



Management Directions: Land and Sea Management Strategy for Torres Strait

2016-2020

Acknowledgements

The *Land and Sea Management Strategy for Torres Strait 2016-2036* was developed with the input of Traditional Owners, TSRA Board members, staff of the Land and Sea Management Unit of the TSRA, government partners and external experts. The TSRA engaged Terry Harper from TerraFormDesign to act as advisor and lead author for the Strategy and to facilitate stakeholder engagement throughout the review process.

This is a summary of the full Strategy that can be accessed online at www.tsra.gov.au or <http://ts.eatlas.org.au/ts> along with supporting documents.



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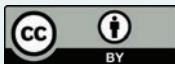
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**Management Directions:
Land and Sea Management
Strategy for Torres Strait
2016-2020**



Foreword

For millennia – since *bepor taim* – Indigenous peoples of the Torres Strait have practiced traditional land and sea management in accordance with *Ailan Kastom*, Aboriginal Lore/Law and native title rights and interests. Because of this continuing stewardship the Torres Strait remains one of the richest and most intact ecological and cultural regions on earth.

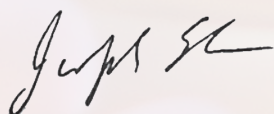
Our region still faces many challenges and the *Land and Sea Management Strategy for Torres Strait 2016-2036* has been prepared so that Torres Strait Islander and Aboriginal peoples can continue to sustainably manage and benefit from their land, sea and cultural resources into the future.

Building on the original *Land and Sea Management Strategy for Torres Strait*, developed in 2005, the revised Strategy uses western science, management experience and advice from Traditional Owners to describe the region's natural and cultural values and priorities for future action. It also seeks to recognise and affirm Torres Strait Islander and Aboriginal peoples' holistic relationship with their islands and sea country and to empower Traditional Owners to play a lead role in the future sustainable management of the unique environmental and cultural values of our region, in collaboration with other partners. The revised Strategy also seeks to secure ongoing investment for the highly successful Ranger Program and other Indigenous community-based management initiatives.

The Strategy has pioneered a participatory planning process, whereby Traditional Owners and their representative organisations have jointly determined the values, vision and desired outcomes for the region's islands and seas into the future, as reflected in the Strategy. Through ongoing dialogue and meaningful engagement, we hope to jointly agree on the best pathways and mechanisms to achieve our shared vision for our region and our people, in light of emerging opportunities and challenges. The Strategy provides a guiding compass and a navigation chart as we embark on this important journey together with partner organisations and all levels of government.

On behalf of the Torres Strait Regional Authority, member organisations of Gur A Baradharaw Kod Torres Strait Sea and Land Council, and all the region's Traditional Owners, we acknowledge the significant effort and collective wisdom that has helped develop the Strategy and these Management Directions. We look forward to working together under this guiding framework to achieve our vision for land and sea management in the region.

**Joseph Elu, Chairperson,
Torres Strait Regional Authority**



**Ned David, Chairperson,
Gur A Baradharaw Kod
Torres Strait Sea and Land Council**



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Photo: Tristan Simpson

Executive Summary

The Torres Strait holds a unique place in the natural, cultural and social fabric of Australia. The region's spectacular diversity of natural and cultural values, enduring *Ailan Kastom* and complex jurisdictional and administrative arrangements provides equal measure of opportunity and challenge for the ongoing conservation, management and sustainable use of the region's natural resources.

The *Land and Sea Management Strategy for Torres Strait 2016-2036* aims to achieve the following vision:

Empowering Torres Strait Islander and Aboriginal peoples to sustainably manage and benefit from their land, sea and cultural resources into the future, in accordance with *Ailan Kastom*, Aboriginal Lore/Law and native title rights and interests.

Land and sea management has been central to Torres Strait culture for thousands of years and will continue to be an important part of the future for Indigenous peoples of the region. The new Strategy builds on the many achievements of the original 2005 Strategy and provides the framework for community-based management of the region's natural and cultural resources over the next 20 years. This document focuses on the management directions, or strategies to achieve the desired condition for each of the key values.

Sixteen key values that make Torres Strait unique have been identified under the themes of People, Sea and Land. For each of these key values, the Strategy identifies the desired outcomes, current situation and strategic management directions.

Whilst the region's environment is still largely in healthy condition (11 of the 16 key values are considered to be in good or very good condition), a high level of management and protection is required to maintain and enhance the resilience of these key values in the face of significant challenges driven largely by climate change, economic and social development and population changes across the wider region (including with neighbouring Papua New Guinea (PNG)).

Best available traditional and scientific knowledge, professional insight and stakeholder perspectives have been used to prepare brief land and sea profiles for each of the 17 inhabited islands and the first ever regional state of environment report card for Torres Strait. The report card provides a succinct yet transparent account of the significance, condition and trend of key regional values and with refinement will provide an improving picture of trends over time to guide ongoing management.

The region's jurisdictional and governance arrangements are complex but well developed. They provide a strong foundation for collaborative partnerships between native title holders and representative bodies, community members, all levels of government, research institutions, industry and other existing and potential partners.

Existing implementation mechanisms operating at the regional and community level (such as Working on Country Ranger Plans) will be further strengthened to help deliver the Strategy, particularly through community-based mechanisms. An investment prospectus will be prepared identifying opportunities for existing and potential partners to contribute time, resources and effort towards implementation of the Strategy according to their capacity and priorities.

The Strategy is built on the principles of adaptive management or learning from experience – think, plan, do, learn, improve – and systems have been developed to encourage delivery partners to learn from experience, continually improve land and sea management approaches, and measure and report on management effectiveness.

Our Vision for Torres Strait Land and Sea Management

Empowering Torres Strait Islander and Aboriginal peoples to sustainably manage and benefit from their land, sea and cultural resources into the future, in accordance with *Ailan Kastom*, Aboriginal Lore/Law and native title rights and interests.



Guiding Principles for Land and Sea Management

To help achieve the vision, land and sea management in the Torres Strait must:

Be culturally appropriate

Reinforcing native title rights and interests, respecting *Ailan Kastom* and Aboriginal Lore/Law, incorporating Traditional Ecological Knowledge, and aligning with Traditional Owner interests

Empower Traditional Owners

Supporting self-determination at the local and regional scale

Deliver enduring outcomes

Providing environmentally, economically and socially sustainable solutions

Adopt integrated decision-making

Using evidence-based approaches that take a long-term holistic perspective and consider all relevant factors

Demonstrate strong adaptive management

Applying flexible approaches that incorporate learning from experience

Focus on protecting and managing key values

Keeping the unique features of Torres Strait secure for the benefit of future generations

Torres Strait at a glance

- 48,000 km² (3% land, 6% tidally-inundated reef flats, 91% open seas)
- Stretches 150 km from Cape York Peninsula to Papua New Guinea (PNG)
- 300 islands (17 inhabited)
- Resident population of 8,700 (42,000 Torres Strait Islanders reside outside the region)
- 1,200 coral reefs
- More than 20 Registered Native Title Bodies Corporate (2015)
- Continuing *Ailan Kastom* and Aboriginal Lore/Law
- Marine biodiversity hot spot
- Australia's most northern community
- Dugong capital of the world

How to use the Strategy

The Strategy will help Torres Strait land and sea management partners to:

- Describe the desired outcomes and set strategic directions
- Align efforts and resources to achieve agreed priorities
- Build understanding and support among key stakeholders
- Measure performance against desired outcomes
- Adapt management strategies based on the lessons learnt

Take home messages

a) A strong history of land and sea management

Land and sea management has been central to Torres Strait culture and way of life for thousands of years and will continue to be an important part of the future for Indigenous peoples of the region.

b) Building on achievements to date

The new Land and Sea Management Strategy for Torres Strait builds on the many achievements of the original 2005 Strategy and provides the framework for community-based management of the region's key natural and cultural resources over the next 20 years.

c) Empowering Torres Strait people

The new Strategy links to and supports other regional strategies and plans to support the TSRA vision for the Torres Strait of '*Empowering our people, in our decision, in our culture, for our future*'.



Figure 1: *Ailan Kastom*, Aboriginal Lore/Law, culture, traditional ecological knowledge and native title rights and interests galvanise all aspects of the key People, Sea and Land values of the Torres Strait

State of the Torres Strait Environment

Key People, Sea and Land values of the Torres Strait

The key natural assets and values of the Torres Strait are totally interconnected and galvanised by the continued practice of *Ailan Kastom*, Aboriginal Lore/Law, culture, traditional ecological knowledge, and native title rights and interests. For practical purposes key values are covered in the Strategy under the overlapping themes of People, Sea and Land (**Figure 1** and **Table 1**).

Attempting to manage the full diversity of natural assets and values in the Torres Strait can be overwhelming so while the Strategy aims to maintain healthy natural systems across the whole region, priority will be given to managing the most important or 'key' natural assets and values. These 16 key values help define the essential quality and character of the Torres Strait and the irreplaceable way of life enjoyed by Indigenous inhabitants. The Strategy aims for these key natural and cultural values of the Torres Strait to survive and thrive for the benefit of all people, for all time.

Because resources are limited, key values will be used as the focus of planning and management effort and long-term performance reporting.

State of the environment – checking for change in the health of land and sea country

The best available traditional and scientific knowledge, professional insight and stakeholder perspectives gathered during the Strategy review process have been used to develop the first state of environment regional report card for Torres Strait. For each of the 16 identified key values, scores have been allocated against five primary measures:

- Condition – Very Good, Good, Some Concern, Significant Concern, Lost
- Significance – International, National, State, Regional, Local
- Threat – Very High, High, Medium, Low, Very Low
- Trend – Improving, Stable, Declining, Uncertain
- Confidence – High, Medium, Low

Consistent with leading international practice, each of these key value attributes is allocated a 'score of best fit' based on a qualitative assessment and professional judgement using available evidence. The confidence level acknowledges the varying quality of information available for the assessment, which is likely to improve over time. Further details on the specific condition class descriptions for each of key values are available at <http://ts.eatlas.org.au/ts>. A summary of the initial 2016 regional state of environment report card is shown in **Table 2**.


Key Value	Theme	Brief description/overview of the key value
 <i>Ailan Kastom</i> , Aboriginal Lore/Law, cultural heritage and enduring connection to land and sea	People	The cultural identity of Torres Strait's traditional inhabitants is expressed and maintained through <i>Ailan Kastom</i> (Island Custom) and Aboriginal Lore/Law. Maintaining and strengthening <i>Ailan Kastom</i> and Aboriginal Lore/Law is a central part of daily life and underpins the community's capacity to sustainably manage land and sea resources into the future.
 Traditional Ecological Knowledge (TEK)	People	Land and sea management in the Torres Strait has been a natural way of life for thousands of years and has been carried out in line with cultural protocols and the benefit of acquired knowledge and experience which has and continues to be passed down through generations.
 Scientific research and monitoring	People	The results of western scientific research and monitoring activity is a valuable addition to Traditional Ecological Knowledge when making decisions and undertaking land and sea management activities. The quality and quantity of scientific knowledge about the region has grown significantly over recent decades.
 Strong regional and community-based management capacity	People	The region has a proud record of developing and implementing community-based planning and management approaches, acknowledging the critical role of communities in acting as local custodians of their environmental assets, integrating western and customary knowledge in management arrangements, as well as empowering communities in decision-making and priority setting.
 Healthy sea ecosystems	Sea	The unique diversity of all marine plants, animals, habitats and natural processes that keep marine ecosystems in the region healthy.
 Marine water quality	Sea	High quality marine water and oceanic processes supporting healthy marine ecosystems and sustainable Torres Strait communities and traditional practices.
 Coral reefs	Sea	A coral reef biodiversity hotspot with over 1,200 coral reefs comprising the northern extent of the World Heritage Listed Great Barrier Reef.
 Seagrass meadows	Sea	Extensive and important seagrass habitat – among the largest continuous meadows globally – fundamental to the health of all Torres Strait ecological and cultural communities.
 Dugong	Sea	With an estimated population of about 12,000, the Torres Strait is the dugong capital of the world. Dugongs are of immense practical, economic, cultural and spiritual significance to Indigenous peoples of the region.
 Marine turtles	Sea	Second perhaps only to dugong, marine turtles are an important part of the natural and cultural landscape of the Torres Strait with six of the world's seven species of marine turtle found in the region.
 Subsistence fishing	Sea	Traditional subsistence hunting, fishing and collecting for cultural, community and personal purposes is central to the Torres Strait way of life and managed under regional and community based arrangements.
 Healthy land ecosystems	Land	The unique diversity of all land plants, animals, habitats and natural processes that keep land ecosystems in the region healthy.
 Sustainable human settlements	Land	The 17 inhabited islands and the 18 Indigenous communities that support continuing connection to traditional homelands in the face of climate change risks.
 Coasts and beaches	Land	Including 650 km of vital and mostly pristine coastline that is central to all life in the Torres Strait.
 Mangroves and wetlands	Land	The large and internationally significant mangrove forests and associated tidal and freshwater wetlands.
 Coastal birds	Land	More than 240 coastal bird species rely on the Torres Strait for all or part of their life cycle (including many internationally significant species).

Table 1: Summary of the key People, Sea and Land values of the Torres Strait














Theme	Key Value	Existing Condition	Desired Condition	Significance	Threat level	Trend	Confidence
People	 <i>Ailan Kastom</i> , Aboriginal Lore/Law, cultural heritage and enduring connection to land and sea	Good	Very Good	International	Medium	Uncertain	Medium
People	 Traditional Ecological Knowledge (TEK)	Some Concern	Very Good	International	High	Improving	Medium
People	 Scientific research and monitoring	Some Concern	Very Good	International	Medium	Improving	Medium
People	 Strong regional and community-based management capacity	Good	Very Good	National	Medium	Improving	Medium
Sea	 Healthy sea ecosystems	Good	Very Good	International	High	Stable	Medium
Sea	 Marine water quality	Good	Very Good	International	High	Declining	Medium
Sea	 Coral reefs	Good	Very Good	International	High	Declining	Medium
Sea	 Seagrass meadows	Very Good	Very Good	International	Medium	Uncertain	Medium
Sea	 Dugong	Good	Very Good	International	Medium	Stable	High
Sea	 Marine turtles	Some Concern	Very Good	International	Very high	Declining	High
Sea	 Subsistence fishing	Good	Very Good	International	Medium	Uncertain	Medium
Land	 Healthy land ecosystems	Good	Very Good	National	Medium	Uncertain	Medium
Land	 Sustainable human settlements	Some Concern	Very Good	National	High	Declining	Medium
Land	 Coasts and beaches	Some Concern	Very Good	National	High	Declining	Medium
Land	 Mangroves, tidal and freshwater wetlands	Good	Very Good	International	High	Declining	Medium
Land	 Coastal birds	Good	Very Good	International	Medium	Uncertain	Low

Table 2: Summary of 2016 regional state of environment report card for Torres Strait

Take home messages

a) A unique Indigenous marine landscape at the juncture of Australia and PNG

The Torres Strait region is unique in Australia in that it is primarily marine, its population is predominantly Indigenous, and it is the only NRM region to have an international border (with PNG and Indonesia).

b) Enduring *Ailan Kastom* (Island custom), Aboriginal Lore/Law and connection to country

The Indigenous communities that inhabit the region have strong cultural, economic, social and spiritual connections with their land and sea country, and maintain their distinct *Ailan Kastom* (Island custom) and Aboriginal Lore/Law. Native title has been determined over most of the region.

c) Complex but strong governance arrangements in place

The region's jurisdictional and governance arrangements are complex but well developed. They provide a strong foundation for collaborative partnerships between government, community, not-for profit and commercial sectors to deliver enhanced land and sea management in the region.

d) A focus on 16 key values

Sixteen key values that make Torres Strait unique have been identified under the themes of People, Sea and Land and are used consistently throughout the Strategy.

e) State of environment regional report card

Best available traditional and scientific knowledge, professional insight and stakeholder perspectives have been used to prepare the first state of environment regional report card for Torres Strait. Whilst the region's environment is still largely in healthy condition (11 of the 16 key values are considered to be in good or very good condition), a high level of management and protection is required to maintain and enhance the resilience of these key values in the face of significant challenges driven largely by climate change, economic and social development and population changes across the wider region (including with neighbouring PNG).

Managing Key Values

For each of the 16 identified key values, management directions (strategies to achieve the desired condition for those values) have been developed based on best available information.

People

The People theme recognises that the Indigenous peoples of the Torres Strait are intimately connected to their traditional land and sea country and are therefore fundamentally important to the continuing management of land and sea resources.



Ailan Kastom, Aboriginal Lore/Law, cultural heritage and enduring connection to land and sea

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Good	Very Good	International	Medium	Uncertain	Medium

Desired outcome

By or before 2035, to have *Ailan Kastom, Aboriginal Lore/Law, cultural heritage and enduring connection to land and sea* in Very Good condition, with all land and sea management in the region totally aligned with and strengthening all aspects of *Ailan Kastom* and Aboriginal Lore/Law.

Management directions

- a) Ensure cultural values and protocols are integrated into service planning and management practices to strengthen, support and respect *Ailan Kastom* (including Ailan People, Places, Practices, Protocols, Partnerships and Promotions) and Aboriginal Lore/Law.
- b) Collaborate with communities to ensure cultural heritage records, including sites, artefacts, stories and histories, are owned and securely accessible by Torres Strait Islanders and Aboriginal Peoples.
- c) Support the development of community-based management plans for the protection and management of significant cultural sites, especially those related to land and sea management, taking into account island biodiversity and biosecurity profiles.
- d) Because of the evolving nature and inherent diversity of *Ailan Kastom* across Torres Strait communities, consider how best to support Torres Strait Islanders to define what *Ailan Kastom* means in context and how it is best expressed in terms of the cultural protocols that are taught, practiced and enforced for each community in relation to land and sea management.
- e) In the spirit of partnership, continue to work with RNTBCs to ensure that local *Ailan Kastom* protocols are understood, respected and reinforced when implementing actions arising from the Land and Sea Management Strategy. This will require continuing respect and good communication from all parties.
- f) Explore the potential need for cultural heritage positions to support community-based cultural heritage management efforts.



“Our unique **Ailan Kastom**, cultural heritage and traditional ecological knowledge galvanises and permeates through all aspects of land and sea management. **Ailan Kastom** recognises that our **systems** of land and sea management **existed** because we existed, since time immemorial.”

(Sereako Stephen, Traditional Owner, Ugar)

“Aboriginal Lore/Law is about the body of **rules**, customs and traditional knowledge that guides our relationships with our people, our land and sea country. Aboriginal Lore protects and **strengthens** Aboriginal peoples’ tribal law.”

(Milton Savage, Kaurareg Traditional Owner)

“We have inherited **traditions** of looking after our land and sea from our ancestors and we must **teach** our children to do the same. We must do more than talk about it; we must practice it.”

(Aven Noah, TSRA Deputy Chairperson)





Traditional Ecological Knowledge

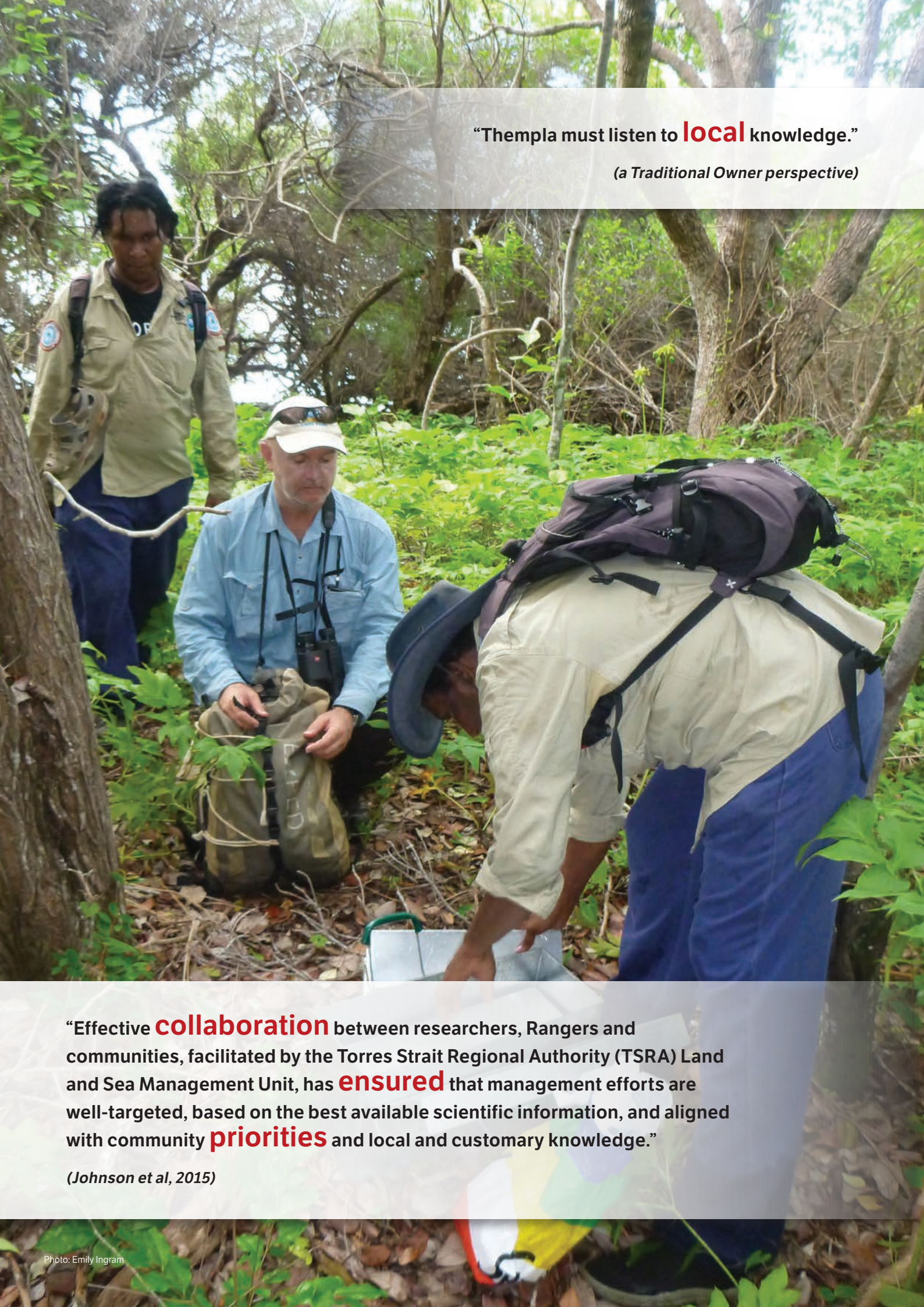
Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Some Concern	Very Good	International	High	Improving	Medium

Desired outcome

By or before 2035, to have Traditional Ecological Knowledge (TEK) in the region in Very Good condition, with evolving TEK actively documented, passed on and applied in land and sea management and supported by effective TEK systems and related protocols being used across all communities.

Management directions

- a) Develop procedures to ensure TEK is fully integrated in all LSMU projects and initiatives.
- b) Encourage the recording of TEK in language and explore options for language conservation programs.
- c) Develop knowledge sharing platforms between Elders, Rangers and youth through the development of 'caring for country' camps or similar with primary school children across the region (especially on the outer Islands).
- d) Develop seasonal calendars for each island that set the TEK links between seasonal indicators of weather, stars, plants and animals and how these can be used to guide land and sea management decisions.
- e) Continue to explore methodologies for TEK and western science to be mutually supportive in land and sea management.
- f) Continue to strengthen community education, awareness and engagement programs to ensure that TEK continues to complement and enhance regional environmental initiatives.
- g) Extend and promote use of TEK systems to collect, collate and use traditional ecological knowledge across the region and support local Rangers in providing training to community members.
- h) Explore additional mechanisms to support Traditional Owners to document and transfer TEK to current and future generations while ensuring appropriate protection of traditional knowledge, intellectual property and copyright.
- i) Identify, repatriate and consolidate materials that have been captured in the past by anthropologists and other researchers and that are held in university, museum and other collections worldwide.
- j) Tighten the linkages between TEK documentation and land and sea management by:
 - Clearly defining how TEK will be used in actions to mitigate threats to all key values of the Torres Strait;
 - Refining TEK systems to ensure the required information (such as management implications for a particular species) is captured; and
 - Developing procedures that state how TEK should be considered in decision-making processes.
- k) Work to better connect Traditional Owners and Rangers to collect, share and use TEK, including for example, through joint patrols and guided access to significant sites.
- l) Continue working with RNTBCs, Rangers and Elders to build capacity (including potentially a recognised TEK officer for each community) and develop clear TEK protocols for each community.



“Thempla must listen to **local** knowledge.”

(a Traditional Owner perspective)

“Effective **collaboration** between researchers, Rangers and communities, facilitated by the Torres Strait Regional Authority (TSRA) Land and Sea Management Unit, has **ensured** that management efforts are well-targeted, based on the best available scientific information, and aligned with community **priorities** and local and customary knowledge.”

(Johnson et al, 2015)



Scientific research and monitoring

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Some Concern	Very Good	International	Medium	Improving	Medium

Desired outcome

By or before 2035, to have regional science and research in Very Good condition, including comprehensive future research requirements collaboratively identified and prioritised, with adequate funding to undertake most priority research activities. To have research activities always undertaken in a culturally appropriate manner with results delivered back to the community and fully incorporated into land and sea management.

Management directions

- a) Continue to explore opportunities for the complementary integration of western science and TEK in land and sea management activities.
- b) Work with communities and research partners to establish a 10-year rolling forward program or research prospectus to set future priorities and secure additional funding.
- c) Develop a Torres Strait Regional Research Protocol to clearly outline Traditional Owner requirements and expectations for project approval, access to country, communication processes, and broader roles, responsibilities and resourcing arrangements. This Protocol will align with the principles of the United Nations Declaration and guide to the Rights of Indigenous Peoples (UNDRIP) and may include community-specific requirements on how they want research to occur (in the form of a checklist or detailed guidelines). The need for a Liaison Officer or similar to act as a regional conduit between researchers and local communities will be considered.
- d) Explore the option of TSRA acting as a central point of contact and co-ordinator for regional research proposals prior to researchers contacting individual RNTBCs. This will allow for region-wide governance arrangements to prevent duplication, build on previous research work and facilitate timely community feedback on research outcomes.
- e) Establish a regular process (potentially annual regional workshop/forum or similar) to:
 - Identify emerging community priorities for scientific research and monitoring;
 - Provide community feedback on research projects undertaken during the year;
 - Discuss actions taken on the basis of research results to date; and
 - Seek necessary community approvals and identify forward research priorities and collaboration opportunities, including opportunities for greater engagement by local Rangers, Traditional Owners and community members.
- f) Continue to collaborate with the research community to ensure that:
 - Ongoing monitoring requirements are critically reviewed to ensure essential priorities are identified and appropriately resourced;
 - Rangers are actively participating in research programs and are effectively supported to be the eyes and ears of the region and checking for change as part of normal operational activities;
 - Resulting management efforts are well-targeted, based on the best available scientific information;
 - Intellectual property rights are appropriately addressed from the early stages of project development;
 - Research findings are made available to local communities in a timely and accessible format;
 - Traditional Owners are appropriately recognised and involved in research publication processes where possible, including as co-authors and project collaborators, and are acknowledged upfront; and
 - Research efforts are aligned with community priorities and local and customary knowledge.
- g) Continue to develop monitoring capabilities and associated information management systems to effectively track and report change in critical aspects of the region's ecology and biophysical characteristics.



Strong regional and community-based management capacity

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Good	Very Good	National	Medium	Improving	Medium

Desired outcome

By or before 2035, to have regional and community based management capacity in Very Good condition, with a regional governance framework that is fully effective and supporting very strong community-based capacity for sustainable land and sea management with secure adequate financial and staffing resources to deliver agreed priorities.

Management directions

- a) Continue to support and encourage capacity-building and community-based programs, such as Ranger programs, to facilitate traditional and local management skills and approaches to land management, marine and coastal conservation, surveillance and monitoring.
- b) Continue to support established Treaty mechanisms and work with regional neighbours to deliver agreed environmental priorities in the region.
- c) Secure sustainable funding to maintain and enhance community based Ranger programs across all regional communities, including the NPA and Inner Island communities, in collaboration with and support of communities and RNTBCs.
- d) Continue to explore avenues for the delegation of compliance powers to Torres Strait Rangers including the most appropriate long-term legal models and frameworks to best support Rangers and RNTBCs reinforce customary laws and protocols.
- e) Continue to deliver professional development and training programs to ensure Rangers are highly skilled and trained in all relevant areas including operationally focused skills (such as operating vessels and vehicles, using tools and equipment, health and safety, communications, oil spill response) and broader land and sea management professional qualifications (such as a Certificate III in Conservation and Land Management).
- f) Continue to support and develop the capacity of women and youth in land and sea management across the region including further developing the junior Ranger program to build long-term community-based capacity and build relationships with schools (including Tagai College).
- g) Support the implementation of relevant recommendations from the TSRA's PBC Capacity Building Project and explore further institutional options (including payment of fees for services) for the longer-term empowerment of RNTBCs to manage native title areas.
- h) Continue to empower communities (in particular, Traditional Owners) to manage their local natural and cultural resources sustainably, in line with endorsed community-based management plans, TEK and local expertise.
- i) Finalise and progressively implement a regional Climate Change Adaptation and Resilience Plan and support all Torres Strait communities to develop local adaptation and resilience strategies to reduce impacts on the environment, culture and community wellbeing.
- j) Explore opportunities to support communities that don't yet have community-based management plans to develop these to guide land and sea management.
- k) To obtain more sustainable and secure funding and management arrangements, the following scenarios will be explored:
 - Working with funding agencies and other partners to incorporate desirable elements of the 'culture-based economy' and the 'hybrid Indigenous economy' concepts into any future investment arrangements;
 - Reviewing the potential future role of work for welfare oriented programs (e.g. My Pathway and potential future initiatives) as a funding stream for land and sea management;
 - Explore the potential benefits of establishing a marine protected area regime in the Torres Strait and seeking



“Today is our **opportunity** to make decisions that redress the mistakes of the past, allowing us to move **forward**.”

(Milton Savage, Kaurareg Traditional Owner)

“Native title recognises our **culture** and our cultural connection to the land and sea. It is the foundation for **everything** we do.”

(Garagu Kanai, Traditional Owner, Moa)

Kaurareg Wabunaw Geth singers
Photo: George Serras, National Museum of Australia

international recognition of the region as the northern extension of the Great Barrier Reef World Heritage Area. Under this scenario, the internationally significant values of the area would be recognised, enduring government funding could be secured, an enforceable management regime established (providing broader protection and compliance benefits), and the insurance value of the relatively pristine marine systems of the Torres Strait recognised in offset funding arrangements applying in the Great Barrier Reef;

- Continue exploring opportunities for a broader joint natural resource management regime in the Torres Strait, which would formally partner Traditional Owners and community members with regulatory agencies in broader natural resource management (marine and terrestrial);
- Increase internal collaboration between TSRA program areas, including Fisheries and Economic Development, Culture, Art and Heritage, to ensure an integrated approach to the delivery of the Environmental Management Program; and
- Investigate options for payment for ecosystem goods and services, and for land and sea management services rendered by RNTBCs, as part of a longer-term transitional process to support the devolution of these responsibilities to native title holders.

Sea

The Sea theme recognises the Torres Strait is primarily a seascape with marine environments of local, regional, national and international significance. About 6% of the region is tidally-inundated reef flats and 91% open seas, much of which is subject to recognised native title rights and interests.



Healthy sea ecosystems

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Good	Very Good	International	High	Stable	Medium

Desired outcome

By or before 2035, to have more than 80% of the region's marine ecosystems in Very Good condition, supporting healthy naturally occurring habitats and species, especially those deemed irreplaceable and vulnerable to human activities.

Management directions

- a) Continue to work through established Treaty governance mechanisms to build resilience and minimise cumulative pressures on marine habitats in the Torres Strait, with a particular focus on preventing impacts on identified highly 'irreplaceable' sites and marine habitat types, including those in the Protected Zone.
- b) Maintain the moratorium on mining of the Torres Strait seabed consistent with established Treaty arrangements.
- c) Continue to work with Australian State and Commonwealth agencies to sustainably manage fishing rights and effort in the region, including those emerging from the Native Title Sea Claim Part A determination (2013) and broader trend towards community-based management approaches.
- d) Work with the Australian, Queensland and local governments and others to minimise impacts from human settlements and associated coastal development, marine debris (from the land and sea) and vessel movements, especially in identified highly 'irreplaceable' sites and marine habitat types (including mangroves and home reefs near inhabited islands).
- e) Take a holistic perspective across the region and adjoining national and international areas, particularly in relation to risks associated with shipping, mining, resource over-exploitation, increasing tropical diseases and climate change.
- f) Work with the Australian, Queensland and local governments and other partners to prevent, monitor and manage the introduction of marine pest species and other biosecurity risks.
- g) Continue to monitor physical and chemical changes in the ocean to track climate change impacts and expand monitoring to include ocean pH.
- h) Build a better understanding of marine and coastal ecosystem processes and productivity with targeted research and monitoring. Incorporate new information into a consolidated spatial inventory and modelling of Torres Strait marine areas.
- i) To keep the community safe from crocodiles and ensure a healthy crocodile population, collaborate with Great Barrier Reef Marine Park Authority (GBRMPA) and Department of Environment and Heritage Protection (EHP) to develop an approach for crocodile management in the region. This may involve public education, crocodile behaviour monitoring, community based policies and procedures for the capture and relocation of problem crocodiles, and Ranger training in crocodile management.



“We are one society, sharing **resources** across the region. When you see the water **change**, you know the people responsible for that area change too.”

(Sereako Stephen, Traditional Owner, Ugar)

“The reef and the **colour** of the water will identify the **boundaries** of the Meriam nation.”

(Doug Passi, Traditional Owner, Mer)

- j) Support further research on the biology, diet, population, behaviour, cumulative impacts on, and management requirements of, iconic marine species within the Torres Strait and adopt holistic approaches to safeguard iconic species as integral components of healthy ecosystems.
- k) Explore the potential benefits of establishing a locally controlled Indigenous marine protected area regime in the Torres Strait to deliver community-driven priorities and secure enduring government funding for the recognition and protection of internationally significant marine values (including potentially World Heritage values).
- l) Develop a community-based eyes and ears program to collect early notification of changes in the condition of sea ecosystems in the Torres Strait.



Marine water quality

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Good	Very Good	International	High	Declining	Medium

Desired outcome

By or before 2035, to have marine water quality in more than 80% of the region in Very Good condition, supporting healthy marine ecosystems and sustainable Torres Strait communities and traditional practices.

Management directions

- a) Continue to work through established Treaty governance mechanisms to maintain water quality in the Torres Strait, with a particular focus on major inflows from large river systems in PNG.
- b) Continue to seek support and funding to conduct water quality monitoring across the region to confirm baselines and track changes in key parameters.
- c) Work with local governments and other regional service providers to minimise water quality impacts associated with local community life (e.g. sewerage treatment on islands, solid waste management, and small vessel related impacts).
- d) Maintain the Ranger marine debris program (beach clean up and monitoring) especially in relation to ghost nets to minimise the impact of marine debris on significant natural and cultural values.
- e) Raise community awareness about the appropriate management of waste, including from traditional fishing and other practices.
- f) Explore options to further reduce the risk of marine pollution events affecting the Torres Strait.
- g) Work with national and international partners to reduce the risks associated with large shipping activity in the region.
- h) Work with the Australian Maritime Safety Authority (AMSA), Maritime Safety Queensland (MSQ) and other relevant agencies and research organisations to review shipping risks and response arrangements in the Torres Strait associated with local and large shipping activity. This should include the matter of compulsory pilotage through the Torres Strait (including Prince of Wales Channel).
- i) Increase preparedness and response capacity in the region proportional to an assessment of the risks and consequences and align shipping response planning with local disaster management plans.
- j) Consider establishing an inter-agency working group (with RNTBC involvement) on water quality to share information, coordinate local sampling and align management initiatives. This may include tissue sampling from dugong and marine turtle for heavy metals and other potential human and environmental toxins.



Coral Reefs

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Good	Very Good	International	High	Declining	Medium

Desired outcome

By or before 2035, to have more than 80% of coral reefs across the region in Very Good condition and stable with high coral cover, presence of major taxonomic and functional groups, and minimal incidence of coral disease and COTS outbreaks.

Management directions

- a) Continue working with Traditional Owners, AIMS, GBRMPA, CSIRO and other partners to develop and deliver a long-term reef-monitoring program to look for changes in the condition and trend of coral reefs in the Torres Strait and to improve knowledge of Torres Strait coral reefs, their management requirements and value to the community.
- b) Continue to promote the importance of Torres Strait reefs as a critical component of the Great Barrier Reef ecosystem and the value of government and others investing in land and sea management in the Torres Strait as a critical measure to protect ALL of the Great Barrier Reef.
- c) Conduct a detailed biodiversity assessment of coral reefs in the Torres Strait involving Rangers and Traditional Owners, and synthesise with TEK and existing data on Torres Strait reefs. This will form the basis for planning the on-going monitoring program and should explore the status of coral reefs in the western and northern parts of the region.
- d) Use the insights from existing research and monitoring to begin considering the potential for future locally controlled Indigenous marine protected area planning and resource use options in the region to help build coral reef resilience and enduring productivity for community benefit.
- e) Maintain the thermal stress (coral bleaching) early warning system to give communities, industry and other government agencies the ability to predict, prepare for and respond to future coral bleaching events.
- f) Work with other marine research and management agencies to monitor the levels of COTS and where feasible, take actions to control or mitigate the impacts of outbreaks.
- g) Collaborate with the GBRMPA on the management of the northern extension of the Great Barrier Reef, including compatible approaches (such as the Reef Health and Impact Surveys [RHIS] methodology), especially on home reefs and representative areas across the region.
- h) Explore better linkages with the Great Barrier Reef Marine Park, Coral Sea Marine Reserve, West Cape York Marine reserve and the coral triangle and greater recognition of the international significance of coral reefs in the Torres Strait.
- i) Support Torres Strait communities and Traditional Owners to explore the potential for expanding community-based management and monitoring of home reefs and local fisheries resources, in line with fisheries management directions including those arising from the Sea Claim Part A determination.
- j) Explore the potential effect of toxins to coral reefs in the Torres Strait including those possibly discharged from large nearby river systems.
- k) Develop and implement education programs for marine users (including commercial fishers) to prevent damaging reefs.
- l) Investigate the potential for Rangers to have compliance powers to act when damage does occur to reefs.





Seagrass meadows

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Very Good	Very Good	International	Medium	Uncertain	Medium

Desired outcome

By or before 2035, to have more than 80% of naturally occurring seagrass meadows across the region in Very Good condition, taking into account natural variation in abundance, distribution and diversity.

Management directions

- Reduce human activity related pressures and impacts on seagrasses to maintain high resilience levels of local seagrass populations, especially those most favoured as food for dugong in the Torres Strait (e.g. *H. uninervis* and *H. ovalis*). In particular, management of threats from commercial shipping and boating are considered a high priority for some Traditional Owners.
- Continue to identify and monitor intertidal and sub-tidal seagrass in the region, using compatible methods across the region to provide a holistic perspective.
- Continue working with research partners to develop a more complete understanding of natural variability in the distribution, abundance and diversity of intertidal and sub tidal seagrasses in the Torres Strait, and the factors affecting seagrass health. The impacts of climate change (including changes in sea levels, temperature and chemistry) are considered a high priority.
- Support Rangers and RNTBCs to record local traditional ecological knowledge about seagrasses and their importance and how they are changing in response to human and environmental pressures. Integrate this TEK with the results of western scientific research and monitoring.
- Undertake further research (using western science and TEK) into the natural climate variability and future scenarios of climate change that may impact seagrass meadows, and therefore dugong and turtle feeding opportunities. Develop appropriate dugong and turtle management strategies that respond to changes in seagrass distribution and communities.



Dugong

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Good	Very Good	International	Medium	Stable	High

Desired outcome

By or before 2035, to have the regional dugong populations in Very Good condition, including a healthy population number (above 12,000 animals), composition and distribution consistent with the best understanding of historic natural levels.

Management directions

- Continue working with traditional hunters and research institutions to further improve dugong population monitoring techniques and to conduct regular population surveys in the region.
- Maintain marine water quality and seagrass meadows essential for long-term dugong population health.

- c) Continue to strengthen and seek permanent funding for community-based management plans for sustainable dugong and turtle hunting as a fundamental requirement for the protection of the species and maintenance of Torres Strait culture.
- d) Work through the Torres Strait Protected Zone Joint Authority (PZJA) to:
 - Improve collaboration between PNG, TS and NPA communities to assist in sustainable dugong and turtle management, education and awareness; and
 - Minimise the impacts of non-traditional and unsustainable take on the regional dugong population and other land and marine based threats (including ghost nets and marine pollution).
- e) Work with Traditional Owners, traditional inhabitants and relevant research organisations and management authorities to ensure the traditional use of dugong and turtle is regionally sustainable.
- f) Share the learning from the catch monitoring process with agencies responsible for managing the dugong and turtle harvest (e.g. AFMA).
- g) Continue negotiations with PNG through the PZJA about extending spatial closures or implementing other management mechanisms in the Torres Strait to support sustainable dugong and turtle conservation.



Marine turtles

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Some Concern	Very Good	International	Very High	Declining	High

Desired outcome

By or before 2035, to have the regional turtle populations in Very Good condition, including a healthy population number, diversity and distribution consistent with the best understanding of historic natural levels and, to have ideal nesting habitat available at historically used rookeries for all naturally occurring marine turtle species with nesting success and hatching success rates above 80%.

Management directions

- a) Continue to strengthen and seek permanent funding for community-based management plans for sustainable dugong and turtle management as a fundamental requirement for the protection of the species and maintenance of Torres Strait culture.
- b) Continue working with partner agencies and PNG Treaty villagers to cooperatively find solutions to address impacts on turtle species that are beyond the influence of local communities. This includes provision for local on-ground actions including research, removal of entangled marine species from nets, harvesting practices, nesting beach management and habitat monitoring.
- c) Continue to support community representatives to improve their capacity and knowledge by communicating with researchers in relevant dugong and turtle research within the region so that community members are invited to participate in all research activities including scientific methodologies, genetic sampling of dugongs and turtles, turtle tagging, turtle nesting and foraging surveys, dugong satellite tracking and dugong aerial surveys.
- d) Continue working with research partners to obtain reliable and robust information about turtle populations in the region, their spatial distribution and threats to populations. Future research directions should include:
 - Structured in-water foraging ground surveys for all species;
 - Increased knowledge of marine turtle demographics including recruitment to foraging grounds and nesting beaches, nest site selection, and hatchling production across all nesting beaches;

- Actions to improve the viability of Raine Island and Bramble Cay as a green turtle rookery (including sediment budgets and efficacy of adaptive management trials such as other actions to improve sand moisture and nesting success);
 - Improved baseline information on the Torres Strait hawksbill and flatback turtles including more consistent annual nesting surveys and genetic analysis; and
 - Enhanced understanding of genetic stock distribution, including comparison of project outcomes from other rookeries and/or foraging grounds, e.g. Raine Island and Milman Island.
- e) Seek advice from Torres Strait communities on proposed legislative and voluntary options such as voluntary community-level seasonal and spatial hunting closures.
- f) To help ensure long-term viability of the region's turtle population, manage and monitor identified turtle nesting beaches to optimise nesting success and hatching success.
- g) Based on the results of improved research and monitoring, explore with Traditional Owners and experts the potential need for adaptive management actions including, for example, physically enhancing habitat value of established turtle rookeries or other measures.
- h) Consider culturally appropriate protocols within dugong and turtle management plans to minimise the impacts associated with traditional human consumption of turtle eggs.
- i) Consistent with island biosecurity profiles currently in development, manage domestic and feral animals on islands and communities with important turtle rookeries to minimise predation and optimise hatching success.
- j) Develop a regional turtle nesting habitat quality index to monitor the condition and trend of important turtle nesting beaches, especially in the context of climate change and required adaptation measures.



Subsistence fishing

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Good	Very Good	International	Medium	Stable	High

Desired outcome

By or before 2035, to have all subsistence fishing in Very Good condition, conducted in a culturally appropriate manner with harvest levels below sustainable yields to ensure continuing very healthy populations of target species and associated ecosystems.

Management directions

- a) Maintain and enhance the overarching regional framework for a community-based approach to the management of the dugong, turtle and other fisheries in conjunction with the Protected Zone Joint Authority (PZJA). Continue to work within that framework to ensure continuation of culture and sustainable take of dugong, turtle and other targeted species.
- b) Continue enhancing community-based management of traditional fishing and hunting to maintain Islander culture and identity and ensure that harvests are sustainable and other impacts on the species targeted, especially dugong and turtle are minimised.
- c) Continue working closely with PNG Treaty villages and NPA communities to sustainably manage regional dugong, turtle and other important traditional fishery stocks.
- d) Continue to work with Australian State and Commonwealth agencies to sustainably manage fishing rights and effort in the region, including those emerging from the Native Title Sea Claim Part A determination (2013) and further support the broader trend towards community-based management approaches.

“When the moon sits on the **eastern** side, we fish there, based on the **knowledge** of our forefathers.”

(Doug Passi, Traditional Owner, Mer)



- e) Manage non-hunting impacts (such as those caused by marine debris, illegal fishing, loss or disturbance of nesting sites and critical habitats) to ensure sustainable populations of rare and endangered species, especially dugong and turtle.
- f) Explore options for a culturally appropriate compliance regime for the traditional take of dugong, turtle and other traditional fisheries. This could include identifying primary target species for traditional subsistence fisheries and the cultural protocols associated with giving permission for Indigenous and non-Indigenous people to take marine resources across the Torres Strait. It may also lead to the introduction of a penalty and enforcement system for breaches of traditional lore and cultural protocols.
- g) Work with Kaurareg organisations to develop broader community-based land and sea management directions for the Kaiwalagal region (Inner Islands), including a framework for the sustainable management of dugongs, turtles and other marine resources (and potential role of Rangers).
- h) Support community leaders to help educate people about the right place for cutting and the right way to hunt in line with enduring *Ailan Kastom*.
- i) Continue to work with each community to ensure:
 - All households are aware of and understand the contents of the Dugong and Turtle Management Plan;
 - High level of community compliance with the Plans;
 - Community initiated hunting closures are in place;
 - Review of the value of closures through community meetings and questionnaires;
 - Community awareness of broader dugong and turtle population impacts including environmental and anthropogenic;
 - Collection of consistent catch data for analysis to enable the community to understand their level of take; and
 - Statistical information is provided to the community to enable the community to make decisions on implementation of possible community catch limits.
- j) Consider the potential expansion of existing community-based Dugong and Turtle Management Plans into broader Sea Management Plans that include management arrangements for all of the important traditional fisheries and use of marine resources generally.
- k) Work with Traditional Owners to monitor the take of important species (not just dugong and turtle) to inform community-based decision-making about appropriate management arrangements. Share the learning from the catch monitoring process with relevant fisheries management agencies (e.g. AFMA) and use results to support further enhancements to fishery management in the region.
- l) Continue to explore the options for community-based aquaculture, including for traditional subsistence purposes.
- m) Support community-based efforts to maintain and use culturally significant traditional stone fish traps.

Land

The Land theme recognises that the 300 islands in Torres Strait (representing 3% of the area) provide a valuable haven for people and land ecosystems in a predominately marine environment. There are important cultural dimensions to the landscape and its features with particular human uses and activities are affected by the geomorphology of particular islands, including their soil fertility and composition, availability of fresh water and ability to support different vegetation types.



Healthy land ecosystems

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Good	Very Good	National	Medium	Uncertain	Medium

Desired outcome

By or before 2035, to have more than 80% of naturally occurring land ecosystems in Very Good condition, supporting healthy naturally occurring habitats, communities and flora and fauna species, especially those deemed irreplaceable and vulnerable to human activities.

Management directions

- a) Develop standard regionally relevant indicators to assess and report on the health of naturally occurring land ecosystems on inhabited and uninhabited lands (adapted and informed by local knowledge and drawing from existing monitoring approaches).
- b) Continue to support community-based management of the existing Indigenous Protected Areas.
- c) Expand and continue supporting community-based efforts to:
 - Establish and maintain native plant nurseries to propagate native plants and undertake replanting and revegetation projects;
 - Undertake plant and animal surveys to identify populations of significant species, important habitats and monitor overall ecosystem health (especially targeting those islands where biodiversity assessments have not been carried out and where known threats are highest); and
 - Identify and monitor pest plants and animals and undertake priority control work in line with the Regional Biosecurity Strategy.
- d) Support the development and implementation of the Regional Biosecurity Strategy in partnership with relevant Councils and other organisations, including controls on the movement of goods from the mainland into Torres Strait.
- e) Continue to build inter-agency organisational and community awareness and support for ecological burning that aims to maintain fire as a vitally important element of the landscape.
- f) Explore the possibility of developing fire management plans for remaining island communities in consultation with RNTBCs.



Sustainable human settlements

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Some Concern	Very Good	National	High	Declining	Medium

Desired outcome

By or before 2035, to have human settlements in Very Good condition, with all inhabited Torres Strait islands providing opportunities for continuing sustainable human settlements that are potentially viable in perpetuity.

Management directions

- a) Continue supporting local efforts to establish and maintain community sustainable horticulture projects (food gardens) to improve soil quality, increase food security, community health and traditional practices.
- b) Explore the option of establishing commercially viable market gardens within the region to support economic development and improved food security outcomes.
- c) Collaborate with service providers to ensure infrastructure required for human settlements in the region is designed, sited and managed in a holistic manner to support long-term sustainability.
- d) Consider the requirement for a Regional Development Plan to guide sustainable planning, infrastructure and development decisions including enhanced meaningful local employment and independent functioning of communities.
- e) Establish an inter-agency working group to consider regionally relevant sustainable settlement principles and practices to build long-term resilience (for example housing siting, design and construction, sustainable township planning, energy, waste and water management).
- f) Promote the adoption, statutory recognition and regular review of the Sustainable Land Use Plans developed for each inhabited community.
- g) Support community adaptation to climate change impacts including those related to predicted sea-level rise.
- h) Support community based efforts to minimise 'spill over impacts' from settlements on surrounding ecosystems.
- i) Continue to invest in the employment of Rangers and in particular their monitoring, surveillance and management activities associated with introduced weeds, pests and vectors of infectious disease.
- j) Support the development and implementation of a Regional Energy Plan in collaboration with relevant government agencies and energy service providers.
- k) Further explore options to increase energy self-sufficiency and reduce regional greenhouse gas emissions through more renewable energy generation technologies, efficient transport arrangements and waste management systems.
- l) Seek to identify measures to ensure that inhabited islands provide opportunities for continuing sustainable human settlement that are potentially viable in perpetuity.



Coasts and beaches

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Some Concern	Very Good	National	High	Declining	Medium

Desired outcome

By or before 2035, to have more than 80% of coasts and beaches (shorelines) of the region in Very Good condition, essentially natural with any necessary coastal fortifications and infrastructure having minimal impacts.

Management directions

- a) Continue working in partnership with local communities, RNTBCs (for land and sea country) and service providers to develop and implement local coastal management plans to address erosion, encourage natural re-vegetation using native species, dune berm and foreshore management, appropriate vehicle access, recreational use and protection of coastal species and habitats.
- b) Work with communities to build awareness and understanding about climate change and to develop community adaptation and resilience planning. In particular, provide public information on specific island community vulnerability to sea-level rise (+1.0m), response options and the implications for community life.
- c) Work with service delivery partners and communities to improve planning and to ensure any necessary coastal fortifications to protect communities from inundation, erosion and storm surge have minimal impact on natural and cultural coastal values and coastal dynamics.
- d) Support local community-based monitoring of:
 - Erosion and other movement of sand in the coastal area;
 - Changes in coastal vegetation;
 - Impacts of seawalls and other infrastructure (e.g. barge landing infrastructure) on natural drainage and on streams and wetlands; and
 - Changes in sea level and storm surge.
- e) Continue Ranger beach patrols to minimise the impact of marine debris on important coastal habitats and culturally significant sites and explore opportunities for Ranger involvement in disaster management.



Mangroves, tidal and freshwater wetlands

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Good	Very Good	International	Medium	Uncertain	Low

Desired outcome

By or before 2035, to have more than 80% of naturally occurring mangrove shoreline, tidal wetlands and freshwater wetlands of the region in Very Good condition.

Management directions

- a) Continue to reduce human pressures on mangrove forests and tidal wetlands by:
 - Avoiding further direct and indirect disturbance from development;
 - Promoting sustainable wood harvesting and clearing;
 - Allowing and encouraging natural regeneration; and
 - Preventing potential land and sea-based pollution of tidal wetlands.



“Many islands are low lying and the **predictions** of sea-level rise and increased storm surge frequency mean that mangroves and coastal **wetlands** may be among the most threatened ecological communities in Torres Strait”

(Duke et al, 2015)



- b) Monitor any removal of mangroves to ensure mangrove forests are healthy and able to provide the best coastal protection and habitat.
- c) Develop island specific management arrangements for mangroves, tidal and freshwater wetlands management.
- d) Extend the mangrove assessment and island specific management objectives across all areas of the Torres Strait (including non-inhabited islands).
- e) Work with research partners and Traditional Owners to improve baseline information for freshwater wetlands in the region.
- f) To support potential future engagement in the carbon economy, work with research partners to better understand the carbon sequestration dynamics of mangrove forests and related peat deposits.
- g) Continue to work with local communities to find suitable actions to address threats to freshwater wetlands, including the control of pest plants and animals that may be valued for other conflicting reasons.



Coastal birds

Existing condition	Desired condition	Significance	Threat level	Trend	Confidence
Good	Very Good	International	Medium	Uncertain	Low

Desired outcome

By or before 2035, to have more than 80% of coastal bird populations inhabiting and using the Torres Strait in Very Good condition, with healthy populations according to presumed historical natural abundance and distribution patterns.

Existing situation

The current and historical natural abundance and distribution patterns of coastal birds in the Torres Strait are poorly documented and understood and there is no established baseline on which to compare future assessments. Professional judgement using best available knowledge suggests that the existing condition of coastal birds in the region is Good with an uncertain trend.

Management directions

- a) Work with Traditional Owners and research partners to better understand the history, diversity, distribution, significance and habitat requirements of coastal birds using the Torres Strait for part of their life cycle. Identify and map threatening processes and known impacts on coastal birds in the Torres Strait.
- b) Collaborate with the Great Barrier Reef Marine Park Authority (GBRMPA), Queensland Department of Environment and Heritage Protection (EHP) and the Queensland Parks and Wildlife Service (QPWS) to establish a pragmatic Torres Strait coastal bird monitoring program with data collection methods and reporting processes consistent with the Queensland Coastal Bird Monitoring and Information Strategy. This may involve selecting key coastal bird species that are representative of a particular feeding guild; are reliant on a limited geographical area; are an important component of an ecosystem; and/or they have been identified through legislation as being under threat.
- c) Explore the option of using coastal bird population monitoring and indicator species to help interpret coastal and marine ecosystem health, for example:
 - Populations and breeding success of various seabird species (boobies to small terns) may indicate health of trophic levels/prey species in a variety of feeding areas from areas of upwelling to reef flats.
 - Shorebirds (e.g. oystercatchers, sandpipers, curlews) may indicate health of intertidal ecosystems (sediment and water quality), which are often important migration stopovers for many species.

- d)** Support local community based monitoring of coastal birds. In particular, work with QPWS to replicate the methods used at Raine Island to monitor coastal bird dynamics at Maizab Kaur.
- e)** Continue to control feral animal impacts on coastal bird feeding and breeding in the Torres Strait.
- f)** Deliver training for Rangers in bird identification and survey methodology to identify and assess important nesting habitat (e.g. seabirds) and foraging and roosting habitat for migratory shorebirds.
- g)** Consider the potential expansion of existing Dugong and Turtle Management Plans into broader Sea Management Plans that include management arrangements for coastal birds and other marine resources.
- h)** Identify management requirements for coastal bird populations and their habitats including regeneration of habitats, removal of impacts (e.g. marine debris) and threatening processes (e.g. pest animals). Explore options for ensuring sustainable harvest of birds, chicks and eggs.
- i)** Work with regional educational institutions to raise awareness and understanding of coastal bird values and management requirements in the Torres Strait.



Take home messages

a) There are 16 key values that make Torres Strait unique

- For each of these identified key values, the Strategy identifies the desired outcomes, current situation and strategic management directions under the themes of People, Sea and Land.

b) People are central to managing land and sea resources in the Torres Strait

The Strategy highlights People management priorities that: strengthen the region's unique *Ailan Kastom*; document and embed Traditional Ecological Knowledge into management practices; help acquire the necessary science base; and build strong community-based management capacity at the regional and local island level.

c) The Torres Strait is a globally unique seascape

The Strategy concentrates Sea management priorities on: maintaining healthy sea ecosystems for the benefit of all species, preserving marine water quality, protecting the region's network of more than 1,200 coral reefs, securing the extensive inter-tidal and sub-tidal seagrass meadows, ensuring a viable future for the globally significant dugong and marine turtle populations, and managing subsistence fishing practices to be sustainable and culturally appropriate.

d) Land is scarce in the Torres Strait – covering just 2.6% of the region

The priorities for Land management are: maintaining healthy land ecosystems across the region's 300 islands and mainland areas; ensuring the 18 human settlements are sustainable in perpetuity; protecting the vital coasts and beaches; enhancing the condition of extensive mangrove forests and tidal and freshwater wetlands; and improving the management of the diversity of coastal birds that rely on the region for part of their life cycle.

Achieving Our Vision – Implementation Arrangements

Who can help? – potential implementation partners

Implementing the Strategy will require cooperation, commitment and resources from native title holders and representative bodies, community members, all levels of government, research institutions, industry and other existing and potential partners. This collaboration requires a holistic approach that develops enduring institutional and community capacity at both the regional and local level. While our vision will remain clear and certain, the pathway and contribution of potential partners may vary over time according to their capacity, needs and changing operating environment.

Our Vision

Empowering Torres Strait Islander and Aboriginal peoples to sustainably manage and benefit from their land, sea and cultural resources into the future, in accordance with *Ailan Kastom*, Aboriginal Lore/Law and native title rights and **interests**.



Figure 2: Potential implementation partners for land and sea management

How can we make it happen? – potential implementation pathways

The long-term priorities and desired outcomes identified in the Strategy will be implemented through a variety of mechanisms operating at the regional and community level including:

- Integrating with and influencing overarching regional planning strategies (e.g. future iterations of the Torres Strait and Northern Peninsula Area Regional Plan, Torres Strait Development Plan and similar documents);
- Incrementally influencing the diversity of program and service delivery by all levels of Government and other service providers;
- Cross-regional TSRA projects and programs (e.g. dugong and turtle, climate change adaptation and resilience); and
- Community-based initiatives (e.g. dugong and turtle management plans, Indigenous Protected Area (IPA) management plans and Working on Country (WOC) Ranger Plans and similar mechanisms) and complementary efforts to build local management capacity.

How do we continue to engage stakeholders?

Opportunities for ongoing engagement and community participation processes for land and sea management in the region includes:

- Revising the Strategy every 10 years;
- Developing, implementing and reviewing community-based plans and initiatives (e.g. dugong and turtle management plans, Indigenous Protected Area (IPA) management plans and Working on Country Ranger Plans and similar mechanisms);
- Developing and updating the state of environment regional report card and island land and sea profiles; and
- Updating resource information via the E-Atlas online portal.

Continuing stakeholder engagement will need to reflect the evolving combination of implementation partners and pathways outlined above and will need to include a balance of structured and ad-hoc opportunities. In particular, specific mechanisms will be developed to engage with:

- PNG Traditional Inhabitants via established Treaty consultation mechanisms;
- Registered Native Title Bodies Corporate (RNTBCs) and their peak group representatives;
- Commonwealth, Queensland and local governments;
- Local communities through community-based Rangers;
- Local geographic champions and issue focused champions;
- An expert panel or technical reference group comprising 'critical friends'; and
- Neighbouring regional NRM bodies and statutory authorities, including the GBRMPA.

How will we fund implementation? – investment prospectus framework

The Strategy aims to be sufficiently ambitious yet flexible enough to inspire and unite stakeholders and attract additional investment over the coming decades. By outlining desired outcomes for land and sea management in the Torres Strait, the Strategy provides an open invitation to all of the potential implementation partners to find their best possible contribution to the sustainable future sought by the Strategy.

In relation to funding, the Strategy is aspirational and seeks to:

- Guide TSRA investment of existing resources to agreed priorities;
- Seek additional direct and indirect funding from government and non-government investors, philanthropic organisations and other supporters; and
- Help partner agencies and organisations align their activities, research and work programs with Strategy priorities.

An investment prospectus will be developed with three key dimensions that focus on attracting, aligning and investing resources with agreed regional priorities.



Figure 3: Torres Strait Land and Sea Management Strategy Investment Prospectus Framework

Attracting resources (including time, money and effort) will rely on contributions from a combination of the following potential funding sources:

- One-off project grants or continuing budget allocations from government sources (local, state, national);
- Commercial sponsorships and philanthropic donations;
- Fee-for-service arrangements to deliver services on behalf of local, state and national governments and their entities;
- Payments for environmental offsets and ecosystem services;
- Not-for-profit and community-based volunteer effort;
- Traditionally owned business enterprises;
- Crowd sourcing and other innovative funding mechanisms; and
- Royalties, fees and other revenue from regionally based commercial enterprises.

Fundamentally, any investment prospectus framework must focus on adding value for all parties and relies on:

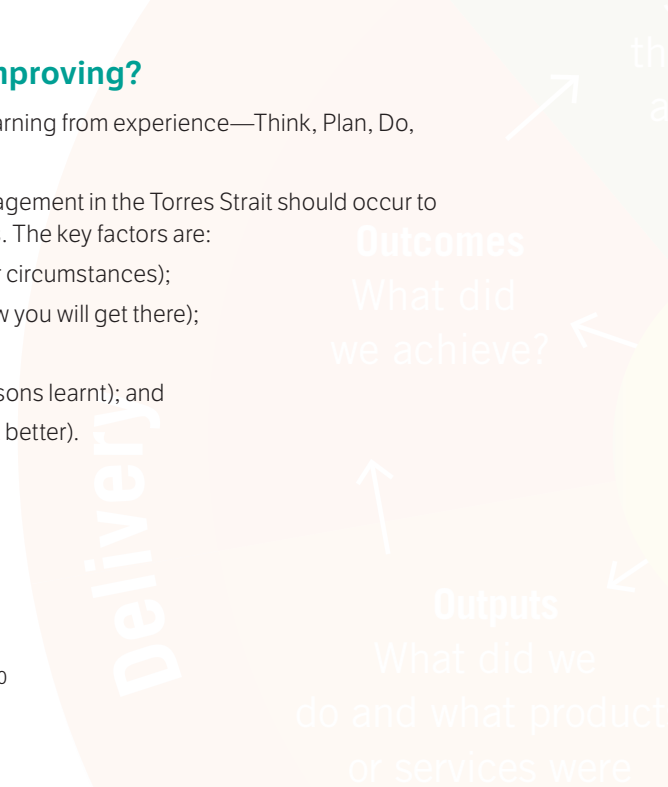
- Strong governance and proven capacity of the funding recipient to deliver contractual commitments;
- Tangible returns to investors including environmental, economic and social (including political) benefits; and
- Favourable comparison to other investment opportunities in terms of the risk/return relationship.

Adaptive management – are we learning and improving?

The Strategy is built on the principles of adaptive management or learning from experience—Think, Plan, Do, Learn, Improve.

The adaptive management process explains how land and sea management in the Torres Strait should occur to be responsive to changing circumstances, knowledge and priorities. The key factors are:

- Think (consider best available information to understand your circumstances);
- Plan (define or redefine the desired outcomes and decide how you will get there);
- Do (take action according to the plan);
- Learn (measure and evaluate progress, identify and share lessons learnt); and
- Improve (adjust management based on what you learned, get better).



Consider best available information to understand your circumstances

Define or redefine the desired outcomes and decide how you will get there



Measure and evaluate progress, identify and share lessons learnt

Take action according to the plan

Figure 4: The adaptive management cycle – Think, Plan, Do, Learn, Improve

Management effectiveness evaluation – are we doing what we said we would do and is it working?

The management effectiveness evaluation (MEE) framework recognises that the full range of activities in the management cycle are required in balance to deliver effective management.

This strategic planning approach adopted by the Land and Sea Management Strategy for Torres Strait is consistent with the management effectiveness and evaluation framework developed by the IUCN for World Heritage areas and other significant protected lands and waters.



Figure 5: The IUCN management effectiveness evaluation cycle (GBRMPA, 2014a)

Conclusion

Torres Strait is a remarkable region with internationally significant natural and cultural values that remain in good or very good condition thanks, in large part, to the strong and enduring land and sea management practiced by Traditional Owners over millennia. Building on earlier successes and lessons from the original 2005 Land and Sea Management Strategy, the revised Strategy provides a framework to ensure the recognised People, Sea and Land key values of the Torres Strait are protected for all people for all time. The Torres Strait is subject to a range of old and new pressures that are driving change in the natural and cultural fabric of the region. Now, more than ever, we need a united approach where all partners are working together to mitigate the risks and harness the opportunities arising from these changes. The management strategies identified in this document describe how together we can make our vision a reality.

Empowering Torres Strait Islander and Aboriginal peoples to sustainably manage and benefit from their land, sea and cultural resources into the future, in accordance with *Ailan Kastom*, Aboriginal Lore/Law and native title rights and **interests**.

Take home messages

a) We all have a role to play

Implementing the Strategy will require cooperation, commitment and resources from native title holders and representative bodies, community members, all levels of government, research institutions, industry and other existing and potential partners.

b) There is plenty of room for other partners to help

We all stand to benefit from strengthening land and sea management in the region and the agreed long-term priorities and desired outcomes identified in the Strategy allow all existing and potential partners to make their best contribution over the coming decade.

c) We will build on our existing strengths to implement the Strategy

Existing implementation mechanisms operating at the regional and community level (such as Working on Country Ranger Plans and proposed implementation plans) will be further strengthened to deliver this Strategy. Self-management, and joint-management arrangements can further strengthen governance arrangements for delivery of land and sea management in the Torres Strait.

d) An investment prospectus framework will help us attract additional resources

A flexible investment prospectus framework identifies opportunities for existing and potential partners to contribute time, money and effort towards implementation of the Strategy according to their capacity and priorities.

e) We will use adaptive management

The Strategy is built on the principles of adaptive management or learning from experience – think, plan, do, learn, improve – and systems have been developed to encourage delivery partners to learn from experience and continually improve land and sea management approaches.

f) We will measure the effectiveness of our management

The management effectiveness evaluation (MEE) system developed by the IUCN is used to help ensure the full range of activities in the management cycle – specifically the attributes of context, planning, inputs, processes, outputs, outcomes and evaluation – are delivered in balance to achieve effective land and sea management in the region.

Notes



