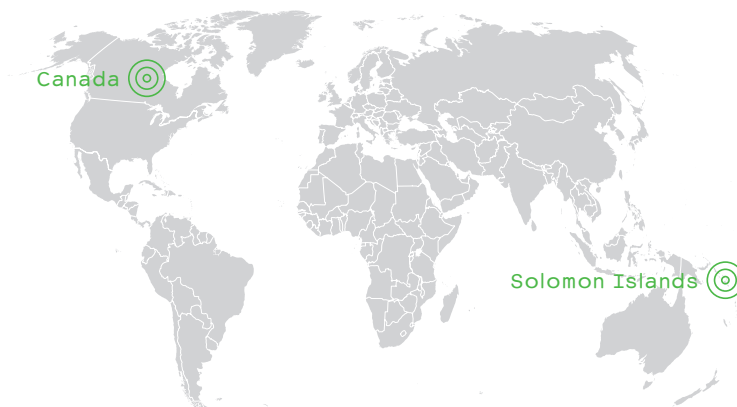
Left: Beekeeping classes provide alternative livelihood options.

Right: Mangroves are often exploited for charcoal production.





Preparing Our Planet: Connecting tradition and innovation for coastal resilience



Preparing Our Planet is an indigenous youth-led community resilience programme that connects indigenous youth in the Solomon Islands and Canada for joint action on disaster risk reduction and climate solutions. Globally speaking, the Small Island Developing States (SIDS) and northern indigenous communities face the most acute and pressing challenges for disaster and climate risk.

Youth volunteers become DRR champions during the course of the project.

The Preparing Our Planet programme brings these communities together to learn and implement community-based disaster risk reduction (DRR) and climate resilience solutions. Beginning with community-based participatory learning processes, this programme creates intergenerational, multi-stakeholder opportunities to understand risk and develop context-specific community implemented risk management activities. By connecting indigenous knowledge to innovative low-cost solutions developed around the globe, this programme will empower the next generation of resilience practitioners. Today, indigenous people make up less than 5% of the global population.

This project raises awareness, enables mutual learning, solutions development and action in disaster risk reduction (DRR) and climate change adaptation (CCA) in indigenous communities in the Solomon Islands, Canada and internationally through the following actions:

- 1) Develop common DRR/CCA curriculum to facilitate an effective translation of knowledge and solutions into action in indigenous communities
- 2) Youth empowerment and professional skills building that addresses social, economic, and environmental outcomes of these marginalized communities and improve their quality of life
- 3) Training, capacity building and implementation of DRR and climate resilience solutions in partner communities
- 4) Scaling up the key lessons learned from other Indigenous and non-indigenous communities through the Preparing Our Home programme
- 5) Raise awareness about DRR/CCA action in SIDS and in northern indigenous communities through digital storytelling by the youth and a massive online open course (MOOC).

Young person taking pictures at a lake in Canada. Photography can be a powerful medium for youth-led digital storytelling.



"We are experiencing the effects of sea level rise and coastal erosion of our islands, droughts affecting our community's crops and fresh-water sources, and intense cyclones. We want to be part of the solution and protect our planet."

Lavi,
a 12-year-old girl,
Solomon Islands



Preparing our Home

ISEF

Solomon Islands
Development Trust (SIDT)

www.preparingourhome.ca

www.isef.ca

www.sidt.org.sb



SaciWATeRs – Building climate resilience for combating risk: Connecting coastal livelihoods, environment and networks



The project aims to strengthen the climate resilience of vulnerable coastal regions and communities in India. It connects policy research, vulnerability assessments, capacity development and community networks with innovative solutions for alternate sustainable livelihoods and ecological restoration into a single interconnected framework. The objective has been to combine both top-down and bottom-up frameworks.



“Traditional fishermen suffer from very limited income. As a development professional I am determined to improve options for their livelihoods by taking technology to them.”

Dr. Solomon Raj,
team member

Coastal regions of India have immense biological productivity and diversity and have thus become centres of economic activities such as fishing, aquaculture and tourism for local communities in a densely populated region with approximately 250 million people. Climate change and climatic variability considerably impact these activities, resulting in impoverishment of the local communities. The majority of this vulnerable population in the coastal areas of India is poorly equipped to cope effectively with the adversities of climate change with limited capabilities, inadequate institutional support and lack of access to adequate resources. The project aims to bring together various physical and social analyses and interventions:

Analysing the intersecting sectoral policies at national and state level for coastal climate change risk reduction, mitigation, and resilience building to identify the non-climatic stresses which exacerbate climate change risks in coastal areas, in order to assess potential synergy of project initiatives with existing government policies and local area plans.

Supporting and implementing alternate livelihood intervention using an innovative technology (Recycled Aqua Systems–RAS) for “mud crab culture” in artificial environments that is accessible, and replicable in a variety of coastal ecosystems with complete involvement of local communities in all stages from construction to operation and maintenance.

Creating awareness amongst coastal communities, building capacities and a network of selected community leaders and representatives on existing innovations and institutional practices for alternative livelihoods, and resource management in coastal ecosystems.

Top: The vertical crab fattening system was developed by Dr. Solomon Raj using recycled aqua system principles with an intention to augment livelihoods of traditional and coastal fishermen with low cost sustainable alternatives.

Bottom: Farmer with pond culture of mud crabs in mangrove areas in Nellore district, on the east coast of India which has a high dependence on mangroves and tidal water; requires large land area and chemical treatment of pond surface unlike the RAS.



SaciWATERS
SOUTH ASIA CONSORTIUM FOR INTERDISCIPLINARY
WATER RESOURCES STUDIES



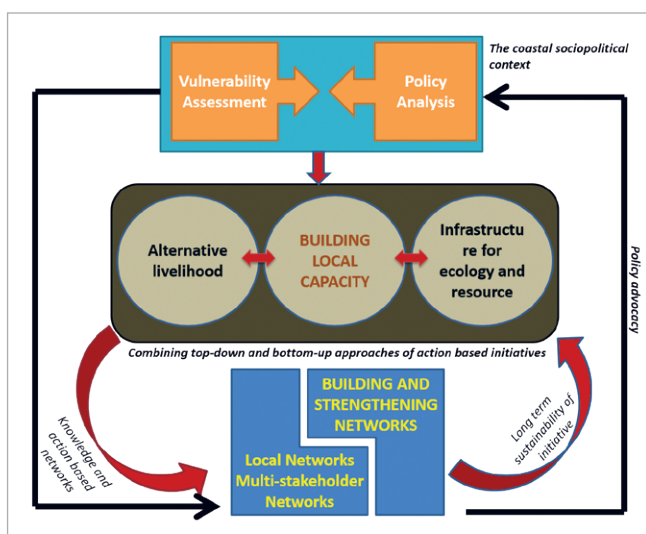
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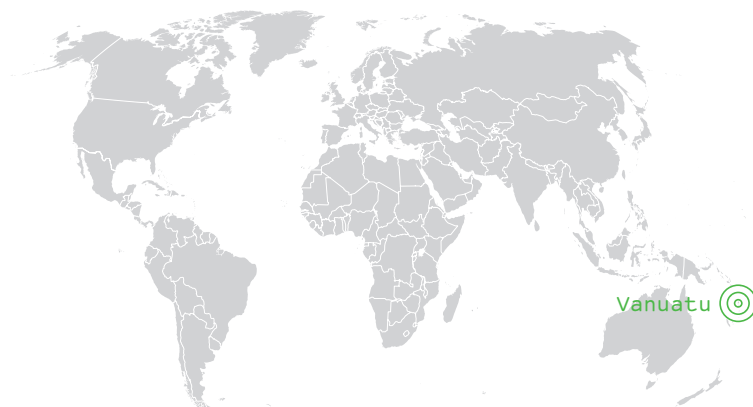
www.saciwaters.org

Framework for connecting bottom-up and top-down approach of project activities of policy research, vulnerability assessment, capacity development, community networks, innovations for livelihoods and ecological restoration.





Empowering indigenous knowledge to enhance coastal resilience and disaster risk reduction (DRR) on Tanna Island, Vanuatu



Project partner Primal Vision Productions video records traditional building construction techniques. Such educational outreach material in English/Bislama will be used by local "Ambassadors for Resilience" in outreach exercises throughout the archipelago.

Indigenous Knowledge (IK) continues to be lost at a worrying pace and with it the abilities of local communities to adapt to both long and short-term coastal changes such as sea level rise, tropical cyclones and tsunamis. This project represents a merging of IK and modern science (geological data, computer modelling) to produce pragmatic educational material to enhance coastal resilience on both Tanna and other islands in the Archipelago.



UNSW Sydney

www.unsw.edu.au

In 2015, members of the team visited the island of Tanna, Vanuatu, in the wake of Tropical Cyclone Pam. The outcome of this work was the recognition of key research and community needs. First, that Indigenous Knowledge (IK) saved many lives, primarily thanks to risk-reduction skills learnt from past events over many generations – this included traditional building design, environmental management and emergency procedures*. While the importance of this IK was widely recognised, it is being lost rapidly as village Chiefs age and die with little being done to record information for future generations. Second, climate change and enhanced tectonic activity are affecting and will affect contemporary and future coastal resilience. IK indicated that some past natural hazards had been even more severe than Tropic Cyclone Pam (2015) and yet development was being encouraged in the coastal zone. There was a recognition that dangerous coastal hazards such as cyclones, tsunamis, landslides and sea level rise seemed to have been more problematic in the recent past – environmental conditions are deteriorating. More specifically, the 2015 project recognised the need for further work on these two intertwining strands –

- 1) recording/documenting and learning from IK related to coastal hazards and resilience, and
- 2) gathering geological data and using computer modelling (Modern Science) to add value to the IK by assessing past, contemporary and future coastal resilience needs into the future.

Ultimately, the aim of this project is to undertake parts (1) and (2), merging data from each to produce pragmatic educational material to enhance coastal resilience on both Tanna and other islands in the Archipelago.



“There is a treasure trove of IK throughout the Pacific region that we cannot afford to lose. If we can add value to this using modern science, we can hopefully preserve it and empower local communities in DRR into the future.”

Professor James Goff,
UNSW Sydney

*[youtube.com/watch?v=DC2nIQeVFs4](https://www.youtube.com/watch?v=DC2nIQeVFs4)



In 1956, saltwater inundated up to this tree some 25 metres above sea level. This event is not documented in any historical records of the time. The sign is a relatively modern reminder of the type of IK preserved in this community.



In 2015, traditional building designs withstood the battering of Tropic Cyclone Pam (Category 5) far better than modern buildings. Adapting such designs using modern materials is one of the aims of this project.



Healthy ecosystems for community resilience in Yucatan, Mexico

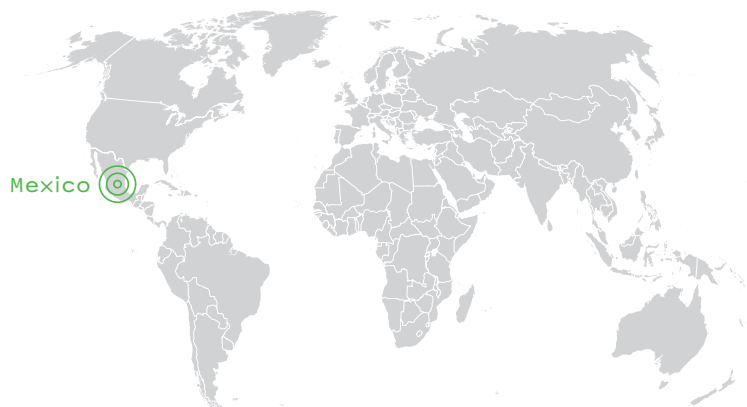


Photo showing coastal erosion and ongoing restoration efforts. Geotubes are installed along the coast to strengthen the sand dune, followed by relocation of sand and reforestation with native species.

Ria Lagartos is home to over 6,000 people who are at risk of suffering the impacts of climate change, including extreme heat, increased intensity of tropical storms and sea level rise. Our ecosystem-based approach is to restore mangroves and coastal dunes, as they provide critical ecosystem services that can reduce community disaster risk, while strengthening their food and job security.



WWF Mexico

Comisión Nacional de
Áreas Naturales
Protegidas (CONANP)

Industria Salinera de
Yucatán (ISYSA)

www.wwfmex.org



"Back to basics. We need to remember that nature has always sustained our livelihoods. It's high time we acknowledge that."

Fernando Camacho Rico,
General Director for
Institutional Development
and Promotion,
CONANP

Communities of the Ria Lagartos Biosphere Reserve depend on fisheries, tourism and the salt industry to support their livelihoods and adapt to the negative impacts of climate change. In turn, these activities depend on the health of ecosystems such as mangroves and coastal dunes. Yet, in recent decades, natural and anthropogenic drivers have impacted these natural barriers. Based on a sound technical base and community participation, we propose:

1) Mangrove restoration:

Mangroves are crucial for coastal protection and support the reproduction of key species for fisheries and tourism, such as the American flamingo. Restoration starts with a hydrological rehabilitation process to create the enabling conditions for subsequent mangrove reforestation.

2) Sand dune restoration:

Coastal sand dunes prevent sea water from entering the lagoon, which could affect its physicochemical and microbiological properties, potentially disrupting habitat of birds and other species and jeopardising the overall system. The restoration process consists of the installation of physical barriers along the coast and rearranging sand to cover the barrier. Native species are then planted to strengthen the dune.

3) Sand dune protection:

This entails installation of breakwater tubes to counteract ongoing erosion.

This ecosystem-based project can not only provide disaster risk reduction for the Ria Lagartos communities, it can also provide many co-benefits for generations to come.



Left: Degraded site and affected mangrove swamp in las Coloradas, Yucatan.

Right: Mangrove swamp after undergoing restoration process.

Information

About the RISK Award

The risks posed by population development, environmental and climate change are increasing. Complex technical systems and infrastructure are additional risk factors. The Award partners recognise the need to address this development. The RISK Award has been set up to help improve risk reduction and disaster management by providing financial support to projects dedicated to this topic.

Prize and awarding ceremonies

The RISK Award, endowed with €100,000, is assigned to operational projects in the field of risk reduction and disaster management. The prize is awarded every two years. The International Disaster and Risk Conference (IDRC), organised by GRF Davos, and the Global Platform for Disaster Risk Reduction in Geneva, organised by UNDRR, host the awarding ceremonies. The endowment for the RISK Award is provided by the Munich Re Foundation.

Project partners

UN Office for Disaster Risk Reduction (UNDRR)

The UN Office for Disaster Risk Reduction (UNDRR, formerly known as UNISDR) was established in 1999. It is mandated by the United Nations General Assembly resolution (56/195) to serve as the focal point in the UN system for coordinating disaster risk reduction. It advances the implementation of the Sendai Framework for Disaster Risk Reduction and guides and coordinates the efforts of a wide range of partners to achieve a substantial global reduction in disaster losses, build resilient nations and communities as a fundamental condition for sustainable development. It is an organizational unit of the UN Secretariat and is led by the UN Special Representative of the Secretary-General for Disaster Risk Reduction (SRSG) Mami Mizutori.

Global Risk Forum Davos (GRF)

The foundation GRF Davos aims to bridge the gaps between science, administration, the private sector, the practice and the public regarding risk reduction, disaster management, and climate change mitigation and adaptation. GRF Davos is the organiser of the International Disaster and Risk Conference (IDRC). IDRC is a global gathering of experts for risk reduction, disaster management and climate change adaptation, and held as a biennial conference in Davos, Switzerland.



Munich Re Foundation (MRF)

The Munich Re Foundation is an independent, non-profit organisation founded by Munich Re in 2000. People are ultimately at the core of what the foundation's work is all about. The foundation's task is to prepare people for the risks they are exposed to and to minimise these risks wherever possible. It clarifies issues and provides support, also in developing countries. In dialogue with partners worldwide, Munich Re Foundation stimulates ideas and creates perspectives.



**Munich Re
Foundation**
From Knowledge
to Action



Contacts

University of Dundee

Nandan Mukherjee
www.dundee.ac.uk

CIFOR – Centre for International Forestry Research

Rosa Maria Roman-Cuesta
www.cifor.org

Conservation International

Emily Corwin
www.conservation.org

Coral Vita

Sam Teicher
www.coralvita.co

CWS Africa Regional Representative

Thomas John Tauras
www.cwsglobal.org

FoProBiM – Fondation pour la Protection de la Biodiversité Marine

Mr. Jean Wiener
www.foprobim.org

PREPARING OUR HOME

Dr. Lilia Yumagulova
www.preparingourhome.ca

SaciWATERS

Dr. Solomon Raj
www.saciwaters.org

UNSW

Professor James Goff
www.unsw.edu.au

WWF Mexico

Alejandra Calzada Vázquez Vela
www.wwfmex.org

Imprint

Picture credits

Christian Barthelt,
Munich Re Foundation
Cover

Douglas Varchol,
Global Resilience Partnership
Page 2

Nandan Mukherjee,
University of Dundee
Page 3

CIFOR
Page 4

Modis Laud
Rapid Response Team, Nasa GSFC
Page 5

Conservation International
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Tim Noviello,
Conservation International
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Conservation International
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Jamal Namu,
Lilia Yumagulova
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Tressa Peters
Page 15

SaciWATERS
Page 16, 17

James Goff,
UNSW Sydney
Page 18, 19

Rafael Barrera Fajardo,
ISYSA
Page 20, 21

CONANP RBR
Page 21

Editors

Christian Barthelt,
Munich Re Foundation

Oliver Klinkhammer,
Munich Re Foundation

Thomas Loster,
Munich Re Foundation

Design

Keller Maurer Design, Munich

