RESILIENT REEFS

Comprehensive Resilience Assessment

2022

Presenter: Kalene Eck
Resilience Officer, Belize Coastal Zone Management Authority & Institute (CZMAI)

Overview

Welcome and opening remarks

Confirming the name and role of the project steering committee

Presentation of RRI key milestones and activities

Presentation of the Resilience Assessment Results

Three Resilience Challenges

Open discussion on Assessment results

Lessons Learned

Next steps and Validation

Steering Committee:
Ad Hoc World Heritage Site Advisory Committee

- WHSAC functions primarily to advise the government on policies, programs and appropriate cultural protocols which benefit World Heritage properties in areas of common interest and on national or cross-cutting issues.

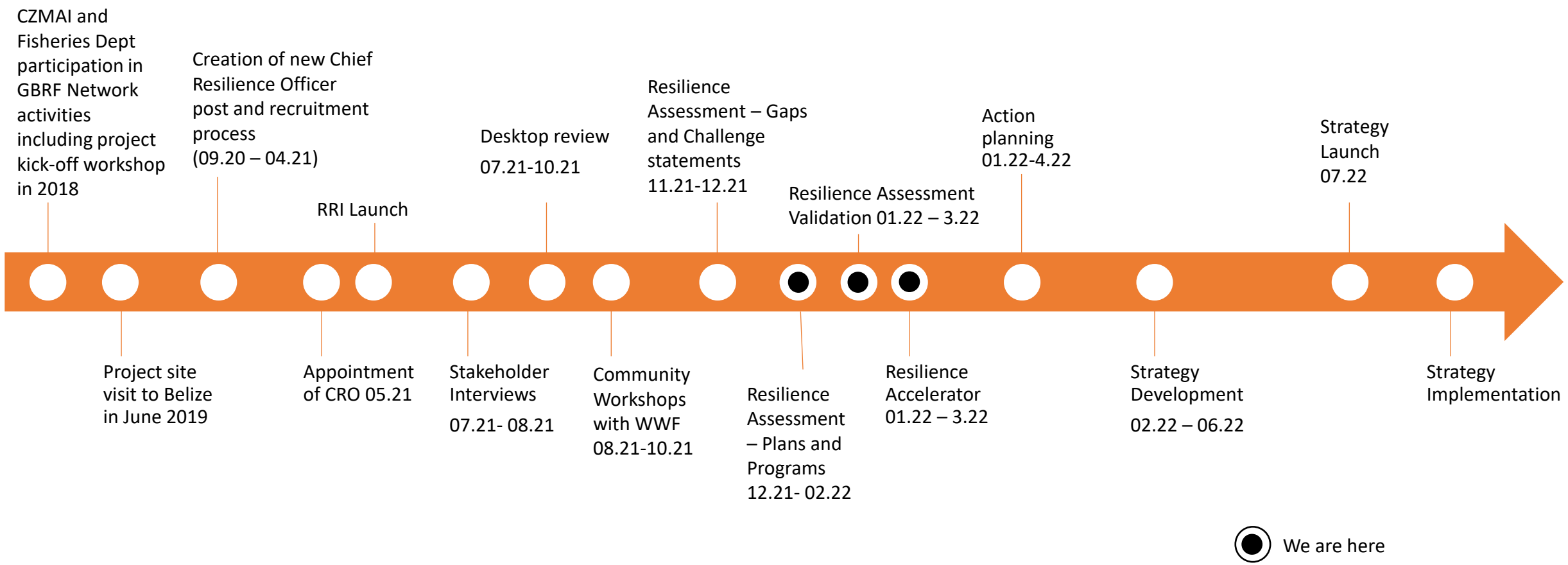
- Its membership, composition and overall function share commonalities with the proposed function of the RRI Steering Committee. The leadership roles within the committee will also provide salient information for the strategy.

- In addition to approving the various deliverables produced by the RRI, the ***committee may be convened for key milestones of the Initiative*** (i.e. Accelerator, Resilience assessment results, action planning, and resilience strategy release)

What is Resilience?

Reef resilience is the capacity of reef ecosystems and the individuals, businesses and communities that depend upon them to survive, adapt and recover from the stresses and shocks that they experience.

Resilient Reefs Initiative: Progress



Other Resilient Reef Initiative Activities in Belize

Solution Exchange on Sustainable Tourism (Nov 2021)

- Each year, RRI brings together its diverse network of partners for this annual event. The event is designed to accelerate understanding of a common resilience challenge; to share and discuss leading science and practice on the topic; and support each RRI site in diagnosing opportunities for local action.
- Three topic were explored during this year's event:
    1. Identifying and managing tourism carrying capacities
    2. Strategies for shifting tourist behavior to better meet local resilience goals
    3. Unpacking the local tourism sector and identifying opportunities for diversifying livelihoods

Design Studio & Accelerator (Jan 2022)

- Develop problem statements that captures the relationships, pressures, and opportunities related to coastal development, the Belize Barrier Reef System, and community livelihoods at the scale of the coastal system and (11) identified transect areas
- Articulate a set of design and planning principles to guide future design and planning in the context of the CZMAI update, Resilience Strategy, and MBE strategy to ground student design concepts for each transect
- Convene local stakeholders, students, faculty, and scholars to uncover opportunities and ground problem statements and relationships across academic disciplines and institutions, public agencies, and local stakeholders

Stony Coral Tissue Loss Disease Proposal

- Local partners have engaged with RRI on the SCTLD response proposal. The new Chair of the National Coral Reef Monitoring is the point person on this proposal

Resilience Assessment: Purpose

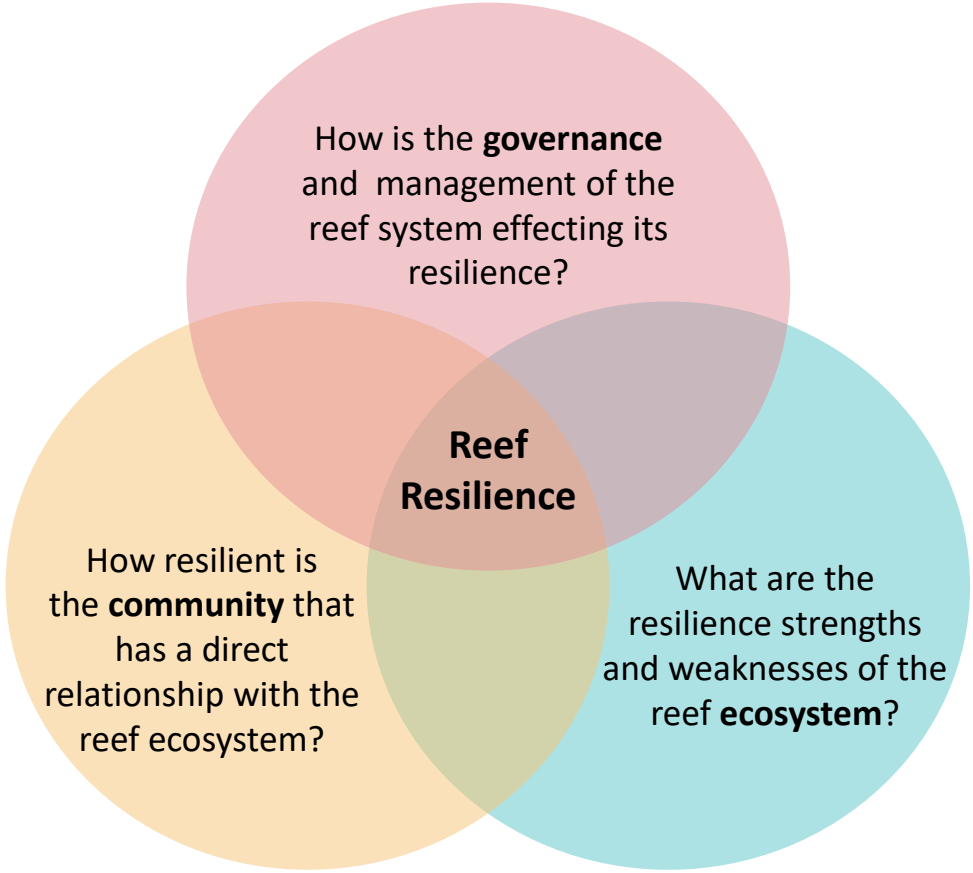
The resilience assessment process uses holistic reef resilience theory and practice to create an overview of the site's resilience.

The resilience assessment provides:

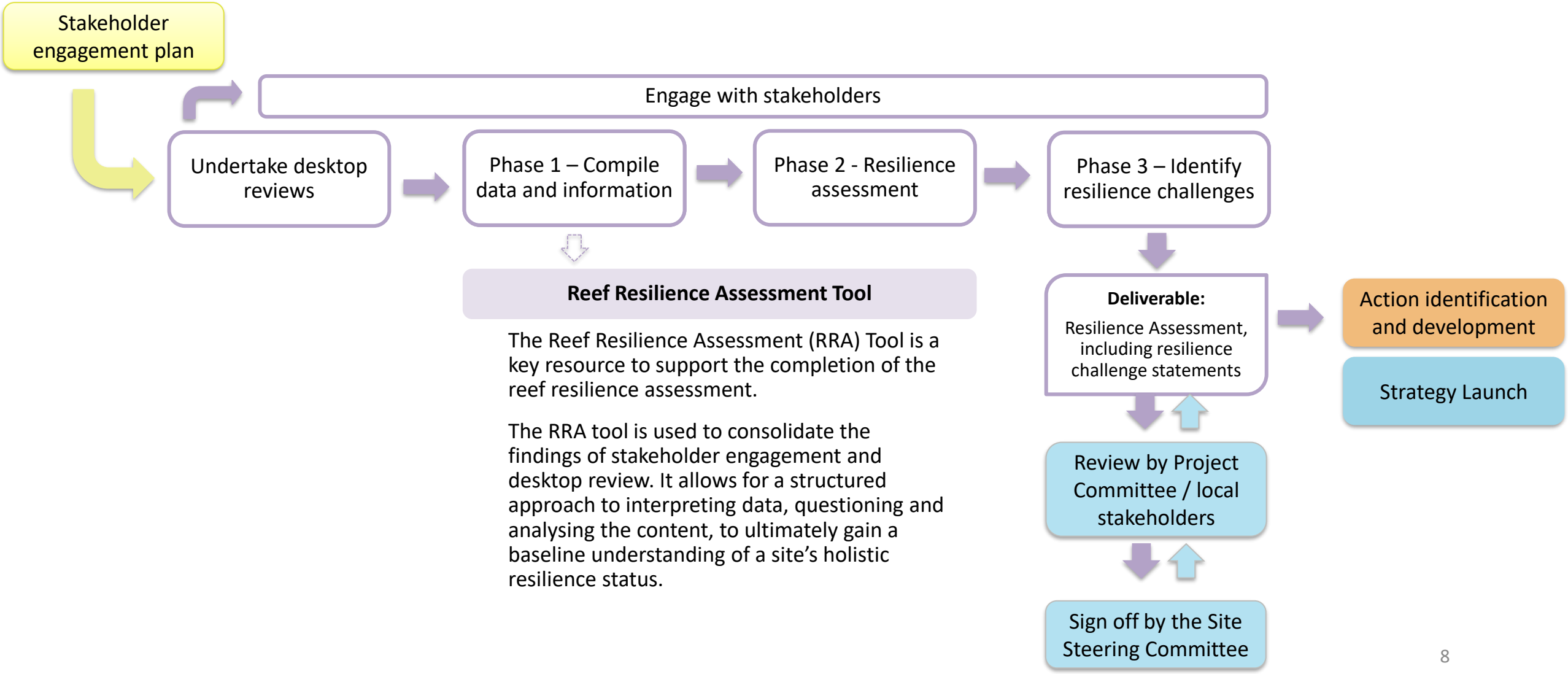
- An opportunity to look holistically at the strengths and weaknesses of each of the site's dimensions of **community**, **governance** and the reef **ecosystem**, and how these strengths and weaknesses impact reef resilience.
- A risk assessment and prioritisation of **shocks** and **stressors** to guide action identification.
- A clear understanding of the critical **resilience challenges** that are affecting or are likely to affect the site.
- A **baseline** for the site that can be used to measure change in the site's resilience status over time.

By using the same method and language, the resilience assessment enables sharing and collaboration between sites in the Resilient Reefs network.

The reef resilience assessment is based on the Resilient Reefs definition of **reef resilience**, and considers:



Resilience Assessment: Process



Methodology & Data Collection: June-October 2021

Engagement: Targeted consultations

- Consultation with project managers and organizations to identify areas for collaboration and leveraging existing research

Engagement: Community Collaboration

- Targeted community engagement with ongoing projects to identify emergent themes and community perceptions. Engagement sessions informed the prevalent shocks and stressors each community faces.

Plan Management: Desktop review

- A list of policies, strategies, and action plans were reviewed to extract all existing actions and work that support resilience building within the ecosystem, community, and governance dimensions.

Stakeholder Engagement: Targeted Consultations

Methodology: Aligning organizations with resilience dimensions

Organization	Ecosystem	Community	Governance
Healthy Reefs Initiative			
Fragments of Hope			
University of Belize – Environmental Research Institute			
Ministry of the Blue Economy and Civil Aviation			
World Wildlife Fund			
WildTracks			
Belize Fisheries Department			
Coastal Zone Management Authority and Institute			

Roughly 1-hour meetings

Informal introduction to RRI and overall goal

Conversation outlining current issues organization is focusing on, ongoing projects, identified challenges, gaps in information.

Potential opportunities for collaboration or action building resulting in next steps and actions to build out

Stakeholder Engagement: Targeted Consultations

Key Findings: Opportunities

Opportunities

- Expanding on the current Stony Coral Tissue Loss Disease Response
- Expanding on ongoing tourism carrying capacity studies and limits of acceptable change
- Expanding on livelihood diversification programs
- Collaborating with MARFund to address wastewater treatment needs in key areas of Belize
- Restructuring the MPA governance framework and co-management agreements
- Evaluating and reinstating out of date MPA plans
- Increasing expertise in blue carbon potential and framework design
- Exploring Parametric Insurance schemes and pilots

Stakeholder Engagement: Community Collaboration

Methodology

Southern Community Engagement

In-person sessions, Aug 2021

Partnership with: WWF, UB-ERI, CZMAI

- Dangriga
- Hopkins
- Placencia
- Riversdale
- Punta Gorda
- Seine Bight

Participants included fishers, tour operators, municipal and village councils, localized non-governmental organization representatives, real estate agents, & concerned citizens

150
Participants
11 communities
8 partner organizations

Northern Community Engagement

Online sessions, Oct 2021

Partnership with: WWF, UB-ERI, CZMAI, MBECA

- Northern coastal communities
  - Chunnox, Copper Bank, Sarteneja
  - Ambergris Caye & Caye Caulker

Local Partner Organizations

- Hol Chan Marine Reserve (HCMR),
- Sarteneja Alliance for Conservation and Development (SACD),
- Southern Environmental Association (SEA),
- Toledo Institute for Development and the Environment (TIDE)

Stakeholder Engagement: Community Collaboration

Key Findings: Opportunities

Opportunities

- Carrying out consistent, collaborative and clear stakeholder engagement (Hybrid engagement)
- Improving marine spatial planning in areas of concern (Ambergris Caye, Placencia, Caye Caulker)
- Incorporating traditional knowledge into management frameworks
- Providing publicly available information especially regarding developments and EIAs
- Assessing cumulative impacts
- Increasing institutional training and capacity

Plan Management: Desktop Review

Methodology

Policies and Strategies with Resilience Building Actions

- A policy and strategy desktop review was conducted extracting existing resilience building actions:
  - To highlight ongoing or planned actions related to resilience building and response to identified threats
  - To corroborate existing stakeholder interest and potential collaboration in financing actions
  - To provide next steps on verification of implementation

- Plans reviewed were focused primarily on fisheries & MPA management, tourism, coastal development, waste management, trade, and emergency response

- Plans were selected and reviewed under the following criteria:
  Relates to direct management of BBRRS
  Related to management of a particular marine resource or issue
  Related to National or Long-term development

- ***Twenty-six (26) priority plans were identified***

62
Plans reviewed
429 resilience actions
20 author organizations

Plan Management: Desktop Review

Key Findings – Integrated Reef Resilience

Integrated Reef Resilience Index, 2021

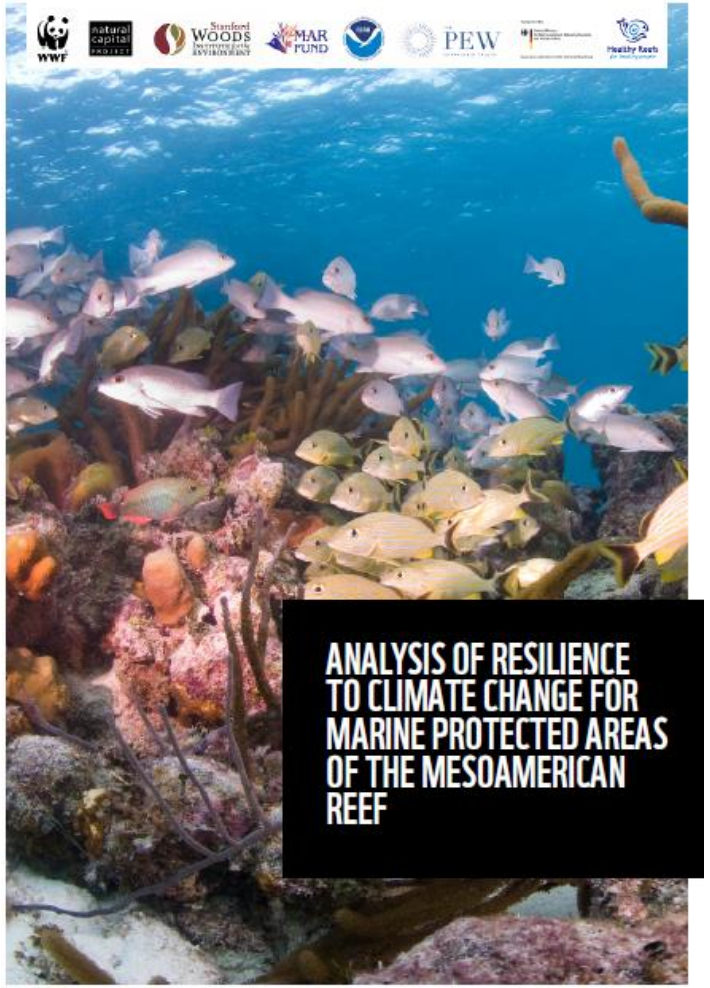
Aimed at analyzing anthropogenic and natural threats to targeted Marine Protected Areas as well as assess their resilience.

The analysis is intended to provide baseline figures to use as reference for future resilience assessments.

The Status of Protected Areas, 2019

The evaluation of management effectiveness of protected areas has been recognized as a critical tool in the conservation of Belize's natural resources, protection of critical ecosystem services and provision of socioeconomic benefits.

All MPAs scored within the range 60-85% under the seven management categories



Key Findings: Challenges by dimension

Ecosystem	Community	Governance
Loss of habitat - Deforestation/ mangrove cutting/mangrove loss	Rapid coastal development	Government mistrust (Transparency & Accountability)
Stony Coral Tissue Loss Disease	Land based pollution & waste management	Limited knowledge, evidence, research available
Sargassum Influx causing degradation in immediate coastal areas	Migration (legal & illegal)	Conflict between industries
Coral reef degradation –bleaching, anchor strike, dredging	Fishing industry reliance on reef & destructive fishing practice	Limited enforcement - protected areas and resources
Coastal erosion – disappearing cayes	Little community input on management decisions	Concerns with governmental processes and weak regulation (EIA & land acquisition)
Limited data availability	Limited platforms to access public information	Outdated MPA governance framework, co-management agreements, and MPA plans
	Infrastructure vulnerabilities in coastal areas: development, land use policies	

Key Findings: Opportunities

Opportunities

- Improving marine spatial planning in areas of concern (Ambergris Caye, Placencia, Caye Caulker)
- Providing publicly available information especially regarding developments and EIAs
- Expanding on ongoing tourism carrying capacity studies and limits of acceptable change
- Expanding on livelihood diversification programs
- Continuing efforts on knowledge and stewardship building from protected area programs
- Incentivizing Private investment in conservation and communities
- Revising building codes to better prepare for climate change
- Promoting recycling and waste management
- Expanding and continuing livelihood diversification programs
- Identifying/implementing strategies to protect & restore mangrove, seagrass and coral reef habitats
- Strengthening local input in management decisions
- Incorporating traditional knowledge into management frameworks

Resilience Assessment: Reef Resilience Framework

The Reef Resilience Framework has been developed as a tool to assist reef communities and managers to better understand the current state of resilience of their reef and communities, identify strengths and weaknesses, and prioritise actions.

The Framework looks holistically at coral reefs, the communities that depend on them, and the governance arrangements that influence them as an integrated system which must be understood together.

The Framework provides a structure for understanding reef resilience through layers of increasing detail including 3 Dimensions and 12 corresponding Attributes.

Framework Dimensions:

- **Ecosystem** - the preservation of ecosystem services.
- **Community** - maintaining or improving community wellbeing.
- **Governance** - the maintenance of robust and effective governance arrangements to support these outcomes.

Refer to the Reef Resilience Framework document for further information.

Reef Resilience Framework Dimensions: Ecosystem

Ecosystem

A resilient reef ecosystem is more able to sustain delivery of important ecosystem services to communities despite exposure to shocks and stressors.

Reef Resilience Framework Dimensions: Ecosystem

Status of Resilience for each attribute

Habitat Condition	**Loss of habitat/ deforestation/mangrove clearing** **Nutrient Runoff** **Anchoring, groundings, damage to coral reef**
Biodiversity	**Overreliance on fishing** **Invasive species** **SCTLD**
Recovery Process	**Extreme weather events (hurricanes, major flood events)** **Sargassum influx**
Seascape Diversity	**Marine dredging** **Coastal erosion**

Opportunities

- Improving Watershed management
- Expanding on the current Stony Coral Tissue Loss Disease and invasive species responses
- Identifying/implementing strategies to protect & restore mangrove, seagrass and coral reef habitats
- Enhancing regulations – fisheries, protected areas, etc.
- Restructuring the MPA governance framework & co-management agreements
- Evaluating and reinstating out of date MPA plans
- Increasing expertise in blue carbon potential and framework design
- Improving marine spatial planning in areas of concern

Reef Resilience Framework Dimensions: Community

Community

Resilient communities and organisations are better equipped to cope with change and uncertainty and take proactive measures to secure their future, and are better able to support reef resilience.

Reef Resilience Framework Dimensions: Community

Status of Resilience for each attribute

Knowledge & Stewardship	**Limited consistent community education programs**
Resources & Livelihoods	**Over reliance on fishing and tourism activity**
Networks & Relationships	**Government mistrust** **Relationship with process** **Conflict between industries**
Health & Culture	**COVID-19 (Pandemic)** **Solid waste management** **Extreme weather events (hurricanes, major flooding)**

Opportunities

- Expanding and continuing livelihood diversification programs
- Promoting recycling and waste management
- Strengthening local input in management decisions
- Expanding ecofriendly tourism and development
- Growing awareness and education programs
- Incentivizing Private investment in conservation and communities
- Improving food security, availability, and affordability
- Revising building codes to better prepare for climate change
- Improving access to healthcare

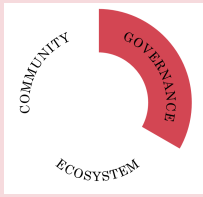
Reef Resilience Framework Dimensions: Governance

Governance

The ability of organisations and their governance arrangements to learn and adapt supports the resilience of communities and reef ecosystems.

Reef Resilience Framework Dimensions: Governance

Status of Resilience for each attribute



Rules & Regulation	**Limited finance for enforcement of regulations** **Illegal wildlife trafficking**
Representation & Inclusion	**Limited channels for community input and solidified representation**
Leadership & Management	**Silos of natural resource management agencies** **Data sharing, collaboration**
Accountability & Equity	**Government mistrust**

Opportunities

- Improving enforcement of existing management policies and conservation plans
- Refining tourism best practices
  - develop an action plan on how tourists interact with marine mammals
- Updating land use and building code updates
- Updating international policy for the Economic Exclusion Zone (EEZ)
- Enhancing public reporting and accountability of agencies
- Increasing institutional training and capacity
- Incorporating traditional knowledge into management frameworks
- Implementing strategies to increase intergovernmental collaboration

Prioritizing Reef Resilience: Focus Areas

RRI: Potential challenges for advancement

Addressing **Shocks** and **Stressors**:

A. Strengthen **disaster and recovery planning**
   - Managed retreat + relocation guidelines

B. Better **address climate vulnerabilities** of fishing and coastal sectors
   - Sea level rise, development of hybrid green/grey structures for coastal protection

C. Strengthen **regulatory framework + enforcement of conservation and coastal development** areas

D. Increase **local representation + participation** in policy, management decisions

E. Strengthen the **balance of protected areas and commercial marine use**

F. Increase **accountability and policy oversight of dredging and land reclamation**

G. Improve **wastewater and general waste infrastructure**

H. Improve local **access to the marine resources**

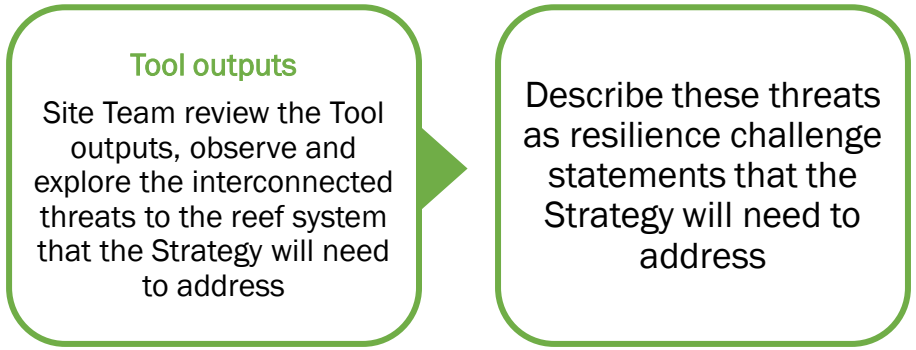
I. Improve **watershed management** for marine health
   - Nutrient runoff/fertilizer as well as mining activity

J. Better **integrate data on of fisheries and coastal sectors** into management plans

K. Improve **cruise ship management**, carrying capacity/limits and waste management

L. Expand reef restoration capacity to continue to support **coral health and adaptation**

Prioritizing Reef Resilience: Identifying Resilience Challenges



Resilience challenge statements, or focus areas, should be as simple and clear as possible, and address:

- **What -** Address what the biggest threats (top shocks and stressors) are for the site in a way that acknowledges their interdependencies. Address what systems and assets are impacted and the interactions with between these and the top shocks and stressors.
- **Who –** Identify who is involved in the issue, for example who is most impacted or involved.
- **Cause –** Describe the root cause as to why the issue is arising.
- **Opportunity -** Identify the gap between the current and desired state for the site, considering the existing management plans and actions, and initial identification of path to build resilience. Sites may also consider how resilience qualities and behaviours can be used to address the resilience challenge statements.

Prioritizing Reef Resilience: Selecting Focus Areas

Approval and voting process:

1. *Internal RRI Review & vote (Dec2021)*
2. *CZMAI & MBECA review & priority area approval (Jan 2022)*

3. **Steering Committee review & approval (Feb 2022)**

Resilient Reefs prioritisation principle prompts

1. **Does the challenge address the issues that will have the greatest impact on the reef's resilience?**
2. **Does the challenge highlight an area where there is little attention or action being made?**
3. **Does the challenge provide an opportunity for the local community to act to make a difference?**
4. Does the challenge statement highlight a gap in management or resourcing?
5. **Would global reef site collaboration help fix this problem?**
6. **Are innovative solutions needed in comparison to business as usual?**
7. Will this challenge benefit from the Resilient Reefs initiative's focus on working across the ecosystem, community and governance dimensions?
8. Do the challenges reflect the diverse needs of the reef community?
9. Has the community had input into the identification of these challenges?
10. **Are these challenges aligned with existing reef management plans and other strategic planning documents for the site?**

Prioritized Focus Areas

Results of first voting session

G. Improve **wastewater and general waste infrastructure**	**5 Votes**
C. Strengthen **regulatory framework + enforcement of conservation and coastal development** areas	**3 Votes**
D. Increase **local representation + participation** in policy, management decisions	
A. Strengthen **disaster and recovery planning** • Managed retreat + relocation guidelines	**2 Votes**
B. Better **address climate vulnerabilities** of fishing and coastal sectors • Sea level rise, development of hybrid green/grey structures for coastal protection	
E. Strengthen the **balance of protected areas and commercial marine use**	
F. Increase **accountability and policy oversight of dredging and land reclamation**	
I. Improve **watershed management** for marine health • Nutrient runoff/fertilizer as well as mining activity	
K. Improve **cruise ship management**, carrying capacity/limits and waste management	

participants: Arlene Young, Safira Vasquez, Shantel Espadas, Victor Sho, & Kalene Eck

Prioritizing Reef Resilience: Challenge Criteria

RRI: Potential challenges for advancement, by shocks and stresses

alignment	Priorities as a result of assessment findings and reoccurring opportunities	Does the challenge provide an opportunity for the local community to act to make a difference?	Does the challenge address the issues that will have the greatest impact on the reef's resilience?	Does the challenge highlight an area where there is little attention or action being made?	Would global reef site collaboration help fix this problem?	Are innovative solutions needed in comparison to business as usual?	Are these challenges aligned with existing reef management plans and other strategic planning documents for the site?
4	Improve **wastewater and general waste infrastructure**						
1	Strengthen regulatory framework + enforcement of conservation and coastal development areas						
4	Increase **local representation + participation** in policy, management decisions						
3	Strengthen **disaster and recovery planning** Managed retreat + relocation guidelines						
2	Better **address climate vulnerabilities** of fishing and coastal sectors Sea level rise, hybrid green/grey structures for coastal protection						
5	Strengthen the **balance of protected areas and commercial marine use**						
2	Increase accountability and policy oversight of dredging and land reclamation						
4	Improve **watershed management** for marine health *Nutrient runoff/fertilizer as well as mining activity*						
3	Improve **cruise ship management**, carrying capacity/limits and waste management						

alignment ranking 5-6 3-4 0-2

Resilience Focus Areas

Harnessing community knowledge and engagement

Address climate vulnerabilities of coastal & marine sectors

Ecosystem

Improve watershed management with a focus on upgrading wastewater treatment and safeguarding coral health

Community

Advance livelihood diversification within coastal communities, ensuring multiple paths to sustainable livelihoods and economic opportunity

Governance

Ensure a healthy balance between the conservation of marine protected areas with commercial and local use that supports national and local economies

Cross-cutting theme: Address climate vulnerabilities of coastal sectors

- Climate change poses an existential threat to coral reef ecosystems and the communities that depend on them, globally.

- Belize is ***exceptionally vulnerable***. Risks include coral bleaching, more frequent and severe storms, flooding, sea level rise, and coastal erosion.

- Because these risks impact communities and ecosystems in a variety of ways, it's essential that a climate change lens is applied to all actions being developed in the Resilience Strategy.

- This includes:
  - examining how climate change impacts may influence the success of actions;
  - including climate adaptation techniques into the design and delivery of actions; and
  - being proactive about climate mitigation opportunities throughout the strategy.

Cross-cutting theme: Harnessing community knowledge and engagement

- Meaningful community engagement is imperative for the success of public policy or management actions within the coastal and marine areas. While some recent initiatives have been geared toward formalizing fishing groups and committees, there is limited capacity and/or interest to meet continuously and actively to provide input of management decisions; in many instances, these approaches have felt like more burden than collaboration.

- Though information is shared with communities, there is a need to provide formal channels for the public and traditional owners to have a role in providing input on decision making (especially regarding developments and EIAs). Limited, or underutilized, channels to provide input has led to government mistrust and a perception that government lacks transparency and accountability.

- This sentiment makes it less likely that policies will be developed and implemented with community knowledge and support, limiting their effectiveness and impact. Increasing local representation and participation in policy and management decisions will inform and improve government's response and improve confidence and transparency within communities, all of which will help ensure more enduring outcomes.

IN DRAFT Ecosystem Resilience Challenge: ***Waste and Watershed Management***

Ongoing research implicates land-based inputs of chemical, biological and/or physical pollution as a continuing stressor on the Belize Barrier Reef and associated habitats.

With its varied rivers, lakes, and groundwater sources across 39 watersheds, Belize has sufficient freshwater resources. Water usage per capita is ~270L per day in urban areas with most freshwater resources used in industrial processes. There is wide access to drinking water but also increasing demand on water resources from expanding agriculture and growing population. Degradation and increasing demand may become a mounting threat to water quality and quantity, especially in the face of climate change.

In Belize, while recent initiatives have improved waste disposal in some areas, inadequate infrastructure for solid waste and wastewater collection, treatment, and disposal threatens watersheds, communities and the environment. Limited solid waste collection in more rural areas leads to waste disposal through burning or dumping, which occurs directly into or is eventually washed into the watershed and accumulates downstream. Additionally, most landfills in Belize are not controlled or sanitary and can allow leakage into the groundwater. Limited capacity for solid waste and wastewater treatment combined with lack of coverage impacts habitats and community health.

Of addition concern to watersheds in Belize is soil erosion, which, exacerbated by mining activates, deforestation, development, and climate change. This, combined with industrial and agricultural effluent, also threatens watersheds, coastal habitats, and coral reefs.

A lack of cohesive legal framework is worsened by a separated institutional framework dividing water resource management across the country. This is further compounded by a lack of comprehensive water monitoring data, limiting the ability to detect and address point source pollution. Together these issues reduce the capacity to make effective management decisions and policy.

IN DRAFT Ecosystem Resilience Challenge: ***Waste and Watershed Management***

Current forces combatting the challenge	Current forces exacerbating the challenge
• Solid Waste Management Authority Act and Projects • Recycling and Upcycling initiatives • Phase out of single use bags, Styrofoam, and plastic utensils • Some NGOs providing waste education and awareness • Water and Sewage Ordinance • Department of Environment Monitoring programs • Water resources Management Act • Stakeholder awareness and support of watershed issues • NGO initiatives on watershed management and education • Increased focus on improved waste and watershed management	• Rapid coastal development • Lack of enforcement of existing regulations • Lack of data on waste collection and disposal at municipal levels, limiting decision making • Limited funding or other economic instruments • Deforestation, mining, and development increasing/altering runoff and erosion • Agricultural and industrial effluent • Improper solid waste disposal • Changes in precipitation associated with climate change • Separated institutional framework dividing water resource management

Vulnerabilities across Ecosystem, Community, and Governance Dimensions

Key drivers of the resilience challenge	Ecosystem	Community	Governance
• Limited and outdated wastewater infrastructure • Limited access to solid waste collection in some communities • Growing urban populations and development • Land and water use that increases runoff and erosion	• Discharges of wastewater and effluents are likely to degrade water quality and coastal/ marine environments • Improper waste disposal leads to solid waste pollution, degrading habitat • Risk of excessive algal growth from nutrient loading	• Public health concerns associated with pollution and contamination • Risk to resources and livelihoods of affected communities • Reduced access to clean water resources	• Waste management policies • Poorer areas are disparately affected raising concerns of accountability and equity • Lack of comprehensive data collection necessary for management decision making

IN DRAFT Community Resilience Challenge: ***Advancing Livelihood Diversification***

Accessing multiple paths to sustainable livelihoods and economic opportunity not only reduce pressure on extractive use and overreliance on one industry, but also increase resilience of communities. Livelihood diversification programs are a common remedy used by projects to support and improve community resilience. However, programs are often embedded in 2–5-year projects where goals are achieved only so far as grant funding allows. This projectized approach does not allow for long-term monitoring, livelihood development, or financial sustainability of small business startups leaving target community members reverting to the original extract uses if financial sustainability cannot be achieved. Revisiting the challenges encountered by previously implemented and existing projects that focus on livelihood diversification may help to inform future livelihood diversification efforts. For example:

The Marine Conservation and Climate Adaptation Project
MCCAP was designed to implement a priority ecosystem-based marine conservation and climate adaptation measures to strengthen the climate resilience of the Belize Barrier Reef System and its productive marine resources. Specifically, the project supports: Improvement of the reef's protection regime including an expansion and enforcement of the Marine Protected Areas (MPAs) and Replenishment (no-take) Zones in strategically selected locations to strengthen climate resilience; Promotion of sustainable alternative livelihoods for affected users of the reef and building local capacity and raising awareness regarding the overall health of the reef ecosystem and the climate resilience of coral reefs.

AND

The Integrated Ridge to Reef Management of the Mesoamerican Reef Ecoregion (MAR2R)
to contribute to the conservation and sustainable use of shared freshwater, coastal and marine resources of the transboundary MAR ecoregion by implementing the ridge to reef approach and hence securing sustainable economic benefits and livelihoods for the countries and their communities.

IN DRAFT Community Resilience Challenge: ***Advancing Livelihood Diversification***

Current forces combatting the challenge	**Current forces exacerbating the challenge**
• Organized local fishing groups and associations • Community Innovation and Resilience Program (MBECA) • Small-scale mariculture programs • Existing marine stewardship programs • Existing and previous projects for livelihood diversification programs (MCCAP & MAR2R)	• COVID-19 • Resistance to move from fishing and other extractive processes • Need for community capacity building • Poor economic climate • Limited financial resources

Vulnerabilities across Ecosystem, Community, and Governance Dimensions			
Key drivers of the resilience challenge	Ecosystem	Community	Governance
• Increasing overreliance and effort on extractive activities to achieve steady profit margins.	• Risk of overexploitation of mature fisheries • Risk of other extractive marine use • Loss of biodiversity	• Diversification is seen as supplemental • Livelihood programs are financially unsustainable	• Projectized approach to tackle issue • Limited finance options to support initiatives

IN DRAFT Governance Resilience Challenge: *Balance of Protected Areas and Marine Commercial Use*

As of 2018, approximately 47% of the total land and sea area of Belize had some level of protection, although the effectiveness of individual protected areas (PAs) can vary widely in both level of protection and management across Government, Co-management, Privately Protected Areas, and Indigenous and Community Conserved Areas.

The Expansion of Fisheries Replenishment (No-Take) Zones approved in 2019 increased the total area of Belize's waters under no-take status to 11.6%. In addition, Belize has committed to designate 30% of its ocean area as biodiversity protection zones through agreements such as the Blue Bonds for Ocean Conservation announced in 2021.

While this expansion will protect habitats, biodiversity, and marine resources, it raises concerns about local community access, equity, and impact to livelihoods. Of particular concern is access to fishing for traditional fishers. The Managed Access program has allowed for some access to these groups through a licensing programs. However, a strong legal and scientific basis will be needed to balance resource protection and extraction.

Of additional concern is illegal resource extraction, including transboundary fishing. Any policies to address balancing Protected Areas and commercial use must include a focus on enforcement.

IN DRAFT Governance Resilience Challenge: *Balance of Protected Areas and Marine Commercial Use*

Current forces combatting the challenge	Current forces exacerbating the challenge
• National Protected Areas System Act 2015 • Multiple PA specific action plans to improve use PA access and community engagement in decision making, while increasing environmental protect/ enforcement • Ongoing expansions to protect additional sensitive habitats and biodiversity both terrestrial and marine • Initiatives promoting diverse job opportunities not reliant upon extracting protected resources • Growing Managed Access system	• Illegal use of PAs and lack of enforcement • Lack of clear management structure and jurisdiction over individual Protected Areas • A need for capacity building and coordination between management agencies and between managers and local communities • Need for community education on PA use, regulations, and benefits • Limited financial resources • Resistance from fishers and fisher cooperatives

Vulnerabilities across Ecosystem, Community, and Governance Dimensions

Key drivers of the resilience challenge	Ecosystem	Community	Governance
• Increasing protected areas to effectively conserve resources conflicting with local community livelihoods and rights.	• Insufficient levels of protection risk overexploitation and loss of biodiversity • Unprotected areas may suffer from destructive resource harvesting degrading habitat	• Livelihoods of local communities depend on access to these resources • Community mistrust can limit participation and successful PAs	• Management structure and protections vary across PAs • Legislation and regulation can be slow to address new developments (e.g. catch limits) • Enforcement is lacking

Next Steps: Assessment Validation

Webinars & validation sessions (mid-late March)

Host 3 sessions pertaining to each area inviting key stakeholders and experts pertaining to the topic being discussed (targeting existing actors and working groups doing work on topics), Collect comments and insights in Mural Board

Key objectives:

- Validation of actions extracted from plans on desktop review
- Discuss lessons learned and current challenges in tackling the issue
- Identifying gaps and research streams to inform challenges and action development
- Generating initial action design

Timeline for strategy development

- Resilience Assessment goes before Project Directors (early March)
  - Comprehensive Assessment Presentation

- Webinars & validation sessions (late March)
  - Validation of actions from current plans
  - Lessons learned and current challenges in tackling issues
  - Identifying gaps and research streams to inform challenges and action development
  - Generating initial action design

- Action Development (April-May)
  - 2-day workshop session focused on building out actions for the focus areas
  - Scope and advance research and design support

- Strategy Development (May-July)

- Strategy Launch (July)

Lessons Learned

What worked

- Identifying ongoing initiatives for collaboration to prevent stakeholder fatigue
  - IKI, SMART Coasts, GCF readiness project, Community Innovation & Resilience Program (MBECA) etc
- Preventing duplication of effort
  - Availability of information
- Planning various options of engagement (Virtual vs In person)

What didn't

- Feedback via virtual community engagement
- Stakeholder engagement tool
- ***Parts*** of the Resilience Assessment tool
  - Status of each attribute
- Timeline for the SCTLD proposal development