

FINANCIAL PLAN

**Tubbataha Reefs Natural Park
and World Heritage Site**



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I. INTRODUCTION













The Tubbataha Reefs Natural Park and World Heritage Site is a 97,030-hectare no-take marine protected area (MPA) located within the political jurisdiction of the Municipality of Cagayancillo in Palawan. It is 150km southeast of Puerto Princesa City, at the heart of the Coral Triangle, the global center of marine biodiversity. It harbors a diversity of marine life equal to or greater than any such reef of its size in the world. As the major source of coral and fish larvae seeding the greater Sulu Sea, Tubbataha contributes to the Philippine economy by providing food and livelihoods for millions of Filipinos.

Contribution to International and National Development and Conservation Targets.

The conservation of Tubbataha contributes to the achievement of the United Nation's Sustainable Development Goals, which aims to promote prosperity while protecting the planet. Specifically, these are:

United Nation's Sustainable Development Goals	
	SGD 1 (No poverty) The outcome from the conservation of Tubbataha, enriched fishing productivity, can help alleviate poverty through the jobs that the fishery sector provides to millions of Filipinos.
	SGD 2 (Zero Hunger) Larval dispersal of important marine species is one of the ecosystem services that Tubbataha provides. Through larval dispersal, it enriches fisheries and contributes to food security and alleviates hunger.
	SGD 8 (Decent Work and Economic Growth) More than 50% of Philippine municipalities are coastal with 62% of the population living in this zone. Majority of this population depend on the sea for work and for food. By helping increase the productivity of the ocean Tubbataha helps create decent jobs and improve living standards.
	SGD 13 (Climate Action) Our oceans are natural carbon sinks which absorbs CO2 from the atmosphere. Tubbataha can help mitigate climate change by protecting many ecosystems like seagrass beds that sequester high amounts of carbon.
	SGD 14 (Life Below Water) Saving our ocean is a global priority because marine biodiversity is critical to the health of people and our planet. Conserving Tubbataha and ensuring that it is effectively managed and well-resourced contributes to the achievement of this goal.

Of the 20 targets under the Philippine Biodiversity Strategy and Action Plan 2015-2028, conserving Tubbataha contributes to the achievement of 12, specifically:

Philippine Biodiversity Strategy and Action Plan 2015-2028	
	Maintain or improve conservation status of threatened species
	Maintain live coral cover, mangrove, and seagrasses
	Maintain population of migratory birds
	Enhance ecosystem services
	Maintain fish stocks of economically important species
	Increase biodiversity conservation related jobs
	Reduce, control, and manage key threats to biodiversity
	Restore ecosystems
	Biodiversity conservation policies in place
	Increase awareness on biodiversity
	Increase protected areas that overlap with Key
	Increase coverage of established MPAs/sanctuaries

Tubbataha was declared a World Heritage Site in 1993 and was inscribed in the Ramsar List of Wetlands of International Importance in 1999. It received national and international awards and distinctions, and is also known as:

- ASEAN Heritage Park (October 31, 2014)
- East Asian-Australasian Flyway Partner (May 2015)
- Particularly Sensitive Sea Area (PSSA), International Maritime Organization, the only one in Southeast Asia to date (July 2017)

Tubbataha is lauded as one of the best examples of MPA management in the Coral Triangle and is recognized as a flagship site in the region. It has also received awards from the Department of Environment and Natural Resources (DENR) in 2013 for exemplary work in enforcement. The R.A. 10069, also known as the TRNP Act of 2009, received the Future Policy Award in 2012, an award that recognizes policies that create better living conditions for current and future generations. In 2017, it was named one of three the best managed large no-take MPAs in the world (Blue Park) by the Marine Conservation Institute. It was also recognized for its best practice in MPA management by the Palawan Council on Sustainable Development.

Republic Act 10067, also known as the Tubbataha Reefs Natural Park (TRNP) Act of 2009, created the Tubbataha Protected Area Management Board (TPAMB) as the TRNP's sole policy-making and permit-granting body. The Tubbataha Management Office (TMO), headed by the Protected Area Superintendent, was established as its executive arm pursuant to Section 14 of the Act.

Both the TPAMB and the TMO existed prior to the ratification of the TRNP Act, carrying out the responsibility of protecting the TRNP since 1996, for the TPAMB, and since 2001 in the case of TMO. WWF-Philippines, through a grant from the United Nations Development Program-Global Environmental Finance facility, defrayed the cost of TMO staff salaries and management activities until 2004.

From 2004 to the present, the cost of management, including staff salaries, is defrayed through tourism revenues from Tubbataha, support from private foundations and organizations, and various agencies of the government.

In 2018, the Department of Justice opined that the TMO is an agency of the government under the Office of the President. Based on this opinion, the TMO applied for plantilla positions with the Department of Budget and Management (DBM). If approved, it will formalize its standing as a government agency and provide tenure to the staff.

II. DRIVER-PRESSURE-STATE-IMPACT-RESPONSE (DPSIR)

We used the DPSIR framework of analysis to determine important trends and drivers of biodiversity change. We analyzed the cause-and-effect of biodiversity problems and the indicators between the drivers of the problem, the pressures caused by the problem, and the existing state and trends of our biodiversity concerns. If the problem persists, we analyzed what impact it can have on biodiversity, and we proposed responses to solve the problems. We identified responses that are relevant to the driver and pressure rather than to the state or impact.

Below are the problems and issues identified:

1. Climate change

Climate change impacts the park through coral bleaching and the erosion and loss of vegetation on the islets. Coral bleaching affected up to 20% of the hard coral cover of the park in 2020. In 2021, some sites have not recovered as evidenced by the continued decline in hard coral cover. Coral bleaching could not only reduce the reef productivity and cause habitat loss, but also impact the value of the park as a tourist site (Cheablam et al., 2013). To monitor the effects of climate change on the reefs, data loggers measuring sea surface temperature were deployed and the data obtained will be correlated to the reef benthos monitoring results.

Climate change is also causing more frequent and stronger typhoons passing through the Sulu Sea (Table 1). The most recent was Super Typhoon Odette which struck in December 2022. Typhoons like this contribute to the erosion of Bird Islet due to strong wave action, which could eventually lead to its disappearance (Figure 1) and loss of the already declining seabird population in Tubbataha (**Error! Reference source not found.**).

Table 1. Storms that hit directly and over/below Tubbataha. Tropical cyclone classification with corresponding maximum sustained winds near the center in kilometers per hour (km/h) used by PAGASA.

Year	Super Typhoon (>220 kph)	Typhoon (118-220 kph)	Severe Tropical Storm (89-117 kph)	Tropical Storm (62-88 kph)	Tropical Depression (<62 kph)
2017				Tino	
2018				Agaton, Basyang	Samuel
2019		Ursula			
2020				Vicky	
2021	Odette			Crising	

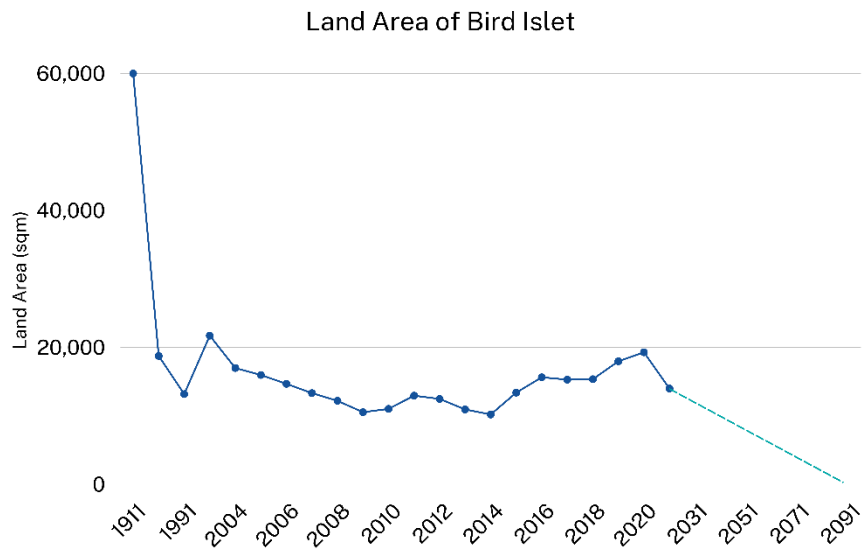


Figure 1. Projected development of land area of the Bird Islet. If the rate of erosion continues, the islet will disappear in 70 years. (Chart from Jensen et al., 2021).

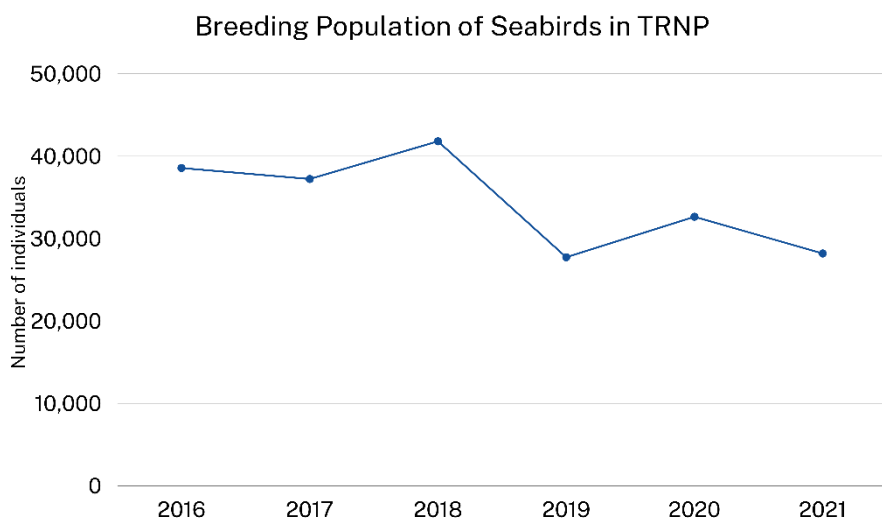


Figure 2. Breeding seabird population in TRNP (Data obtained from Jensen et al., 2021).

2. Erosion of Bird Islet/Loss of vulnerable species

The erosion of the islets and the loss of vegetation directly impacts the seabird population in Tubbataha – the largest seabird colony in the country. Beach profiling and erosion monitoring will be continued to obtain data on the changes of the islet and to inform erosion mitigation measures.

Loss of seabird habitat will be addressed through continuous planting of beach forest trees. Artificial nesting structures will be installed in the islets to provide breeding habitats for the protected Black Noddy. CEPA activities will be conducted in Cagayancillo to support established seabird sanctuaries.

Vulnerability and risk assessment will be carried out in collaboration with research institutions. CEPA activities will be continued to increase compliance of tourists and fishers.

3. Inadequate infrastructure

The Tubbataha ranger station, constructed in 2000, has deteriorated due to seawater seepage into the concrete, causing support beams to rust, expand and weaken. The structure of the station is compromised and repairing it is no longer economically viable. This poses threats to the safety and welfare of marine park rangers guarding the park. In 2020, the Provincial Government of Palawan completed Phase 1 (foundation) of the new ranger station with funding from TIEZA and materials from DENR. To date, the funds to complete the station is yet to be secured.

4. Marine debris

The increasing use of plastics worldwide contributes to the park's declining biodiversity. Marine debris in surface water and on the reefs kills marine species, such as seabirds and sharks, and degrades the aesthetic value of TRNP as a dive site. Over 800 kgs/year of debris were collected during the pre-Covid years of 2017 to 2019. During Covid, the figure dropped to 86 kgs/year (TMO files). About 90% of debris collected were plastic, with very few items made of metal and glass.

In response to this issue, CEPA on the impacts of marine debris will be strengthened in local communities, and the policy banning the use of single-use plastic in TRNP will be strictly enforced. Clean-up of islets and surface water will be carried out regularly.

5. Adverse effects of tourism

Tourism is one of the only two activities allowed in the park. A gradual increase in the number of tourists was observed from 2014 until 2019. Although tourism brings a considerable amount of revenue for the park, it can have detrimental effects on

marine life. Tourists can touch or break off sections of corals while diving causing damage.

Studies conducted during the pandemic showed that water quality improved significantly in the absence of dive boats, indicating that the presence of tourist boats in the park, despite strict regulations, affects the ecosystem.

Enforcing PCG Memorandum Circular 10-14 (Prevention of Pollution from Sewage) will mitigate the effects of tourism in the park. Meanwhile, water quality monitoring will be continued.

6. Illegal fishing

Illegal fishing is not as prevalent in Tubbataha as it was in 2006 to 2010, when over 400 illegal fishers involved in 20 arrests were prosecuted. In the last ten years, illegal fishing cases dropped to only four (4) incidents. Still, illegal fishing is an ever-present threat. Overexploitation of marine resources and the increasing demand for marine products for food and livelihood to sustain a growing population are some of the driving factors of illegal fishing.

To respond to this threat, communicating and educating the public on marine conservation will be intensified. TMO will continue to collaborate with experts in improving compliance management. Park authorities will explore new and state-of-the-art technology (e.g., drone, Aids to Navigation) to strengthen surveillance and enforcement.

7. Escalating shipping activities

The main transport mode for global trade is ocean shipping: around 90% of traded goods are carried over the waves (OECD). Sulu Sea is part of the archipelagic sea lanes, thereby increasing the likelihood of ship groundings, chemical and oil spills, introduction of alien invasive species and increase in marine debris in park.

In 2017, the International Maritime Organization declared TRNP, including its buffer zone, as a Particularly Sensitive Sea Area and an Area to be Avoided. Marine park rangers continue to monitor shipping activities through an automated identification system (AIS) and radar and caution ships about to enter the buffer zone of the park. To date, no formal complaint has been filed with the IMO against erring shipping companies.

8. Energy exploration

Industrial development and modernization require additional supply and sources of energy. A seismic survey conducted in the Sulu Sea contiguous to park in September 2014 excluded the TRNP buffer zone from the survey area. However, there is no official document that articulates this prohibition. Because of the effects of seismic

activities to marine life, e.g., dolphins, whales, fish and corals, and the possible oil and chemical spills, park authorities need to look out that TRNP is not included in future seismic surveys in the Sulu Sea.

III. BIODIVERSITY EXPENDITURE REVIEW

The Biodiversity Expenditure Review (BER) conceptual model is based on the key question: How much is spent on biodiversity? The aim of the review is to obtain and use detailed data on public, private, and civil society budgets, allocations, and expenditures to inform and promote improved biodiversity policies, financing, and outcomes.



Figure 3. Tourism revenues from 2010 to 2021.

The majority of TRNP management expenses over the last five years (2017-2021) were funded through tourism revenues therefore the BER data in this section derived from internal records of TMO. In-kind contributions of partners such as WWF Philippines, the Philippine Navy, the Philippine Coast Guard, among others, were monetized and included in this computation.

TMO has relied on external support since its creation in 2001. Even as tourism revenues increased (Figure 3), partner support remained consistent (**Error! Reference source not found.**), allowing the TPAMB to accumulate reserves for contingencies. Private organizations contributed 42% of TRNP expenditures over the last five years, government agencies contributed 23% (primarily from DENR), and tourism revenues, also known as the PA retained income account (RIA), contributed 35% (Figure 4).

Table 2 outlines the total management costs for the last five years. TMO is opportunistic in terms of securing project grants, hence, the amount of funds coming in varies, as shown in the table. TMO maximizes funding opportunities that are

relevant to achieving its conservation goal. Based on experience, donors typically prefer to contribute to biodiversity and habitat conservation, research, monitoring, and restoration programs.

Table 2. Total management costs in the last five years.

BUDGET ITEMS	2017	2018	2019	2020	2021	Total
Personnel Cost	3,829,077	5,778,266	5,838,094	7,415,680	7,423,998	30,285,116
Programs						
Biodiversity & Habitat Protection, Research, Monitoring, & Restoration Program	10,056,451	10,944,689	11,296,938	9,513,752	12,892,346	54,704,177
Community Development and Resource Management Program	2,619,700	5,357,910	4,773,575	1,674,050	1,117,125	15,542,360
Communication, Education and Public Awareness Program	9,672,315	10,142,064	10,423,821	94,719	924,116	31,257,035
Institutional Strengthening, Partnership and Capacity-Building Program	324,524	530,325	1,830,827	633,377	434,900	3,753,954
Management and Operational Expenses	1,514,974	1,289,984	1,203,192	1,050,207	1,020,229	6,078,586
TOTAL	28,017,042	34,043,239	35,366,447	20,381,785	23,812,714	141,621,228

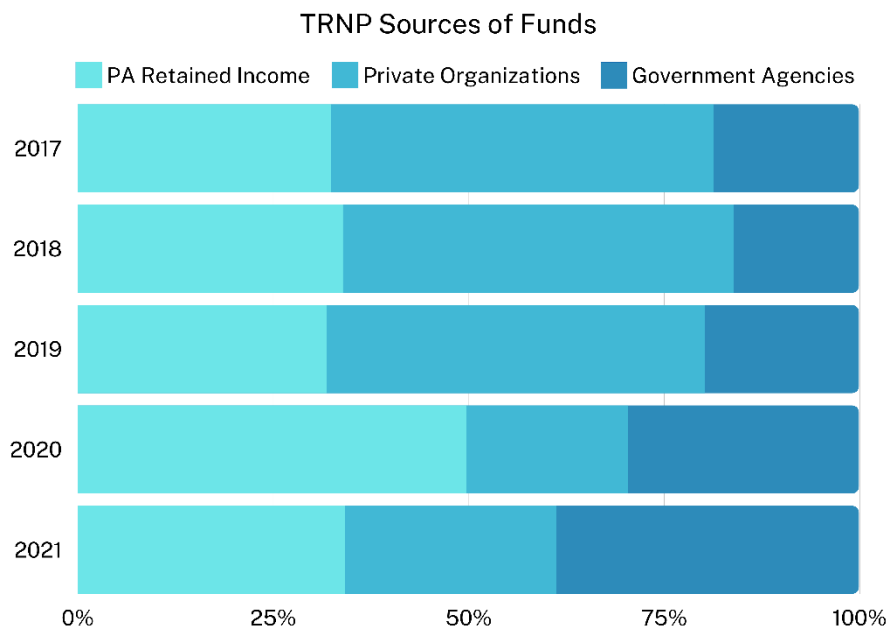


Figure 4. Sources of funds from 2017 to 2021

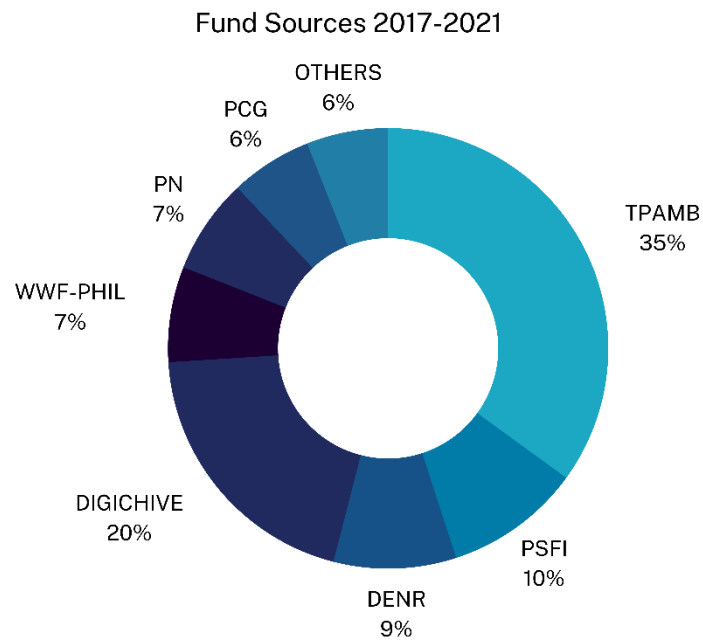


Figure 5. Sources of funds by agency

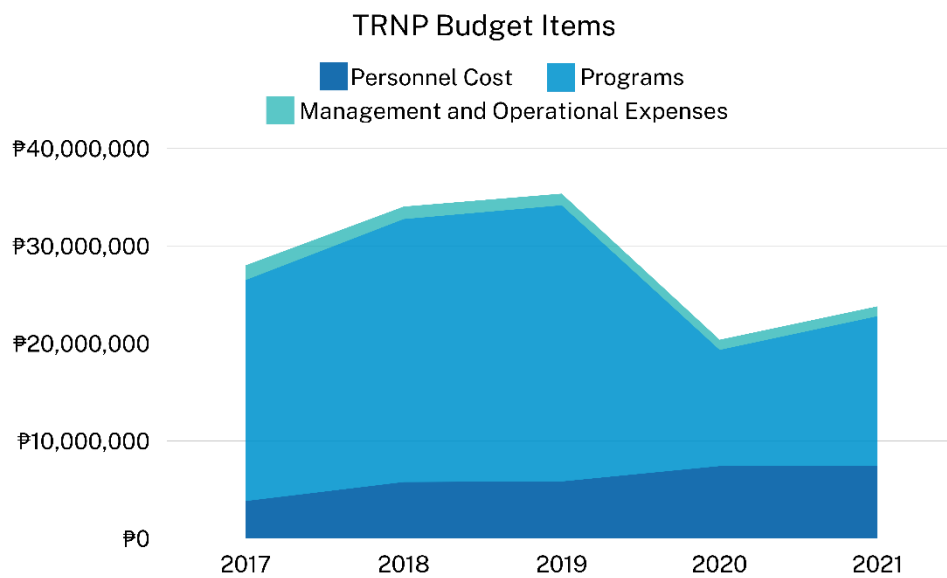


Figure 6. Budget items from 2017 to 2021

Personnel and management costs were funded through the RIA. Seventy-five percent (75%) of the RIA was used for programs and the rest for personnel and management costs.

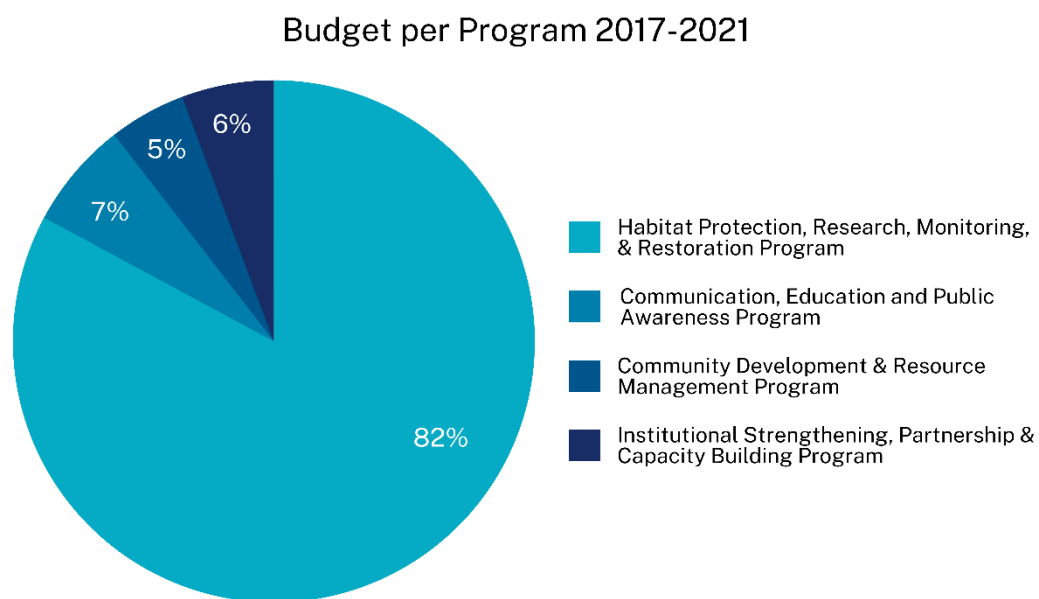


Figure 7. Budget per management program from 2017 to 2021

When tourism revenues peaked in 2019, the TPAMB authorized a compensation adjustment for TMO staff resulting in a sharp increase in personnel expenditures in 2020 (**Error! Reference source not found.**). In 2021, when tourism operations were still stalled by the pandemic, the DENR subsidized a portion of personnel salaries. At least three (3) staff position also became vacant and were not filled, resulting in a minor decline in expenditures.

Management costs are recurring expenses associated with the daily administration, such as office supplies, utilities, and office rental. These are funded entirely through tourism revenues. Honoraria for TPAMB members attending meetings falls under this category as well. The office rental is the highest-value item in this expense category, followed by TPAMB's honoraria.

75% of the budget for the past five years was allocated to program expenses, with the Biodiversity & Habitat Protection, Research, Monitoring, & Restoration Program getting the most funding (82%) of the four programs (**Error! Reference source not found.**).

Biodiversity Relevant Programs/Activities

In the 2018 BIOFIN Workbook, biodiversity expenditure is defined as "any expenditure whose purpose is to have a positive impact or to reduce or eliminate pressures on biodiversity." It further categorized these expenditures as: "direct" expenditures that have biodiversity as their principal purpose, or 'causa finalis', as well as "indirect" expenditures that have biodiversity as their secondary or joint purpose.

Expenditure tagging followed the aforementioned classifications and was guided by the following attributions:

Weighing BD relevance

Application of Rio Marker to MFOs, PPAs

100 % marker	Activities that have the conservation, restoration and sustainable management of biodiversity (ecosystems, species, and genetic diversity) and the maintenance of related ecosystem services as their primary objective and are expected to lead to direct effects / benefits with regard to biodiversity. The activity would not have been carried out in the absence of such objectives / intended effects for the conservation and restoration of biodiversity
40 % marker	Activities where the conservation, restoration and sustainable management of biodiversity (ecosystems, species, and genetic diversity) and the maintenance of related ecosystem services are one of the principal reasons for undertaking the activity; expected effects on / benefits for conservation and restoration of biodiversity and related ecosystem services are significant but not the primary intended effect;
0 % marker	Activities which neither directly nor indirectly seek to contribute significantly to the conservation, restoration or sustainable management of biodiversity (ecosystems, species, and genetic diversity) and the maintenance of related ecosystem services.

Weighing BD relevance

Application of BRF to STO & GASS

- **General Administration and Support Services (GASS)** - General Management and Supervision; Human Resource Development
- **Support to Operations (STO)** - Data Management; Production & Dissemination of Technical and Popular Materials; Legal Services including Operations against unlawful titling; Conduct of special studies, design, and development; Formulation and Monitoring of ENR Policies, Plans, and Projects; Ecosystem Research Development and Extension Program; Mineral Economics Information and Com Plan

BIODIVERSITY RELEVANCE FACTOR (BRF)

Bureaus / Offices of the DENR	Standardized BRF
BMB	<u>79.0</u>
ERDB	36.26
EMB	7.13
FMB	33.89
LMB	5.15
MGB	5.17

Because the BER data gathered are specific programs and activities, a program description was employed in the attribution of expenditures. Focusing on the detailed expenditures of programs resulting to 72% biodiversity-relevant expenditures (**Error! Reference source not found.**). BD-related expenses that were women-focused or concerning gender equality were not addressed in the programs/activities implementation.

Table 3. Biodiversity relevance matrix.

Programs/projects/activities (BD relevance)	2017	2018	2019	2020	2021	Total
Budget/expenditure	28,017,042	34,043,239	35,366,447	20,381,785	23,812,714	141,621,228
BD-relevant	22,109,800	27,785,899	18,159,187	16,530,504	17,554,262	102,139,652

Annex 3 summarizes expenditures over the previous five years.

IV. FINANCE NEEDS ANALYSIS

The TPAMB and the TMO has long aspired to find ways to fund the long-term protection of TRNP. Many approaches have been suggested but lacked follow through because TMO focused on park conservation and protection rather than on fundraising. With this financial plan as a guide, management can now pursue additional funding opportunities with the assistance of TRNP's long-standing supporters and partners.

Tubbataha, unlike other protected areas in the country, does not receive regular funding from the General Appropriations Act (GAA) but has relied mainly on tourism. Financial and in-kind grants from private and government donors are also pursued to support continued operations. The current funding arrangement of TMO is expected to remain unchanged until the DBM legitimizes the establishment of TMO and provides funds for, at least, staff salaries and wages.

To fully implement the General Management Plan in the next 10 years, TRNP will require Four Hundred Seventy-Four Million Pesos (PhP474M). This amount includes a substantial capital outlay of PhP132M in the first two years for the construction of the ranger station. Minus the said outlay, the average annual funding requirement is estimated to be PhP34M. The estimated costing of each budget line item is shown in Annex 4.

Expenditures Categories

Personnel Cost

Since the establishment of TMO in 2001, the Protected Area Superintendent and staff are hired on a contractual basis with compensation below that of government employees with comparable positions and responsibilities. This employment condition is expected to improve when the DBM decides to fully legitimize TMO's existence as a government agency with plantilla positions.

Given the anticipated absence of consistent government appropriations in years to come, a conservative budget for 18 job positions over the next ten years was projected. Staff salaries account for 19% of Tubbataha's estimated investment requirement over the next ten years. Nonetheless, the cost is expected to increase dramatically when DBM approves the proposed 35 staff positions for TMO.

Program No. 1: Biodiversity and Habitat Protection, Research, Monitoring, and Restoration

The capital outlay of PhP132M for the completion of the ranger station is included in the Biodiversity and Habitat Protection budget distributed over the first two (2) years. The average financing requirement for habitat protection or enforcement and field operations is PhP12 million per year.

Tubbataha's ecosystem research and monitoring initiatives are divided into two categories: regular monitoring and targeted research. The study of seabirds, fish, benthos, and water quality are done annually and fall under regular monitoring. Targeted research, e.g., *Terpios* sponge, coral diseases, oceanographic studies, vulnerability assessment, are conducted at intervals or when funds are available. Research is costly because of the remoteness of Tubbataha. Boat transfers and fuel/oil make up most of the cost of research. Given that most consultants waive their fees, only a small amount of funding is set aside for consultancy.

TMO researchers are trained to perform regular monitoring with the assistance of marine park rangers. Their abilities were put to the test in 2020 when travel restrictions prevented Manila-based consultants/experts from joining the trips. TMO has been conducting regular monitoring with local volunteers, for the past two years, with limited assistance from consultants. Savings from consulting or expert fees resulted in a minimal allocation of 16% of the total budget for the next ten years for research studies, or an annual average fund requirement of PhP7.4M.

Program No. 2: Community Development and Resource Management

The TPAMB has been supporting the local government unit of Cagayancillo, Palawan by sharing 10% of its annual tourism collections for livelihood programs. Activities under this program, including livelihood training and implementation, MPA

management, participatory research, etc., have been implemented by the NGO members of the TPAMB, WWF-Philippines and Conservation International-Philippines in the past.

Program No. 3: Communication Education and Public Awareness (CEPA)

This program focuses on fostering support for conservation through public outreach and distribution of information materials. During the pre-pandemic years, school visits and presentations in coastal communities were the main conservation approach of TMO. During the pandemic, however, social media became the norm, and this expanded the reach of the campaigns. Information is now widely disseminated through digital channels that are accessible at any time and at a lesser cost than face-to-face campaigns. However, coastal communities, mostly without internet access, could not be reached through this approach.

The most significant projected expenditures under this program are for the coming year is mostly for audio-visual equipment and digital campaign materials. However, investment in this program will increase by 2023 and the succeeding years, when Covid 19 is expected to be more under control.

Program No. 4: Institutional Strengthening, Partnership, and Capacity-Building

To effectively respond to emerging challenges, there is a need to strengthen the resource management capabilities of the TPAMB, the TMO, and its partners. These stewards must be kept up to date and equipped with the knowledge and skills needed to navigate the ever-changing landscape of MPA management.

Partnerships have proven to be effective in the implementation of management programs, strategies, and activities. The relationship between park management and its stakeholders needs to be strengthened because the park's success is heavily reliant on this synergy. Hence, investments in networking and collaboration will be prioritized.

One of the main objectives of the TPAMB is to develop a sustainable financing mechanism to secure long-term funding for Tubbataha. A budget for a consultant who will prepare a comprehensive plan and eventually initiate the implementation of financial solutions is being secured. Updating the TRNP General Management Plan and other plans also falls under this program.

Management Cost

This budget line item, like the personnel cost, is entirely funded through tourism revenues. Office overhead costs account for approximately 3% of total park operating costs over the next ten years, with office lease being one of the main expenditures under this line item.

Annex 5 described in detail the budgetary line items per program.

Estimated Forecast of Expenditure/ Appropriations

Forecast of expenditures for the next ten years is being done using the historical data. The annual rate value was computed with additional inflation adjustments of 5% compounded annually. Annex 6 outlines the estimated investment from 2022 to 2031.

The significant spike in the first two years (**Error! Reference source not found.**) represents capital outlay for the construction of the Ranger Station. The first year's funding, PhP58M, will come from the compensation paid by the United States for the grounding of the USS Guardian ship in 2013. The fund is being kept by the Bureau of National Treasury, pending clearance for release. While the second year's construction cost is unfunded, a proposal to raise fund through crowd sourcing is being developed.

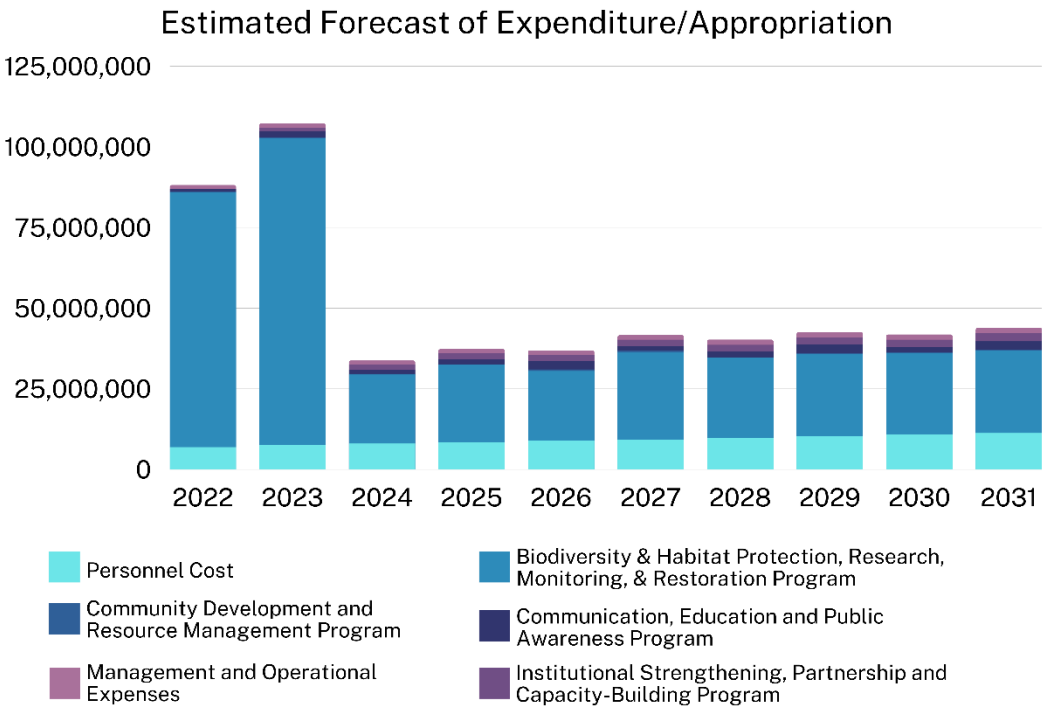


Figure 8. Timeline of Costs for Implementing the TRNP General Management Plan, 2022-2031

V. FINANCE SOLUTIONS

1. Tourism fees

Visitors and dive masters are charged PhP5,000 and PhP250 per person, per entry, respectively. Dive operators pay vessel entry fees based on the tonnage of their boats. The website www.tubbatareefs.org contains information about tourism fees.

Tubbataha's tourism operations are limited to the summer months of March to part of June, with some operators arriving towards the end of February. A growing number of visitors was recorded in years preceding the pandemic due to the park's popularity among local and international scuba divers. Tourism earnings increased considerably from 2017 to 2019, more than doubling the average annual revenues since 2010 (Figure 3). When the pandemic hit, collections dropped to nearly zero for two consecutive years. This situation demonstrates how volatile the tourism industry is. Unless tourism returns to normal, Tubbataha will lose its main source of income, as it has in 2020 to 2021.

2. Corporate and corporate foundation donations

It is said that "fund raising is friend-raising". Networking and coalition-building will be pursued to increase the number of corporate supporters of the park. It is likely that this financing option will be the main source of funds for management for the next few years while TMO awaits its transformation into a bona fide government agent.

3. Government support

Section 16 of RA 10067 stipulates the role of the DENR and PCSD of providing technical and financial assistance to TRNP. DENR's annual support to TRNP enabled TMO to conduct the regular ecosystem monitoring and enforcement. The PCSD is actively involved in providing technical assistance and linking TMO to project funding possibilities.

Beside DENR and PCSD, the Palawan Provincial Government helps Tubbataha by funding information materials for CEPA activities every year.

Apart from the aforementioned government agencies, government project grants have been received in a few instances, such as when the Department of Agriculture contributed to the maintenance of the Ranger Station and the conduct of special research on Napoleon Wrasse, and when the Department of Tourism donated an outboard engine.

4. Crowdfunding (individual giving)

Crowdfunding is the process of raising money from a large number of people to fund a project, a company, or a cause (www.spectroomz.com). Social media and special crowdfunding sites are the main vehicles for this funding approach and no specific amount of contribution is required to participate. TMO has accumulated a visitor database over the years, which may be used as one of the key resources for expanding its base of support outside its usual patrons. This, along with corporate donations will be prioritized in the coming years. However, there may be legal limitations to this undertaking therefore, implementing this approach needs to be studied in detail.

5. Collaterals (sale of merchandise)

Since 2004, TMO has been selling merchandise as revenue-generating activity. T-shirts, rash guards, and sun hats, etc., are sold at the ranger station during the diving season. The revenue generated from this activity help cover a portion of the park's operational expenditures. Running a retail business is not a core strength within TMO. Training in this field will help improve entrepreneurial skills and get more out of this venture.

6. Diaspora funding

This form of funding involves inter-personal financial transfers between migrants and their countries of origin. The Ayala Foundation conducted a study called "Diaspora Philanthropy: The Philippine Experience," which investigated Filipino diaspora philanthropy as a potential source of funding. The study accounted for the presence of approximately 8.1 million Filipinos in 193 countries, with a significant number residing in first-world countries. Furthermore, according to the study, first-generation immigrants, particularly those who have done well abroad and/or are nearing retirement, are looking for ways to share their wealth or talent with their home country. TMO can do further research into this possibility and consider launching a donation campaign of its own based on this information.

7. Endowment fund

An endowment is a donation of money or property to an organization, which uses the resulting investment income for a specific purpose. The fund managers invest the capital of the endowment forever so that the capital can keep generating new income each year in perpetuity. Only the annual income from investing the endowment is spent to finance conservation activities, but no part of the endowment capital is spent. This is a potential financing source but entails comprehensive study.

8. Operationalization of research station

The new Tubbataha Ranger Station structure includes a research building where scientists can stay for extended periods of time to conduct scientific research in the park. The TPAMB May charge a researcher fee to subsidize a portion of field operating costs. This is a new concept that necessitates extensive study in terms of management and implementation.

9. Digital marketing

This refers to using digital channels to market products and services to consumers. This marketing strategy is widely executed on websites, mobile devices, and social media platforms. The following are the most viable digital marketing channels:

- Video Marketing
 - Earn money from ads by joining in the YouTube Partner's Program
 - Establish audience support through "fan funding", e.g., create a tipping jar for the viewers to donate whenever and however they feel like contributing (one-off donations)
 - Create a membership platform for fans to subscribe monthly and receive exclusive rewards (recurring donations)

- Content Marketing

This is a marketing approach that involves creating and distributing valuable, relevant, and consistent content to attract and acquire a specific audience and generate lucrative consumer action. A piece of content such as viral video with global popularity, can be legally licensed and sold to a third party for distribution.

Annexes

Annex 1. Drivers, Pressures, State, Impact, Responses (DPSIR) Framework

Problem/Issue 1) Climate change

	DRIVERS	PRESSURES	STATE	IMPACTS
	Increase in global temperature due to emissions and greenhouse gases	From 2017 to 2020, there were more prolonged peaks in SST observed. Even during outside of the summer months. Before 2017, peaks in SST were generally observed during summer month (NOAA). Coral bleaching often coincides with prolonged peaks in SST.	In 2020, up to 20% bleaching was recorded, resulting in decrease in hard coral cover. In 2021, some sites have not recovered as evidenced by the continued decline in hard coral cover.	Reduced tourism value (Cheablam et al., 2013), reduced productivity, loss of habitats
	RESPONSES TO DRIVERS	RESPONSES TO PRESSURES	RESPONSES TO STATE	RESPONSES TO IMPACTS
What Needs to be Stopped	-	-	-	-
What Needs to be Continued	-	Monitor sea surface temperature (SST) using data loggers, results will be used to quantify effects of increased SST on the reefs. Continue coral monitoring for bleaching	CEPA - decrease in coral cover, tourist briefings. Monitoring - submit bleaching status to Coral Bleaching Watch, citizen science reports on coral bleaching. Research - conduct coral bleaching assessment, measure impacts, use new methods (Coral Reef Targeted Research) and approaches to quantify changes or impacts to coral cover	CEPA - encourage tourists to comply with regulations to minimize impacts on corals. Research - measure impacts of coral bleaching. Compliance management - strict enforcement of rules that applies to tourists and fishers. Mobilize grants from external sources.
What Needs to be Started	-	Carry-out vulnerability and risk assessment in collaboration with research institutions to design and implement measures for resiliency of the coral reef to climate change.		

Problem/Issue

2) Erosion of Bird Islet / Loss of vulnerable species

	DRIVERS	PRESSURES	STATE	IMPACTS
	Climate Change	From 2017 to 2021, more frequent and stronger typhoons travers the Sulu Sea. Frequent and prolonged drought also exacerbated the erosion and loss of vegetation.	Bird Islet continues to erode due to strong waves and unstable soil/ground. This also results in loss of vegetation.	It is projected that Bird Islet will disappear in 70 years, if the rate of erosion continues. This will result to loss of Tubbataha's seabirds - the largest breeding colony in the Philippines. The loss of trees resulted to the decrease in the population of tree nesting species.
	RESPONSES TO DRIVERS	RESPONSES TO PRESSURES	RESPONSES TO STATE	RESPONSES TO IMPACTS
What Needs to be Stopped		-	-	-
What Needs to be Continued		Beach profiling and continuous erosion monitoring	Undertake ecological measures to reduce erosion (regeneration of beach forest)	Install artificial nesting structures, provide nesting materials, networking with seabird experts
What Needs to be Started	Monitor impacts of climate change in the area	-	Protect remaining vegetation in the islets and conduct ecological erosion mitigation measures	Satellite tracking of black noddies, brown booby, masked booby, and sooty tern, collaboration with other groups in seabird conservation
	-	Carry-out vulnerability and risk assessment in collaboration with research institutions to design and implement measures for resiliency of the coral reef to climate change.		

Problem/Issue **3) Inadequate infrastructure**

	DRIVERS	PRESSURES	STATE	IMPACTS
	Climate change	Natural degradation of the ranger station and increased intensity and frequency of typhoons	The structure of the station is already compromised and repairing it is no longer economically viable. Inadequate funds to complete the new ranger station	Compromised safety of marine park rangers
	RESPONSES TO DRIVERS	RESPONSES TO PRESSURES	RESPONSES TO STATE	RESPONSES TO IMPACTS
What Needs to be Stopped	-	-		
What Needs to be Continued			Continue maintenance and reinforcement of the old ranger station	
What Needs to be Started			Raise funds for the Phase 2 of the ranger station	Complete the new ranger station

Problem/Issue **4) Marine debris**

	DRIVERS	PRESSURES	STATE	IMPACTS
	Increasing use of plastics	High volume of marine debris collected until 2018. A decrease was observed one year after implementation as an area to be avoided.	Increasing marine debris. Increase shipping activities coincides with increase in volume of marine debris collected	Negative impacts on wildlife - entanglement and death e.g., seabirds, sharks. Reduced aesthetic value - surface water covered with trash and fishing nets entangle on corals; Effects on navigation - entanglement of debris in propeller
	RESPONSES TO DRIVERS	RESPONSES TO PRESSURES	RESPONSES TO STATE	RESPONSES TO IMPACTS
What Needs to be Stopped	-	Reliance on single use plastic products	-	-

What Needs to be Continued	CEPA on minimizing the use of single-use plastics	Ban on single-use plastic in TRNP (Admin Order 2 series of 2019), CEPA, Ban on single-use plastic in Cagayancillo	Surface and underwater clean-ups, characterization of marine debris	Opportunistic rescue of entangled wildlife, surface and underwater clean-ups
What Needs to be Started	Support efforts to reduce use of plastics	Coordinate with DENR, NGOs, LGUs, and businesses (CSR)	CEPA on minimizing the use of single-use plastics	-

Problem/Issue

5) Adverse effects of tourism

	DRIVERS	PRESSURES	STATE	IMPACTS
	Tourism activities	Graywater discharge from dive boats	High levels of oil and grease, and fecal and total coliform during dive season. Diving activities entails possible coral damages and diseases	Possible effects to nutrient enrichment in the water, coral diseases, and coral damages
	RESPONSES TO DRIVERS	RESPONSES TO PRESSURES	RESPONSES TO STATE	RESPONSES TO IMPACTS
What Needs to be Stopped	-	Discharge of graywater inside the core and buffer zones	-	-
What Needs to be Continued	-	-	Water quality monitoring Conduct pre-departure briefings, highlighting park rules and regulations and best dive practices	
What Needs to be Started		Enforce PCG Memorandum Circular 10-14	Monitoring and analysis of effluents from dive boats Carrying capacity/Diver impact study	Train MPR and researchers to conduct coral disease monitoring

Problem/Issue

6) Illegal fishing

	DRIVERS	PRESSURES	STATE	IMPACTS
	Over-population	Over exploitation of marine resources	Threat of illegal harvesting of marine resources in TRNP	Possible depletion of marine resources, makes species vulnerable to extinction and change in ecological state, continuous expenditure in compliance management
	RESPONSES TO DRIVERS	RESPONSES TO PRESSURES	RESPONSES TO STATE	RESPONSES TO IMPACTS
What Needs to be Stopped	-	-	-	-
What Needs to be Continued	-	CEPA on sustainable fishing practices, compliance management	CEPA on sustainable fishing practices, compliance management	CEPA on sustainable fishing practices, compliance management, collaboration with ICCM
What Needs to be Started	-	-	Use of state-of-the-art technology (use of drones, AToN) for surveillance and enforcement	Use of state-of-the-art technology (use of drones, AToN) for surveillance and enforcement

Problem/Issue

7) Escalating shipping activities

	DRIVERS	PRESSURES	STATE	IMPACTS
	Increase in global trade and economic activities	Sulu Sea is included in the archipelagic sea lanes	Shipping activities continue adjacent to the buffer zone of the park. Some ships entered park's buffer zone	Ship grounding, oil and chemical spills, introduction of alien invasive species and increased marine debris
	RESPONSES TO DRIVERS	RESPONSES TO PRESSURES	RESPONSES TO STATE	RESPONSES TO IMPACTS
What Needs to be Stopped	-	-		

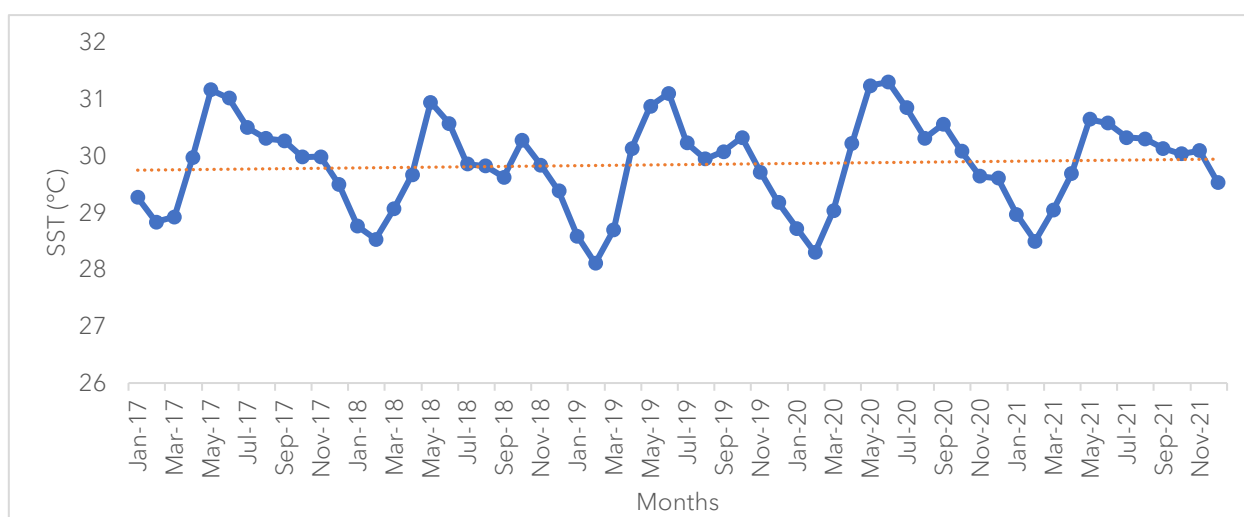
What Needs to be Continued	-	-	Monitor shipping activities through AIS, warn ships about to enter PSSA/ATBA, file formal complaints to DFA against violators	Coordination with relevant agencies, e.g., PCG in the implementation of the Contingency Plan Conduct coastal and surface clean-ups
What Needs to be Started	-	-		

Problem/Issue **8) Energy exploration**

	DRIVERS	PRESSURES	STATE	IMPACTS
	Industrial development and modernization	Need for additional supply and sources of energy	No current energy exploration activities and service contracts	Seismic activities impact marine life, e.g., dolphins, whales, fish and corals Possible oil and chemical spills
	RESPONSES TO DRIVERS	RESPONSES TO PRESSURES	RESPONSES TO STATE	RESPONSES TO IMPACTS
What Needs to be Stopped				
What Needs to be Continued			Ensure that TRNP is not included in the area to be surveyed	
What Needs to be Started				

Annex 2. Sea surface temperature data in TRNP in 2017 to 2021

The average maximum sea surface temperature (SST) from 2017 to 2021 was 29.9°C. The maximum monthly SST were highest during the summer months, from April to June, and a slight increase were recorded in September and October, in most years. No major coral bleaching incident was observed until May 2020, which coincided with the mass bleaching event reported throughout the Philippines (Coral Bleaching Watch of the Philippines 2020).



Monthly Average Maximum Sea Surface Temperature in West Philippine Sea and Sulu Sea. Source: NOAA Coral Reef Watch, accessed on 29 December 2021

In 2020, the SST peaked in June at 31.3°C. Prior to that, the TMO research team observed a few bleached corals in May. During the subsequent research trips to Tubbataha in June, TMO staff and the rangers observed that the beaching has worsened. In July, the team revisited the permanent reef benthos monitoring sites to assess the severity of coral bleaching in the park. It was believed that during this time, bleaching occurrence was at its peak. In September of the same year, another increase in SST was observed (30.6°C) and the marine park rangers observed that corals in the shallow areas near the Ranger Station were bleaching.

The bleached hard coral cover (HCC) per station ranged from 3.58% to 18.96% in the shallow areas. The most common hard corals that bleached in the monitoring sites include *Pocillopora*, *Acropora*, *Isopora*, *Seriatopora*, which are known to be sensitive to bleaching. In the deep monitoring stations, the bleached HCC ranged from 2.47% to 16.95%. The most common hard corals that bleached in these sites include *Acropora*, *Pocillopora*, *Isopora*, *Seriatopora*, *Millepora*, and *Porites*.

Annex 3. Budget Expenditure Review (BER)

Programs/projects/activities (BD relevance)	2017	2018	2019	2020	2021	Total
Budget/expenditure	28,017,042	34,043,239	35,366,447	20,381,785	23,812,714	141,621,228
BD-relevant	22,109,800	27,785,899	18,159,187	16,530,504	17,554,262	102,139,652

Relative distribution of biodiversity-relevant gender budgets	2017	2018	2019	2020	2021	Total
BD-relevant	22,109,800	27,785,899	18,159,187	16,530,504	17,554,262	102,139,652
BD-related expenditures that were women-focused or about gender equality						

BUDGET ITEMS	2017	2018	2019	2020	2021	Total
Personnel Cost	3,829,077	5,778,266	5,838,094	7,415,680	7,423,998	30,285,116
Programs						-
Biodiversity & Habitat Protection, Research, Monitoring, & Restoration Program	10,056,451	10,944,689	11,296,938	9,513,752	12,892,346	54,704,177
Community Development and Resource Management Program	2,619,700	5,357,910	4,773,575	1,674,050	1,117,125	15,542,360
Communication Education and Public Awareness (CEPA)	9,672,315	10,142,064	10,423,821	94,719	924,116	31,257,035
Institutional Strengthening, Partnership and Capacity-Building Program	324,524	530,325	1,830,827	633,377	434,900	3,753,954
Management and Operational Expenses	1,514,974	1,289,984	1,203,192	1,050,207	1,020,229	6,078,586
TOTAL	28,017,042	34,043,239	35,366,447	20,381,785	23,812,714	141,621,228

Total biodiversity-relevant appropriations by category	2017	2018	2019	2020	2021	Total
GAA						
IPAF						
Income from Operations:						
PA Retained Income Account (RIA)	9,089,472	11,542,382	11,257,392	10,143,903	8,143,816	50,176,965
IPAF -SAGF						
Other Sources of Funds:						
Pilipinas Shell Foundation, Inc (PSFI)	2,516,041	3,000,000	3,001,758	2,198,185	2,866,066	13,582,050
ASEAN Centre for Biodiversity (ACB)	-	-	636,202	-	800,000	1,436,202

Note: BD - Biodiversity

Total biodiversity-relevant appropriations by category	2017	2018	2019	2020	2021	Total
Stellios Foundation	-	-	-	172,622	127,143	299,765
East Asian-Australasian Flyway Partnership (EAAFP)	-	-	-	-	238,432	238,432
Don Antonio O. Floirendo, Sr. Foundation, Inc. (AOFF)	226,137	836,820	1,115,582	-	-	2,178,539
SAGUDA Palawan, Inc	-	-	183,542	252,482	310,231	746,255
Jimenez Group of Companies	-	-	-	-	500,000	500,000
UNESCO-Jakarta					500,000	500,000
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)	464,000	-	-	-	-	464,000
National Fisheries Research and Development Institute (NFRDI)	-	430,845	-	-	-	430,845
Department of Environment and Natural Resources (DENR)	1,484,000	1,234,000	3,091,000	2,299,000	4,941,000	13,049,000
Provincial Government of Palawan	238,200	250,000	250,000	-	500,000	1,238,200
Total projects implemented by TMO	14,017,850	17,294,047	19,535,475	15,066,192	18,926,688	84,840,252
Projects implemented by Partners						
WWF-Philippines	1,200,000	3,900,000	2,900,000	1,600,000	1,100,000	10,700,000
Digichive Philippines Corporation	9,300,000	9,300,000	9,300,000			27,900,000
Philippine Navy (PN)	1,785,928	1,835,928	1,897,644	1,962,057	2,010,026	9,491,583
Philippine Coast Guard (PCG)	1,713,264	1,713,264	1,733,328	1,753,536	1,776,000	8,689,392
Total projects implemented by Partners	13,999,192	16,749,192	15,830,972	5,315,593	4,886,026	56,780,975
TOTAL FUND SOURCES FOR BUDGET	28,017,042	34,043,239	35,366,447	20,381,785	23,812,714	141,621,228

Annex 4. Estimated Forecast of Expenditure

BUDGET ITEMS	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	TOTAL
Personnel Cost	6,896,032	7,625,980	8,007,279	8,407,643	8,828,025	9,269,427	9,732,898	10,219,543	10,730,520	11,267,046	90,984,395
Programs	79,011,346	95,037,683	21,348,913	24,045,549	21,630,373	26,873,109	24,817,493	25,386,461	25,218,992	25,526,461	368,896,381
<i>Biodiversity & Habitat Protection, Research, Monitoring, & Restoration</i>	77,911,346	91,748,308	18,225,820	20,534,775	16,607,004	22,874,853	20,820,339	20,063,769	21,033,748	20,201,157	330,021,120
<i>Community Development and Resource Management Program</i>	250,000	210,000	220,500	-	486,203	574,327	-	281,420	295,491	310,266	2,628,206
<i>Communication, Education and Public Awareness (CEPA)</i>	750,000	1,837,500	1,212,750	1,678,556	2,674,114	1,403,910	1,943,139	2,814,201	1,625,201	2,559,692	18,499,062
<i>Institutional Strengthening, Partnership and Capacity-Building Program</i>	100,000	1,241,875	1,689,844	1,832,217	1,863,053	2,020,019	2,054,016	2,227,071	2,264,552	2,455,346	17,747,994
Management and Operational Expenses	1,111,989	1,272,588	1,225,967	1,287,266	1,351,629	1,419,211	1,624,181	1,564,680	1,642,914	1,725,059	14,225,483
TOTAL FORECAST	87,019,367	103,936,252	30,582,160	33,740,458	31,810,028	37,561,746	36,174,572	37,170,684	37,592,426	38,518,566	474,106,259

Annex 5. Expenditure Categories

EXPENDITURES CATEGORIES		
COST ITEM	DESCRIPTION	CLASSIFICATION
Personnel	This cost is for 18 positions under contract of service with an all-inclusive monthly rate (salaries and premium) that is not in conformity with the Salary Standardization Law of the government.	Office of the PASu (2)
		Biophysical Research team (3)
Law Enforcement	These are the expenditures associated with the implementation of RA 10067, also known as the TRNP Act of 2009, which has the primary mandate of protecting and conserving TRNP.	Marine Park Rangers (4)
		CEPA team (3)
		Admin and finance (6)
		Patrol boat upgrading (engine and hull)
		Field equipment (communication, surveillance, etc)
		Fuel, oil and lubricants
		Repair and maintenance: Ranger station
		Repair and maintenance: patrol boat
		Repair and maintenance: field equipment
		Relieving trip
		Legal and apprehension fund
		Legal retainer
		Subsistence allowance for Rangers
		Communication expenses (satphone and internet)
		Field supplies
		Disaster risk reduction related expenditures
		Contingency expenses
		Other field expenses
		Construction of Ranger Station
Ecosystem Research and Monitoring	These are the costs necessary in the achievement of the program's goals: to determine ecosystem health; generate sound scientific information; serve as basis for formulating proactive strategies; and measure biophysical indicators of management effectiveness.	Philippine Navy support (personnel + relieving)
		Philippine Coast guard support (personnel)
		Regular monitoring: seabirds, fish, benthos, and water quality
		Targeted research
Tourism Management	These costs were identified to attain the TRNP's tourism goal of effectively manage tourism to support conservation of the park's resources through proper management set-up, good partnerships with the tourism stakeholders, use of scientific information for improved management, and committed support of various stakeholders.	Satellite tracking device for seabirds
		Upgrading of research equipment
		Mooring/Anchor buoys (materials for maintenance)
		Attendance to tourism exhibits/conferences
		Pre-departure briefings and other supplies
Community Development and Resource Management Program	These expenditures were recognized to better engage the relevant stakeholders to achieve sustainable outcomes for Tubbataha's effective governance.	Repair and maintenance: equipment
		Equipment
		Public consultations
		Support to LGU Cagayancillo Livelihood Programs
		Resource mobilization Plan
Conservation and Awareness Program	The expenditures identified here are intended to achieve the program's goals, which are to promote awareness, generate support, foster stewardship, and promote voluntary compliance with regulations.	Updating of General Management Plan
		Updating of Ecotourism Plan
		Production of brochures and leaflets
		Production of AVP
		Procurement of equipment-AVP
		CEPA campaign and advocacies (digital)
		CEPA campaign and advocacies (face to face)
		Tubbataha Youth Ambassador (TYA) program
Institutional Strengthening, Partnership and Capacity-Building Program	Expenditures under this program are identified to enhance policy development, expand partnerships with agencies and institutions, and enhance management capability to enable effective response to emerging challenges.	CEPA in Cagayancillo for establishment of bird sanctuaries, beach forest regeneration of native trees on the islet
		IEC materials on MPAs
		IEC on wildlife conservation and protection
		Networking and collaboration
		Familiarization of TPAMB and Partners
		Management Effectiveness Evaluation (MEE)
		Dive Operators Meeting
		Coral reef insurance
Management and Operational Expenses	These are the recurring administrative expenditures	Capacity building of research staff
		Capacity building for sustainable tourism (e.g. for dive guides; ecotourism etc)
		Capacity building of Marine Park Rangers
		Capacity development for TMO-Admin staff and TPAMB
		PAMB Meetings and Operation
		Office Equipment/furnitures
		Repair and Maintenance of Office equipment/furnitures
		Office rental
		Utilities
		Office supplies
		Transportation and Delivery Expenses
		General services
		Other admin expenses

Annex 6. Estimated Detailed Costing

TRNP ESTIMATED INVESTMENT FROM 2021-2031

ITEM DESCRIPTION	Unit Cost (PhP)	Unit	Frequency	Estimated	Budgetary Notes & Assumptions	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	TOTAL
Personnel Cost						6,896,032	7,625,980	8,007,279	8,407,643	8,828,025	9,269,427	9,732,898	10,219,543	10,730,520	11,267,046	90,984,395
PAStu	84,698	per person per month	12	1,016,370.38	Estimated unit cost; inclusive 20% premium	1,016,370	1,067,189	1,120,548	1,176,576	1,235,405	1,297,175	1,362,034	1,430,135	1,501,642	1,576,724	12,783,797
Executive Asst	20,110	per person per month	12	241,315	Estimated unit cost; inclusive 20% premium	241,315	253,381	266,050	279,352	293,320	307,986	323,385	339,554	356,532	374,359	3,035,234
Senior MPR/Researcher	50,487	per person per month	12	605,849	Estimated unit cost; inclusive 20% premium	605,849	636,141	667,949	701,346	736,413	773,234	811,896	852,490	895,115	939,871	7,620,304
Senior MPR	41,753	per person per month	12	501,033	Estimated unit cost; inclusive 20% premium	501,033	526,085	552,389	580,008	609,009	639,459	671,432	705,004	740,254	777,267	6,301,939
Junior MPR/Researcher	29,583	per person per month	12	354,998	Estimated unit cost; inclusive 20% premium	354,998	372,748	391,385	410,955	431,502	453,077	475,731	499,518	524,494	550,718	4,465,127
Junior MPR	27,824	per person per month	12	333,884	Estimated unit cost; inclusive 20% premium	333,884	350,578	368,107	386,512	405,838	426,130	447,436	469,808	493,299	517,964	4,199,557
Research Officer	36,156	per person per month	12	433,869	Estimated unit cost; inclusive 20% premium	433,869	455,562	478,341	502,258	527,370	553,739	581,426	610,497	641,022	673,073	5,457,158
Researcher	31,347	per person per month	12	376,169	Estimated unit cost; inclusive 20% premium	376,169	394,977	414,726	435,463	457,236	480,098	504,102	529,308	555,773	583,562	4,731,413
Researcher	29,686	per person per month	12	356,236	Estimated unit cost; inclusive 20% premium	356,236	374,048	392,750	412,388	433,007	454,657	477,390	501,260	526,323	552,639	4,480,698
CEPA/IEC Officer	30,567	per person per month	12	366,806	Estimated unit cost; inclusive 20% premium	366,806	385,146	404,404	424,624	445,855	468,148	491,555	516,133	541,940	569,036	4,246,840
Tourism Officer	31,347	per person per month	12	376,169	Estimated unit cost; inclusive 20% premium	376,169	394,977	414,726	435,463	457,236	480,098	504,102	529,308	555,773	583,562	4,731,413
CEPA/IEC Asst	20,110	per person per month	12	241,315	Estimated unit cost; inclusive 20% premium	241,315	253,381	266,050	279,352	293,320	307,986	323,385	339,554	356,532	374,359	3,035,234
Admin Officer	54,262	per person per month	12	651,147	Estimated unit cost; inclusive 20% premium	651,147	683,704	717,890	753,784	791,473	831,047	872,599	916,229	962,041	1,010,143	8,190,057
Cashier	27,392	per person per month	12	328,708	Estimated unit cost; inclusive 20% premium	328,708	345,143	362,401	380,521	399,547	419,524	440,500	462,525	485,651	509,934	4,134,454
Accountant	26,438	per person per month	12	317,251	Estimated unit cost; inclusive 20% premium	317,251	349,769	367,258	385,621	404,902	425,147	446,404	468,724	492,160	517,964	3,990,349
Budget/HR Officer	26,438	per person per month	12	317,251	Estimated unit cost; inclusive 20% premium	317,251	349,769	367,258	385,621	404,902	425,147	446,404	468,724	492,160	517,964	3,990,349
Admin Asst-Property Custodian	23,757	per person per month	12	285,089	Estimated unit cost; inclusive 20% premium	285,089	299,343	314,311	330,026	346,527	363,854	382,047	401,149	421,206	442,267	3,585,819
Messenger	13,282	per person per month	12	159,379	Estimated unit cost; inclusive 20% premium	159,379	167,348	175,715	184,501	193,726	203,412	213,583	224,262	235,475	247,249	2,004,652
Programs						79,011,346	95,037,683	21,348,913	24,045,549	21,630,373	26,873,109	24,817,493	25,386,461	25,218,992	25,526,461	368,896,381
Biodiversity and Habitat Protection, Research, Monitoring, and Restoration Program						77,911,346	91,748,308	18,225,820	20,534,775	16,607,004	22,874,853	20,820,339	20,063,769	21,033,748	20,201,157	330,021,120
LAW ENFORCEMENT						69,353,946	83,097,143	9,386,625	14,648,524	10,348,755	12,716,801	15,215,374	12,683,527	12,578,976	13,968,075	253,997,746
Patrol boat upgrading (engine and hull)																
Hull for single engine	1,300,000	PhP lump sum	1	1,300,000	one-time cost; once in 15 years (2010 last acquisition)						1,659,166					1,659,166
Hull for twin engine	1,300,000	PhP lump sum	1	1,300,000	one-time cost; once in 15 years (2021 last acquisition)				1,504,913							1,504,913
Hull for dinghy	200,000	PhP lump sum	1	200,000	one-time cost; once in 15 years (2019 last acquisition)											-
Engine replacement-90HP (2 units- w/ access)	750,000	PhP lump sum	2	1,500,000	one-time cost; once in 3 years (2018 last acquisition)	1,500,000			1,736,438			2,010,143				5,246,581
Engine replacement-150HP (w/ accessories)	1,000,000	PhP lump sum	1	1,000,000	one-time cost; once in 3 years (2018 last acquisition)	1,000,000			1,157,625			1,340,096				3,497,721
Engine replacement-25HP	150,000	PhP lump sum	1	150,000	one-time cost; once in 4 years		157,500				191,442				232,699	581,641
Field equipment (communication, surveillance, etc)																
Radar	500,000	PhP lump sum	1	500,000	one-time cost; once in 10 years (2019 last acquisition)								703,550			703,550
Other equipment (55B radio, satellite phone, camera (drone and go pro)	230,000	PhP lump sum	1	230,000	Recurring cost; every 3 years	230,000			266,254			308,222			356,805	1,161,281
Camera (drone and go pro)	110,000	PhP lump sum	1	110,000	Recurring cost; every 3 years	110,000			127,339			147,411			170,646	555,395
Fuel, oil and lubricants	80/lt	1000 li	6	480,000	Recurring cost	480,000	504,000	529,200	555,660	583,443	612,615	643,246	675,408	709,179	744,638	6,037,388
Repair and maintenance: Ranger station	100,000	PhP lump sum	1	100,000	recurring cost	100,000	105,000	110,250	115,763	121,551	127,628	134,010	140,710	147,746	155,133	1,257,789
Repair and maintenance: patrol boat	100,000	PhP lump sum	1	100,000	recurring cost	100,000	105,000	110,250	115,763	121,551	127,628	134,010	140,710	147,746	155,133	1,257,789
Repair and maintenance: field equipment	50,000	PhP lump sum	1	50,000	recurring cost	50,000	52,500	55,125	57,881	60,775	63,814	67,005	70,355	73,873	77,566	628,895
Relieving trip																
TMO	411,100	per trip	4	1,644,400	recurring cost	1,644,400	1,726,620	1,812,951	1,903,599	1,998,778	2,098,717	2,203,653	2,313,836	2,429,528	2,551,004	20,683,086
PN	500,000	per trip	2	1,000,000	recurring cost	1,000,000	1,050,000	1,102,500	1,157,625	1,215,506	1,276,282	1,340,096	1,407,100	1,477,455	1,551,328	12,577,893
Legal and apprehension fund	500,000	PhP lump sum	1	500,000	Recurring cost; revolving fund must be maintained	500,000	525,000	551,250	578,813	607,753	638,141	670,048	703,550	738,728	775,664	6,288,946
Legal retainer	15,000	Monthly	12	180,000	Recurring cost	180,000	189,000	198,450	208,373	218,791	229,731	241,217	253,278	265,942	279,239	2,264,021
Subsistence allowance for Rangers					Recurring cost	729,300	765,765	804,053	844,256	886,469	930,792	977,332	1,026,198	1,077,508	1,131,384	9,173,057
PN & PCG personnel (6 pax)	120	Daily	365	262,800												-
TMO & LGU (4 pax)	300	Daily	365	438,000												-
LGU weekend and regular & special non	125	Daily	114	28,500												-
Communication expenses (satphone and internet)					Recurring cost	121,200	127,260	133,623	140,304	147,319	154,685	162,420	170,541	179,068	188,021	1,524,441
Satellite phone	3,800	Monthly	12	45,600												-
Satellite broadband	6,300	Monthly	12	75,600												-
Field supplies	30,000	every 2 months	6	180,000	Recurring cost	180,000	189,000	198,450	208,373	218,791	229,731	241,217	253,278	265,942	279,239	2,264,021
Disaster risk reduction related expenditures	500,000	PhP lump sum	1	500,000	Recurring cost	500,000	525,000	551,250	578,813	607,753	638,141	670,048	703,550	738,728	775,664	6,288,946
Contingency expenses	200,000	Annual	1	200,000	Unforeseen field expenses	200,000	210,000	220,500	231,525	243,101	255,256	268,019	281,420	295,491	310,266	2,515,579
Other field expenses	5,000	every 2 months	6	30,000	Recurring cost	30,000	31,500	33,075	34,729	36,465	38,288	40,203	42,213	44,324	46,540	377,337
Construction of Ranger Station					Total construction cost is 210M, structure was partially	58,000,000	74,000,000									132,000,000
Philippine Navy support (personnel + relieving)	794,520	Annual	1	794,520	Recurring cost	834,246	875,958	919,756	965,744	1,014,031	1,064,733	1,117,969	1,173,868	1,232,561	1,294,189	10,493,057
Philippine Coast guard support (personnel)	1,776,000	Annual	1	1,776,000	Recurring cost	1,864,800	1,958,040	2,055,942	2,158,739	2,266,676	2,380,010	2,499,010	2,623,961	2,755,159	2,892,917	23,455,254

TRNP ESTIMATED INVESTMENT FROM 2021-2031

ITEM DESCRIPTION	Unit Cost (Php)	Unit	Frequency	Estimated	Budgetary Notes & Assumptions	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	TOTAL
ECOSYSTEM RESEARCH AND MONITORING						8,452,400	8,400,065	8,638,539	5,675,563	6,037,028	9,925,769	5,298,068	7,124,149	8,185,875	5,950,740	73,688,197
Regular monitoring:																
Seabird monitoring	909,500	Php lump sum	1	909,500	7-day trip; once a year, core program	909,500	954,975	1,002,724	1,052,860	1,105,503	1,160,778	1,218,817	1,279,758	1,343,746	1,410,933	11,439,593
Fish and Benthos survey	833,500	Php lump sum	1	833,500	9-day trip ; once a year, core program	833,500	875,175	918,934	964,880	1,013,124	1,063,781	1,116,970	1,172,818	1,231,459	1,293,032	10,483,673
Water quality monitoring	613,500	Php lump sum	1	613,500	4-day trip, consultancy & reagents; once a year	613,500	644,175	676,384	710,203	745,713	782,999	822,149	863,256	906,419	951,740	7,716,537
Targeted research																
Beach forest restoration	537,500	Php lump sum	1	537,500	4-day trip; every year	537,500	564,375	592,594	622,223	653,335	686,001	720,301	756,316	794,132	833,839	6,760,617
Seagrass, gastropods, trochus survey	712,700	Php lump sum	1	712,700	7-day trip; every 3 years; with consultancy-30k			785,752		-	909,606		-	1,052,982		2,748,340
Napoleon Wrasse Assessment	841,900	Php lump sum	1	841,900	8-day trip; every 5 years; with consultancy-50k	841,900					1,074,501	-			1,306,063	3,222,465
Coral Bleaching Assessment	841,900	Php lump sum	1	841,900	8-day trip; as needed; consultancy 50k				841,900					883,995		1,725,895
Fish Census	300,000	Php lump sum	1	300,000	Airfare and travel via diveboat; pro-bono consultancy; every 2 years		315,000			364,652			422,130			1,101,782
Shark survey	735,500	Php lump sum	1	735,500	6-day trip; every 3 years; consultancy-50k			810,889			938,705			1,086,668		2,836,262
Larval study	1,033,500	Php lump sum	1	1,033,500	8-day trip; every 10 years; consultancy-200k						1,319,037					1,319,037
Turtle laparoscopy	809,500	Php lump sum	1	809,500	7-day trip; every 3 years; consultancy 50k		849,975			1,033,150			1,139,048			3,022,173
Carrying capacity study	500,000	Php lump sum	1	500,000	travel via diveboat and consultancy;one-time cost		525,000									525,000
Fish and benthos comprehensive assessment	1,181,500	Php lump sum	1	1,181,500	10-day trip; one-time cost; consultancy-200k				1,367,734							1,367,734
Coral taxonomy	959,500	Php lump sum	1	959,500	7-day trip; every 5 years; consultancy-200k			1,057,849					1,350,113			2,407,962
Vulnerability assessment	959,500	Php lump sum	1	959,500	7-day trip; every 5 years; consultancy-200k	959,500					1,224,592	-		-		2,184,092
Habitat mapping and cetacean survey	5,117,771	3 yr budget	1	5,117,771	3-year budget;	1,927,000	2,558,915	631,915								5,117,830
Opportunistic sampling of IAS identification and	959,500	Php lump sum	1	959,500	7-day trip; every 5 years; consultancy 200k		1,007,475		-	-	-	1,285,822		-	-	2,293,297
Research and development of artificial nesting	100,000	Php lump sum	1	100,000	Every year; materials & fabrication	100,000	105,000	110,250	115,763	121,551	127,628	134,010	140,710	147,746	155,133	1,257,789
Satellite tracking device for seabirds	4,000,000	Php lump sum	1	4,000,000	10 tags & satellite subscription; travel of consultants; materials & accessories	1,500,000		1,500,000		1,000,000						4,000,000
Upgrading of reseach equipment	500,000	Php lump sum	1	500,000	recurring cost; once every 3 years; 2021 test upgrade; 2022-add l equipment only	230,000		551,250			638,141		-	738,728		2,158,119
TOURISM MANAGEMENT						105,000	251,100	200,655	210,688	221,222	232,283	306,897	256,092	268,897	282,342	2,335,176
Mooring/Anchor buoys (materials for maintenance)	100,000	Php lump sum	1	100,000	recurring cost; supplies and materials	100,000	105,000	110,250	115,763	121,551	127,628	134,010	140,710	147,746	155,133	1,257,789
Attendance to tourism exhibits/conferences	30,000	Annual	1	30,000	recurring cost; travel cost		31,500	33,075	34,729	36,465	38,288	40,203	42,213	44,324	46,540	347,337
Pre-departure briefings and other supplies	47,000	Annual		47,000	Food and tranpo exp and printing of map and other incidental exp		49,350	51,818	54,408	57,129	59,985	62,984	66,134	69,440	72,912	544,161
Repair and maintenance: equipment	5,000	Annual	1	5,000	Recurring cost: OIWR	5,000	5,250	5,513	5,788	6,078	6,381	6,700	7,036	7,387	7,757	62,889
Equipment	60,000	Php lump sum	1	60,000	Recurring cost-IT equipment; once every 5 years		60,000					63,000				123,000
Community Development and Resource Management Program						250,000	210,000	220,500	-	486,203	574,327	-	281,420	295,491	310,266	2,628,206
Public consultations	200,000	Php lump sum	1	200,000	recurring cost: once in 3 years			220,500			255,256			295,491		771,247
Support to LGU Cagayancillo Livelihood Programs		Php lump sum	1	-	recurring cost; contingent on tourism collection	-	-	-	-	-	-	-	-	-	-	-
Resource mobilization Plan	250,000	Php lump sum	1	250,000	recurring cost-consulancy; update every 5 years	250,000					319,070					569,070
Updating of General Management Plan	200,000	Php lump sum	1	200,000	recurring cost; every 5 years;	-			-	243,101	-	-		-	310,266	553,367
Updating of Ecotourism Plan	200,000	Php lump sum	1	200,000	recurring cost; every 3 years	-	210,000		-	243,101			281,420			734,521
Conservation and Awareness Program						750,000	1,837,500	1,212,750	1,678,556	2,674,114	1,403,910	1,943,139	2,814,201	1,625,201	2,559,692	18,499,062
Production of brochures and leaflets	250,000	Php lump sum	1	250,000	recurring cost	250,000	262,500	275,625	289,406	303,877	319,070	335,024	351,775	369,364	387,832	3,144,473
Production of AVP	350,000	Php lump sum	1	350,000	one time-cost; assume every 3 years;	350,000			405,169			469,033			542,965	1,767,167
Procurement of equipment AVP	200,000	Php lump sum	1	200,000	one time-cost: once every 5 years: last upgrade 2021					243,101	-				310,266	553,367
CEPA campaign and advocacies (digital)	150,000	Php lump sum	1	150,000	recurring cost	150,000	157,500	165,375	173,644	182,326	191,442	201,014	211,065	221,618	232,699	1,886,684
CEPA campaign and advocacies (face to face)	250,000	Php lump sum	1	250,000	recurring cost; post pandemic			275,625	289,406	303,877	319,070	335,024	351,775	369,364	387,832	2,631,973
Tubbataha Youth Ambassador (TYA) program	450,000	Php lump sum	1	450,000	At least 4 youth/year; monthly allowance (10k/mo) and trainings		472,500	496,125	520,931	546,978	574,327	603,043	633,195	664,855	698,098	5,210,052
CEPA in Cagayancillo for establishment of bird sanctuaries, beach forest regeneration of native trees on the islet	350,000	Php lump sum	1	350,000	recurring cost; every 3 years		367,500		-	425,427		-	492,485		-	1,285,412
IEC materials on MPAs	200,000	Php lump sum	1	200,000	recurring cost; every 3 years		210,000		-	243,101			281,420		-	734,521
IEC on wildlife conservation and protection	350,000	Php lump sum	1	350,000	recurring cost; every 3 years		367,500		-	425,427		-	492,485		-	1,285,412

TRNP ESTIMATED INVESTMENT FROM 2021-2031

KNP ESTIMATED INVESTMENT FROM 2021-2031																
ITEM DESCRIPTION	Unit Cost (PhP)	Unit	Frequency	Estimated	Budgetary Notes & Assumptions	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	TOTAL
Institutional Strengthening, Partnership and Capacity-Building Program						100,000	1,241,875	1,689,844	1,832,217	1,863,053	2,020,019	2,054,016	2,227,071	2,264,552	2,455,346	17,747,994
Networking and collaboration	100,000	PhP lump sum	1	100,000	Recurring cost; post pandemic activity-travel		105,000	110,250	115,763	121,551	127,628	134,010	140,710	147,746	155,133	1,157,789
Familiarization of TPAMB and Partners	537,500	PhP lump sum	1	537,500	Recurring cost		564,375	592,594	622,223	653,335	686,001	720,301	756,316	794,132	833,839	6,223,117
Management Effectiveness Evaluation (MEE)	200,000	PhP lump sum	1	200,000	Recurring cost; once every 2 years	-	210,000		231,525	-	255,256	-	281,420	-	310,266	1,288,467
Dive Operators Meeting	150,000	PhP lump sum	1	150,000	recurring cost; post pandemic activity		157,500	165,375	173,644	182,326	191,442	201,014	211,065	221,618	232,699	1,736,684
Capacity building of research staff	100,000	PhP lump sum	1	100,000	recurring cost		100,000	105,000	110,250	115,763	121,551	127,628	134,010	140,710	147,746	1,102,656
Capacity building for sustainable tourism (e.g. for dive	150,000	PhP lump sum	1	150,000	one-time cost; once every 2 years-post pandemic			165,375		182,326		201,014		221,618		770,334
Capacity building of Marine Park Rangers	200,000	PhP lump sum	1	200,000	Recurring cost; online platform for the next 2-yr; face to face activity onwards @200k/yr	50,000	52,500	220,500	231,525	243,101	255,256	268,019	281,420	295,491	310,266	2,208,079
Capacity development for TMO-Admin staff and TPAMB	300,000	PhP lump sum	1	300,000	recurring cost; post pandemic full cost	50,000	52,500	330,750	347,288	364,652	382,884	402,029	422,130	443,237	465,398	3,260,868
Management and Operational Expenses						1,111,989	1,272,588	1,225,967	1,287,266	1,351,629	1,419,211	1,624,181	1,564,680	1,642,914	1,725,059	14,225,483
PAMB Meetings and Operation	261,000	PhP lump sum	1	261,000	recurring cost; regular meetings + TAB	261,000	274,050	287,753	302,140	317,247	333,109	349,765	367,253	385,616	404,897	3,282,830
Office Equipment/furnitures	100,000	PhP lump sum	1	100,000	recurring cost-IT equipment; upgrade every 5 years		105,000		-	-	-	134,010		-	-	239,010
Repair and Maintenance of Office equipment/furnitures	96,000	Annual	1	96,000	Recurring cost	20,000	21,000	22,050	23,153	24,310	25,526	26,802	28,142	29,549	31,027	251,558
Office rental	481,989	Annual	1	481,989	recurring cost	481,989	506,088	531,392	557,962	585,860	615,153	645,911	678,206	712,117	747,723	6,062,402
Utilities	167,000	Annual	1	167,000	Recurring cost	167,000	175,350	184,118	193,323	202,990	213,139	223,796	234,986	246,735	259,072	2,100,508
Office supplies	48,000	Annual	1	48,000	Recurring cost	48,000	50,400	52,920	55,566	58,344	61,262	64,325	67,541	70,918	74,464	603,739
Transportation and Delivery Expenses	28,000	Annual	1	28,000	Recurring cost	28,000	29,400	30,870	32,414	34,034	35,736	37,523	39,399	41,369	43,437	352,181
General services	84,000	Annual	1	84,000	Recurring cost	84,000	88,200	92,610	97,241	102,103	107,208	112,568	118,196	124,106	130,312	1,056,543
Other admin expenses	22,000	Annual	1	22,000	recurring cost	22,000	23,100	24,255	25,468	26,741	28,078	29,482	30,956	32,504	34,129	276,714
GRAND TOTAL						87,019,367	103,936,252	30,582,160	33,740,458	31,810,028	37,561,746	36,174,572	37,170,684	37,592,426	38,518,566	474,106,259