PANORAMA
SOLUTIONS FOR A HEALTHY PLANET

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SOLUTIONS IN FOCUS:

Governance of Protected and Conserved Areas

Volume II: Actions and Approaches

german cooperation
DEUTSCHE ZUSAMMENARBEIT

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BIOPAMA
From Knowledge to Action for a Protected Planet

IUCN Green List
Protected | Conserved Areas

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PANORAMA - Solutions for a Healthy Planet

PANORAMA – *Solutions for a Healthy Planet* is a global partnership initiative to facilitate learning from success in conservation. It promotes examples of inspiring solutions that showcase how nature conservation can benefit society. Through a modular case study format, solutions are being dissected into their replicable "*building blocks*". Their broader application is supported through cross-sectoral learning and exchange, relying on online as well as offline mechanisms.

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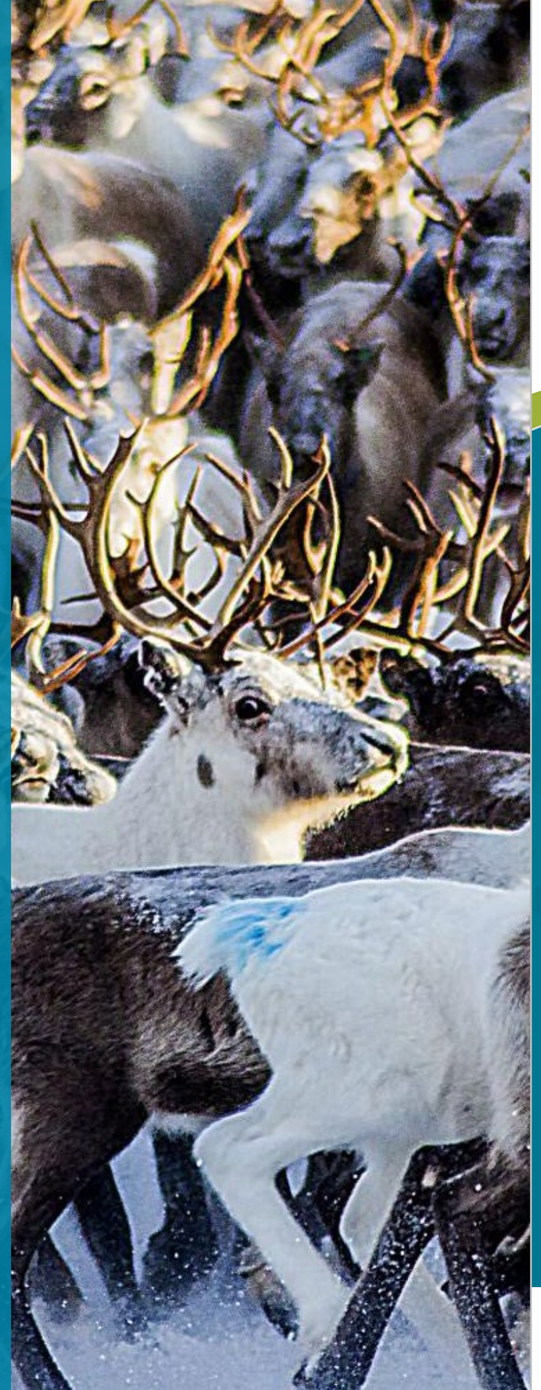
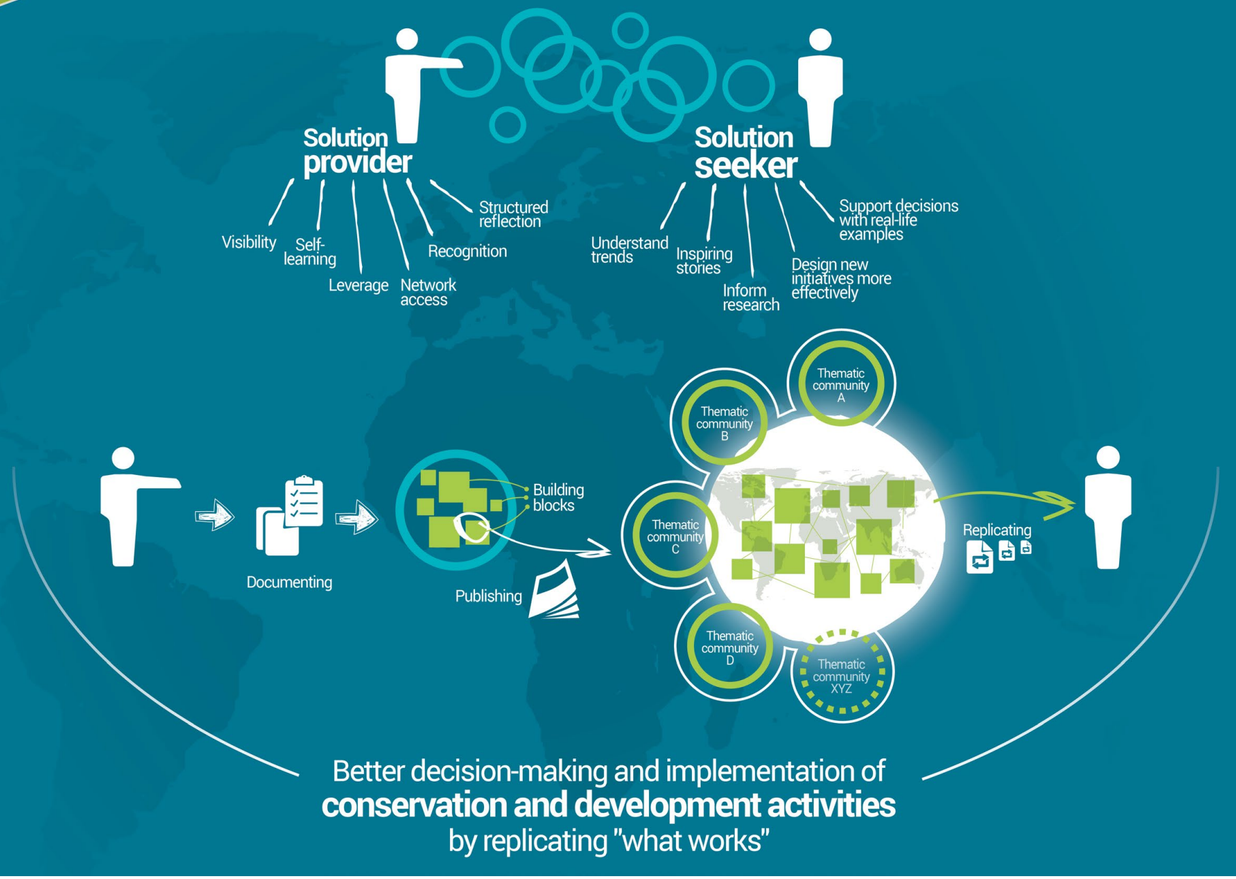


What if we could learn from each other's success?

PANORAMA
SOLUTIONS FOR A HEALTHY PLANET

Cross-sectoral, global
learning and exchange



Better decision-making and implementation of
conservation and development activities
by replicating "what works"

The “Solutions in Focus” series

This booklet is part of a series of compilations assembling PANORAMA solution case studies on a defined topic. “Solutions in Focus” zooms in on a topic of interest covered by PANORAMA, allowing to explore common elements and shared learnings across success stories. It is a snapshot of the PANORAMA portfolio at a given time, rather than a representative assembly of selected “best practices” on the issue at hand.

Further “Solution in Focus” booklets:

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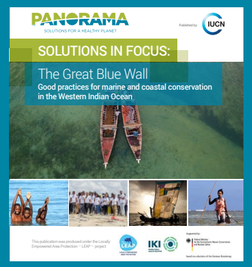
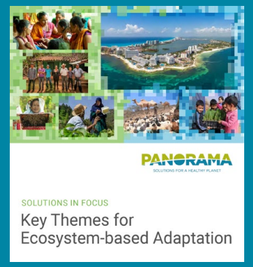
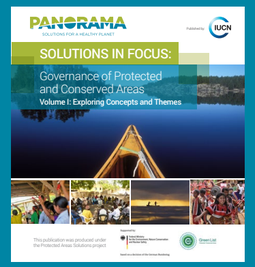
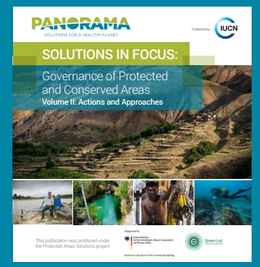
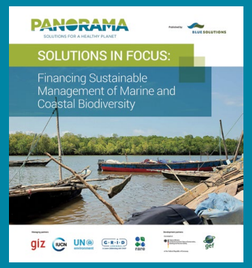
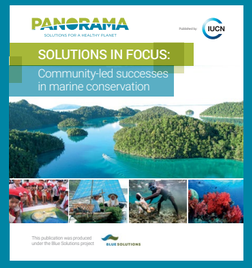


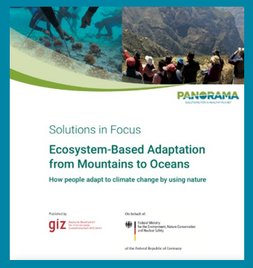












The Biodiversity and Protected Areas Management (BIOPAMA) Programme: BIOPAMA assists the African, Caribbean and Pacific countries (ACP) to address their priorities for improved management and governance of biodiversity and natural resources. The programme provides support to conservation actors via a variety of tools, capacity development programmes, services and direct funding via an action component. This publication aims to further the knowledge and action taken towards ensuring equitable and effective protected and conserved areas.

The Green List of Protected and Conserved Areas: The IUCN Green List of Protected and Conserved Areas is the first global standard for effective and equitable area-based conservation. The standard has an associated programme of certification for protected and conserved areas that are well managed and fairly governed. It was recognized by the CBD in 2016 as an important voluntary measure for countries to adopt, bringing independent verification of the conservation performance of their protected and conserved areas estate. The Green List places a core emphasis on well-governed protected and conserved areas, and this publication offers illustrative examples on how these may be achieved in practice.

A Roadmap for Readers

Governance is a critical factor in protected and conserved area effectiveness, equity and sustainability. But what does governance look like in practice, and how and why does it matter? This collection includes 20 Solutions from the PANORAMA platform that can help shed light on that question. As short examples, no one Solution fully describes the area or territory's rich governance story. However, collectively, these Solutions highlight diverse approaches to recognising, supporting and improving the site- and systems-level governance of geographically, socially and ecologically diverse protected and conserved areas.

Recognising and supporting governance diversity

Many of the Solutions in this collection highlight strategies and approaches for recognising and supporting ***diverse governance types and approaches***, at the site and/or systems level**.** A well-functioning system of protected and conserved areas is complete and well-connected in conserving representative features and functions of nature.[1] This includes protected or conserved areas governed by government (at various levels), Indigenous Peoples, local communities, private actors, or combinations of actors from across these groups collaborating through shared governance. For example:

- Artisanal fishers in Costa Rica are promoting and advancing "**collaborative governance …for …marine territory**, where fishers and government work together towards responsible fishing and improvement of the quality of life of the communities". (Solution 1)
- Since "the Tla-o-qui-aht Indigenous Peoples established the first Tribal Park in 1984", several additional **Tribal Parks have been declared by Indigenous Peoples in …** [British Columbia, Canada] culminating in 2014 with the Dasiqox Tribal Park declaration, based on a precedent setting Supreme Court of Canada decision on Aboriginal Title to Land". (Solution 9)
- Pastoralist, agro-pastoralist and hunter-gatherer communities in northern Tanzania are strengthening security of their land rights, and enhancing governance and management of the communal lands and connected rangelands. This is both crucial to their livelihoods and culture, and also to wildlife. The use of a legal innovation, the communal certificate of Customary Right of Occupancy, has secured these outcomes. (Solution 2)

Reviewing key concepts: This collection complements Volume I of this series, which focuses on broad concepts and themes for equitable and effective protected and conserved area governance. Some of those key concepts are briefly reviewed here. Globally, protected and conserved areas[2] - or, more generally, 'area-based conservation' - have long been and remain a key biodiversity conservation strategy.

'**Governance**', as used here, concerns how and by whom decisions about a protected and conserved area site or system are made and who is (or should be) accountable for those decisions. It is about who has power and responsibility, and through what rules, structures and processes those power and responsibilities arise and are exercised. Governance is related to management but is different from it. Management is what is done in pursuit of given objectives such as day to day or longer term actions. Governance is about who decides about what is to be done, and how those decisions are taken. It is about who holds power and responsibility and who is, or should be, held accountable. Three important, inter-related aspects of conserved and protected area governance are **type**, **diversity** and **quality.** Governance **type** relates to **who governs** a particular site – i.e. who has the primary decision-making power and responsibility. **Diverse** governance systems recognise and support various governance types, e.g.: (A) governance by government, (B) shared governance, (C) governance by private actors, and (D) governance by Indigenous Peoples and/or local communities. **Quality** concerns the **effectiveness** and **equity** of governance rules, structures and processes. Often, quality is assessed by looking at governance in relationship to widely agreed-upon principles, such as: **legitimacy and voice,**[3] **direction,**[4] **performance,**[5] **accountability,**[6] **and fairness and rights**[7].[8]

- An "Indigenous Land Use Agreement **formally recognises** the Bundjalung People of Byron Bay (Arakwal people) as the Traditional Owners and **provides for joint management** with the [New South Wales]… National Parks and Wildlife Service" in Arakwal National Park (Australia). The result is a long term management plan that secures the rights and the deep cultural values of the Arakwal people. (Solution 3)
- The Cote Bleue Marine Park (France) was created in 1983 through a "**bottom-up initiative …based on an experimental cooperation** between local public authorities and professional small-scale fisheries, in order to implement a program for sustainable development of fishing activity, marine environment protection, experimental scientific research and public awareness and education". (Solution 4)
- The MIHARI, the Locally Managed Marine Areas (LMMAs) Network of Madagascar, was created in 2012 from the initiative of 18 LMMA communities from the southwest of Madagascar. The network aims at supporting the LMMAs **by building local leadership, sharing best practices, securing financial sustainability and making fishers' voices heard.** It is organised in a network structure, that allows national coordination and regional implementation. (Solution 14)
- In the coastal zone of Soc Trang Province, Mekong Delta, Vietnam, partners **negotiated a co-management (shared governance) agreement**, contributing to substantial expansion in mangrove coverage and "local authorities and people … working together and making joint decisions for natural resource conservation". (Solution 5)
- In Armenia, a civil society organisation (The Foundation for the Preservation of Wildlife and Cultural Assets)) have advocated for new policies that "**recognize, encourage and monitor privately protected areas**

as a key contribution to national and international conservation targets and to implement mechanisms for integrating privately protected areas into the national system". (Solution 7)

- In Peru, collective action led by a local civil society group (SPDA´s Act for Your Wave Initiative) is mobilizing support and legal protection of iconic surf breaks, in the "absence of national, spatial coastal-marine planning strategies". This illustrates the importance of recognition and support of other effective area based conservation measures that may not receive formal protection under the law. (Solution 6)

Collectively, these and other Solutions in this volume help to illustrate why and how a diversity of governance approaches and arrangements can contribute to equitable and effective area-based conservation. At the same time, they highlight that there is no simple or singular recipe for governance diversity. The current governance 'type' (of a site), and the constellation of recognised and supported sites within a system, often arise from many interacting historical, social, political and ecological factors. And governance is dynamic. These approaches can evolve over time, as circumstances change and new challenges and opportunities arise. Stories in this collection also highlight that greater recognition and support for diverse governance approaches is often enabled through the leadership and collective action of rights-holders, stakeholders and their allied organisations. Sometimes that action is already supported by new (and/or innovative use of) supportive laws and policies. Yet often this collective action precedes – and informs - law and policy changes.

… Diversity in the governance of both protected and conserved areas…

In this volume, we talk about governance diversity primarily in terms of recognition and support for different governance types, actors and arrangements. It's important to remember that any of these governance types can be present in both protected areas (i.e. Solutions 3, 4, 17, 18) or conserved areas (i.e. Solutions 2, 6). For example, an area or territory that is conserved by Indigenous Peoples or local communities may or may not be recognized and classified as a protected area in a given system, for a variety of reasons, including national law and/or the preferences of the governing people or community. The Solutions in this collection, including those mentioned above, include both protected and conserved areas.

Understanding, improving and upholding governance quality

The Solutions in this collection also illustrate strategies and approaches for understanding, improving and upholding ***governance quality***. As with Volume I, each Solution relates to several governance principles (e.g. legitimacy and voice, direction, performance, accountability, and fairness and rights) in more and less direct and distinct ways. The Solutions also show some of the ways that governance principles are interrelated. Given this, we invite you to read the Solutions in this volume with all of these principles in mind. Below are some of the governance themes that emerge, each of which cuts across multiple principles:

- ***Secure rights:*** Recognising, respecting and protecting rights is a core governance principle. In the context of conservation, it is crucial not only as a legal and ethical imperative. Secure rights are also often a foundational element for ensuring that rights-holders can effectively and sustainably govern and manage their territories and areas. Rights are, in other words, at the heart of equitable, effective and diverse governance. See, for example, the central role of land and natural resource rights woven into the Solutions about community-led and -shared governance in fisheries in Costa Rica; connected, communal rangelands land in northern Tanzania; the establishment of Tribal Parks in Canada,; and sustainable use and participatory monitoring in Banc d'Arguin National Park (Mauritania); among many others.

- ***Diverse knowledge and ways of knowing:*** Respecting and incorporating diverse knowledge and ways of knowing, including Indigenous and local knowledge, is also crucial for protected and conserved areas governance quality, and is key component of the CBD voluntary guidance on equity which calls for i.a. respect of rights, knowledge and institutions.[9] It is important in relation to the principles of legitimacy, voice (e.g. having knowledge recognised and incorporated), fairness and rights (e.g. having knowledge respecting, including in terms of free, prior and informed consent), direction (e.g. for learning and adaptation), performance (including, ultimately, conservation effectiveness), and accountability. Elements of these links can be seen throughout this volume, - e.g.

  "The role of traditional knowledge and application of diverse knowledge systems for wildlife management is demonstrated by Indigenous and local trackers and rangers e.g. in Bwabwata National Park in north east Namibia" where "[t]he indigenous trackers and rangers are using a rigorous, culturally appropriate methodology for assessment and certification of tracking skills and competence.

  "Mandingalbay Yidinji (MY) people from the Wet Tropics World Heritage Area, Australia, have used Participatory 3 Dimensional Modelling (P3DM) to empower their community through the mapping and sharing of cultural and landscape knowledge."

  Governing partners are collaborating on a process to incorporate Sámi culture and language in site interpretation and narratives about the Røros mining town and the Circumference World Heritage (Norway), which includes parts of Sámi reindeer husbandry districts.

- ***Appropriate structures and processes:*** Central to all the principles of governance quality, is the question of whether or how they are reflected in the structures and processes through which decisions are made and upheld. For example: Are they inclusive? Do they enable full and effective participation of rights-holders, including in ways that help equalize power imbalances? Are they culturally / contextually appropriate and otherwise fit for purpose? Do they enable coordinated and effective decision-making? Do the structures and processes for engagement support governing partners in coming to shared visions and direction? To sharing information and learning, so that they can take adaptive action? Elements of these questions can be seen throughout this volume – e.g.

  An Arakwal-led, **cross-cultural planning approach** for traditional owners and park managers to agree upon how to work together in Arakwal NP (Australia), including to identify a vision, shared purpose and key actions.

  A participatory process to "**strengthen transboundary governance** and improve institutional adaptation capacities" in the Sixaola binational river basin (Costa Rica and Panama).

  An "approach to building capacity among local actors to **develop collective strategies** for navigating the system towards a broad collectively defined vision", piloted in the Västra Hargs Lövskogar nature reserve (Sweden).

  Community deliberation facilitated through an online discussion forum to **enable social learning** among stakeholders in the Denali region of Alaska (United States).

  Critical stakeholder engagement – "an approach that aims at including planning and decision-making processes with all key stakeholders and rights holders" - for "fostering community stewardship for the safeguarding of the natural and cultural

heritage of Victoria Falls/Mosi-Oa-Tunya, Zambia and Zimbabwe".

Public participation in the planning for the Great Barrier Reef (Australia), facilitated through a multi-step process including inviting and analysing written public comments, with further outreach and communications.

- ***Sustainable use, fair sharing and accountability:*** While each is important in its own right, several of the Solutions in this volume also highlight often-present links between secure and fair benefits and community-led and engaged monitoring for accountability – e.g.:

  "Participatory maritime surveillance within the Banc d'Arguin National Park" (Mauritania), which is one of the largest national parks in Africa, and in which the Imraguen, a population of desert fishermen, have "ancestral and exclusive rights over fishing resources".

- ***Vitality and resilience:*** Governance is dynamic, at both site and systems levels. Several Solutions highlight strategies for fostering vitality, resilience and/or re-strengthening – e.g.

  MIHARI – the Locally Managed Marine Areas (LMMAs) Network of Madagascar - was created by 18 communities in 2012 and has been growing and evolving since then. It aims to support LMMAs by "building local leadership, sharing best practices, securing financial sustainability and making fishers' voices heard".

  "In the Solomon Islands, conservation has a long history of use of traditional and customary practices known as "Hope" in Vangunu language. However, since social and economic change and development, the communities experience huge change and undermining of traditional practices and customs." This Solution highlights efforts "empowering communities to have good governance and leadership, conservation activities and resource management, to be heard effectively by the national government".

  Parc Marin Mohéli (Comoros) "was established in 2001 through a negotiated process agreed by the ten main village centers around the area. However, during political instability, external support dried up in 2005, and pressures on coastal ecosystem resources vital to the local economy have increased" Since 2014, efforts to bolster performance are being made through, *inter alia*, "re-addressing the institutional and governance framework" and revitalizing "[l]ocal community engagement in the park's decision-making and management … based on experiences from Madagascar…", illustrating that "any protected area can revisit their core values and the rights and obligations of its stakeholders, and come up with solutions".

References and Notes

1. Borrini-Feyerabend, G., P. Bueno, T. Hay-Edie, B. Lang, A. Rastogi and T. Sandwith (2014). *A primer on governance for protected and conserved areas*, Stream on Enhancing Diversity and Quality of Governance, 2014 IUCN World Parks Congress. Gland, Switzerland: IUCN.
2. These terms are used and understood in diverse ways. For purposes of this booklet, we are guided by the following:
   - IUCN defines a protected area as a: "…clearly defined geographical space, recognised, dedicated and managed, through legal or other effective means, to achieve the long-term conservation of nature with associated ecosystem services and cultural values". See Dudley, N. (2008). Guidelines for Applying Protected Area Management Categories. IUCN, Gland (Switzerland).
   - Borrini-Feyerabend and Hill (2015:178) describe a conserved area as one that "…regardless of recognition and dedication, and at times even regardless of explicit and conscious management practices, achieves de facto conservation and/or are in a positive conservation trend and likely to maintain it in the long term". See Borrini-Feyerabend, G. and R. Hill (2015). 'Governance for the conservation of nature', In Protected Area Governance and Management, Worboys, G. L. et al. (eds.). ANU Press, Canberra.
   - Some conserved areas may be recognised as "other effective area-based conservation measures" (OECMs) for purposes of reporting to the CBD. In 2018, CBD Parties adopted a decision defining OECMs as "…a geographically defined area other than a Protected Area, which is governed and managed in ways that achieve positive and sustained long-term outcomes for the in situ conservation of biodiversity, with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic, and other locally relevant values" (CBD Decision 14/8, para 2, Sharm El-Sheikh, 2018). This decision also includes scientific and technical advice stating that "Recognition of [OECMs…] in areas within the territories of indigenous peoples and local communities should be on the basis of self-identification and with their free, prior and informed consent, as appropriate, and consistent with national policies, regulations and circumstances, and applicable international obligations" (Decision 14/8, Annex III, A(i)).
3. Legitimacy and voice *refers to "enjoying broad acceptance and appreciation in society; ensuring procedural rights of access to information, participation and justice; fostering engagement and diversity; preventing discrimination; fostering subsidiarity, mutual respect, dialogue, consensus and agreed rules…"* Borrini-Feyerabend et al., 2014:17.
4. ***Direction*** *refers to "following an inspiring and consistent strategic vision grounded on agreed values and an appreciation of complexities; ensuring consistency with policy and practice at various levels; ensuring clear answers to contentious questions; ensuring proper adaptive management and favouring the emergence of champions and tested innovations…* Borrini-Feyerabend et al., 2014:17.
5. ***Performance*** *refers to "achieving conservation and other objectives as planned; promoting a culture of learning; engaging in advocacy and outreach; being responsive to the needs of rightsholders and stakeholders; ensuring resources and capacities and their efficient use; promoting sustainability and resilience…"* Borrini-Feyerabend et al., 2014:17.
6. ***Accountability*** *refers to "upholding integrity and commitment; ensuring appropriate access to information and transparency, including for lines of responsibility, allocation of resources, and evaluation of performances; establishing communication avenues and encouraging feed-back and independent overseeing"* Borrini-Feyerabend et al., 2014:17.
7. ***Fairness and rights .:*** *refers to "striving towards equitably shared costs and benefits, without adverse impact for vulnerable people; upholding decency and the dignity of all; being fair, impartial, consistent, non-discriminatory, respectful of procedural rights as well as substantive rights, individual and collective human rights, gender equity and the rights of indigenous peoples, including Free, Prior and Informed Consent; promoting local empowerment in conservation…"* Borrini-Feyerabend et al., 2014:17.
8. Adapted from: Borrini-Feyerabend, G., P. Bueno, T. Hay-Edie, B. Lang, A. Rastogi and T. Sandwith (2014). *A primer on governance for protected and conserved areas*, Stream on Enhancing Diversity and Quality of Governance, 2014 IUCN World Parks Congress. Gland, Switzerland: IUCN.
9. Convention on Biological Diversity (2018). Decision 14/8, 'Protected areas and other effective area-based conservation measures'. Montreal: Convention on Biological Diversity Annex II

Communities leading sustainable fisheries management, Costa Rica

Solution Provider: Vivienne Solis-Rivera, CoopeSoliDar R.L.

Summary Text: Costa Rica's coastal population is culturally and economically closely tied to the seashore and strongly dependent on artisanal fisheries. However, blocked access to marine resources, degraded and polluted habitats and declining fish stocks threaten livelihoods and increase local poverty. The artisanal fishermen's cooperative CoopeSoliDar R.L. encouraged the community to use local marine resources sustainably, thus guaranteeing their economic future and cultural way of life. They led a dialogue with the semi-industrial fleet to reach agreements on the use of the marine territory. They have promoted a collaborative governance model for the management of the country´s marine territory, where fishers and government work together towards responsible fishing and improvement of the quality of life of the communities.

Location: Tárcoles, Garabito, Puntarenas Province, Costa Rica | Gulf of Nicoya, Costa Rica

Organisations Involved: Cooperativa Autogestionaria de Servicios Profesionales para la Solidaridad Social (COOPE SoliDar); Cooperativa de Pescadores de Tárcoles (COOPE Tárcoles); Consorcio Por La Mar

Impacts:

- Recognition of Marine Area for Responsible Fishing
- Local Responsible Fishing Code and participatory mapping and governance model that considers scientific and traditional knowledge
- Fishermen from Tárcoles and neighboring communities actively participate in the zoning process
- Environmental management plan for better fish processing practices and clean local beach shores
- Database developed to monitor all exploited species in the Tárcoles area
- Institutionalized sustainable fishing protects economic future of the community
- Cooperative benefits for workers in related occupations - often women and youth
- Collective action provides an equitable and just distribution of benefits
- Development of a local enterprise that promotes guided visits to learn about local fishing practices
- Expanding ecotourism provides alternative income sources
- Proposal for the recognition of a community governance model to ensure the collaborative management of MPAs by communities and government
- Establishment of a community-based Marine Area of Responsible Artisanal Fishing of Tárcoles (MARAFT)
- Uniting artisanal fishers for political purposes through visits to the localities in Tárcoles
- Tárcoles has been a flagship project in the creation of a National Network of Marine Responsible Fishing Areas

Building blocks:

1 Community-managed Marine Area

The policy that regulates the recognition of Marine Responsible Fishing Areas (MRFAs) is under the control of INCOPESCA, the National Fishing and Aquaculture Institute. In 2009, CoopeTárcoles R.L requested the Costa Rican government to recognize a MRFA in their fishing territory, which was approved in 2011. The recognition of this area and fishers' rights helps to conserve both the marine biodiversity and the cultural identity of the local community.

2 Negotiation and Legal Recognition

A participative process with artisanal fishers of Coope Tárcoles R.L., government authorities represented by INCOPESCA and CoopeSoliDar R.L., as a facilitator of the process, was initiated for the development of the MRFA fishing management plan. Artisanal fishers and semi-industrial trawlers agreed that semi-industrial trawlers would stay 3 miles from the coast. During 2009, semi-industrial trawlers made the proposal to move out from water areas with a depth of 15 meters or less, but requested that artisanal shrimp fishers had also to respect this no fishing zone so that the white shrimp population could recuperate faster. There was also an agreement for a one-year ban on shrimp captures by artisanal and commercial fleets, which was transformed in the year 2012 by the INCOPESCA Board of Directors into a national decree (AJDIP-193) as stipulated by the MRFA decree. After the ban, Coope Tárcoles R.L. requested permits for shrimp fishing. This request was backed up by the INCOPESCA research department and approved and the shrimp semi-industrial trawlers were requested to permanently stay out of the agreed 15-meter zone. Later, shrimp trawlers agreed to move out of the area 5 nautical miles from the coast to support sustainable shrimp populations.

3 Participatory Local Governance

MRFAs are defined as "areas where fishing activities are regulated to secure the sustainable use of resources in the long term and where the conservation, use and management action of INCOPESCA can count with the support of coastal communities and other institutions" (Executive Decree No. 35502 of October 1st 2009). This new legislation recognized the fishers' effort for a collaborative governance model for the management of the marine territory. The local community developed a Fisheries Management Plan based on their traditional knowledge. A commission, composed of members of the fishing cooperative and governmental authorities, is responsible for the further management of the area.

4 Fishery Database

Each fisher records their daily fish catches, methods and site locations and feeds the information into a database. This information aids in monitoring the abundance and diversity of key species and serves as an important management tool. Data are analyzed by technicians/scientists and the results are discussed with fishermen

5 Responsible Fishing Code of Conduct

The fishers adopt voluntary standards for responsible fishing based on FAO recommendations. The Local Code of Conduct for Responsible Fisheries helps to ensure the conservation and sustainable use of coastal and marine resources. It was applied once the Marine Responsible Fishing Area was recognized.

6 Sustainable Ecotourism

Cultural tourism provides an additional source of income for the local community. Guided tours promote community traditions, art of fishing and wealth of natural resources. However, if not well-controlled and based upon strong values and rules, recreational fishing can be unsustainable and a source of local conflict. The Consorcio Por la Mar R.L developed guided visits to learn about the culture of being a small-scale fisher in Costa Rica.

Community connected land tenure for better livelihoods and conservation in northern Tanzania

Solution Provider: Paine Mako (Ujamaa Community Resource Team)

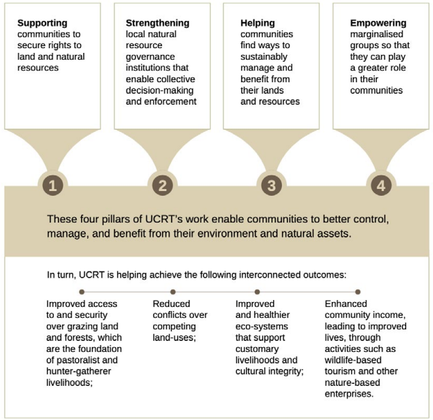
Summary Text: Pastoralist, agro-pastoralist and hunter-gatherer communities have traditionally occupied the semiarid and arid areas of northern Tanzania, where they have managed the land sustainably, supporting both themselves and the wildlife that live there. Threats of land alienation and increasing resource degradation add to the insecurity of these natural resource dependent livelihood systems. In 2011, UCRT pioneered the communal certificate of Customary Right of Occupancy. Community land tenure provides local communities with the rights to own the communal land and resources which they live and depend on. Through supporting land rights and nature-based livelihoods, and empowering these communities to sustainably manage the community land, huge areas of wildlife areas can be protected which otherwise would be susceptible to agriculture, encroachment and deforestation.

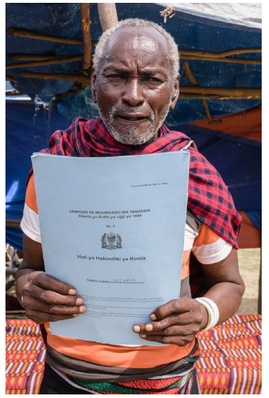
Location: Tanzania (Simanjiro, Longido, Monduli, Kiteto, Hanang, Yaeda Valley and Lake Eyasi and Ngorongoro)

Organisations Involved: [only Ujamaa Community Resource Team listed]

Impacts:

UCRT has used this innovative communal tenure mechanism to help communities secure over 1,100,000 hectares of Indigenous community connected land. These rangeland areas are located near some of Tanzania's most protected wildlife areas. Important ecosystems have been protected, securing wildlife migration paths and breeding areas, allowing for connectivity to national parks and other protected areas. Communities benefit from greater economic security from the sustainable management of their land and natural resources. For example, in 2020, communities in Makame Wildlife Management Area received $361,000 from carbon offsetting and the Hadzabe tribe have better food security since the introduction of ecotourism initiatives. Greater land tenure security empowers communities. Women can now benefit from land ownership. When women own land, food security increases, family health improves and children have increased access to education.





Building blocks:

1 Community Land Tenure

About 70% of Tanzanian land falls under village land owned and managed by local communities. Due to this, the Tanzanian Land Act allows for ownership and management of land by communities through local governing bodies. To secure land rights for these communities, a village must have a Village Land Certificate which defines the official boundaries of each village. To get that, conflict resolution must be carried out for neighbouring villages to amicably agree on the boundaries of their respective villages. After that, Communities are supported to undertake a Village Land Use Plan, guided by the National Land Use Planning guidelines. Having done that, communities are then supported to secure, through a communal certificate of Customary Right of Occupancy (CCRO), a communal title to their land in which they continue to practice their traditional practices that are friendly and help conserve the environment. These communal CCROs are connected to each other to support mobility of livestock and wildlife from one area to another, which helps these animals access crucial shared resources such as water points and salt licks

2 Governance

UCRT builds the capacity of local governance institutions and the communities they serve to understand their rights, roles and responsibilities. Communities are supported to put in place governing structures to support sustainability of land and natural resources. Also, capacity building is carried out to ensure that these governing structures are transparent and accountable. This also promotes the rights of women to take leadership positions and have their voices heard in decision-making processes. UCRT engages in advocacy and policy dialogue to help shape supportive conditions for sustainable community-based natural resource management. As part of the management process, communities come up with natural resource governing by-laws to support enforcement and implementation of practices to support sustainable ecosystems. Also, for pastoral groups, grazing plans and calendars are set to ensure a holistic approach in the use and to sustain natural resources for now and the future.

3 Community Natural Resource Management

UCRT works to dually support the rights and wellbeing of communities and the flora and fauna of northern Tanzania by helping communities adaptively improve and strengthen their management systems and practices. This is done by facilitating village formulation of land use plans and natural resource management by-laws and building community capacity to sustainably manage the rangelands across village borders.

4 Nature-Based Livelihoods

UCRT builds strategic partnerships with ethical investors and organisations skilled in nature-based enterprise development. Community benefits are then increased through building capacity to engage in natural resource-based enterprises, such as eco-tourism, carbon projects, or easements. UCRT also supports the economic empowerment of women so that they are in a position within their households and communities to be stewards of their land and natural resources.

Cross-cultural conservation planning for a threatened orchid (Arakwal National Park, Australia)

Solution provider: Norman Graham - New South Wales National Parks and Wildlife Service

Summary Text: Arakwal National Park (NP) is a small coastal reserve in New South Wales that was created in 2001. An Indigenous Land Use Agreement formally recognises the Bundjalung People of Byron Bay (Arakwal people) as the Traditional Owners and provides for joint management with the NSW National Parks and Wildlife Service (NPWS). Although Arakwal NP is small, it contains significant cultural and ecological values including the endemic Byron Bay Graminoid Clay Health community - the only known habitat of the endangered Byron Bay Orchid (Diuris byronensis). This species is important to the Arakwal people and is the focus for a renewed cross-cultural approach to management. NPWS managers, Arakwal rangers, Traditional Owners and scientists have been working to incorporate Indigenous and scientific knowledge and cultural priorities in management decisions for the orchid and clay heath community. In 2018 a cultural burn of the orchid's heath habitat was done – the first in 30 years. Already there are signs of successful regeneration.

Location: Arakwal National Park, Byron Bay, New South Wales 2481, Australia

Impacts:

The Arakwal people have a connection with their lands and waters dating back at least 22,000 years. The ecological and cultural values of Arakwal NP are inseparable due to the strong cultural association of the Arakwal people with the area and their knowledge and use of plants and animals. Joint management has had positive outcomes for conservation, Arakwal culture, and local communities

Since 2016, Arakwal people, NPWS and CSIRO have been working together using cross-cultural approaches to identify the most important actions to rehabilitate the orchid's habitat. These included bringing people on country, managing weeds and encroaching trees, harvesting bush tucker, communicating with neighbours and visitors, maintaining tracks and importantly, a cultural burn in the orchid habitat. These actions have been progressively implemented by park managers with the support and participation of Arakwal people. A seasonal planning calendar was developed to show how management actions are scheduled considering seasons, opportunities, weather and traditional practices.

Through this process, local Arakwal communities have had more opportunities to connect with Country, share knowledge and strengthen relationships. Arakwal rangers and community have had a stronger voice in decision making about how to care for Arakwal NP.

Building blocks:

1 Park managers and traditional owners agree how to work together

The principles and ethics of applying a cross-cultural approach were established at the outset. It was important that this was an Arakwal led process and they had a strong voice in setting up the collaboration framework. This included who the knowledge holders were, how information could be shared within the Arakwal community, within the joint management team and with the wider non-Aboriginal community, who had a say in prioritising values, how to engage the Arakwal and broader Byron Bay communities and the time frame that suited all participants. Arakwal rangers, Arakwal community, researchers and NPWS managers collaborated to identify a vision and shared purpose through a series of workshops. Together they developed the vision for the orchid and surrounding habitat, "this species and place is in healthy condition into the future, and that the areas and its values are cared for, learned about and used by the Arakwal people".

2 Develop a common understanding of the most important values and how to look after them

Through the three workshops, Arakwal knowledge holders had time to identify, discuss and build consent on the priority values, most important actions and how to evaluate success. Through this process, protecting and caring for the Byron Bay orchid and its habitat, the graminoid clay heath were identified as the highest priority for management. Both have cross-cultural significance as they have cultural significance for Arakwal people and are listed as endangered under Australian Environmental Protection and Biodiversity Conservation Act 1999. NPWS and Arakwal people are working to protect these values but are faced with challenges of limited resources and information.

Ten key actions were identified to help manage the cultural and ecological values of the orchid and its habitat including: activities to bring people on country, management of weeds and encroaching trees in the clay heath habitat, harvesting of seeds and fruits, communication to reduce impacts of neighbours and visitors. One of the most important actions identified was to undertake a cultural burn in the heath which requires burning to regenerate and control weeds and invasive plants. Cultural burning is defined as "*burning practices developed by Aboriginal people to enhance the health of the land and its people*" (Firesticks Alliance Indigenous Corporation).

3 Commit to implement actions the 'right' way and evaluate the impact

The Arakwal people and NPWS staff committed to work together to implement the agreed actions. NPWS included actions in the annual operations plan and worked with Arakwal people to create opportunities for them to connect with the orchid and its heath habitat. They recognised this as an important part of maintaining and strengthening the cultural values. Before this project, the heath had not been burned for 30 years due to the difficulty of getting approval for a cultural burn of bushland next to a suburban area. Even though the cultural burn required a lot of resources, NPWS prepared and approved a burn plan and Arakwal people undertook cultural activities such as seed collection ahead of the fire. Fortunately, in 2018 all the conditions were suitable for a small cultural burn. The health of the heath has been surveyed by Arakwal NPWS staff post fire with additional sightings of Byron Bay orchid have been reported. As a result of this project a seasonal planning calendar which highlights how management actions are scheduled through year, factoring in seasons, opportunities, weather and traditional practices was co-created. The calendar brings together culture, ecology and management actions in an easy to understand form that is both a communication and a scheduling tool.

The Côte Bleue Marine Park (France, NW Mediterranean): a success story in co-construction with small scale fisheries since 40 years

Solution Provider: Eric Charbonnel, Parc Marin Côte Bleue - Côte Bleue Marine Park

Summary Text: The Cote Bleue Marine Park (PMCB, France) was created in 1983. This bottom-up initiative is based on an experimental cooperation between local public authorities and professional small-scale fisheries, in order to implement a program for sustainable development of fishing activity, marine environment protection, experimental scientific research and public awareness and education. The territory represents 9.873 ha on 42 km of rocky coastline, including 2 no-take reserves of 295 ha, where all kinds of fishing, mooring and scuba diving are prohibited. The originality is the use of no-take reserves and artificial reefs (both for production purposes and protection against illegal trawling) as complementary tools for conservation of exploited resources and sensitive habitats.

Location: 13620, Carry-le-Rouet, Bouches-du-Rhône, France

Organisations Involved: Parc Marin Côte Bleue - Côte Bleue Marine Park

Impacts:

The experiments of management conducted by the Côte Bleue Marine Park for 38 years led to positive impacts: (i) environmental impact with a clear reserve effect observed, with more fish, and more and bigger returns of rare and protected species. In 24 years, fish captures have multiplied by a factor of 7 and the mean weight of a fish increased by a factor of 2.6; (ii) social impact, with acceptance of the park and marine reserves by local artisanal fishers (88% feel they are involved in decision processes of the park) who are at the origins of creation of no-take reserves and artificial reefs, and who benefit directly or indirectly from these protection tools ; (iii) and economic impact, with local fisheries getting more sustainable, with high catch per unit of effort around the borders of no-take reserves (2.5 kg/100 m of net vs. 1 kg/100 m in the rest of PMCB).

Building blocks:

1 An accepted Marine Protected Area with shared governance

The PMCB is a local initiative and was founded with a "bottom-up" approach and shared governance. This co-construction has been based on a strong dialogue process since the beginning with local artisanal fishermen organizations. These include around 30-35 small scale fishing boats operating along the coastline, using mainly gillnets and trammel nets. Fishermen are at the origin of the creation of the 2 no-take reserves (Carry, 85 ha since 1983 and Couronne, 210 ha since 1996). A real success was the renewal of the 2 protected reserves in 2014, obtained for an unlimited time. These no-take zones have a legal status as fishery reserves and the renewal was asked for by fishermen themselves. The Marine Park has daily contact with individual fishermen in the 5 small ports of the Cote Bleue coastline, through patrol at sea, interviews and monitoring on landing, fishing effort, and catches. We also have formal but irregular meetings, depending on programs (Natura2000 process, PhD study on fisheries, EU scientific programs).

2 Better knowledge for better management

The protection and surveillance within the 2 no-take reserves - where all kinds of fishing, mooring and scuba diving are prohibited - is effective, with more than 2,400 hours of enforcement per year, mostly at sea. There is a great increase in fish biomass, with an increase of abundance, larger fish, and a comeback of rare/sensitive species like groupers, brown meagre, seabass, etc. Experimental controlled fishing operations are conducted every 3 years within the reserve and showed that, in 24 years, the mean weight of a fish increased by a factor of 2.6 (287 g in 2019 vs. 111 g in 1995). During this time, fishing captures have been multiplied by a factor of 7, with catch per unit of effort increasing from 1.1 kg / 100 m of net in 1995 to a maximum of 7.1 kg / 100 m in 2019... These spectacular results and a clear reserve effect not only concern fishes, but also the invertebrates, like spiny lobsters: catches have multiplied by 8 since the creation of the reserve. These results are important for artisanal fishers who benefit from biomass exportation processes: in the borders of marine reserves, the fishing yields can reach 2.5 kg/100 m of net, while in the rest of the MPA, the mean CPUE is 1kg/100 m.

3 Back to some successful management

Apart from creation of 2 no-take reserves, the originality of PMCB is the use of artificial reefs, with the deployment of 4.884 m3, both for production and protection against illegal trawling. The success of protection reefs is [shown in....] the decreasing of fishing pressure on the coastal band, by removal of illegal trawling activities, which are not selective (a lot of juveniles are caught) and mortality by fishing juveniles is the principal factor of the falling of catches. The efficiency of anti-trawling reefs allowed a better sharing of space and resources between local fishermen. It helps traditional small scale fisheries (gillnet, trammel net, hook on line) that have selective techniques (catch only adults, thus facilitating conservation of fishing resources). The other essential effect of protection reefs is to preserve the most productive and fragile natural habitats (*Posidonia* meadows and coralligenous reefs) from mechanical destruction by trawlers. These damages have important ecological and economic repercussions, because these habitats serve as spawning, nurseries, recruitment and feeding areas for the majority of the exploited resources.

Co-management (shared governance) of natural resources in the coastal area, Vietnam

Solution Provider: Klaus Schmitt, Deutsche Gesellschaft fuer Internationale Zusammenarbeit (GIZ) GmbH

Summary Text: This solution aims to create better governance (shared governance) of natural resources in the coastal zone of Soc Trang Province, Mekong Delta, Vietnam to protect its first line of coastal defence (mangroves) and to improve the livelihood of local communities through resource conservation.

Location: Soc Trang Province, Vietnam | Au Tho B village, Soc Trang Province, Mekong Delta, Vietnam

Organisations Involved: Department of Agriculture and Rural Development of Soc Trang Province, GIZ

Impacts:

Co-management helps to conserve mangroves in Soc Trang. The mangrove area in front of Au Tho B village has increased from 70 ha in 2008 to 118 ha in 2014. Local people involved in shared governance of natural resources have developed stronger resource ownership and have become more aware of the needs for and benefits of mangrove conservation. Governance of natural resources has been improving steadily. Local authorities and people are becoming partners working together and making joint decisions for natural resource conservation. Additional initiatives have been suggested to deal with local issues as the results of discussion among these actors.

On behalf of BMZ Federal Ministry for Economic Cooperation and Development

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

SỞ NÔNG NGHIỆP VÀ PTNT SÓC TRĂNG

Building blocks

1 Negotiation process:

The negotiation process consists of three key aspects:

- Organising for partnership: This starts with consultation with all stakeholders about the co-management concept. When they understand and see the need to create the co-management partnership among actors, they should be organised to be ready for the negotiation of the agreement. The organisation aspect is essential to turn passive individuals in the community into an organised group with a common vision and to ensure a high level of participation.
- Negotiating the co-management agreement and shared governance institution: This is the practice of power sharing among actors. Through negotiation, different actors express their concerns and contribute their ideas on how natural resources should be managed and conserved. Governance issues, such as who can make decisions and what responsibilities and accountabilities are for each actor, are also negotiated.
- Learning by doing: The negotiation process is not a linear process but spiral loops of implementing the agreement, sustaining the functioning of the shared governance institution, continuing the monitoring and reviewing of their results and impacts through time and providing inputs for renewal of the agreement.

2 Co-management agreement

The co-management agreement is a document consisting of everything agreed to during the negotiation process, including management and governance elements. It can be seen as written evidence of the partnership among local actors. The management part specifies the six 'W's': who can do what, where, when, how and how much. It provides general conditions and specifies natural resource management rules and regulations in each zone, as well as rewards, penalties, the reporting schedule, implementation terms and monitoring. The governance part specifies key actors for decision-making and their responsibilities.

3 Pluralistic governance board

A pluralistic governance board is typically composed of representatives from local authorities, government departments and agencies, local communities and sometimes business organisations and is established during a negotiation process. The board is responsible for making joint decisions about issues raised regarding natural resource conservation. Its role is steering the implementation of the co-management agreement and review of the co-management results and impacts, based on monitoring. The pluralistic governance board is an essential element to turn the idea of "sharing power" from theory into practice. This distinguishes it from centralised or private management where only one partner assumes the responsibility for making decisions.

SOLUTION 6

Legally protecting spectacular surf breaks: a tool for contributing to coastal ecosystems management, Peru

Solution Provider: Manuel Ruiz (Peruvian Society for Environmental Law - SPDA)

Summary Text: The solution targets protection of iconic surf breaks in Peru. In absence of national, spatial coastal-marine planning strategies in a country rich in marine resources and beautiful coastal sceneries, SPDA´s initiative to protect surf breaks has stimulated positive responses from users: surfers, visitors, local fishing communities, tourist operators and sporting and local authorities. SPDA´s Act for Your Wave Initiative, is always received positively and receives media attention and citizen support and is the enabling platform for the solution.

Location: Peru, South America | Chicama (La Libertad), Cabo Blanco (Piura), El Ñuro (Piura), Lobitos (Piura), Costa Verde, La Herradura, San Pedro, San Bartolo, Cerro Azul, Punta Hermosa (Lima), Pacasmayo (La Libertad)

Organisations Involved: [TO BE ADDED]

Impacts:

1. Demonstrates the possibilities of positive alliances between users (surfers), visitors, local fishing communities, photographers, tourist operators and sporting and local authorities.
2. Enables the effective protection of biodiversity rich marine and coastal ecosystems, key dimensions in local livelihoods.
3. Ensures positive and active involvement and participation of local fishing communities, tourist related stakeholders, and a wide range of users (e.g. surfers, photographers and simple beach goers!)
4. Opens up very real possibilities of upscaling experience in other countries - initial interest has been expressed by actors in Brazil, Chile, Costa Rica.
5. Promotes engagement of young people in activities related to protection campaigns (e.g. media campaigns, cleaning of beaches initiatives, celebrations in free concerts, promotion activities, etc.).
6. Obligates the national protected areas authority to take into account and consider the importance of surf breaks as a potential conservation and management tool.
7. Enables engagement of Do it for Your Wave (an ongoing initiative by SPDA) in international initiatives sponsored by IUCN, Save the Waves Initiative and others.

SPDA 30 años

Building blocks:

1 Participatory awareness raising and analysis

Legitimizing the formal recognition and protection of a surf break is key to ensuring sustainability and maintenance of the site over the long term. Meetings to explain the advantages of protecting the surf break and its multiplicatory effect, enables direct actors at the local level in particular to commit to the idea and be the direct agents of change and local protection. Likewise, involving local authorities facilitates broad consensus towards a common goal shared by all participants. This is achieved through local workshops and incidence activities.

2 Building a strong base of actors (surfers, tourist operators, others) to engage in campaigns and actions

The protection of iconic surf breaks needs to have a strong advocacy group/base to support a wide range of actions both at the national and local level to secure the protection of the break. These actions include: participating in campaigns, networking and identifying potential technical cooperation, identifying key persons which can offer pro bono support, assisting in developing technical files describing the surf breaks and their characteristics, etc.

3 Exercising leadership in registering surf breaks in the official national register

SPDA has led the registration of over 10 surf breaks which are now formally protected. This leadership is key because there is need for dynamic, strong and visible actions which can be informed to the key actors/base of stakeholders who support the idea of protecting surf breaks and their surroundings. Leadership in this context involves not only "action" per se but internal legal capacity to navigate the administrative procedures and requirements to lead to the recognition of a particular surf break as subject of protection. This leadership includes: systematizing relevant documents (e.g. maps, analysis of social context, environmental and ecologic description of the area, map of actors, etc.), presenting them to the relevant authority (DICAPI - the Direction of Ports and Marine Officials), following and monitoring process and presenting complementary documentation, undertaking press conferences, leading media campaigns, etc.

4 Working in partnership with key champions in the public sector

To achieve an effective protection of surf breaks, SPDA has built a very strong relationship with DICAPI and, in particular, with the National Surfing Federation (FENTA) with whom all actions are coordinated and campaigns discussed. Having a good relationship with DICAPI as the competent authority in registering the surf breaks is not a guarantee for success, but does facilitate actions taken as DICAPI realizes SPDA is a serious organization and is supported by a group of committed actors. The relationship with FENTA is also very positive because FENTA is the key national institution which promotes surf and related sports.

5 Monitoring and being vigilant and active in implementation

Though ensuring the registration of a surf break is no easy task, it is critical to ensure that once a surf break is recognized and registered, actions are taken to ensure that the promises and advantages of protection are delivered to all actors, and local fishing communities in particular. This building bloc implies, for example: regular capacity building and interaction with children and youngsters; cleaning of beaches campaigns; recognition of local champions and leaders; monitoring development initiatives (e.g. in infrastructure which may affect a surf break), regular meetings with local actors to explore ways in which the local environment can be improved, etc.

Pioneering Private Conservation in Caucasus Wildlife Refuge, Armenia

Solution Provider: Siranush Tumanyan, Foundation for the Preservation of Wildlife and Cultural Assets (FPWC)

Summary Text: The Caucasus Wildlife Refuge (CWR) is a privately protected area managed by the FPWC. Having grown from 400 to 20000 hectares since 2010, the refuge stretches along the border of Khosrov Forest State Nature Reserve (IUCN Ia category). The overall objective of the CWR is to contribute to efficient biodiversity protection in Armenia by improving the conservation measures in the reserve's previously unsustainably managed buffer zones and wildlife migration corridors. This is done by interlinking sustainable community development, conservation and behaviour change.
FPWC maintains a permanently manned ranger station in the area (6 rangers are employed from the community), which is sufficiently equipped to protect the territory against any negative human impact. The rangers are patrolling the 8000ha at a 24/7 regime preventing any illegal activity in the area, as well as monitoring the animals by applying newest technologies. CWR is the only project of this type in the entire South Caucasus.

Location: Armenia

Organisations involved: Foundation for the Preservation of Wildlife and Cultural Assets

Impacts:

While in 2010 wildlife in the area was nearly nonexistent – mainly due to illegal hunting – trap cameras located all over the CWR now show growing numbers of rare and red listed animals, such as the Bezoar ibex, Brown bear, Bearded vulture, Golden eagles, as well as common species such as the Caucasian lynx, martens, badgers, grey wolves, foxes and hares.

In 2013 the trap cameras spotted a male Caucasian leopard (Panthera pardus saxicolor).

FPWC has linked the CWR with Yerevan Zoo to create a unique regional focal point for the breeding and reintroduction of rare South-Caucasian species into the wild.

The Eco Lodge built in CWR serves to raise the local population's capacities to adopt more environmental friendly and sustainable practices. The center offers accommodation for eco-tourism, as well as local and international students / scientists, who conduct field research in the area.

Rural communities are involved in FPWC's conservation efforts and get direct benefits, including annual lease funds into the community budget, (self)employment opportunities, renewable energy solutions introduced in the communal buildings, improved water supply network / access to drinking or irrigation water, organic farming development, etc.

SunChild eco-clubs (since 2006) engage youth and children in conservation actions by combining theory and practice in the original curriculum.

Caucasus Wildlife Refuge

FPWC® Foundation for the Preservation of Wildlife and Cultural Assets

Building blocks:

1 Regenerating Sustainable Communities

Through the Soviet period and after independence, Armenian society in general and rural communities in particular have continuously been discouraged from taking an active role in the protection and management of nature reserves.

Recognizing the urgent need for communities living around protected areas to actively participate in and benefit from the conservation of the resources upon which they depend, the FPWC, since 2006, has consistently contributed to the communities' environmental, social, economic, and cultural development, thus referring to all four dimensions of sustainability.

The community development project promotes a new sustainable development strategy for the villages all around Armenia, with a focus on the areas adjacent to the CWR.

It aims to improve the livelihoods of rural people and to foster sustainable rural development as a holistic approach. This strategy links economic and infrastructure improvements with nature conservation and the protection of the environment by offering inhabitants of remote villages incentives and opportunities to gain income by using/managing natural resources sustainably.

2 Amending the Law

In 2016, at the IUCN World Congress, FPWC co-authored Motion 37 on Supporting Privately Protected Areas, which was one of the top discussed documents at the congress and passed with a majority of votes. This became a crucial step in the FPWC's efforts to lobby the Armenian government to adopt policies that recognize, encourage and monitor privately protected areas as a key contribution to national and international conservation targets and to implement mechanisms for integrating privately protected areas into national system. FPWC continues to promote legal and financial incentives for the maintenance and strengthening of privately protected areas, to have the respective category highlighted in the Law of the Republic of Armenia on Specially Protected Natural Areas.

Since 2015, FPWC has had a tangible contribution in elaborating an amendments package for the Law of the Republic of Armenia on Fauna, in collaboration with the Ministry of Nature Protection.

FPWC has been a member of GSP+ monitoring system for international environmental conventions and protocols such as CBD or CITES.

Community participation in PA management provides development benefits, Comoros

Solution Provider: Christophe Du Castel, Agence Francaise de Développement

Summary Text: The Parc Marin Mohéli, Comoros, was established in 2001 through a negotiated process agreed by the ten main village centers around the area. However, during political instability, external support dried up in 2005, and pressures on coastal ecosystem resources vital to the local economy have increased. The solution has been to revive the village dynamics around the protection of the park, and since 2014 to develop income generating activities for both local communities and the park's management.

Location: The Parc Marin Mohéli, Comoros

Organisations involved: Agence Française de Développement

Impacts:

- Re-addressing the institutional and governance framework for the Mohéli Marine Park has resulted in a more productive arrangement between local villages and protection authorities. Dialogue concerning impacts on local resources and livelihoods has moved from one of costs and claims to one of action and benefits.
- Trade-offs between protection and exploitation have become possible, and resulted in reduced impacts on marine and coastal ecosystems. New areas of 'no-take' zones have both increased 'spill-over' and recovery of key commercial species (octopus, holothurians) and provided strict biodiversity havens within the Mohéli island ecosystem.
- The active participation of villages in reducing watershed and coastal erosion are perceived as beneficial for their community, not just for the protected area.

Building blocks:

1 Revitalizing community engagement in park management

Local community engagement in the park's decision-making and management has been revitalized, based on experiences from Madagascar, which permit ongoing and active participation of community members in implementation, with involvement and buy-in to projects developed to support management activities. The regular dialogue between protected area and village representatives provides information on the activities of the protected area; allows for presentations of results from research; and raises issues and challenges that need a management response. In parallel, the park acts as an intermediary with donors to facilitate the financing of activities and amenities in the villages.

2 Community action for sustainable artisanal fisheries

Targeted activities have been implemented that maintain fishing as a livelihood activity, while combatting destructive practices, easing fishing pressure on the reef, protecting critical habitats and developing alternative, yet complimentary activities: - Establishment of a fisheries resources monitoring system: Use of surveillance sheets for establishing a monitoring protocol by fishermen and investigators. The data informs the protected area's information system. - support for diversification of fishing activities: feasibility studies to evaluate possibilities for developing sea cucumber aquaculture and capture and culture of fish larvae - reviving other activities such as small-scale lobster fishing - establishing no-take zones in the areas of the park which have been identified as

crucial for protection of fisheries resources through a combination of local knowledge and scientific studies - to discourage further offshore fishing, the application of techniques such as the use of fish aggregating devices (FADs) is encouraged - temporary or permanent closure of the reef to octopus fishing, in order to prevent coral destruction, but also demonstrate the power of recovery and 'spill-over' – octopus will typically recover quickly.

3 Sustainable agriculture in watersheds and vulnerable coasts

Institutional support to producers in organizing themselves, to better engage with the local and regional markets and implement a more uniform plan and approach; reduce market competition and provide more inclusive access to production activities. - Promotion of more sustainable agricultural potential products, such as Ylang-Ylang used for perfume production, using more efficient, sustainable and resource-efficient technologies. For example, using copper stills and providing better distillation techniques that allow growers to also enter the production chain and command a better price for a better quality product. Agro-forestry techniques reduce the amount of primary fuelwood needed for the stills, and reduce impacts on the watersheds for the island. - Developing market-gardens and vegetable production to supply tourist facilities, such as hotels, restaurants, yachts within Comoros

Tribal Parks in Canada: From Clayoquot to the Chilcotin and Beyond

Solution Provider: Eli Enns

Summary Text: In the 1970s and '80s, the provincial government of British Columbia had clear cut a significant area of Clayoquot Sound, when the Tla-o-qui-aht Indigenous Peoples established the first Tribal Park in 1984. During the 31 years since then, several additional Tribal Parks have been declared by Indigenous Peoples in BC culminating in 2014 with the Dasiqox Tribal Park declaration, based on a precedent setting Supreme Court of Canada decision on Aboriginal Title to Land.

Location: British Columbia, Canada

Organisations Involved: Tla-o-qui-aht (Clayoquot), Moses Martin, Joe Martin, Eli Enns, Saya Masso, Terry Dorward

Impacts:

- Habitat protection (Ancient Cedar rainforests of Meares Island have been protected since 1984)
- Increased economic diversification with primary, secondary and tertiary sectoral development (tourism economy, education sector, eco-tourism, value-added natural resources, ecosystem services, etc).
- Increased community health and well-being associated with self-determination and dignity

Empowering communities based on traditional conservation practices, Solomon Islands

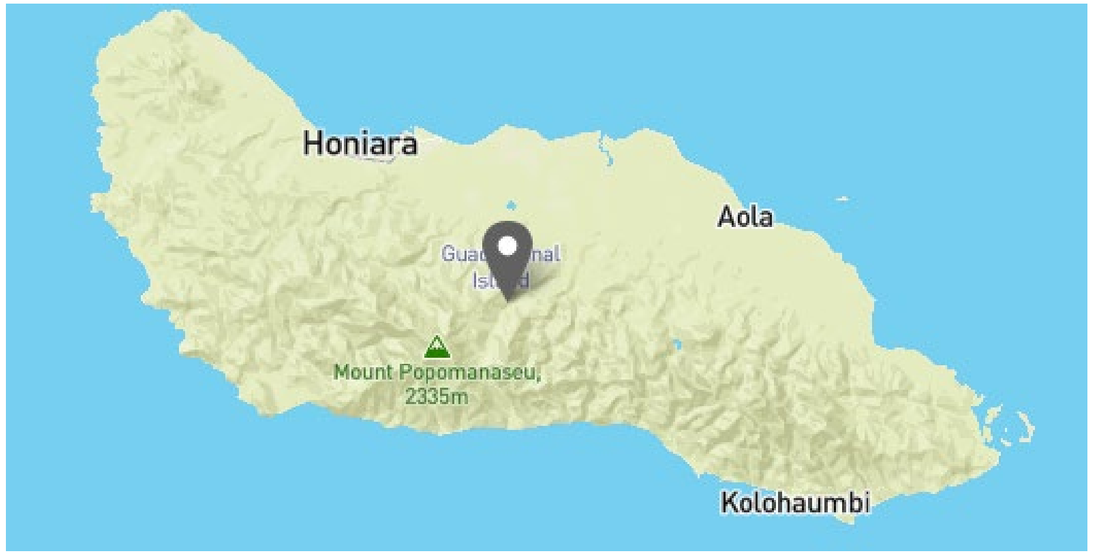
Solution Provider: Albert Chris Kwatelae

Summary Text: In the Solomon Islands, conservation has a long history of use of traditional and customary practices known as "Hope" in Vangunu language. However, since social and economic change and development, the communities experience huge change and undermining of traditional practices and customs. Our solution is empowering communities to have good governance and leadership, conservation activities and resource management, to be heard effectively by the national government.

Location: Solomon Islands

Impacts:

Indigenous people in the community (village) with which we are partnering have seen the successful integration of science and traditional knowledge in management and protection of resources, proven by the fact that they still have abundant fish stocks and other marine animals. These resources will continue to support them compared to other communities that are badly affected by logging and huge pressures on fish stocks. They have fresh and clean water, fresh air and have established small scale ecotourism activities that help them in obtaining small cash to sustain their daily living. People also have good and fresh vegetables from their farms and gardens. Local leaders are developing and re-strengthening their governance system as they establish management plans. This is yet to be formally recognized by Solomon Island Government under the newly approved/passed Protected Areas Act 2010.



Integrating Sámi culture in the narrative of Røros mining town and the Circumference World Heritage, Norway

Solution Provider: Torfinn Rohde, Municipality of Røros

Summary Text: Røros Mining Town was inscribed in the World Heritage List under criteria (iii), (iv) and (v) in 1980. In 2010, the World Heritage area was extended to include the mining areas and the agricultural landscapes around Røros Mining Town, the Femundshytta melter and the "winter-route". The area called the Circumference, granted to the mining enterprise by the Danish-Norwegian Crown in 1646, was added as a buffer zone: 2 national parks, Femundsmarka and Forollhogna, and parts of three Sámi reindeer husbandry districts are located within. Because of the lack of written and tangible sources of Sámi practices, the recognition of Sámi environmental knowledge and customary landscape management strategies have been limited in the World Heritage site narrative. Since the extension, a process has started at the management level to include Sámi culture into the interpretation of the site, with a focal point on the Røros museum, which also functions as Røros and the Circumference World Heritage centre.

Location: Røros, Trøndelag, Norway | Holtålen, Engerdal, Os and Tolga municipalities, Innlandet and Trøndelag Counties, Norway

Organisations involved: Municipality of Røros, County of Trøndelag, County of Innlandet, World Heritage Centre Røros, Norwegian Directorate for Cultural Heritage, Sámi parliament, Municipality of Holtålen, Municipality of Os, Municipality of Engerdal, Municipality of Tolga

Impacts:

The integration of Sámi culture into the narrative of Røros and the Circumference World Heritage is an ongoing effort which has given some fruits:

- Sámi culture and understanding of landscape is being included in the interpretation of the heritage place with several temporary exhibitions in the Røros museum, the last one in 2017-2018. (https://verdensarvenroros.no/en/);
- Projected inclusion of Sámi values in the management of the World Heritage property (2021);
- The management plan for 2019-2023 proposed the creation of a new permanent position for a conservator specialist on Sámi buildings and places (proposed to be funded by the Sámi parlament) in the Røros museum.

RØROS KOMMUNE

RIKSANTIKVAREN

Building blocks:

1 Indigenous people's representative at the World Heritage Management Board

The World Heritage Management Board was established in 2012 and is composed of 8 members representing the main stakeholder groups in the World Heritage property: 5 mayors of the 5 municipalities - Røros, Tolga, Holtålen, Engerdal and Os-, 1 representative for each of the 2 counties - Trøndelag and Innlandet (regional level)- and 1 representative of the Sámi Parliament. The chair holds the role for 2 years and can be re-elected. The World Heritage coordinator acts as the Secretary of the board. Besides, there are 6 observers: the Director of Destination Røros, the Director of the Røros museum, the Director of Nord-Østerdal Museum (3 municipalities), the Director of Røros Municipality, the Cultural Heritage manager of Røros and the site manager of the Femundsmarka National Park who represents both national parks and the governors of the 2 counties. The board has regular meetings (4-5 times a year) and excursions where they process cases proposed by the coordinator, by the members themselves and by other stakeholders. The management plan, budget, new proposals to strengthen the values in the site, national and international collaboration and hearings of different suggestions from the directorates and departments are discussed. The decisions are taken by consensus.

2 Integrating Indigenous people's perspectives in the interpretation of the heritage place

The place where to learn about Røros and the Circumference is the Museum. The Røros museum consists of five main sections, one dedicated to the buildings of Røros, one dedicated to the Sámi culture, one dedicated to nature conservation management, one to mining and quarrying and one to the World Heritage. A permanent position as Sámi researcher was established in 2001. The establishment of the Museum as the World Heritage centre of Røros and the Circumference in 2017, allowed the enlargement of the World Heritage narrative to the Sámi relationship to the place already existing in the museum. In this space, it is clarified that the Sámi were in the area before the copper-works started. The Sámi community has existed through history on its own terms but also in interaction with the society around the copper-works. Interaction could be based on trading with reindeers, with handicraft, with reindeer-skins, or as hosts for reindeers that were owned by people who owned the copper-work, tradesmen and farmers. The landscape of the Circumference has been to some extent also shaped in relation to the reindeers, and Sámi managed this relationship in a sustainable way.

3 Using the elaboration of the World Heritage management plan as a space for dialogue

The process for the elaboration of the new management plan for the World Heritage property started in 2017, and several groups have been working on it for three years (2017-2020). The World Heritage Management Board is leading the process, with the collaboration of the cultural heritage manager in Røros, the representative of Sámi Indigenous people, urban planners from the different municipalities and counties within the World Heritage property and buffer zone, and the Director of the Museum of Røros. Hearings and meetings with the municipality boards in the 5 municipalities have been used for establishing this dialogue. More than 40 different parties were invited to the hearings including the counties, municipalities, museums, NGOs, persons involved in the Management Plans, private owners of land within the World Heritage property, and the Sámi Parliament. The Sámi were involved in the same way as the other stakeholders, and counting with representatives both in the World Heritage Board and in the administrative group.

4 Using Indigenous language in the signage of the heritage place

Røros municipality is a *Sámi management area for language and culture* which is a legal status where Sámi culture and language should be used for public communication, schools and land use plans at municipal level. The process to be a Sámi management area started in 2015, and the objective for the process was to lift forward the Sámi language and culture in the municipality. The municipality board delegated the mission to a political committee, who presented the results in November 2016. The government approved the application in 2018. Today there are 12 Norwegian municipalities that are *Sámi management areas for language and culture.*

In Røros, the signage of places and streets shall be translated to Sámi language at county and municipality levels. A Sámi name for Røros will also be decided. There is also education in Sámi language in primary school in Røros and Engerdal municipalities. Sámi language is also used in the signing of e-mails of officers. For the translation and naming process, the municipality appoints a committee which suggests words and names. The suggestions are taken into the municipality board, which sends the proposal to the Sámi Parliament. The Parliament discusses it on a hearing, and when the hearing is over, the municipality board finally decides the names.

Empowering Mandingalbay Yidinji people through P3DM, Australia

Solution Provider: M'Lis Flynn, Wet Tropics Management Authority

Summary Text: Mandingalbay Yidinji (MY) people from the Wet Tropics World Heritage Area, Australia, have used Participatory 3 Dimensional Modelling (P3DM) to empower their community through the mapping and sharing of cultural and landscape knowledge. The project was facilitated by Wet Tropics Management Authority, and involved all of the MY community. Decision making about what to show, and what to exclude, was made entirely by the MY people.

Location: Queensland, Australia

Organisations involved: Wet Tropics Management Authority, Djunbunji Land and Sea Program

Impacts:

The P3DM project: undertaken in October 2014, has already yielded impacts and change. An MY community member was heard to say "..doing this has reconnected me back to my country, my landscape, I didn't expect that...". This project bought community together to focus on something positive, and to be in a process where MY people could control the outcomes - a rare occurrence for Australian indigenous peoples. The P3DM process has also started reconnecting young people who have become disconnected from culture and the landscape -they have become interested in what older community members have to say, and started to see how much cultural knowledge remains within MY elders.

The P3DM project has already encouraged MY people to use the model for planning economic development activities on their traditional lands to create more sustainable livelihoods. Another impact is the inspiration this project has created in other Aboriginal people to learn about and use P3DM themselves. Ideally MY people will be at the front of facilitating future P3DM activities with other Aboriginal communities. This will help to broaden, strengthen and deepen impact.

Building blocks:

1 Community identification and selection

As the Wet Tropics Management Authority works with more than 20 Aboriginal communities in the Wet Tropics region, it was important we use a transparent and fair process to select a group to undertake a P3DM. An expression of interest was developed and distributed outlining parameters of the project, its potential benefits and what would be required of the community. Written applications were assessed, and applicants interviewed against a series of questions. Selection was based on a combination of the written applications and interviews.

2 Community briefing and site selection

The Authority established a partnership with Mandingalbay Yidinji peoples own organisation, Djunbunji Land and Sea Program. Collaboratively we developed a timeline for project activities, and developed an Memorandum of Understanding (MoU) for the delivery of certain outcomes by Djunbunji. These outcomes included construction of model tables, facilitation of community involvement and coordination of P3DM activity days. At a first community meeting the wider community were briefed on project parameters, risks and potential outcomes. The community were taken step-by-step through the proposed process and shown a film of the Ovalau P3DM activity. At this meeting the community made several key decisions, these were: - the geographic coordinates of area to be covered by the 3 dimensional model (a pivotal outcome as it determines several actions henceforth) - the scale of the model - a calendar of dates for the building of the model, its legend and the population of information onto the model - to participate in the development of a video of the process - a commitment to work on the project to completion.

3 Technical and GIS preparation

Mapped data depicting height contours is the key to creating a 3D model, as each layer of the model corresponds with a contour height. At the Authority's offices two sets of 1:10,000 scale maps depicting contour heights at 20m intervals, and the coastline, were printed to fit the model tables exactly. At the community's request we also printed large format topographic/satellite imagery of the area. This phase also involved sourcing and purchase of model construction and depiction materials. Research was undertaken

prior to ascertain what was available locally and how much it would cost. We used foamcore board for the model, acrylic school paints, acrylic wool yarn and pushpins for depicting information on to the model. The amount of foamcore or carton board purchased is dependent on how many contour layers will be depicted on the model. This phase was done entirely by the Authority's facilitator due to time constraints. Concurrently the Djunbunji organisation built the tables for the models, using specifications adapted from Rambaldi, G (2010) Participatory 3 Dimensional Modelling: Guiding Principles and Applications.

4 Creating and agreeing on the model legend/key

Misappropriation of traditional knowledge, history and a sometimes fractured relationship between Indigenous people and governments in Australia, has meant that Aboriginal people are often reluctant to share or expose their cultural heritage knowledge. Decisions about what to include in the model legend were led by Mandingalbay Yidinji people, through a carefully facilitated process. The Authority's facilitator took participants through a participatory brainstorming process to list every feature (natural, cultural, historical etc) of their traditional lands and waters. One feature per card. As a group the community then displayed the cards, grouped and sorted into themes and made final decisions about what to include and exclude on the legend. Once agreement was reached, participants collectively decided on symbology for each legend item. A hardcopy legend was created by elders and youth at the site, and the facilitator translated this in to softcopy. Sites were listed as a reference for creating labels on the model This process occurred over several meetings, allowing time for participants to think and discuss exclusions without pressure.

5 Constructing the model

Construction of the 3D model took place over 3-4 days at both a community hall and 'on country' at the Djunbunji offices. Elders, youth, Rangers, men, women and children and the Authority's facilitator participated in the model building. Participants used contour maps, foamcore board, tracing paper, pencils and craft knives to trace and cut each 20m contour. Each contour layer was then pasted on to the tables and built up to create a 'blank' model. On completion of the construction, crepe paper and toilet tissue were pasted over the model to smoothe out hillslopes and soften the shape. The community hall was used for 2 full days where the bulk of the construction was completed. Following that, several community members continued to work on the model at Djunbunji office and in their homes until completion.

6 Depiction of knowledge on to model

Indigenous Elders and knowledge holders depicted their knowledge on to the blank model over several days. On the first day participants spent some time orienting themselves to the model; finding points of reference and discussing how and where to start. Creeks and walking tracks were depicted first using wool and paint. Labels were also added early as reference points. Younger people were slowly bought into the process as knowledge was being depicted, and were invited to paint or place wool strands with direction. Progressively during the process discussions around place and the significance of certain heritage was shared between Elders and other participants. Participants decided that the models would be a 'work in progress' and that more knowledge could be added at later times. During this stage participants also attended the World Parks Congress and conducted a live demonstration of 'depicting knowledge'.

Governance for adaptation in the shared Sixaola River basin, Costa Rica and Panama

Solution Provider: Marta Pérez de Madrid (IUCN)

Summary Text: Sixaola binational river basin, shared by Costa Rica and Panama, flows into the Caribbean Sea. The area has a high biodiversity and cultural richness with a mixed afro-descendant and indigenous population. Communities face social vulnerability and lack adaptation capacities. The area is threatened by increasing habitat fragmentation, changes in rainfall patterns and rising incidences of extreme weather events, particularly floods, all affecting local livelihoods. The solution aims to strengthen transboundary governance and improve institutional adaptation capacities. This was done by working with the Binational Commission of the Sixaola River Basin (CBCRS), promoting public participation, while achieving greater binational cooperation and up-scaling solutions to basin scale. A governance model was used that was multidimensional, participatory, flexible and ecosystemic, in order to foster adaptation actions that enhance local livelihoods and healthy ecosystems.

Location: Talamanca, Limón, Costa Rica | Changuinola, Bocas del Toro, Panamá

Organisations Involved: IUCN; Asociación Corredor Biológico Talamanca Caribe (ACBTC); Comisión Binacional de la Cuenca del Río Sixaola (CBCRS); Ministerio de Ambiente y Energía (MINAE) de Costa Rica; Ministerio de Ambiente de Panamá; Ministerio de Planificación (MIDEPLAN) de Costa Rica; Ministerio de Economía y Finanzas (MEF) de Panamá; Federal Ministry for Environment, Nature Conservation & Nuclear Safety (Germany); International Climate Initiative (IKI) del Ministerio de Ambiente, Conservación de la Naturaleza y Seguridad Nuclear de Alemania; Swiss Agency for Development and Cooperation (SDC)

Impacts:

Strengthening of CBCRS representation through:

- Integration and awareness of involved communities, farmers, public institutions and civil society organizations.
- Integration of new actors (e.g. Municipality of Bocas del Toro, Panama)

Improved management, advocacy and coordination capacities of CBCRS through:

- Adoption of the Strategic Plan for Transboundary Territorial Development (2017-2021), as a key multidimensional governance achievement.
- Enhanced binational learning and cooperation (e.g. through the organization of joint activities, such as the Agrobiodiversity Fair and binational reforestation events).
- Synergies with alike projects and initiatives: IUCN BRIDGE project on transboundary water resource governance; Rural Development Central American Strategy (ECADERT).

Scaling up and mobilizing funds for EbA:

- Promoting EbA measures, such as agrodiversification through a resilient farmers network (> 40 farms).
- Close coordination with Ministries of Agriculture and agricultural agencies of both countries, and dialogues informed by learning about EbA for its integration into public policies.
- Commitments to EbA and "Nature-based Solutions" by municipalities of both countries and Bribri Indigenous Peoples Development Association.

Building blocks:

1 The ecosystem approach into practice

Under an ecosystem approach, efforts seek to improve the livelihoods and resilience of ecosystems in order to reduce the vulnerability of local communities to the challenges of erratic rains, changing pf seasons, storms and consequent loss of crops. The EbA measures promoted are:

- Restoration of riverbank forests to prevent river bank erosion during extreme storms and flash floods. This is promoted with annual Binational Reforestation Days and guided by a Restoration Opportunities study in river banks.
- Agrodiversification was undertaken with local farmers to increase the number and varieties of crop species, fruit and wood trees in their plots, while combining these with animals. This aimed to improve the resilience of the system against erratic rainfall and changing seasonal patterns. The model is locally named «integral farms».
- Learning and exchange through a network of resilient farmers with knowledge on EbA.
- Organization of agrobiodiversity fairs for the promotion and rescue of endemic seeds.

The model used a "learning by doing" approach and the adoption of iterative decisions that identify short-term strategies in light of long-term uncertainties. Learning and evaluation allow new information to be considered and inform policies at different levels.

2 Achieving multidimensional governance for adaptation

The CBCRS functioned as a multidimensional (multisectoral and multilevel) governance platform for the basin. The CBCRS brings together representatives from different levels of government and sectors (including indigenous peoples and the local private sector of both countries) but needed to attain more effective vertical and horizontal integration. The preparation of the Strategic Plan for Transboundary Territorial Development (2017-2021) had the effect of fostering inter-institutional and inter-sectoral coordination and cooperation, forging dialogues on national frameworks and local needs, and promoting EbA.

At the local level, Eba measures such as agricultural diversification with integral farms and reforestation actions were implemented. The aim was beyond individual impacts, to scale up lessons to the basin scale, such as:

- the CBCRS´s project portfolio
- the coordination of binational activities, such as Agrobiodiversity Fairs.
- the Biological Corridor Association of producers, which facilitated the exchange of experiences and peer-to-peer contacts (producers, municipalities)

3 Achieving participatory governance for adaptation

The CBCRS needed to diversify participation in the basin's governance. Although it brought together actors from different sectors and levels of government (national and municipal), some actors were still missing (such as the Municipality of Bocas del Toro, Panama, which joined in 2016). The CBCRS management was not yet consolidated, because of its complex composition and because it had neither a binational territorial planning tool with which to articulate efforts on both sides of the border, nor its own budget. Through an extensive participatory process, the CBCRS drafted a Strategic Plan for Transboundary Territorial Development (2017-2021) and expanded its project portfolio. Encouraging participation in this process, and in bi-national activities, has created conditions for civil society and municipalities to take an active role in the implementation of the plan and adaptation actions. It provides a space particularly for women, youth and indigenous people, usually marginalized in decision making. The CBCRS plan also urged greater equality in the access to and use of natural resources on which local communities depend, thus favouring those groups most vulnerable to climate change and creating a sense of ownership.

MIHARI, the first national LMMAs network in the Western Indian Ocean, Madagascar

Solution Provider: Vatosoa Rakotondrazafy (MIHARI network)

Summary Text: MItantana HArena Ranomasina avy eny Ifotony - MIHARI, the Locally Managed Marine Areas (LMMAs) Network of Madagascar, was created in 2012 from the initiative of 18 LMMA communities from the southwest of Madagascar. Since then, it has kept growing and evolving. The network aims at supporting the LMMAs by building local leadership, sharing best practices, securing financial sustainability and making fishers' voices heard.
It is organised in a network structure, that allows national coordination and regional implementation.
Recently in 2020, MIHARI has become a formal entity with an independent status, that enables it to receive and manage grants directly.
The Malagasy government doesn't have yet formally embedded an LMMA Ministerial Decree in its legislation, but it has been involved in MIHARI's various fora and decision-making processes.

Location: Madagascar | Melaky, Menabe, Antsimo-Andrefana, Anosy, Boeny, Sava, Diana, Analanjirofo, Antsinanana, Sofia

Organisations involved: MIHARI network

Impacts:

Operational since 2015, MIHARI is nowadays an officially recognized national movement of small-scale fishers.

Considered as marginalised and poor, small-scale fishers are often shy and reluctant to speak up. MIHARI has invested a lot in strengthening their capacities in leadership, public speaking, negotiations and partnerships creation. It has generated a leaders' movement with fishers' representatives in each village and LMMA. These leaders now dare to express themselves in public, in front of the government authorities, and take part in negotiations. This has led to the adoption of three motions.

MIHARI is a membership of 219 LMMAs, ramified in 10 coastal regions out of 13. The network has enabled the emergence of small-scale fishers who are convinced of the benefits to manage their resources and have adopted their own customary law, called dina, to regulate their fishing activities in their LMMA.

MIHARI has also had a critical role in convening NGOs to work together. It has generally succeeded in mobilising all key stakeholders, from government to international donors, communities' associations and their supporting NGOs.

The LMMA approach is one of the models of co-management of natural resources in the Western Indian Ocean, that became widely known thanks to MIHARI. The network has inspired other countries, beyond the region.

MIHARI
Madagascar Locally Managed Marine Area Network

Building blocks:

1 Trustful relationship with the government

Since its creation, MIHARI has always involved the government authorities, at the highest level. It has made the Ministries of Agriculture, Livestock and Fisheries, as well as of Environment, visible, as they were both cited as main partners, host of conferences, etc. MIHARI has also consulted the authorities along processes, such as the formalisation of a reference guide on LMMAs, the first of this kind in the country, to be hopefully eventually integrated in the national law.

2 Implementation of the network structure

In 2015 started the consultations among all MIHARI members, to establish a clear and functioning structure. There are 45 fishers who are elected to be representatives of their region, and who meet regionally or nationally every year. They also have opportunities during these events to approach directly government officials, which has had a great impact.

3 Fishers' leadership enhanced

The enhanced leadership of the fishers who are elected to represent their communities in MIHARI's different activities is vital for the network to exist as a true fishers' movement. Their self-confidence to speak up and active participation in the discussions and consultations, support and feed the partnership between NGOs and LMMAs communities.

Building capacity for resilient and inclusive conservation of cultural landscapes, Sweden

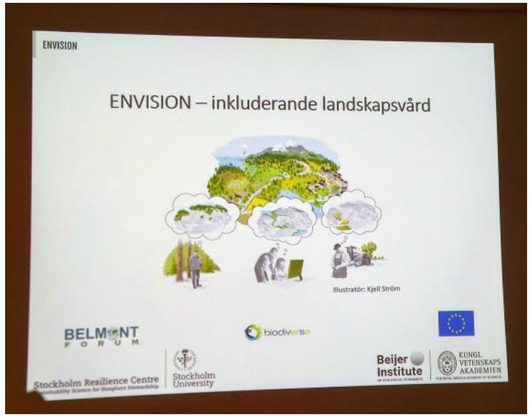
Solution Provider: Jan Kuiper (Stockholm Resilience Centre)

Summary Text: In mixed landscapes defined by coexisting land uses, landscape quality is an outcome of a confluence of actions by local actors with diverse, ever-changing and potentially conflicting needs, interests and desires. We present an approach to building capacity among local actors to develop collective strategies for navigating the system towards a broad collectively defined vision. The presented approach is adapted from a participatory resilience assessment and includes a series of workshops and meetings. The process starts with a baseline inventory to surface people's values, knowledges, problems, and preferences, along with the identification of alternative management strategies and their actions. This inventory feeds into a deliberation on how multiple parallel strategies may coexist, complement or replace each other and can be coordinated to maintain overall landscape quality. We piloted the approach in Västra Hargs Lövskogar nature reserve in Sweden.

Location: Västra Hargs Kyrka, 595 91 Mjölby, Sweden

Organisations involved: Stockholm Resilience Centre, University of Helsinki, The County Administrative Board of Östergötland

Impacts: Dozens of local actors and stakeholders have been actively engaging in our process and through that gained a better understanding of contemporary and future challenges, and how they all are part of the solution. Inspired by this engagement, a new management council for the protected area was erected where different actors can meet regularly to coordinate and plan ahead.



Building blocks:

1 Guiding framework and learning process: connecting building blocks and linking strategies

Knowing what you need to know about your system is the starting point and constant framework for a targeted learning process. The Västra Harg case was informed by recent developments in resilience thinking on pathway diversity to introduce an approach for building capacity among system actors to navigate changes and move the system toward a common vision.

2 Creating a spatial baseline understanding of knowledges and potentially diverging values of stakeholders and local residents

We collected baseline information through a large survey among residents in the area.

3 Preferences, priorities, problem identification and tentative solutions – mapping system knowledge, target knowledge and transformative knowledge

Eliciting perspectives and systems understandings from a larger group of people in a systematic way to better understand the key issues that the process is framed around. Key issues are useful entry points to start entangling system dynamics - What are useful entry points in your case and to whom? This phase also asks the question of what is already known about the system by the stakeholders and what are uncertainties according to the stakeholders?

4 Space for reflexivity

A diagnostic and reflexive approach on values, knowledge and expectations at individual level is a useful baseline to prepare the group interactions and to balance representativeness and synergies in pluralistic settings.

5 Building agency through facilitated knowledge co-creation

After the baseline assessment the deliberation and co-learning process needs to shift towards a long-term continuous process with recurring meetings. This may include changing roles and encouraging stakeholders to claim ownership and take lead. For this to be a smooth transition it needs to be addressed already when the process starts.

Inclusive Conservation through Social Learning in Alaska Protected Areas, United States

Solution Provider: Riley Andrade (University of Illinois)

Summary Text: The Denali region of Interior Alaska faces social and environmental pressures related to rapid landscape change. Although the communities there are tight-knit and linked by their shared connection to the area, local stakeholders can feel excluded from regional decision-making to address resource management issues. One potential pathway toward more inclusive decision-making is having residents learn from and adapt to one another in discussions about landscape change, thereby strengthening underrepresented voices through collective knowledge building. Community deliberation can be challenging to get started, but social learning is a conservation tool that can facilitate shared dialogue based on understanding the many and diverse values related to public land management through community deliberation. This solution is based on the concept of socially inclusive conservation, which aims to represent how people value nature to improve protected area management.

Location: Interior Alaska - Denali Borough, Alaska, United States - Northern Matanuska-Susitna Valley

Organisations involved: University of Illinois, Norwegian Institute for Nature Research, The National Park Service

Impacts: The solution has connected community members and local stakeholders from various interest groups across the Denali region. Building local partnerships helps to identify the needs of people living in the area and research directions that are the most meaningful for residents. Understanding residents' connections with the Denali landscape is the second critical step in the solution, which results in building trust and shared understanding with a tight-knit community wary of newcomers or temporary residents who do not intimately love or understand the region like they do. Activities, such as a survey about visioning the future of the region, highlight key trade-offs that people make to adapt to landscape change, the importance of multiple values to predict engagement in stewardship activities, and the role of trust in shaping residents' perceptions of inclusivity. Social learning through community deliberation also results in residents gaining knowledge about diverse perspectives and building valuable relationships to increase community capacity for engaging in regional decision-making. The interconnected outcomes from the building blocks are being continually reintegrated into the collective understanding of the Denali region through webinars, workshops, and meetings with government and industry leaders.

1 Building blocks:

Building local partnerships

People who live in the Denali region are connected by their shared appreciation for the landscape, resulting in tight-knit communities. For the project to succeed, it was important that the research team establish a mutual understanding and trust based on local partnerships. These relationships have helped to ground the project in a relevant and regional context, provide insight into what matters most to local residents, and guide various phases of the project:

- A local Executive Committee consisting of ten stakeholders who represent a diversity of perspectives from the region was formed to build local partnerships.
- The project hired a local resident to be a research technician and community advocate for the project to assist with data collection, entry, project design, information dissemination, and communicating research findings.
- A series of informal interviews and listening sessions were conducted to start the process of creating a shared understanding of change within the Denali region.

2 Understanding the place

To deepen understandings of distinct perspectives in the Denali region, this project focused on engaging various stakeholders in discussions about the characteristics of the region and how it is managed. We used semi-structured interviews and focus groups. Interviews with residents included questions about participants' sense of place, perceptions of landscape change, local organizations, knowledge of the landscape, and governance. Participants were identified during the first phase of this study and a snowball sampling approach was adopted whereby participants were asked to nominate others.

This phase also identified residents' perceptions of the region as a social-ecological system to understand how communities are anticipating change and lay groundwork for collaborative management that prioritizes social-ecological resilience. This project adopted fuzzy cognitive mapping, which is a participatory tool used to graphically represent residents' mental image of where they live and how things are connected to one another. This approach allowed residents to map their perceptions of the key features that characterized the region and drivers of change. The individual exercise was administered during a series of focus groups and interviews, resulting in 51 maps that were aggregated to represent a regional perspective.

3 Visioning for the future of Denali region

The purpose of visioning for the future of the Denali region is to evaluate stakeholder preferences and trade-offs they are willing to make when thinking about the future of the region. Identifying distinct visions for the future is important in places like Interior Alaska where impacts from climate change are magnified and anticipated to rapidly transform the social-ecological landscape. This information can inform decision-makers about priorities for the future across a gamut of stakeholders and serve as a foundation for participatory planning. This study evaluated visions as part of a mixed mode household survey administered to residents across the Denali region.

To identify preferences and trade-offs for future conditions, a discrete choice experiment that evaluated the strengths of preferences and trade-offs for future conditions of the Denali region was included. Survey data were used to understand preferences for attributes including wildlife populations, off-season tourism, and fire management, as well as the cost of maintaining current conditions of these attributes. Results showed that all of these factors influenced preferences for the future, and that the range of environmental attitudes held by stakeholder groups accounted for variation in the strength of preferences reported by survey respondents.

4 Learning through community deliberation

The purpose of community deliberation is to facilitate the process of social learning for residents about protected area management through stakeholder-driven discussions. Social learning is the change in understanding that occurs amongst individuals and groups through social interactions. A number of participatory approaches can be taken to facilitate social learning; we used community deliberation through an online discussion forum. The online discussion forum encompassed a four-week activity that residents participated in asynchronously. Residents were given a new topic prompt to address weekly and were encouraged to focus on responding to comments left by fellow residents. Weekly summaries were generated and feedback was also elicited to ensure the summaries accurately reflected residents' deliberations. Over 400 responses and comments were posted by 37 residents on the discussion board throughout the four-week period. The last prompt asked residents what they had learned from participating in the forum, followed by a survey questionnaire administered online to measure other shifts in values, perceptions, or behaviors as a result of participation.

5 Reflection period and integrating outcomes

The purpose of the reflection period and integration of project outcomes is to continually disseminate findings from this research to residents, businesses, government agencies, scientists, and other relevant decision-makers who are shaping the future of protected areas, those in the Denali region. In turn, the research team is building knowledge of how residents are discussing and reacting to pressures related to rapid social, economic, and landscape change, and this knowledge is being reported back to stakeholders. This cyclical process of co-creation is occurring throughout the project. The medium for reflection is taking a variety of forms, particularly through webinars, in-depth discussions with the local executive committee, and reports provided to decision-makers. The reflection period will culminate in a film about communities in the Denali region, as well as wrap-up workshops at the end of the project. These workshops are being framed as spaces for civic discovery whereby residents become aware of the diverse values for places that they do (and do not) share with others in the region. They are encouraged to recognize potential opportunities for growth in ways that take advantage of shared thought, directed actions and channeled support for preserving the desired character of places.

Critical stakeholder engagement: fostering community stewardship for the safeguarding of the natural and cultural heritage of Victoria Falls/Mosi-Oa-Tunya, Zambia and Zimbabwe

Solution Provider: John Zulu, National Heritage Conservation Commission

Summary Text: In 1989, the site of Mosi-Oa-Tunya/Victoria Falls was inscribed on the World Heritage list for its outstanding, on-going geological processes, unique geomorphological formations, and exceptional natural beauty displayed through daytime and lunar rainbows. This is one of the world's largest waterfalls. However, the site is not only important for its internationally recognized natural values. Mosi-Oa-Tunya/Victoria Falls is also a very important site for local communities in Zambia, Zimbabwe and the wider south-eastern African region, which protect the spiritual and religious values the site embodies. The solution focuses on how these cultural values have been identified and mapped, and how the inclusion of critical stakeholders - in combination with awareness raising and education campaigns - have become a change for improved management and for creating a framework for the sustainable economic development of the area, moving towards a less tourism-dependent economy.

Location: Livingstone, Southern, Zambia | Zimbabwe

Organisations Involved: National Heritage Conservation Commission, Zimbabwe Parks & Wildlife Management Authority

Impacts:

The solution has brought several positive impacts that have tackled several challenges related to the lack of understanding of the site, its set of values and the missing framework for inclusion of local actors and communities. Effective management and protection of the site have resulted from improved understanding of the site values, which has birthed stronger cooperation with local communities and actors. Local communities have been engaged to participate in the identification of cultural, spiritual and religious values and recognition of local stewardship as a key element for improved management and conservation efforts. These efforts have been further supported by the establishment of capacity building and awareness raising opportunities that have empowered communities to strengthen their connection with the site and be part of the steering committee for the management of the property. The site has created an enabling environment of shared opportunities in which communities have been included as key stakeholders and have been given the chance to develop sustainable economic means inside and nearby the site. Lastly, through cultural mapping, the solution has revealed colonial elements, such as the World War I memorial, a space which has been upheld and is now being questioned on its relevance to the Falls and its cultural landscape.

NATIONAL HERITAGE CONSERVATION COMMISSION

Building blocks:

1 Critical stakeholder engagement

The key principle behind the governance and management structure of Mosi-Oa-Tunya/Victoria Falls World Heritage Site is critical stakeholder engagement, an approach that aims at including planning and decision-making processes with all key stakeholders and rights holders: from the governments and relevant institutional authorities of Zambia and Zimbabwe to local communities and actors. Critical stakeholder engagement as a process works on building trust and cooperation between institutional and non-institutional stakeholders. Through this process, local actors and communities are empowered in the exercise of their stewardship towards the site, which further inspires them to engage in conservation and management activities for the long-term safeguarding of the site's natural and cultural heritage values.

2 Cultural mapping

Mosi-Oa-Tunya is a site inscribed on the World Heritage List for its outstanding natural heritage value. However, the site is also associated with key spiritual and religious values that are recognised by communities and people locally, regionally and even internationally. The exercise of cultural mapping has allowed the management of the site to gain a broader understanding of the multi-layered significance of the site and the different values attributed to it by different stakeholders and rights-holders. Through cultural mapping, the site is embodied with military values, archaeological values, anthropological values, cultural ecology values, and historical architecture values to name a few. Cultural mapping, with the involvement of multiple local actors and communities, has brought a wider recognition of the site's significance and values, which has brought attention to the multiple interconnections between natural and cultural values and the need to safeguard both for the long-term safeguarding of the site.

3 Incorporating traditional knowledge systems in management and safeguarding activities

Through the recognition of the cultural significance of the site, an important aspect for effective management and conservation of Mosi-Oa-Tunya/Victoria Falls has been the inclusion of traditional knowledge systems in the integrated management plan for the site. The spiritual and religious values of the site are of high importance for communities and people, and their maintenance, management and conservation are carried out traditionally by these communities. These values are embodied by the shrines located in various places within the site. The inclusion of these practices as part of the integrated management strategy of the site has led to enhanced commitment and responsibility from these communities and vitalized the cooperation with the institutions involved in the management of the site. Community stewardship is a key strategic objective of the management activities. As culture is not static, but dynamic in nature, it is important to document the beliefs and practices of the cultural practices attached to the falls. It is important to acknowledge that site management facilitating traditional practices in the site solidifies the sense of ownership among the communities and local people. This is important in ensuring that effective management of the site values is attained.

4 Educating new generations

It is important to think not only about managing and conserving in today's world, but also about ensuring long-term conservation through outreach and awareness raising activities aimed at informing and empowering future generations. In an effort to prepare the next generation that would appreciate its heritage, the Mosi-Oa-Tunya/Victoria Falls World Heritage Site has developed a heritage conservation club at the Palm Grove school. The school is located within the boundaries of the World Heritage Property and this has offered an opportunity to work in close cooperation with the school management. During weekly club meetings, staff of Mosi-Oa-Tunya/Victoria Falls teach basic heritage conservation lessons and undertake conservation activities in teaching grades 4 to 8. This ongoing sensitization on the importance of heritage conservation to teachers and pupils is critical. Outdoor activities, such as visits to museums, the National Park and other heritage sites, have proven to be very effective in developing interest in pupils and to effectively communicate heritage values to them. Stakeholders such as tour operators have been sensitized on the program and they were given a role to play in supporting the program.

Public Participation to Strengthen and Legitimise Planning Processes in the Great Barrier Reef, Australia

Solution Provider: Jon C. Day, ARC Centre for Coral Reef Studies (James Cook University)

Summary Text: This solution ensured the local communities were actively engaged throughout the most recent planning process for the GBR Marine Park. Going above and beyond what is normally required for public engagement in the legislation guaranteed high legitimacy for this planning process. It also provided detailed information for the park planners and facilitated the engagement of many others (locally, nationally or internationally), which subsequently led to a better planning process overall.

Location: Great Barrier Reef, Queensland, Australia

Organisations involved: Arc Centre for Coral Reef Studies (James Cook University); Great Barrier Reef Marine Park Authority

Impacts:

Significant changes were made between the draft zoning plan and the final zoning plan, primarily due to high levels of public participation. Many of the modifications to the draft resulted from the detailed information provided in public submissions and from other information received during the planning process. The final zoning plan came into effect in July 2004 and achieved its objectives; it protected the range of biodiversity of the GBR in a way that minimised the impact on the users as far as was practicable. The final plan included many compromises and no one group got exactly what they wanted; everyone felt somewhat aggrieved. However, there was also widespread recognition that the public input had effected huge changes during the planning process and everyone had multiple opportunities to have their say. The high levels of community involvement and visibility of the process due to media attention ensured that members of parliament were well aware of the extent of public participation and the significant changes that occurred between the draft and the final plan. Media attention, interest-group lobbying and government involvement all led to legitimacy, not only for the plan, but also for implementation and enforcement.

ARC Centre of Excellence Coral Reef Studies

Australian Government
Great Barrier Reef Marine Park Authority

Building blocks:

1 Written public submissions during the planning

Given that GBRMPA had previously never received so many public submissions (> 10,190 in the 1st phase and 21,500 in the 2nd phase commenting on the draft zoning plan), the following multi-stage process was used to analyse all the submissions:

a. Contact details from each submission were recorded in a database, a unique identification number was assigned and an acknowledgment card was sent to whoever made the submission.

b. All submissions were individually scanned and the electronic files were saved into an Oracle submissions database.

c. Trained GBRMPA staff analysed each submission using a coding framework consisting of keywords for a range of themes and attributes. The framework was developed from a stratified random sample of submissions based on place of origin and sector. The database linked the scanned PDF with the relevant contact details and analytical information (i.e. keywords).

d. A search and retrieve ability based on the keywords enabled planners to search and retrieve PDFs of specific submissions or to run various queries of all the information in the submissions.

e. Many submissions involved spatial information, including some 5,800 maps in the formal submission phases; these maps were digitised or scanned.

2 Assessing the views of those who don't want to get involved

It should not be assumed that all those who have an interest in an area or the planning process will necessarily provide a written submission. Around 1 million people live adjacent to the GBR and many millions of people elsewhere in Australia and internationally are concerned for the future of the GBR. However, the 31,600 written public submissions represented only a small proportion of all those concerned citizens (noting many individual submissions were prepared on behalf of groups representing many hundreds of members). At many public events during the planning or in the media, it was a small 'noisy minority' who dominated the discussions. Different techniques were therefore applied to determine the views of the 'silent majority', many of whom were interested or concerned but did not bother to write a public submission. This included commissioning telephone polling of major population centres elsewhere in Australia to determine the 'real' level of the wider public understanding and support. In addition, community attitudes and awareness were monitored through public surveys. These showed that many stakeholders were misinformed about the key issues/pressures and what could, or should, be done to address their concerns.

3 Correcting misinformation and unrealistic expectations

During any planning exercise, some key messages or information may become deliberately (or inadvertently) distorted or mis-represented by those who are opposed to the process. Many people believe everything they hear (without always checking the accuracy) and are also suspicious of any changes proposed by bureaucrats. Every time these concerns are passed onto others, they are embellished, leading to distortions from the original facts. Furthermore, some stakeholders selectively quote from 'research' when it suits their concerns whilst ignoring evidence with a contrary position. Some stakeholders have unrealistic expectations and do not understand what is possible, or impossible, as part of the planning process. Unless this misinformation is addressed, the public may only hear the distorted or unclear messages, which may then become reinforced by others with similar perspectives. Such misinformation, and the consequent fear and uncertainty, resulted in some of the largest public meetings during the GBR planning process. To counter some of these problems and address unrealistic expectations, GBRMPA produced a fact sheet titled 'Correcting the mis-information' - this was widely distributed, especially at large public meetings.

4 Ongoing/continuing public engagement during the planning

The GBR legislation mandates two formal phases of public engagement when planning – one seeking input prior to developing a draft plan and a second for providing comments on that draft plan. However previous planning processes in the GBR demonstrated that public engagement was more effective if undertaken throughout the process. This included the preparation of various brochures, technical information sheets (some tailored for different target audiences), periodic updates [...] and graphics explaining concepts like connectivity. Throughout the planning process (1999-2003) the public were engaged by a variety of methods e.g. newspapers, radio, TV, the website [...]. Planners knew a revised plan was needed. However, communication experts pointed out that the wider public did not understand why a new zoning plan was needed when there already was an existing plan. Rather than progressing the new draft plan, communications experts advised the planners to pull back for several months to conduct an awareness campaign called "Under Pressure". Once the public were more aware of the problems facing the GBR, they were more accepting of the need for a new plan but also understood they could have their say.

5 Targeted educational material

Throughout the GBR planning program, targeted educational material was prepared and widely distributed. For example, the map of the 70 bioregions across the GBR was a key foundational document upon which a lot of subsequent public engagement was based. The preparation of Technical Information Sheets [...] helped to explain concepts like 'biodiversity' in layman's terms as many people did not understand what it was nor its importance. Similarly, trying to explain the importance of 'connectivity' in the marine environment was greatly enhanced by a poster entitled 'Crossing the Blue Highway' [...]. It used a combination of digital art, photos and words to explain the importance of connectivity between the land and the sea, and within habitats of the GBR. This reinforced the need for the 'representative' approach to the zoning. Different stakeholder groups have differing interests so the communication messages were appropriately tailored by experts who understood the sectors e.g. what was presented to fishers was different to how a very similar message was presented to researchers or to politicians.

6 Engaging politicians and champions throughout the planning

It is important to engage the key political players from the start of the planning process rather than wait until nearer the completion of any such process. Soon after the start of the GBR planning process, a formal 'Leader's Guide' was delivered to all state and federal politicians along the GBR coast and wherever possible, personal briefings were undertaken by senior GBRMPA staff. This helped ensure all politicians had the correct information, had extra materials to give to their constituents and had a contact within GBRMPA if further information was required. While some decision-makers would prefer all planning decisions to be consensus-based, or achieve a 'win-win' for all concerned, neither consensus nor 'win-wins' are achievable goals for stakeholder processes dealing with issues of such magnitude and complexity as most MPA planning processes. In the GBR, it was important to explain to politicians early in the planning process that compromises were the expected outcomes. At the end of the GBR rezoning, no one stakeholder group felt they got exactly what they wanted; but every group knew they had ample opportunities to become engaged and to provide input – and most understood the compromises all sectors had made.

Providing scientifically credible technical services in Bwabwata National Park, Namibia

Solution Provider: Friedrich Alpers, Indigenous Peoples of Africa Coordinating Committee in cooperation with Cybertracker

Summary Text: The role of traditional knowledge and application of diverse knowledge systems for wildlife management is demonstrated by Indigenous and local trackers and rangers e.g. in Bwabwata National Park in north east Namibia. The indigenous trackers and rangers are using a rigorous, culturally appropriate methodology for assessment and certification of tracking skills and competence. This knowledge is applied in wildlife monitoring and documenting scientific observations.

Location: Bwabwata National Park, Namibia

Organisations involved: Indigenous Peoples of Africa Coordinating Committee in cooperation with Cybertracker, Kyaramacan Peoples' Association, Integrated Rural Development and Nature Conservation (IRDNC)

Impacts:

The programme has generated sustainable employment for both Khwe (a San ethnic group of the region) men and women, pride in traditional knowledge, and assisted in conservation in Bwabwata National Park. It has reinforced indigenous rights to land tenure by placing indigenous peoples in significant conservation roles in their own territory. Formal assessment and recognition of traditional knowledge and competency, (consisting of rigorous assessment, grading, certification and training in new technology) unlocks a vast store of previously unavailable knowledge, data collection capacity, and innovative approaches to problem solving. At the same time issues of rural poverty and skills deficits are addressed. The use of traditional knowledge in climate data collections, monitoring, management and appropriate responses is particularly important for countries where long time series of traditional knowledge exist.

Building blocks:

1 Establishing tracker and trailing assessment system

The innovation involves using an assessment methodology which is free from literacy-based biases in determining the relative levels of expertise amongst trackers in being able to identify animal spoor, trail wildlife, and related skills associated with wildlife behavioural knowledge, game counting, disease monitoring, anti-poaching activity and wild plant inventories. The skills are assessed against an ecosystem specific competency test and trackers are certified at four different levels of competence. The assessment is scientifically credible and internationally certified for standardization. The best trackers are then employed to train younger trackers and later to assess them.

2 Indigenous-run tracker training school

The community is working to set up an indigenous-run tracker training school which would service Namibia and potentially also neighbouring Botswana. Due to low literacy levels in the region, indigenous peoples were previously kept out of formal conservation employment or underpaid for their sophisticated skills. Though anchored in Khwe traditional knowledge, the training and assessment methodology is based on international standards and is accessible to people from any background who have sufficient biodiversity and faunal / floral knowledge of a specific ecosystem. Research thus far indicates a strong demand for certified trackers by both government and private sector for conservation, anti-poaching and natural resource management.

3 Training in the use of GPS-capacity and IT data-base

In parallel with the formalization of the tracker skills and competence assessment, trackers learn to use Cyber tracker handheld computer / GPS technology. This allows important data on biodiversity trends and density, to be systematically recorded and algorithmic analyses provide rapid insight into conservation priorities, including issues of climate change, disease vectors and anti-poaching strategies.

4 Use of geospatial technologies

In cooperation with the EU-ACP Technical Centre for Agricultural and Rural Cooperation (CTA), African indigenous peoples are experimenting with geospatial technologies such as participatory 3D modeling (P3DM), and low-tech, participatory methodologies such as eco-cultural mapping. These detailed and geo-referenced models provide a bridge between oral cultures and IT or other media for understanding indigenous and local knowledge of landscape, seascapes and governance models. The methodologies can be applied for education, planning, heritage management, migratory information, conflict resolution and planning for climate change impacts and resilience building.

Participatory maritime surveillance within the Banc d'Arguin National Park, Mauritania

Solution Provider: Lemhaba Ould Yarba (Parc National du Banc d'Arguin - PNBA)

Summary Text: With an area of 12,000 sq.km. – of which 6,300 are marine areas and 5,700 are on the continent – the Banc d'Arguin National Park (PNBA) is one of the largest national parks in Africa. It is a breeding ground for the curlew, for the maturation of the yellow mullet, and is home to many migratory birds and fish species. The park is also home to extensive intertidal and subtidal seagrass meadows. Another exceptional feature of the PNBA is the presence of the Imraguen, a population of desert fishermen. They have ancestral and exclusive rights over fishing resources as part of their traditional practices using Latin sailing boats called 'lanches'. The importance of the PNBA in terms of biodiversity and cultural heritage requires guaranteeing its socio-ecological integrity. Aware of this situation, the PNBA managers and the Delegation for Fisheries Surveillance and Control at Sea (DSPCM) – now the Mauritanian Coast Guard (GCM) – set up a participatory maritime surveillance system in 1999.

Location: Banc d'Arguin National Park, Nouadhibou, Mauritania

Organisations Involved: [only PNBA listed]

Impacts:

Since its establishment in 1999, the participatory maritime surveillance and monitoring of the PNBA results in the boarding of a significant number of offending vessels each year (170 motorized pirogues and 10 lanches in 2018), as well as in the seizure of different types of prohibited fishing nets. The monitoring of the fishing effort and catches of all the sailboats has been conducted since the 2000s. These data are being processed every year by the PNBA agents in collaboration with the Mauritanian Institute of Oceanographic Research and Fisheries (IMROP), and shared annually with the population of each village within the PNBA. Although the participatory maritime surveillance system has contributed to reducing the illegal exploitation of resources and to the application of management rules, the impacts on the fish stocks are quite unknown. A stock assessment is needed to evaluate the precise impacts of the conservation and fisheries management measures over the stocks of the five groups of fish being harvested within the park.

Building blocks:

1 Shared Governance

The participatory maritime surveillance system of the PNBA is the result of a tripartite partnership, which integrates the resident Imraguen population, alongside the park managers and the coast guards (GCM). This system aims to control the entry of boats from outside the PNBA, particularly for motorized pirogues, which have been prohibited within the park since its creation in 1976. The respect of the fishing seasons calendar is today considered a successful model in the West African sub-region. The experience of the PNBA has benefited the Regional Network of Marine Protected Areas in West Africa (RAMPAO), notably through technical support missions and exchange visits. The functioning of the PNBA's participatory surveillance mechanism has as a central feature the representativeness of three entities on board each surveillance vessel: a PNBA agent, a GCM agent, and a representative of the Imraguen population. It has so far contributed to the reduction of illegal exploitation of resources, through the application of management rules agreed upon jointly with the resident population.

2 Supporting related economic activities and alternative incomes

In order to enhance the participatory surveillance system, but also to preserve ancestral local know-how and the maritime heritage, the PNBA has set up a community shipyard of R'Gueiba. This shipyard is devoted to the renovation and construction of Imraguen boats. It is managed by the local carpenters' cooperative "El Ittihad", which brings together 8 Imraguen trained by the PNBA with the help of Breton French naval carpenters. Women are in charge of the pruning and maintenance of the sails. In addition, ecotourism activities are carried out – mainly by women – with the aim of offering alternative income-generating activities, and hence reduce anthropic pressures on the fishing resources.

3 Awareness raising and knowledge exchange activities

Awareness raising activities and information campaigns around the legal regulations in place, and around the management measures agreed upon by mutual agreement, are regularly carried out among the population. These enhance the acceptance of the maritime surveillance activities by the population, as well as a good understanding of the different conservation measures taken and their evolving impacts on the biodiversity of the PNBA. The activities include raising awareness about the fisheries regulations in force and their evolution with respect to biological halt periods, raising environmental awareness in general, but also sharing the results of fisheries monitoring (fishing effort, catches, infractions recorded, etc.).

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