TUBBATAHA REEFS NATURAL PARK

WORLD HERITAGE SITE

TRNP

Management Effectiveness Evaluation 2025

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Executive Summary

To ensure accountability and continual improvement, TRNP undergoes Management Effectiveness Evaluations every three years. This year, TMO used the Management Effectiveness Tracking Tool (METT-4), developed by IUCN. This report presents the results of the 2025 assessment, highlighting TRNP's performance, current threats, and strategic recommendations for enhancing conservation impact over the next planning cycle.

While TRNP continues to meet or exceed many of its management targets, the latest assessment recorded lower scores compared to previous years. Declines were observed in planning integration, staff and budget capacity, and operational processes. Contributing factors included unclear delineation of adjacent sea lanes, lack of regular funding sources, insufficient permanent staffing and training opportunities, and limitations in climate adaptation, stakeholder engagement, and emergency preparedness. Environmental stressors—such as reef degradation, islet erosion, and invasive species—also contributed to decreased outcomes.

Despite these challenges, the core conservation outcomes remain relatively stable. The evaluation emphasized that the lower scores should not be interpreted as setbacks, but rather as opportunities to further enhance resilience and adapt to evolving threats.

Strategic recommendations include updating regulatory frameworks, integrating advanced monitoring technologies, strengthening research and partnerships, improving stakeholder participation, and implementing climate adaptation measures.

As TRNP navigates the complex challenges of managing a marine protected area in the face of climate change and other external pressures, its continued success will rely on adaptive management, innovation, and sustained collaboration.

This report serves as a roadmap to build on existing strengths, address identified gaps, and secure long-term ecological and socio-economic benefits for current and future generations.

Introduction

1

Overview of Tubbataha Management

Tubbataha Reefs Natural Park (TRNP) is among the oldest and largest no-take marine protected areas in the Philippines. It boasts a spectacular array of coral reefs that support nearly 800 fish species and 360 coral species. The park also serves as a crucial breeding ground for over 35,000 individual seabirds and is home to two marine turtle species. It safeguards approximately 180 species classified as Threatened and Near Threatened by the IUCN.

The Tubbataha Protected Area Management Board's (TPAMB) vision for Tubbataha is a World Heritage Site that is effectively conserved to maintain ecological integrity, contribute to the equitable distribution of benefits, and support the socio-economic development of present and future generations. The mission statement of the Tubbataha Protected Area Management Board (TPAMB) is to preserve the outstanding universal value of the park through responsible stewardship and genuine partnerships.

Management strategies and programs are structured around the TRNP General Management Plan, which steers the Tubbataha Management Office in planning and executing its activities. The plan identifies five key strategies:

- Biodiversity and Habitat Protection, Research, Monitoring, and Restoration: This strategy emphasizes compliance management, ecosystem research and monitoring, and sustainable tourism practices.
- Community Development and Resource Management: Focuses on sustainable resource use and community-based livelihood projects.
- Communication, Education, and Public Awareness: Involves public outreach, the production of information materials, and social marketing efforts.
- Institutional Strengthening, Partnership, and Capacity-building: Prioritizes policy development, partnerships, and capacity-building initiatives.
- Crosscutting Management Program: Aims to secure sustainable financing for Tubbataha while integrating gender and development considerations across all the strategies.

To track the impacts of management, a Management Effectiveness Evaluation (MEE) is conducted every three years, as prescribed by the Department of Environment and Natural Resources. This evaluation is an integral part of the TRNP Management Plan (2022–2031), providing essential feedback for ongoing conservation efforts.

History of Management Effectiveness Evaluation in Tubbataha

Management effectiveness measures how well a protected area is managed, the extent to which it safeguards its values, and its success in achieving established goals and objectives (Hockings et al., 2006). At Tubbataha, a variety of evaluation tools have been employed, with assessments carried out triennially as stipulated in the Management Plan. This participatory process involves the Tubbataha Protected Area Management Board, the Tubbataha Management Office, and partner organizations.

TMO adopted the International Union for Conservation of Nature's (IUCN) "How Is Your MPA Doing?" tool in 2003, followed by the Management Effectiveness Assessment Tool (MEAT) launched in 2011. In 2014, the Management Effectiveness Tracking Tool (METT) was used, and later that same year, the Great Barrier Reef Marine Protected Authority MEE was used. For the most recent evaluation, METT was applied.

The METT-4 Assessment

The Management Effectiveness Tracking Tool-4 (METT-4) is the fourth iteration of the METT developed by IUCN. It offers a quick, comprehensive overview of management performance in a protected area over time, utilizing various indicators and questions related to planning and operations. METT-4 benchmarks performance, identifies gaps and strengths, and informs management strategies for better resource allocation.

The process typically involves consultations with local communities and stakeholders to ensure a holistic view of management challenges and successes. Aggregated individual scores offer a clear overall picture that can be used for comparing different protected areas or tracking progress over time.

METT-4 utilizes a scorecard methodology that assesses five key elements of management—planning, inputs, processes, outputs, and outcomes—based on the IUCN-World Commission on Protected Areas (WCPA) framework. This approach aligns with the understanding that effective protected area management progresses through distinct stages: identifying values and threats, planning and resource allocation (inputs), executing management actions (processes), and delivering outputs that culminate in desired outcomes (Stolton et al., 2007).

On 19 February 2025, a workshop was held in Puerto Princesa City, Palawan, attended by representatives from the Tubbataha Protected Area Management Board and TMO staff. The workshop provided an overview of Tubbataha's management and highlighted the park's key threats. The session also included the history of the Tubbataha MEE and an orientation on the METT-4, ensuring that all participants understood the assessment's purpose, indicators, rating system, and procedures. The Threat Assessment was conducted in a plenary session, using a voting mechanism to rate the severity of threats, while the evaluation of management indicators was carried out in thematic groups.

Threat Assessment

The Threat Assessment component follows broad categories established by the Conservation Management Partnership and IUCN. It employs thirteen broad threat categories, derived from the Conservation Measures Partnership (CMP) hierarchy, which are further subdivided into 63 specific threats. Each threat was evaluated for its extent and severity—low to very high—relative to its impact on the protected area's values.

Management Indicators Assessment

METT's management assessment used a scoring system from 0 (absent) to 3 (optimal condition), considering the following indicators:

- Planning: Clarity of objectives, legal frameworks, and management plans.
- Inputs: Adequacy of financial, human, and material resources.
- Processes: Effectiveness of management operations, stakeholder engagement, and adaptive practices.
- Outputs and Outcomes: Tangible conservation results, such as enhanced biodiversity protection and improved ecosystem services.

For this assessment, the METT-4 questions were adapted to suit the context and needs of Tubbataha by organizing the 38 indicators into three thematic groups: Governance, Biophysical, and Socio-Economic. Each thematic group captures key elements essential to effective protected area management—from institutional and legal foundations to ecosystem health and stakeholder engagement.

- Governance: Encompassing objectives, management plans, staff capacity, and financial aspects.
- Biophysical: Covering habitat extent, research, climate change responses, and conditions of values and habitats.
- Socio-economic: Addressing community involvement, benefits, and contributions from various stakeholders.

Jonet Carpio

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Threats Assessment

The threats below were identified in the TRNP Management Plan and previous MEE. After discussing each threat, scores were given to measure its extent and severity.

1

Transportation and Service Corridors

The first threat identified was “Shipping lanes and canals”. The Sulu Sea serves as a passageway for many vessels, passenger and cargo alike. These vessels that pass around the buffer zone of TRNP threaten biodiversity with the potential of oil spills and ship groundings. The participants considered the extent of the threat to be high, with very high severity. The participants recommended that the TMO take part in crafting the Implementing Rules and Regulations of the R.A. 12065 or the Philippine Archipelagic Sea Lanes Act, repair the South Atoll lighthouse, and continue deterring ships around the buffer zone through AIS monitoring.

2

Biological Resource Use and Harm

Fishing will always be a threat to Tubbataha, as some violators continue to try and are occasionally apprehended by the rangers. The specific threat identified was fishing, killing, and harvesting aquatic resources. Although an ever-present threat, it was considered to have a low extent, as mostly small-scale fishers have been apprehended affecting limited portions of the reef. The threat severity was deemed medium.

3

Human Intrusions and Disturbances

Recreational activities and tourism, although generating income for TRNP, can also negatively impact biodiversity. The extent and severity were deemed medium, as visitor numbers are far below the maximum carrying capacity determined by Arceo and Alatraca (2025). A response to this would be to ensure that all dive boats have proper permits, and for park authorities to continuously enforce rules and regulations in the park.

Research, education, and other activities were viewed as having low extent and severity. Research activities can harm biodiversity through coral damage and disturbance to wildlife. To minimize impacts, strict implementation of research policies should be continued.

The park authority's activities were also assessed as low in extent and severity. Due to meticulous planning, the construction of the new ranger station and other activities were thought to have insignificant impacts on the reefs.

The threat of vandalism and destructive activities threatening protected area staff and visitors was viewed in the context of terrorism and piracy. The Dos Palmas terror attack of 2006 was brought up during this discussion, and it was mentioned that the number of visitors in Tubbataha decreased for a few years after the incident.

Due to the potential risks to staff and tourists, the threat severity was scored high, while the extent was scored low, because of the rarity of these events. To avoid this, regular monitoring of boats using AIS, coordination with anti-kidnapping group Joint Task Force Peacock of the Western Command, and aerial monitoring by the Armed Forces of the Philippines should be continued.

4

Invasive and Other Problematic Species and Genes

The participants identified the Terpios sponge as an invasive, possibly non-native species. This threatens ecological processes, but was scored low in extent and severity, because Terpios was observed only in a few areas, e.g., in front of the ranger station, near Delsan Wreck, Black Rock.

Rafting organisms were also identified as a possible threat of invasive species. This was scored to have a high threat extent and medium severity as it threatens biodiversity in TRNP. A management response to mitigate this is to collaborate with tourists to collect marine debris and use an incentive system.

Pathogens were considered to have the highest extent and severity under this section, as the rise of Avian Influenza threatens TRNP's seabird population. Periodic monitoring of the presence of Avian Influenza and implementing safety protocols during monitoring activities were determined as management responses to HPAI.

5

Pollution Entering or Generated

The threat of pollution from wastewater in TRNP comes mainly from the ranger station and dive boats that enter the park during the season. There were instances of dive boats releasing wastewater near the reefs. The participants scored this threat of sewage and wastewater as medium and its severity as low . The low scores are because the sewage leaks are mostly accidental and are only small in quantities, as opposed to intentional dumping of wastewater. Still, dive boats and their greywater disposal need to be closely monitored with the help of the PCG. Incident reporting is also encouraged.

The threat of garbage and solid waste was thought to be slightly more severe compared to wastewater, with a score of medium on both threat extent and severity. Marine debris threatens biodiversity by covering corals and hindering their growth, being consumed by or entangling marine organisms. To mitigate this, coastal cleanups should be continued and fishing activity outside the park should be monitored. Other management responses could include collaborating with government agencies to promote alternative fishing materials and conducting a specific study on marine debris.

6

Geological Events

Erosion and siltation/deposition were the only threats identified in this category. Bird Islet has lost most of its vegetation due to over-fertilization and drought resulting in erosion. Habitat loss threatens the seabird breeding population of TRNP, especially the endemic Black Noddy and the critically endangered Masked Booby. The participants gave a score of very high in both extent and severity. The management responses suggested include continuing the biannual beach profiling or/and exploring active interventions like sandbagging and constructing palisades.

7

Climate Change and Severe Weather

Habitat shift and alteration were the first threats identified in this category. Prolonged high water temperatures resulted to coral bleaching, which may have led to the proliferation of sponges and algae. Although this threatens coral biodiversity, data on bleaching in TRNP shows that it affects only a limited area in the park, hence the score of medium on threat extent. Threat severity was scored high, as sea surface temperature (SST) rise and can cause more devastating effects in the coming years. Regular benthos monitoring should be continued to check for habitat shifts. Temperature extremes were scored high on both extent and severity.

Tet Lara

As previously mentioned, SST continues to rise and may have a greater impact on corals and possibly on seabirds as well. Experts must be consulted on how to mitigate or adapt to this threat.

Storms can negatively impact corals as strong waves and currents can degrade reefs. Regular monitoring must be continued to assess the reef benthos post-typhoons and consult with experts for management actions. Flooding in the islets affects seabirds as the eggs can be inundated, dislodged, or buried in sand. Strong winds can also destroy the nesting structures and tree guards on the islets. Threat extent was scored high for TRNP as a whole, but very high for seabirds specifically, as many eggs do not hatch after heavy rains. Threat severity was also scored high.

Ocean acidification, resulting from climate change, likewise threatens TRNP. This can cause coral porosis, a weakening of the structural integrity of corals by hindering the production of calcium carbonate in the coral skeleton. This makes corals less resilient to environmental stress and slows recovery. Regular monitoring of pH levels should be conducted with the expertise of consultants and in collaboration with the academe. School awareness campaigns should also include lowering carbon emissions and other actions to prevent climate change. The last identified threat in this section was the rise in sea level. This has the potential to “drown” corals when the depth of the water prevents photosynthesis. It can also reduce or completely submerge seabird and turtle nesting habitats. Threat extent was marked as very high, and threat severity was marked as high as TRNP is an offshore reef and is mostly water. NAMRIA should be contacted for a possible tidal station to monitor the rise in sea level.


Kymry Delijero

8

Governance Problems

The Tubbataha Management Office is threatened by its unclear institutional standing. The participants scored the threat extent as very high but only medium for threat severity. The severity was scored as medium as the application for plantilla positions has been submitted. This was determined to be a threat to biodiversity as it can potentially delay or impede effective management. It was recommended that more proactive approach be applied, i.e., seek appointments with relevant agencies like the Office of the President, Department of Justice, and the DENR.

9

Energy Exploration

The Sulu Sea is a region of interest for the exploration of non-renewable energy sources. This is a potential threat to marine animals and other marine species as energy exploration can cause habitat degradation, noise pollution, and oil spills. This warranted a threat extent score of high and a medium threat severity. The medium threat severity may be attributed to the size of TRNP, with accidents more likely to affect only a small portion of the park, rather than the whole protected area. The management response given was for TPAMB/TMO to coordinate with DOE about service contracts of energy exploration in the Sulu Sea.

Management Indicators

3

The following section presents the results for each thematic group, including justification for the given score (in parentheses).

Theme 1: Governance

1

Legal Status (3)

TRNP received the highest rating because it was legislated as a marine protected area under the Republic Act 10067 or the Tubbataha Reefs Natural Park Act of 2009. It was first declared as Tubbataha Reef National Marine Park (TRNMP), a no-take protected area, on August 11, 1988, through Presidential Proclamation 306 issued by late President Corazon C. Aquino. On August 23, 2006, former President Gloria Macapagal-Arroyo issued Presidential Proclamation 1126, expanding TRNMP to include Jessie Beazley Reef and renaming the park to Tubbataha Reefs Natural Park (TRNP).

2

PA Objectives (3)

There was a consensus that Tubbataha is managed based on the agreed objectives set forth in the TRNP Management Plan (2022-2031) and RA 10067; hence, the highest rating was given. The objectives in the TRNP Management Plan are:

- By 2031, the five pillars of the outstanding universal value of Tubbataha are maintained and park management is sustained
- By 2031, the status of relevant taxa and processes are maintained
- Build resilience to climate change through vigilant enforcement
- Enhance the socio-economic well-being of local communities by maintaining ecosystem services and empowering communities through biodiversity-friendly enterprise and/or capacity building within the next 10 years
- Contribute to the Kunming-Montreal Global Biodiversity Framework's 30x30 Target (at least 30% of the planet under effective conservation by 2030)

These objectives were crafted to ensure that Tubbataha is achieving its goals of protecting its Outstanding Universal Value, including biological diversity and ecological processes, providing benefits to the communities, and contributing to achieving global conservation goals. These objectives are also anchored by a clear vision, mission, and goals articulated in the Plan.

Although the rate provided was high, it is crucial to reassess the set objectives to determine if improvements are needed.

3

PA Regulations (2)

Numerous regulations for controlling resource use and activities within Tubbataha are in place and being implemented, such as the R.A. 10067 and its Implementing Rules and Regulations, Tourism Rules and Regulations, and other TPAMB policies. The IRR and other policies were recently reviewed and amended to enhance clarity, efficiency, and to streamline procedures. However, it was determined that there is room for improvement in terms of implementation. Therefore, it was recommended to develop an evaluation tool to assess the effectiveness of these policies.

4

Planning for Adjacent Land and Water Use (2)

The adjacent land and water use plans (e.g., in mainland Palawan, Cagayancillo) fully recognize and consider the protection and preservation of Tubbataha. The park's core zone is part of the Environmentally Critical Areas Network of the Palawan Council for Sustainable Development. Other agencies also acknowledge the importance of protecting Tubbataha. The International Maritime Organization recognizes the importance of Tubbataha, declaring it as a Particularly Sensitive Sea Area and an Area to be Avoided (ATBA), which prohibits international vessels from traversing the buffer zone. The Philippine Coast Guard also supported this declaration by issuing notice to the mariners. NAMRIA has released nautical charts that outline the boundaries and core zone of TRNP, indicating in these charts that entry into the park is prohibited.

5

PA boundary (3)

The boundaries of Tubbataha and its buffer zone have been defined and mapped, and most stakeholders are already familiar with the area. The coordinates for both the core and buffer zones were established by R.A. 10067 (TRNP Act of 2009). These boundaries, as well as the buffer zone are indicated in NAMRIA Nautical Chart No. 1566. It is not financially viable to install marker buoys around park boundaries given that the surrounding waters are very deep, exceeding 1000 meters.

6

PA Management Plan (3)

The current General Management Plan (2022-2031), which guides the TMO and the TPAMB in managing Tubbataha, has been revised to align with the format prescribed by the DENR. The strategies and programs outlined in the Plan assist TMO in developing its Annual Work and Financial Plan. Every three years, the plan undergoes a review following a management effectiveness evaluation. Additionally, subplans (e.g., CEPA Plan, Tourism Plan) are reviewed every five years. The review of all plans is conducted in a participatory manner. Research and monitoring results, along with periodic MEE findings, are incorporated into the management plan.

7

PA Annual Work and Financial Plan (3)

The Annual Work and Financial Plan (AWFP) for the approaching fiscal year is prepared by TMO for the TPAMB's approval. This AWFP acts as a guide for the TMO in carrying out activities and projects. The Plan is evaluated mid-year and prior to the next planning cycle to assess achieved and pending activities.

8

PA Staffing Numbers (2)

The proposed staffing plan for TMO is 35 personnel. Currently, only 17 staff members are employed, all under service contracts. These employees perform the tasks outlined in the annual work plan, which encompasses enforcement, research and monitoring, communication and public awareness campaigns, administrative duties, and overall management. Despite inadequate staffing, TMO still manages to fully implement management activities.

9

PA Staff Training (2)

The TMO staff possesses certain capacities, skills, and knowledge, but there is potential for further improvement to meet management objectives more effectively. Some identified training needs include:

- Government accounting skills
- Technical skills (data analysis, new methods in research)
- Science communication skills

10

Current Budget (2)

All planned activities outlined in the 2024 Annual Work and Financial Plan were successfully executed. The current budget adequately supports the essential programs and activities for managing the protected area, although it could be further enhanced to optimize effectiveness.

The funds of TRNP come from two sources: tourism revenue and external funds, which includes in-kind contributions, donations, and grants. In 2024, tourism revenue covered 50% of the budget, while the shortfall was covered through external sources.

11

Budget Security (1)

TMO, although recognized as a government entity, does not have a mother agency. Thus, it cannot receive funding from the Philippine General Appropriations Act (GAA). Additionally, there is no legislated budget source from either the local or national government. TMO relies on tourism revenue to fund management. However, tourism collections are inadequate, as they do not cover all the park operations. Some of the core management costs, e.g., research and monitoring, and public awareness campaigns, are implemented through external financing.

12

Management of Budget (2)

TMO presents the annual work and financial plan to the Executive committee, then to the TPAMB, which thoroughly reviews them before granting approval. According to accomplishment reports sent to the TPAMB, TMO has consistently met and often surpassed targets by the end of each fiscal year. There are ongoing budget monitoring practices in place, including regular reviews with management staff throughout the year. While budget management is adequate, there is room for improvement.

13

Equipment and Facilities (2)

Appropriate equipment and facilities (i.e., a ranger station, management office) are available to implement the activities. However, emerging needs and challenges also require further improvement in the equipment and facilities.

The current ranger station is over 25 years old and is beyond repair, putting the safety of the rangers at risk, particularly during inclement weather. While the construction of the new ranger station is ongoing, the delays in the release of funds extend the rangers' exposure to dangerous situations.

The current office space is also inadequate to support the existing staff numbers. TMO, while gradually growing, is also accumulating years' worth of supplies, equipment, and documents that cannot be disposed of.

The lack of a dedicated vessel for relieving rangers and conducting research is a significant issue. Currently, TMO rents cargo boats from Cagayancillo during favorable weather conditions and relies on the Philippine Navy or Coast Guard for boats during rough seas to relieve the rangers. Additionally, TMO rents the WWF vessel for research activities within the park. However, the schedules are contingent upon the WWF boat's availability, as the organization also has its activities to implement. This limitation presents a significant operational constraint, providing the TMO with only a narrow timeframe in which to conduct research activities within the park.

14

Law Enforcement (2)

TRNP boasts a relatively robust capacity in terms of equipment and resources to implement R.A. 10067 (TRNP Act of 2009), and other TPAMB policies. The marine park rangers in Tubbataha form a diverse team consisting of members from the Philippine Navy, Philippine Coast Guard, Bantay Dagat of the Municipality of Cagayancillo, and the TMO. This composite team works together to complement each other's strengths in enforcement, research, and park management. A trained pool of personnel from the three agencies (PN, PCG, LGU-Cagayancillo) is sustained through annual comprehensive training tailored for marine park rangers in Tubbataha. This training encompasses marine conservation, environmental laws, and apprehension procedures, among other topics. Enforcement activities are also directed by the Compliance and Enforcement Plan. Nevertheless, there is still room for advancement, particularly regarding the provision of more sophisticated enforcement equipment, such as drones.

15

Protection Systems (2)

Existing protection systems in place are moderately effective in controlling access/resource use within the park. TMO implements a permitting system to regulate boat entry, and its buffer zone is designated as a Particularly Sensitive Sea Area. However, there is room for improvement in terms of its enforcement. For instance, while TMO set a strategic number of patrols to cover the whole park, it can still be increased. However, due to inadequacy in resources and rough sea conditions, this is not currently possible.

16

Staff Safety (2)

The safety of staff is a key priority for management, and steps have been taken to minimize threats and ensure a secure working environment. Nonetheless, there is room for further improvements. Marine park rangers receive several types of insurance, including dive, accident, and travel insurance, when stationed in TRNP. Safety equipment, such as life rafts, fire extinguishers, life vests, and medical kits, is available and regularly replaced. To maintain their skills, the rangers periodically refresh their training in Safety of Life at Sea and Basic Life Support.

17

Monitoring and evaluation (3)

Monitoring and evaluation systems are effectively implemented. TMO performs quarterly assessments of achievements relative to targets, ensuring the team remains on track. A Management Effectiveness Evaluation is periodically conducted using various tools, including METT-4 and How is your MPA doing? to assess management actions. The identified results and gaps are incorporated into the annual work plan and the management plan review.

Theme 2: Biophysical

18

Protected area design (2)

The designated size of the protected area is deemed adequate to achieve the overall objectives in species and habitat protection, including the protection of pelagic species such as sharks. However, the increasing presence of fishing vessels outside park boundaries pose a potential threat. The assessors suggested that implementing buffer zone management or expanding the existing protected area could enhance management effectiveness. This would necessitate an act of Congress, additional budgetary allocation to support the expansion, and the construction of supplementary ranger stations for future planning.

19

Resource Inventory (2)

The conservation of critical habitats, species, and maintaining ecological processes is prioritized in park management. Protection ensures the continuity of natural and ecological processes within the park. Research and monitoring activities, as stipulated in the management plan, are in place. While annual ecosystem monitoring informs management actions, it is currently focused on shallow reef areas.

It was proposed that research efforts be expanded to include mesophotic reefs, potentially through the proposed OceanX Research Expedition for the Sulu Sea and Tubbataha. The initiative will be led by the DENR-BMB in collaboration with academic institutions, NGOs, and local entities.

20

Research (2)

Monitoring of fish, coral, and seabird populations are conducted annually, while the status of other indicator species is updated every 3-5 years. Specialized studies for other ecosystems and taxa are recommended. Furthermore, in-depth research on key indicator species is warranted, including investigations into potential sources of invasive species, such as the study of ballast water from vessels as a possible vector for coral-killing sponges.

21

Resource Management (2)

Active resource management and restoration in Tubbataha includes monitoring the status of the endemic seabird species, Black Noddy subspecies worcesteri, which is experiencing population decline due to loss of vegetation in the islets. The current restoration efforts involve beach reforestation and the construction of artificial nesting structures to support the remaining Black Noddy population that breeds in the islets. Beach nourishment was done in Bird Islet to mitigate erosion, however, this needs to be done every monsoonal shift, and other measures need to be explored.

22

Climate change (1)

Allowing limited and regulating activities in the park is one strategy to increase the resilience of the reefs to the impacts of climate change. However, it was noted that only a partially proactive approach, primarily focused on reef monitoring, is being implemented. To improve this, real-time meteorological monitoring system, data logger for quantifying ocean acidification rates, and installing wave height sensors should be considered in future planning.

Allowing limited and regulating activities in the park is one strategy to increase the resilience of the reefs to the impacts of climate change. However, it was noted that only a partially proactive approach, primarily focused on reef monitoring, is being implemented. To improve this, real-time meteorological monitoring system, data logger for quantifying ocean acidification rates, and installing wave height sensors should be considered in future planning.

With regards to infrastructure, the ongoing construction of a climate-resilient ranger station, designed to mitigate the impacts of sea-level rise and increased typhoon intensity, is anticipated to reduce the threats to life and property.

23

Ecosystem services (2)

Ecosystem services and valuation studies have been conducted in the past and the results were integrated in the management plan. However, more in-depth studies are required to fully explore and value other potential ecosystem services of the park.

24

Threats (2)

While many anthropogenic threats are being mitigated within the park, significant challenges remain. Notably, coral-killing sponges are increasing rapidly, especially in some monitoring sites, where they overgrow coral colonies and gradually take over the space these corals occupy. To monitor these changes over time, TMO has established a permanent quadrat.

Climate change-induced issues, such as the erosion of Bird Islet, are also being addressed through ongoing hydrodynamic study within the surrounding area. Continued collaboration with experts is essential to address knowledge gaps related to other existing threats. A comprehensive assessment of the threats to biodiversity should also be undertaken.

25

Connectivity (2)

Functional connectivity has been assessed for certain taxa, such as marine turtles, which prompted the inclusion of Tubbataha in the Sea Turtle MPA Network. Existing studies on larval dispersal patterns of fish within the Sulu Sea, including TRNP, are driven by seasonal variations in water currents.

Additionally, simulation studies have modeled possible trajectories where fish and coral larvae are dispersed, demonstrating connectivity to the eastern coast of Palawan and adjacent areas within the Sulu Sea. This can be further improved by incorporating DNA or molecular analyses to characterize threatened species, determine their genetic structure and provenance, and further contribute to a more comprehensive assessment of reef-to-reef functional connectivity.

26

Detailed assessment of values

Detailed assessment results were provided for the five key values of the protected area, i.e., biodiversity (threatened species and habitat), ecological processes, connectivity values, scenic values and outstanding natural beauty, and tourism and recreational use. The overall condition of these values remains in very good condition. Aside from tourism/recreational use, which is improving in trend due to additional revenue, all other values are stable.

Existing studies and reports on the status of threatened species, including seabirds, corals, and fish, are subjected to periodic updates. Scenic, ecological, and connectivity values remain stable. This is attributed to the effectiveness of management programs and strict implementation of park regulations. Continued protection and monitoring of the reef ecosystem are recommended to ensure the sustained provision of ecosystem services.

27

Condition of natural values (2)

While there is partial degradation of key habitats, the core ecological values remain largely unaffected. TMO will continue to implement strategies to restore the vegetation on the islets. Furthermore, TMO is committed to strengthening partnerships with experts through collaborative research to understand hydrodynamic processes and develop effective beach erosion mitigation measures.

The preservation of natural resources is achieved through rigorous law enforcement and the periodic review of the enforcement plan to ensure its efficacy. Management strategies to address existing threats include the rehabilitation of Bird Islet and monitoring of coral-killing sponges. These approaches represent key components of ongoing efforts to enhance management effectiveness.

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Detailed assessment of species

Fish, corals, and seabirds are monitored on an annual basis. Over the past five years, fish, corals, and seabird populations remained stable. However, habitat alterations on Bird Islet pose a significant threat to the seabird population. Potential mitigation strategies, such as construction of artificial palisades (contingent upon further in-depth research), should be explored and tree planting initiatives sustained.

29

Condition of key indicator species (3)

The population density of Napoleon Wrasse, one of the key indicator species in the park, has significantly increased. Coral cover, fish biomass, and seabird populations remained stable over the years. These findings are articulated in the Ecosystem Research and Monitoring (ERM) reports. Other studies on sharks and marine turtles provide critical information to enhance species conservation within the park. TMO will continue to collaborate with experts and scientific organizations to advance studies on key indicator species.

30

Detailed assessment of habitat

While a decline in hard coral cover was observed in the regular monitoring sites, the recent benthos assessment conducted outside the monitoring sites revealed that most reef areas in Tubbataha remain in good condition. This suggests that the observed declines in monitoring stations may be due to site-specific factors rather than a park-wide issue.

The two islets, which serve as a breeding ground for more than 35,000 seabirds in Tubbataha, continue to experience erosion. In addition, restoring the vegetation on the islets remains challenging. It is recommended to prioritize habitat restoration for seabirds and implement mitigation strategies to address beach erosion on the islet.

31

Condition of habitats (3)

Over the last five years, the condition of coral reefs and the islets remained stable. Continued enforcement by the marine park rangers and ongoing beach reforestation initiatives are identified best practices contributing to this improvement.

Theme 3: Socio-economic

32

Education and awareness (2)

TRNP implements a Communications, Education, and Public Awareness (CEPA) Plan. This plan outlines strategies and activities tailored for various target audiences, including tourists and dive operators, children and youth, professionals, and the media. Current CEPA initiatives include an active social media presence, webinars, the production of informational materials (such as children's books), school campaigns, the installation of billboards at major airports, and participation in travel and dive shows. At least one CEPA activity in Cagayancillo is targeted. Measure behavioral change among target audience and groups.

33

Commercial tourism operators (3)

Tourism operations in Tubbataha adhere to the Tourism Plan and Tourism Rules and Regulations. TMO has established a positive relationship with the diving community operating within the park. In 2024, the TMO held three meetings with dive operators (pre-, mid-, and post-season) to discuss tourism rules and regulations and to address any issues or concerns.

Partner agencies, such as the Philippine Coast Guard, are also invited to these meetings to discuss their policies and guidelines. Outside of the dive season, TMO maintains open communications with dive operators and consults with them on tourism policies before implementation to ensure compliance and support.

34

Fees (3)

Conservation fees, as stipulated in RA 10067, are collected to support the park's conservation and management activities. These fees include entry fees for tourists, vessels, and dive professionals. In 2024, conservation fees covered more than 50% of the park's management costs, highlighting the significant contribution of tourism to park management.

35

Visitor facilities and services (2)

Visitor facilities in TRNP include mooring buoys, which are currently available for boats weighing less than 200 gross tons. In 2024, 26 moorings were available to dive boats. Among the 15 dive vessels that operated, four were unable to use the moorings as their weight exceeded the mooring load capacity. Installation of moorings in deeper waters for these boats is recommended.

36

Indigenous people (0)

This question was previously not applicable to Tubbataha. In 2024, the Kagayanens were officially recognized as Indigenous Peoples (IP) by the National Commission on Indigenous Peoples (NCIP), according to representatives from the Local Government Unit (LGU) of Cagayancillo. While RA 10067 does not include IP representatives in the TPAMB's composition, the LGU Cagayancillo representatives have expressed their intent to apply for membership.

37

Local communities (2)

The local communities considered for TRNP are the residents of Cagayancillo. They are represented in the TPAMB by two LGU representatives (the Municipal Mayor and a Sangguniang Bayan Member) and one People's Organization, Tambuli ta mga Kagayanen. Through these representatives, the local community participates in the management of TRNP, and their voices are heard.
Open communication and trust exist between the local community, stakeholders, and park managers. They support the management of Tubbataha and recognize the benefits derived from its protection. There was a consensus among the group that Indigenous Peoples should be involved in management.

METT-4 Results 2025

4

Following the METT-4 assessment tool guidelines, the indicators were grouped into the five components in the management cycle. This section presents the comparison between the 2022 and 2025 METT Assessments for TRNP.

In the 2025 assessment, TRNP scored 85/114 points, or 75%. This is 15 points lower than the 2022 assessment, which had a score of 103/114, or 90%.

Planning

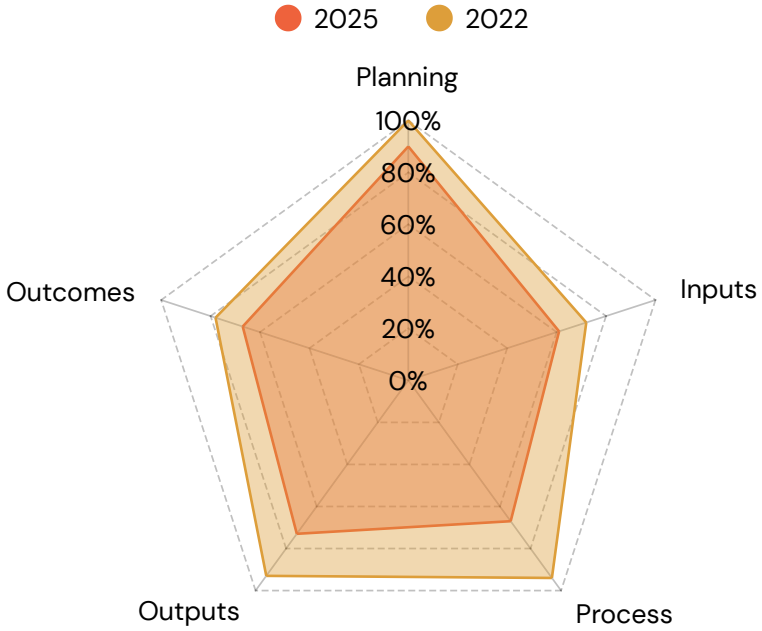
2025: 19/21
2022: 21/21

Planning pertains to the legal status of the protected area, management plans, and work plans, among others. While the assessment score in planning remains relatively high, improvements such as the integration of TRNP in external planning instruments (i.e., delineation of ASL) may be explored.

Inputs

2025: 11/18
2022: 13/18

Inputs include the number of staff, staff skills, budget availability, equipment, and facilities. The lower score was attributed to the lack of plantilla positions, insecure and externally-dependent funding, and limited staff training opportunities, particularly for technical and emergency response skills.



Comparison of scores in each METT-4 element between the previous evaluation (2022) and this year.

Process

2025: 36/51
2022: 48/51

Process covers enforcement, research, CEPA implementation, staff safety, collaboration, and climate change adaptation. The assessment score decreased due to the insufficient institutional capacity to implement climate change adaptation measures and the gaps in emergency response preparedness.

Outputs

2025: 11/15
2022: 14/15

Outputs refer to the delivery of key services such as stakeholder engagement, visitor services, and benefit-sharing. The lower score reflects insufficient mooring infrastructure for larger vessels, zero participation of Indigenous People (IP) in the management, and the perceived insufficiency in stakeholder participation and representation from Cagayancillo.

Outcomes

2025: 7/9
2022: 8/9

Outcomes evaluate the condition and trends of key habitats, species, and ecosystem health. The decline was due to the worsening condition of Bird Islet, ongoing erosion, and proliferation of algae and sponges in some reef areas, which may signal reef stress and habitat shifts. This year's assessment resulted in lower scores, despite the management targets being met and even surpassed. The assessors stressed that these results should not be viewed as setbacks, but as opportunities to strengthen management through innovation, resilience planning, and enhanced collaboration. These lower scores should be viewed as an opportunity and impetus for continuous improvement.

Jurgen Freund

Recommendations

5

Below are the major recommendations identified in the assessment to improve the management of Tubbataha

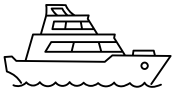
Theme 1: Governance

Establish a Citizen's Charter to improve transparency, streamline permitting processes, and define service standards. Implement a client satisfaction survey to assess public feedback on permitting and enforcement procedures. Conduct a policy review to ensure alignment with relevant government regulations, such as the Anti-Red Tape Act (ARTA).

Collaborate with the National Mapping and Resource Information Authority (NAMRIA) and the Department of Foreign Affairs (DFA) to ensure Tubbataha's representation in drafting the Archipelagic Sea Lanes (ASL) policy, advocating for navigational safeguards within the ASL framework to prevent adverse impacts from passing vessels.

Pursue application as a government unit under the Office of the President. This involves securing plantilla positions through the Department of Budget and Management to ensure job security and career growth for staff, while establishing TMO as a budgetary unit under the General Appropriations Act to guarantee secure government funding.

Continue providing technical and administrative training for staff, including ranger training, financial management, scientific methods, and science communications.



Improve equipment and facilities for law enforcement, including upgrading surveillance technology with industrial drones, forward-looking (FLIR) cameras, and long-range binoculars for improved monitoring. This also includes completing the construction of the new Ranger Station to enhance operational efficiency and ranger welfare. Acquiring a vessel to relieve the rangers and conduct research activities is also recommended to strengthen the enforcement and research capabilities of TMO. In addition, acquiring larger office space to accommodate the growing TMO should be considered.

Tet Lara

Theme 2: Biophysical

Sustain collaboration with academic institutions and experts to support research and monitoring, such as studies on Terpios sponge proliferation. Conduct a comprehensive assessment of the threats to biodiversity within TRNP. Pursue connectivity studies using DNA/molecular techniques to enhance understanding of species dispersal and population structure.

Pursue a partnership with OceanX to explore and assess the mesophotic habitats of Tubbataha. Initiate a comprehensive research on habitat characteristics and microplastic pollution within these ecosystems.

Maintain beach reforestation efforts for seabird habitat rehabilitation. Conduct an in-depth hydrodynamic study of Bird Islet to guide the development of erosion mitigation strategies and explore potential interventions, such as palisades.

Establish a permanent, real-time meteorological station in consultation with DOST PAGASA. Collect long-term climate data to monitor key climate change parameters and develop a comprehensive climate change adaptation plan for TRNP based on these findings.

Evaluate the need for buffer zone expansion to address increasing pressures from fishing and other threats. If expansion is found viable, secure adequate budgetary allocation to support enforcement in the expanded operational area.

Theme 2: Socio-economic

Conduct CEPA activity at least once a year in Cagayancillo.

Implement specific measurements of behavioral change in CEPA activities. Conduct studies to assess behavioral changes resulting from CEPA activities and integrate indicators for measuring changes into CEPA implementation.

Provide Filipino-brand service training from the Department of Tourism (DOT) to enhance the skills and knowledge of dive professionals working in TRNP.

Develop a pro-forma document for reporting violations and incidents during the diving season.

Incentivize dive boats with the highest number of tourists to increase diver numbers and boost tourism revenue. Incentives may include certificates or social media announcements recognizing their contributions to the park through tourism.

Continue to explore the possibility of moorings for vessels over 200GT. Consider building a Tubbataha visitor center in Puerto Princesa to receive tourists and the general public.

Involve Indigenous Peoples in management activities and include other stakeholder groups in Cagayancillo when implementing livelihood and other activities.

Yvette lee

The 2025 METT-4 assessment underscores that while Tubbataha Reefs Natural Park remains a benchmark for marine protected area governance in the Philippines and the Coral Triangle, it is not without challenges. Emerging threats and internal capacity gaps continue to test the park's resilience. Although the overall score declined compared to previous years, it is important to note that most management targets were achieved—and in many cases, even surpassed. The dip in scores is largely attributed to the more rigorous standards of the updated METT-4 tool, which now includes new indicators such as carbon storage, climate adaptation, and ecological connectivity, studies for which TMO cannot conduct due to the absence of in-house expertise.

Rather than being seen as a setback, this outcome serves as a constructive signal—a reminder that adaptive management, innovation, and sustained investment are essential in keeping pace with a rapidly evolving conservation landscape. This report offers not only an honest appraisal of current performance but also a strategic roadmap for the future of TRNP. With strengthened partnerships, renewed commitment from government and stakeholders, and the continued leadership of the Tubbataha Protected Area Management Board, TRNP is well-positioned to advance ecological protection, institutional resilience, and long-term conservation impact for generations to come.

Annex 1. Workshop Documentation

Management Effectiveness Evaluation of Tubbataha using METT-4

Best Western Plus The Ivywall, Puerto Princesa City
19 February 2025

Preliminaries

The Management Effectiveness Evaluation workshop took place in Ivywall on February 19, 2025, and was attended by various members of the Tubbataha Protected Area Management Board (TPAMB). Other resource persons who had previously participated in the MEE were also invited to maintain continuity. The program commenced with a prayer led by Ms. Anthea Valenzuela, followed by opening remarks from PASu Angelique Songco and an introduction of the participants.

Overview of the Management and Effectiveness Evaluation History of TRNP

Mr. Jon Cabiles, CEPA Officer, provided an overview of the management of Tubbataha, including its structures, strategies, programs, and the threats confronting the park. This was followed by a presentation from PASu Songco on the evolution of management practices through past evaluations using various tools, including the Management Effectiveness Assessment Tool, How is your MPA doing?, GBR's assessment system, and the current METT-4 approach. Presenters also quizzed the participants on their presentations and awarded headwear as a prize.

Introduction to METT-4

Ms. Alaba introduced the Management Effectiveness Tracking Tool version 4 (METT-4), a self-assessment instrument developed by IUCN and adopted by the DENR under Technical Bulletin No. 2017-05. METT-4 is integrated into the TRNP General Management Plan and assesses six critical components of the management: context, planning, inputs, processes, outputs, and outcomes. The workshop aimed to identify and evaluate current and potential threats to Tubbataha, assess the park's governance, biophysical, and socioeconomic aspects, and discuss actionable strategies for improved management.

Participants actively voting on threat severity.
Photo: Thea Valenzuela/TMO

Workshop

Threat Assessment

Ms. Alaba led the threat assessment session, wherein the TMO had previously identified both current and potential threats to Tubbataha. These threats were categorized by severity—ranging from very high to low—based on their impact, from site-wide issues to localized challenges.
Participants were encouraged to discuss and evaluate the severity of these threats on the values, using four categories, from very high to low. They also discussed relevant management actions that could be taken to mitigate the threats.

METT Assessment

Participants were divided into three thematic groups corresponding to the 38 METT-4 questions: Governance, Biophysical, and Socioeconomic. Each group was assigned facilitators and documenters to guide the participants in answering the questions.

For each question, participants assigned scores from A to D, with D representing the highest possible score. Justifications and supporting evidence for each rating were provided to explain the reasons behind the assigned scores. Additionally, participants provided recommendations for improving management practices. After the group discussions, the participants reconvened in a plenary session to share their findings and recommendations. Representative of each group presented their group outputs:

- Governance : Marco Ancheta
- Biophysical : PO3 Mercurio PCG
- Socioeconomic : Gia Querubin

GOVERNANCE	SOCIO-ECONOMIC	BIOPHYSICAL
1. Atty Jay Bolusa, PCSDS	1. Angelica Querubin, SAGUDA	1. Dr. Roger Dolorosa, WPU*
2. Commo Charles Villanueva, WESCOM	2. Aris Bonales, LGU-Cag	2. Dr. Edilberto Ona, PSU*
3. Marco Ancheta, DOT-PCSSD	3. Paulino Cardijon Jr., LGU-Cag	3. Commo Vincent Sibala PN, NFW
4. Dave June Divinicia, PGP	4. Shaliane Carvajal, PCSSD	4. Elena Basaya, BFAR*
5. Lt Goreati Christi B Manatad, NFW	5. Dr. Jean Beth Jontila, WPU*	5. Joseph Padul, LGU-Cag*
6. ENS Alarich Kyle Ugay PCG, CGD	6. PO1 Ryan Jude PCG, CGD-Pal	6. PO3 Dan Jeric Mercurio PCG, CGD
7. Jerry Buncag, LGU-Cag	7. Luigi Lubrico, PCSDS	7. Lloyd Orendain, TMO
8. Ria Coquia, DENR-PENRO	8. PO3 Carlo Doroliat PCG, CGD-Pal	8. Dylan Chua (D), TMO
9. Angelique Songco, TMO	9. Kenah Ngayao, TMO	9. Rowell Alarcon (F), TMO
10. Anthea Valenzuela, TMO	10. Jon Andrew Cabiles (D), TMO	
11. Maxine Lim (D), TMO	11. Retch Alaba (F), TMO	
12. Gerlie Gedoria (F), TMO		

*D-Documenter, F-Facilitator, *Attended past MEE*

Conclusion and Next Steps

The workshop concluded with closing remarks from Dr. Roger Dolorosa, the WPU official representative to the TPAMB. Dr. Dolorosa thanked the participants for their active engagement and reiterated the importance of regular management evaluations to promptly address threats and management issues.

The TMO will compile the scores and detailed report of the workshop. Once finalized, the report will be disseminated to all TPAMB members to guide future management improvements for Tubbataha.

Breakout groups in active discussion during the workshop on METT-4 questionnaires (top). Ms. Querubin presented the outputs of the socio-economic team in the plenary (below) Photo: Thea Valenzuela.

Prepared by:

Gerlie Gedoria
Researcher

Noted by:

Angelique Songco
PASu, TRNP

Annex 2. METT-4 Questions

Code	Thematic Area	Question
1	Governance	Does the PA have legal status or is it established through "other effective means"?
2	Governance	Is management undertaken to achieve the objectives of the protected area?
3	Governance	Are appropriate regulations/controls in place to manage use and activities in accordance with the management objectives of the protected area?
4	Governance	Does land and sea use planning outside of the protected area recognize the protected area and contribute to the achievement of management objectives?
5	Biophysical	Is the protected area the right size and shape to protect species, habitats, ecological processes and water catchments of key conservation concern?
6	Governance	Is the boundary known and demarcated?
7	Governance	Is there a management plan or equivalent and is it being implemented?
7a-c	Governance	Additional points: Planning process
8	Governance	Is there a regular work plan and is it being implemented?
9	Biophysical	Do you have enough information to manage the area?
10	Governance	Are there enough people to manage the protected area?
11	Governance	Do the people involved in managing the protected area have the necessary knowledge and skills?
12	Governance	Is the current budget sufficient?
13	Governance	Is the budget secure?
14	Governance	Is the budget managed to ensure effective administration of the protected area?
15	Governance	Are equipment and facilities sufficient for management needs?
16	Governance	Can staff (i.e. those with responsibility for managing the site) enforce protected area legislation and regulation?
17	Governance	Are systems (e.g. patrols, permits, intelligence gathering etc) in place to control access/resource use in the protected area?
18	Governance	Do protected area staff have safe working conditions and does management prioritise safety?
19	Biophysical	Is there a programme of management-orientated survey and research work?
20	Governance	Are management activities regularly monitored, evaluated and adapted?

Code	Thematic Area	Question
21	Biophysical	Is active resource management being undertaken?
22	Biophysical	Is the protected area consciously managed to adapt to climate change?
23	Biophysical	Is the protected area being consciously managed to prevent carbon loss and to encourage further carbon capture?
24	Biophysical	Does management consider ecosystem service provision?
25	Socioeconomic	Is there a planned education programme linked to the management needs?
26	Socioeconomic	Is there co-operation with neighbouring land/sea State and commercial users?
27	Socioeconomic	Do commercial tour operators contribute to protected area management?
28	Socioeconomic	If fees (i.e. entry fees or fines) are applied, do they help protected area management?
29	Socioeconomic	Are visitor facilities and services adequate?
30	Socioeconomic	Are Indigenous people involved in management decisions?
31	Socioeconomic	Do local communities living in or near the protected area have input to management decisions?
31a-c	Socioeconomic	Additional points - Impact on communities
32	Socioeconomic	Is the protected area providing sustained livelihood benefits to local communities and/or Indigenous people, e.g. income, employment, payment for ecosystem services?
33	Biophysical	Are the threats to the main values of the protected area being effectively addressed?
34	Biophysical	Have the requirements for functional connectivity have been assessed and implemented?
	Biophysical	Detailed assessment of condition and trend in values
35	Biophysical	What is the condition of the important natural values of the protected area as compared to when it was first designated?
35 a-c	Biophysical	Additional points - Condition of natural values
36	Biophysical	What is the condition of the important cultural values of the protected area as compared to when it was first designated?
36 a-c	Biophysical	Additional points - Condition of cultural values
	Biophysical	Detailed assessment of key species
37	Biophysical	Has the status of key indicator species changed over the last 5 years?
	Biophysical	Detailed assessment of habitats
38	Biophysical	Has the status of habitats changed over the last 5 years?

Jonet Carpio

Tubbataha Management Office
Manalo Ext. Brgy. Milagrosa,
Puerto Princesa City, Palawan 5300

Telephone: (048) 716-1631
Mobile: 0917-553-0909
Email: tmo@tubbatahareefs.org
Website: tubbatahareefs.org
Facebook: @OfficialTubbataha
Instagram: @tubbatahareefs