

Towards a collaborative and sustainable financing system for Mount Arayat National Park, Philippines

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ABSTRACT. Insufficient funds and inefficient fund administration are among the main constraints in effective protected area management in the Philippines. Aside from biodiversity conservation objectives, Protected areas (PAs) also aim for financial sustainability. This study analyzes the financing status and fund administration of Mount Arayat National Park (MANP), providing administrative, fiscal, and policy options for sustainable financing. A Financial Sustainability Scorecard was formulated to identify and assess policy, administrative, fiscal, and financial issues and gaps related to the financing of MANP. Analysis of secondary data and reports, key informant interviews, and focus group discussions with the PA management were conducted to fill up the scorecard. SWOT analysis was then conducted to identify crucial internal and external factors related to funding generation and administration. Results show that the overall financial administration of MANP is fair (53%) but below satisfactory. One of the key strengths of MANP, and probably all site-level PAs in the country, is the presence of sufficient and sound legal, regulatory, and institutional frameworks supporting sustainable financing. However, adopting and implementing these guidelines can be improved, such as business planning and tools for cost-effective management. An updated and comprehensive management plan, detailed financial plan, and business plan must be formulated. At present, MANP has limited revenue-generating mechanisms. The Special-use Agreement on Protected Areas (SAPA) was the most promising option to increase revenues in MANP. Collaboration with organizations, such as the local government units, academe, non-government organizations, and other government agencies for the possible benefit and cost-sharing schemes may also be encouraged. Investing in human resources and capacity building is recommended, particularly for effective fund administration and revenue collection systems and in crafting and marketing alternative financing mechanisms.

Keywords: financial sustainability scorecard, fund management, protected area, SWOT analysis

INTRODUCTION

The Philippines is a biodiversity-rich country and one of the 18 mega-biodiverse countries in the world (DENR-BMB, The Fifth National Report on Convention on Biological Diversity 2014). However, its biodiversity richness continues to decline, making the country one of the world's top biodiversity hotspots. To protect and conserve the richness and integrity of the country's biodiversity, several protected areas (PAs) were designated. The designation and governance of PAs are one of the core strategies and critical tools for protecting and conserving

the world's biodiversity (Dudley 2008; Secretariat of the Convention on Biological Diversity 2008). PAs also play a vital role in climate change mitigation strategies, conserving cultural and spiritual values, and assuring healthy communities.

The effectiveness of PA management in the Philippines was assessed under the Protected Areas Management Enhancement Project, covering 61 PAs nationwide (Guiang & Braganza 2014). The project results

revealed that PA management in the Philippines is poor to fair. This project also specified insufficient funds and inefficient fund administration as among the main constraints in effective PA management in the Philippines, along with other governance and management issues such as lack of harmonized land use plans, conflict of interest between rights and stakeholders, and outdated biophysical resource inventory. Thus, PA managers should also aim for financial sustainability as an integral component of effective PA management, aside from biodiversity and socio-economic objectives.

Protected area financial sustainability is defined as the “ability to secure sufficient, stable, and long-term financial resources and allocate them in a timely manner and an appropriate form, with respect to conservation and other objectives” (Emerton *et al.* 2006). It entails the ability to provide for and meet all the costs associated with managing a PA (Bovarnick 2010) by identifying financial sources and opportunities and matching them with the PA's financing needs (IUCN 2000). In the economic sense, it denotes finding ways to meet and sustain the “demand” or the PA financing needs with appropriate funding “supply” through various financing mechanisms (Bovarnick 2010; Flores *et al.* 2008). However, financial sustainability does not merely mean having a lot of money or fund (Emerton *et al.* 2006) but also examining how the money or fund is spent. Thus, it considers funding quality, form, and timing important aspects of effective fund mobilization and management.

The IUCN publication “Sustainable Financing of Protected Areas” identified five elements as integral parts of sustainable PA financing (Emerton *et al.* 2006): 1) building a diverse, stable, and secure funding portfolio; 2) improving financial administration and effectiveness; 3) taking a comprehensive view of costs and benefits; 4) creating an enabling financial and economic framework, and 5) mainstreaming and building capacity to use financial tools and mechanisms. These imply that PA financial sustainability covers both sufficiency of funding and efficiency of fund utilization and administration and indicate that financial sustainability necessitates strong and effective institutions for PA management (Flores *et al.* 2008; Emerton *et al.* 2006).

Several studies were conducted to assess PA's status and financing system at the national level in the Philippines (Anda & Atienza 2016; REECS 2014) and recommended actions toward sustainable PA financing. However, limited studies assess site-level PA's financial status and financing system. This study was conceptualized to aid in analyzing the financial status and administration of site-level PAs, with Mount Arayat National Park (MANP) as the pilot site, and to provide administrative, fiscal, and policy options for sustainable financing of the PA.

MANP is the first-ever designated protected area in the province of Pampanga. It is located at approximately 15°12'N to 120°45'E in the north-eastern portion flat agricultural region of the province (**Figure 1**). It covers a total area of 3,715 ha. The southern-east portion of the mountain lies within the municipality of Arayat, encompassing eight barangays. The north-western side is under the jurisdiction of the town of Magalang, which covers five barangays. In total, it is surrounded by 13 barangays. The park is one of the most iconic natural features in the province and one of the most popular tourist spots in the region. In terms of its biodiversity richness, this mountain was identified as one of the 18 Centers of Plant Diversity in the Philippines (Fernando *et al.* 2009).

However, like other site-level PAs in the country, its management faces financial constraints (PENRO-Pampanga 2018). Though sustainable financing is one of the key missions indicated in the PA's management plan, funding remains problematic. In its last management effectiveness report, it was revealed that the fund allotted to the PAMB was insufficient to carry out the necessary activities indicated in the management plan and other contingency activities needed for conservation activities (PENRO-Pampanga 2018).

METHODOLOGY

Financial sustainability scorecard for MANP

A financial sustainability scorecard suited for site-level PAs in the Philippines was developed to assess the financial status and administration of MANP. This was adopted from the “Financial Sustainability Scorecard for National Systems of Protected Areas” of Bovarnick (2010), a template that offers a standard and systematic framework and guidelines for assessing financial gaps of PA management, along with the assessment of the legal, fiscal, and administrative strengths and weaknesses of the financial system of PA. However, this scorecard is primarily intended for National Systems-level and not for site-level PAs. Nevertheless, the guidelines specify that adjusting the content of the scorecard, either by eliminating or adding elements, is allowed to better fit the scorecard to the context and purpose of the intended users. Thus, the scorecard was re-designed, with some elements omitted and revised, considering the Philippines' context of site-level PA management.

The scorecard was divided into two parts: Part 1—an assessment of the overall status, and Part 2—an assessment of the qualitative elements of the financing system. The assessment of the overall financial status (Part I) aimed to determine if MANP has sufficient funds or a financial gap. It covered computation of available finances, estimation of basic and optimal management costs, projection of financing

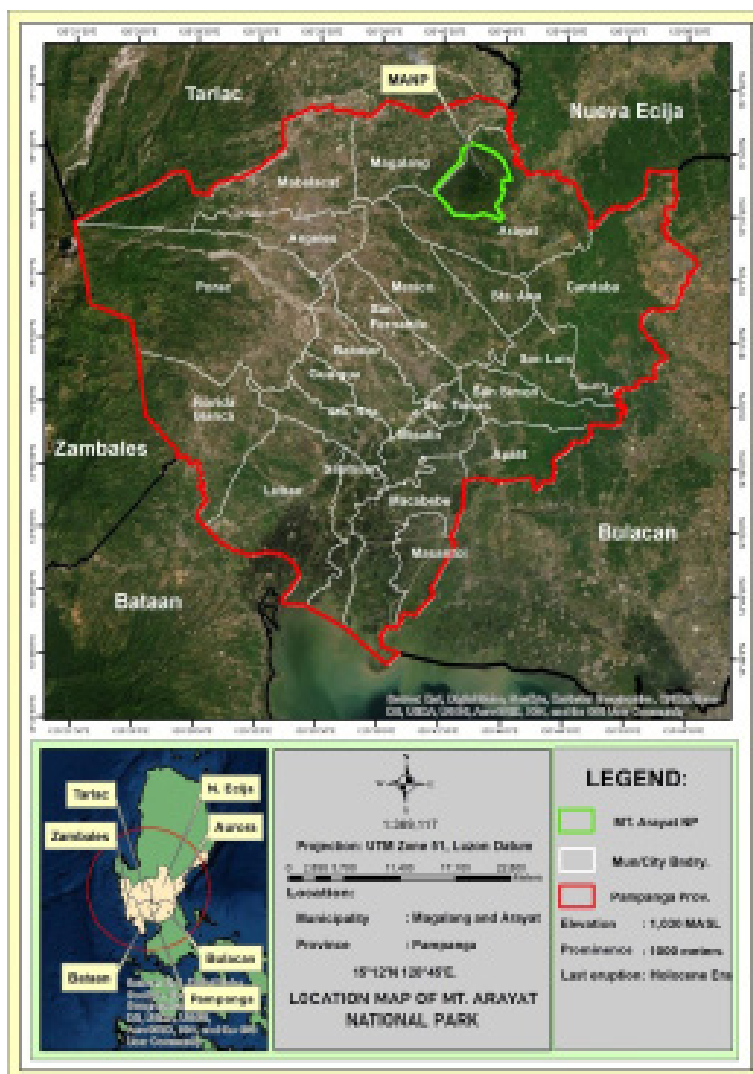


Figure 1. Location map of Mount Arayat National Park (MANP).

needs, and assessing financial gaps. On the other hand, Part II included an assessment of a wide aspect of PA financings, such as the presence or absence of legal frameworks supporting sustainable financing, business plans, and other management tools, and a variety of fund sources operated in a MANP. This part was divided into three components: Component 1 – Legal, regulatory, and institutional frameworks that enable sustainable financing; Component 2 – Business planning and tools for cost-effective management; and Component 3 – Tools for revenue generation and mobilization.

Under these components were a set of elements and sub-elements. To fill up the scorecard, a scoring system was used. Possible scores ranged from zero to three. Higher scores mean that the more compliant the PA is, the more in agreement the PA managers are with the sub-elements. Scoring was based on the available data and knowledge of PA managers.

Secondary data analysis conducted to fill up the scorecard included the review of the Protected Area Management Plan (PAMP), Work and Financial Plan (WFP), ecotourism plan, existing business plan, and financial records and reports, including the Integrated Protected Area Fund (IPAF) collection and disbursement. A thorough review of PA management and financing policies was also conducted, including existing institutional arrangements with other agencies and organizations. Key informant interviews (KII) and focus group discussions (FGD) with key personnel directly involved in the planning, management, and operation of MANP were organized to verify the initial findings and finalize the answers and scoring of the scorecard. They include the Protected Area Superintendent (PASu), key staff from the Protected Area Management Office (PAMO), Provincial Environment and Natural Resources Office-Pampanga (PENRO-Pampanga), and Conservation and Development Division (CDD) of DENR Region 3. During

the FGD, the participants were encouraged to deliberate, justify their scores, and come up with a consensus.

Scores for each sub-element were summed-up, and total scores and percentages for each element and component were computed by dividing the total score by the maximum allowable score and multiplying by 100. A percentage closer to 100% indicates that a particular element and component conform to foundations for sustainable financing.

Table 1. Description of the percentage score.

Range of percentage score (%)	Description
less than 20	Very poor
21–40	Poor
41–60	Fair
61–80	Satisfactory
81–100	Very Satisfactory

SWOT analysis

SWOT analysis is the process of assessing internal factors (strengths and weaknesses) and external environments (opportunities and threats) and is an important part of strategic planning (Reihanian *et al.* 2012). Organizations or institutions use it to formulate strategies for attaining goals and objectives (Sammut-Bonnici & Galea 2015). SWOT analysis provides a strategic framework to synthesize and analyze the scores and data from the financial sustainability scorecard used in this study. The performance score of each element and component provides a quantitative basis to determine the weaknesses and strengths of the financing system of MANP. Elements and components with low scores can be considered weak areas and denote a need for future intervention and capacity building (Bovarnick 2010). On the other hand, components and elements with high scores can be categorized as key strengths supporting PA financing. The justifications of the scores and the results of KII and a comprehensive review of laws and policies, existing institutional arrangements, management plans, documents, and reports, provide information for identifying possible opportunities and threats that should be considered. In this study, SWOT analysis was used to diagnose key internal and external factors related to funding status, administration, and generation of MANP, and served as a basis for determining a strategic action plan for sustainable financing.

RESULTS AND DISCUSSION

Financial status

The MANP has two main fund sources: government budget allocation and the user fee. There are two user fees in MANP.

One is the entrance fee collected from the two entrance gates, and the other is the concession fee paid by the Municipality of Arayat for the co-management of the 4-ha resort area in Brgy. San Juan Baño, Arayat, Pampanga.

National budget allocation accounts for 91% of the annual fund available. Based on the 2016–2020 Work and Financial Plan (WFP), MANP received stable funding from the national government (**Figure 2**). The high dependence of site-level PAs for funding from the national government allocation was also highlighted by the Biodiversity Management Bureau (BMB 2014), stating that 96% of the budget for PAs comes from the national government. From 2014 to 2019, MANP collected approximately PHP 2 M in user fees, which accrued to its Integrated Protected Area Fund (IPAF), specifically under its PA-RIA or Protected Area-Retained Income Account. PA-RIA is a trust fund maintained by a protected area and is administered by the Protected Area Management Board (PAMB). In MANP, user fees account for 9% of the total available funds. The disbursement of funds under IPAF-PARIA goes directly to fund projects involving protection, maintenance, and administration, as approved through a PAMB Resolution.

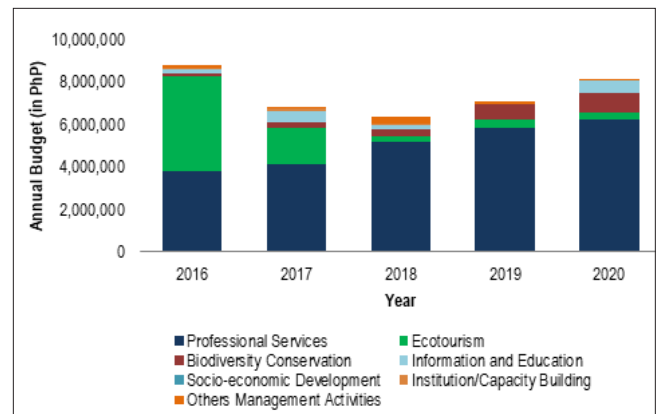


Figure 2. National budget allocation for MANP from 2016 to 2020.

However, MANP has an estimated annual average financing gap of PHP 2.8 M, computed by subtracting the estimated financing needs from the expected available funds of MANP for a 10-year management period (**Table 2**). A financial projection was formulated for the basic and optimal management scenarios to compute the financial needs. In this paper, the basic management costs consist of costs for the common activities of PAMB based on its Annual Work and Financial Plan. The estimated cost for the basic management scenario was PHP 10.3 M annually. Financing needs outside the usual PAMB activities were identified for the optimal management scenario based on MANP managers and staff interviews. These include hiring additional staff, developing

ecotourism facilities, as well as other maintenance and operating expenses not specified in the WFP. The estimated cost for this was PHP 3.8 M annually. The annual financing requirement was estimated to be around PHP 14.1 M for a 10-year management period.

Table 2. Summary of financial projection and estimated annual financial gap for MANP.

Annual estimates	Amount (in PHP)
Available finances (A)	
Estimated national budget allocation	10,344,560.30
Estimated entrance fee collection	677,810.70
Estimated annual concession fee	300,000.00
Total	11,322,371.00
Financing needs (B)	
Estimated costs for basic management scenario	10,344,560.30
Estimated additional financing needs for optimal management	3,751,277.27
Total	14,095,837.57
Financing gap (A - B)	-2,773,466.57

To estimate available finances from entrance fees, the number of visits in 2019 was used instead of the reported remittances. The computed annual entrance fee collection is PHP 677,810, assuming a 10% annual increase in revenue for 10 years of operation. Assuming that the concession fee will continue to be collected for a 10-year operation of the resort, a PHP 300,000 annual concession fee was expected as fixed revenue. The estimated annual revenue from user fees is PHP 978,000.

For the computation of the financing gap, it was assumed that the fund for the basic management costs would always be available since the DENR regularly funds it. Thus, the additional financing needs not included in the regular WFP would need supplemental funding, which would rely on other sources, particularly user fees. Therefore, the estimated annual financial gap is around PHP 2.8 M.

A better estimation of the financial gap is through activity-based cost (ABC) accounting, a costing methodology that identifies activities and assigns a cost for each activity according to specific budget items (BMB Technical Bulletin No. 2016-08). This method allows systematic and realistic budgeting of planned programs and activities identified in the PA management plan. However, for this study, ABC accounting was not done due to insufficient data needed for this purpose. Budgeting in the existing management plan is generalized, and no updated management plan is available as the basis for ABC accounting. This aspect is one of the limitations of this study. Thus, the financial gap presented is a conservative estimate based on the best available data.

Financial administration

The financial sustainability scorecard developed for this study shows that the overall financial administration of MANP is fair (53%) but below satisfactory (**Table 3**). Among the three components, Component 1 has the highest score (85%). This finding suggests a sufficient, sound, and strong legal, regulatory, and institutional framework supporting sustainable financing in MANP. However, although guidelines and a framework exist, adopting and implementing these guidelines were not as desired. Thus, the performance score for Component 2 or business planning and tools for cost-effective management was fair (46%), and several aspects need to be improved. These include creating an updated management plan and crafting a sensible and doable business plan with a comprehensive financial plan. The lowest performance score was computed for Component 3 or tools for fund generation (35%). For this component, the very limited revenue-generating mechanisms being operated in MANP were observed, particularly the user fee system.

SWOT analysis

Component 1 – Legal, regulatory, and institutional frameworks that support sustainable financing

The scorecard revealed that adequate and functional laws and policies are in place that facilitate funding and revenue generation in site-level PAs in the Philippines (**Table 3**), including MANP. These include policies on national budget allocation, revenue generation from operation and resource use on site-level PAs, collection and administration of funds from external sources, enterprise development and concession, and benefit-sharing mechanisms. Key legal frameworks include the enactment of the Expanded National Integrated Protected System (Republic Act No. 11038) and the issuance of the Manual on the Establishment and Management of the Integrated Protected Area Fund (IPAF) (BMB Technical Bulletin No. 2019-02), among others. In addition, the enactment of Republic Act No. 10629 (as amended by Republic Act No. 11038) and the establishment of IPAF-PA-RIA give the PAMB of MANP more autonomy to use its income for necessary activities. This law allows PAMBs to retain 75% of the income from PA operations. Every PAMB can access and utilize these funds more promptly since this fund will no longer be requested from the National Treasury. It facilitates fund disbursement for PA management activities approved by the PAMB and aligned with the PA management plan. It also creates room for the PAMB to increase its revenue to fund the pursuit of management objectives and fill other financing needs (**Table 4**).

Table 3. Result of the scoring of the financial sustainability scorecard for Mount Arayat National Park.

Components/Elements	Max. score	Sub-total score	Percentage (%)
<i>Component 1 – Legal, regulatory, and institutional frameworks</i>			
Element 1- Revenue generation	18	16	89
Element 2- Cost reduction	9	6	67
Element 3- Fund administration	12	12	100
Element 4- Financial and business planning	15	12	80
Sub-total	54	46	85
<i>Component 2 – Business planning and tools for cost-effective management</i>			
Element 1- Management, financial, and business planning	24	11	46
Element 2- Accounting and auditing system	6	3	50
Element 3- Monitoring and reporting system	9	3	33
Element 4- Training and support networks	15	8	53
Sub-total	54	25	46
<i>Component 3 – Tools for revenue generation by PAs</i>			
Element 1- Number of revenue sources	18	7	39
Element 2- User fee	18	9	50
Element 3- Special use and concessions	9	4	44
Element 4- External funds	9	4	44
Element 4- Economic valuation	15	0	0
Element 5- Training on sustainable financing	6	2	33
Sub-total	75	26	35
	Total possible score	Total score	Overall status
	183	97	53

The remaining 25% of the IPAF collection shall be deposited with the Bureau of the Treasury (BTr) under the Special Account in the General Fund (IPAF-SAGF) as stipulated under Section 15 of the ENIPAS (amending Section 16 of NIPAS and R. A. 10609). The collection shall be used to support system-wide funding. In addition, legal frameworks to accommodate external sources of income, including donations, grants, and endowments, also exist. This external income from various sources received by the PA shall be deposited in a separate account called the PA-Trust Receipts

(PATR) in the SAGF. There is also an existing guideline for a more comprehensive formulation of the Protected Area Management Plan (BMB Technical Bulletin No. 2016-08), which emphasizes a more detailed cost accounting and financial planning and the incorporation of a holistic business component of the management plan. Here, the financial plan was integrated as a core element of the management plan, unlike the previous guideline (DAO No. 2008-06), which had no provision for including a detailed financial plan. In the updated guideline, a more comprehensive procedure for the financial planning process is provided, along with guidelines for developing alternative financing mechanism strategies in site-level PAs. As stipulated under Section 5.9 of this technical bulletin, the financial plan shall include: a) assessment of the financial needs for short and long-term management objectives, b) identification of the goods and services provided by the PA, c) estimation of the economic value of these products, and d) identification of the potential “customers” or anyone that derives benefits from the identified goods and services. The information obtained from these should be used for resource allocation, formulating possible cost-cutting measures, and developing alternative funding sources. Guidelines on computing available finances, cost requirements, and financial gaps are also provided.

In addition, BMB Technical Bulletin No. 2016-08 requires adopting Activity-Based Cost (ABC) Accounting to prepare the PA Financial Plan. It requires a comprehensive and iterative determination of all costs necessary for the management and operation of the PA by putting into detail the financial and resource needs of the PAMB and the PAMO in every activity specified in the management plan. This guideline allows precise estimation of the funding need and financial gap for the duration of the management plan implementation. It also addresses several elements of sustainable financing, according to Emerton *et al.* (2006), specifically improving financial administration and effectiveness, taking a comprehensive view of costs and benefits, and mainstreaming and building the capacity to use financial tools and mechanisms.

Moreover, this guideline encourages the development of alternative financing mechanism strategies in site-level PAs. It includes, but is not limited to, payment-for-ecosystem services (PES), enterprise development, and public-private partnership. Imposition of appropriate fines and damages and user fees are also recommended as options to increase revenue.

However, one key weakness identified was the insufficient policy framework for the imposition and use of fiscal instruments to support PAs, such as tax subsidies and fund mobilization from government agencies directly to PAs. Under Section 26 of Republic Act No. 11038,

Table 4. SWOT analysis for Component 1 – Legal, regulatory, and institutional frameworks that support sustainable financing.

Strengths	Weaknesses	Opportunities	Threats
• Adequate, functional, and updated laws and policies are in place that facilitates funding, revenue generation, revenue-sharing, and fund administration. • A standard user fee system backed up with a legal framework. • Guidelines for preparing a comprehensive management plan, with a detailed financial plan and holistic business plan, were updated and mandated for adoption. • Existing guidelines give site-level PAs autonomy to develop and operationalize their financing mechanism alternatives. • There are legal frameworks to accommodate a variety of income sources, including donations, grants, and endowments.	• Lack of relevant and comprehensive laws and policies regarding the imposition and use of fiscal instruments (such as government taxes and subsidies). • Underdeveloped policies regarding benefit-sharing agreements with other institutions. • Few legal, policy, and regulatory support for alternative institutional arrangements for cost-reduction exist. • Special-use agreement within Protected Area (SAPA) fee is relatively costly.	• Stronger legal and fiscal support as more representatives from relevant government agencies is now encouraged to join the PAMB, including the DND, DOST, and Congress representatives.	• Conflict with PA violators with the implementation of laws and regulations and the imposition of fines and penalties and other necessary payments.

STRATEGIC PLAN

- Provide the PAMB and PASu appropriate legal support in law enforcement, particularly in filing violations and collecting appropriate penalties.
- Provide the PAMB and the development partners with legal and administrative support to come up with the most legally and economically acceptable SAPA scheme.
- Provide support to PAMB in materializing management agreements with partners government agencies either through MOA or other legal means.
- Create collaboration with respective LGUs on projects that can be funded under LGU's Internal Revenue Allotment (IRA), such as those related to disaster risk mitigation and climate change.
- Examine the possibility of increasing the entrance fee, as the existing guidelines allow.

local government units (LGUs) can appropriate a portion of their internal revenue account (IRA) as part of their contribution to managing a PA, but it is optional. There are also underdeveloped policies regarding benefit-sharing agreements with other institutions. The legal framework of the benefit-sharing agreement is limited only to LGU as specified under Section 26 of Republic Act No. 11038 and BMB Technical Bulletin No. 2017-12. Private institutions, especially those that want to invest in enterprises, should apply for the Special Use Agreement within Protected Areas (SAPA), which is relatively costly, particularly for small-scale entrepreneurs. Meanwhile, the enactment of ENIPAS strengthens the legal and fiscal support system for MANP as more representatives from relevant government agencies are now encouraged to be part of the planning and management of the PA, including representatives from the Senate and House of Congress.

On the other hand, possible conflict with stakeholders and PA violators during implementing laws and regulations and imposing fines and penalties were considered the main threats.

Component 2 – Business planning and tools for cost-effective management

This component pertains to adopting and implementing policies, guidelines, and management tools. In particular, this component involves assessing how well the management, financial, and business plans are developed, implemented, and evaluated. It also assesses collaborative management arrangements of PAMB-MANP with other institutions and agencies.

MANP was weak in this component, receiving poor to fair scores in all elements (**Table 3**). Several weaknesses have been enumerated as critical to cost-

effective management. It includes the absence of an updated and comprehensive PA Management Plan to follow. Most of the concurring activities on MANP depend primarily on what is indicated in the Annual WFP and not necessarily from the management plan. In addition, no comprehensive financial and holistic business plans were included in the management plan. Although a business plan exists, it only covers ecotourism-related activities. In the business approach of PA management, the source of funds in all activities should be specified. Financial and business plans are tools used to guide the financial operation and address the financing needs of a PA (Flores *et al.* 2008). PA financial plan includes calculating financial needs and expenses, income projection, estimation of the financial gaps, and selection of other financing mechanisms to meet financing needs (BMB Technical Bulletin 2016-08). The business plan, meanwhile, is a tool that aids in the identification of the most appropriate funding sources (IUCN *et al.* 2000). It specifies how a specific revenue mechanism shall be materialized and operated (Flores *et al.* 2008). It can also play an important communication role by relaying the PA funding needs to potential markets, such as government agencies or external donors (IUCN *et al.* 2000). Though the two tools are often used interchangeably, they are integral tools needed to attain PA sustainable financing.

Thus, the PA management, financial, and business plans must be comprehensively done to assure that the objectives and activities to be conducted are well identified and the funding source, including collaborative management schemes for each activity, are well-specified. This would assure that funds will be spent properly, and allow the PA managers to determine which activities need further funding.

In terms of collaborative management, there was also a limited cost-sharing mechanism, even if some potential collaborative management schemes could be pursued. Several NGOs, private companies, government offices, and even academic institutions were involved in different management activities in MANP, like research, reforestation, and community development initiatives. They are potential partners for collaborative management, but only one formal collaboration currently exists. This is the Protected Area Community-Based Resource Management Agreement (PACBRMA) with a People's Organization (PO) named Samahan ng Magsasaka sa Mataas na Lupa Inc., (SMAMLI) for sustainable farming in a portion of MANP. Other collaborations were not properly recorded or not being reported as part of management achievements.

Another weakness observed was the poor financial monitoring and reporting, especially regarding revenue tracing of user fees. Estimated revenue based on the number

of visitors is higher than the actual remittance. Thus, there was a suspected revenue loss. One of the underlying factors of most of these financial management concerns may be a lack of adequate and equipped human resources to formulate comprehensive management tools and manage revenue collection systems. The constantly changing organizational and institutional setup of MANP may also be considered a downside due to possible changes in priority programs and projects.

Though MANP was weak in this component, one of its key strengths is the management's compliance with the auditing and accounting guidelines for funds disbursement, particularly for the national budget allocation. In addition, an existing business plan, though it only covers ecotourism development and enterprises, initiated its ecotourism development and has been used as the basis for further improvement of ecotourism facilities and services.

Another advantage of the management system in MANP is the existing support system from the People's Organization for entrance fee collection and visitor management. The SMAMLI and the New Maria Sinukuan Farmers Inc. (NMSFI) were deputized to collect and remit entrance fees from Magalang and Arayat entrance gates, respectively, in the absence of an officially designated special collection officer (SCO). This co-management scheme provided the PAMB with the needed human resource to monitor and handle the entrance gates and collect user fees from tourists. This also gave the POs an additional source of income through their share of revenue on ecotourism and income from tour guiding.

Nevertheless, the potential for more collaborative management schemes remains a viable opportunity for MANP as the number of representatives from other government agencies is expected for PAMB-MANP. This includes representatives from the Department of Agriculture (DA), National Economic and Development Authority (NEDA), Department of Science and Technology (DOST) and the Philippine National Police (PNP), the Department of National Defense (DND), and possibly a representative from House of Congress. This also provides windows for possible co-management projects since it is required that all development programs of all PAMB member institutions be harmonized in the PA management plan. Likewise, including the PNP and DND could strengthen law enforcement and subsequently reduce the cost of forest protection. More active participation from these two agencies is assumed as they become member institutions of PAMB.

Strengthening and formalizing co-management agreements between other government, private and non-government

organizations that have previously contributed resources for and conducted projects in MANP were also workable opportunities. On record, several NGOs, private companies, government offices, and even academic institutions were involved in different management activities in MANP before in different aspects, like research, reforestation, and community development initiatives. However, the continuity of partnerships was not maintained for the long term, and some partnerships were not properly reported as part of the management achievements. Nevertheless, given proper arrangements, co-management strategies with these agencies remained a very promising opportunity for MANP managers for cost-effective management.

For the threat, the PAMB may prioritize increasing revenue and unintentionally threaten the biodiversity aspect of MANP, given the autonomy to venture into enterprises and ecotourism development. Nevertheless, it was pointed out by the German Federal Agency for Nature Conservation, WWF International & The Nature Conservancy (2008) that the business principle as applied to PA should be to meet conservation goals rather than financial gain. This reminds us that all the enterprise initiatives within MANP should be in harmony with its biodiversity conservation goals. The SWOT matrix for Component 2 is presented in **Table 5**.

Component 3 – Tools for revenue generation

This component assesses the capacity and effectiveness of the MANP management to generate funds and revenue from various sources and develop alternative financing mechanisms. However, the scorecard showed that this is the weakest component among the three assessed components (**Table 3**). Under this component, the main weakness of MANP is the limited sources of stable funding (**Table 6**) and the limited financing mechanism being operated. Although national government allocation was stable, no other stable funding source was in place. User fee collection was unstable, particularly during calamities and pandemics. There was no remittance to IPAF since early 2020 or the onset of the COVID 19 pandemic from both entrance fee and concession fee. Unexpected events, such as pandemic and other calamities, decreases the revenue generation of MANP.

In addition, no official SAPA has yet materialized at the time of data collection, even though many potential SAPA holders were already identified. No payment-for-ecosystem-services (PES) scheme was established, though it is being highly encouraged by the DENR as a potential financing mechanisms for PAs (REECS 2014; BMB Technical Bulletin 2016-08). Likewise, no fines and penalties were reported in the IPAF report. In terms of external sources, there were no reported external funds such as donations and grants.

Another weakness is the sub-optimal user fee collection system and poor revenue monitoring and reporting. For example, on the Magalang side, not all visitors pay entrance fees, particularly during the Lenten season, due to the flooding of visitors and lack of sufficient personnel to collect fees. On the Arayat side, meanwhile, some visitors could also access MANP ecotourism spots without paying the necessary entrance fee to the PAMB. The primary reasons were the presence of multiple entry points aside from the designated entrance points and the absence of sufficient deputized staff to man entrance gates all the time. This problem can be associated with insufficient and well-trained SCO on designated entrance gates. Based on existing guidelines, only SCO should collect user fees and remit and report revenues (DAO No. 2019-05). However, the PAMB and PASu have not yet designated official SCOs for each entrance gate and its sufficient and trained administrative support staff.

On the other hand, one principal strength of MANP is the stable funding support from the national government. The national budget allocation was the only stable source of funding for MANP for the last five years. REECS (2014) reported that, in general, PAs in the Philippines were heavily reliant on the government for funding. In addition, the existence of guidelines allowing an increase in the entrance fee and setting appropriate fines and damages serves as another advantage point for MANP since it allows adjustment of fees and fines to augment PA revenue.

The provision of strong administrative support of PAMB and PASu in helping potential SAPA applicants process their applications was also considered one of its management strengths. Recognizing the potential of SAPA to increase funds for MANP and to control illegal occupation inside MANP, the PAMB and PASu were openly and actively communicating with all the persons and entities with existing establishments inside MANP to apply for SAPA instead of immediately charging them with violations and fines. This allows the potential partners to determine the best SAPA schemes they can avail themselves of, given all the financial considerations in investing into any allowable enterprise inside MANP.

Meanwhile, other fund sources are available and can be pursued by PAMB-MANP to increase funding. One is the fund allotment from LGUs from their Internal Revenue Allotment (IRA) as their share for managing the PA under their jurisdiction as provided under Section 26 of ENIPAS Act. The LGU and PAMB can also include activities, such as forest restoration and protection, as co-funded initiatives as part of the LGUs' adaptation and mitigation measures under their Local Climate Change Action Plan (LCCAP). The PAMB can also tap the Wildlife Management Fund of BMB to support biodiversity conservation-related programs in the PA. WMF is a special account administered by the DENR

which is intended to finance rehabilitation or restoration of habitats in PAs and activities such as scientific research, enforcement, and monitoring activities, and capability enhancement projects established in accordance with Section 29 of Republic Act No. 9147 or also known as the Wildlife Resources Conservation and Protection Act. Other user fees from user groups that are not yet charged with entrance fees can also be operated in the future, especially the bikers going to the Tree House Bike Park. The Tree House Bike Park is a popular biking destination located in Brgy. San Juan Baño, in the town of Arayat, Pampanga, and inside MANP. Since the start of its development as a bike destination, bikers going to the area are not paying entrance fees, an opportunity that has

not been taken advantage of. Thus, there are other feasible sources of other income and funds for MANP.

On the other hand, one main threat under this component is the resistance of the current resource users, who were advised to apply for SAPA and pay the appropriate fee, which can be too costly for some resource users. Given the estimated zonal value of land around MANP at PHP 1,500 m⁻², a resource user or a project proponent should pay approximately PHP 750,000 yr⁻¹ for every hectare of land occupied for whatever enterprise the proponent is into. Given that there is more than one potential SAPA applicant, income from SAPA is expected to be considerably

Table 5. SWOT analysis for Component 2 – Business planning and tools for cost-effective management.

Strengths	Weaknesses	Opportunities	Threats
- Existing business plan exists (only for ecotourism-related activities). - National budget allocation is well accounted for and audited, following the guidelines of COA, DBM, and the DENR. - There is an existing support system for entrance fee collection and visitor management from people's organizations.	- Outdated management plan. - The activities set in the management plan are not well-adopted and implemented. - No comprehensive financial plan and financial analysis for the management plan. - The business plan is not holistic. - Poor revenue collection, monitoring, and recording. - Donations, grants, and endowments were poorly recorded and reported. - No existing comprehensive system is used for calculating and reporting financial returns on tourism. - Insufficient human resources to formulate comprehensive management tools and manage revenue collection system. - Changes in program and priorities as influenced by constantly changing the organizational and institutional setup.	- More collaborative management is expected with the increase in the number of representatives from other government agencies in the PAMB. - Several government instrumentalities and non-government organizations have previously contributed to achieving PA management objectives	The PAMB may prioritize increasing revenue and unintentionally threaten the biodiversity aspect of MANP.

STRATEGIC PLAN

- Create a technical team to spearhead the updating of the PAMP, with representatives from the academe, LGUs, POs, DOT, and PAMO staff as the core members and with CDD staff as technical supervisors.
- Start updating the PAMP following the recent BMB Technical Bulletin No. 2016-08, including the comprehensive financial and viable business plans.
- Collaborate with potential co-partners such as LGUs, NGOs, and academe for projects amendable between PAMB and partner agencies, under agreed-upon cost-sharing or benefit-sharing agreement.
- At the regional level, including training on the development of sound management plans, financial plans, and business plans on the regular activity of the CDD.
- Synchronize the updating of PAMP of all site-level PAs in the region to provide more organized technical support. Compose a technical committee to review, verify and assess each PAMP.
- Provide and develop a system to regularly monitor fund utilization, disbursement, and revenue collection of MANP.

Table 6. SWOT analysis for Component 3 – Tools for revenue generation.

Strengths	Weaknesses	Opportunities	Threats
- National budget allocation is relatively stable.user fees. - Strong administrative support from PAMB-MANP and the PASu in helping development partners apply for SAPA, following the DENR guidelines. - A guideline for a possible increase in entrance fee exists.	- Unstable revenue from user fees. - Absence of adequate Special Collection Officer and lack of support staff to administer proper user fee collection, revenue and visitor monitoring, and revenue recording and reporting. - Leaking out of potential income from ecotourism due to inefficient user fee collection system, visitor management, and revenue monitoring, recording, and reporting. - No valuation studies are in place to support and formulate alternative financing mechanisms, such as PES studies. - Limited institutional capacity to develop and operate alternative financing mechanisms. - No specific training for developing sustainable financing mechanisms in site-level PA has been organized.	- There are several potential ecotourism enterprise development projects already identified for MANP. - Collaborative management schemes and funding from LGUs and other government agencies are possible given the proper venue and conditions. - Several possible SAPA applicants exist. - An alternative revenue-generating mechanism such as the payment for ecosystem services (PES) scheme can be explored.	- Resistance from identified users and concessionaires to pay the appropriate SAPA fee, or user fee as mandated by law, either due to unwillingness to cooperate and/or inability to pay the appropriate fee. - Unexpected events such as pandemics and calamities.

STRATEGIC PLAN

- Assign and train necessary Special Collection Officers required by the DENR guidelines, and provide sufficient administrative staff to support user fee collection, visitor management, and revenue monitoring, recording, and reporting.
- Improve revenue tracking and ticketing system for better revenue monitoring.
- Collaborate with the tour organizers and POs for proper user fee collection and ticketing and visitor monitoring under an acceptable benefit-sharing agreement.
- Strengthen law enforcement and collection of fines and penalties.
- Develop new/ alternative financing mechanisms by linking MANPs' ecosystem services to potential donors and other fund sources through valuation studies, feasibility studies, or other co-management agreements.
- Access available funding from other agencies such as the Wildlife Management Fund (WMF) of BMB and/or from the ecotourism development fund of TIEZA.
- The Regional Office, through CDD, shall conduct regular capacity-building activities related to formulating alternative financing options for PAs in the region.

high. For example, LGU Arayat would need to pay around PHP 3 M yr⁻¹ to the PAMB if they intend to convert its existing MOA into SAPA in managing the 4-ha resort area, as recommended by the PAMB and the PASu. This was significantly higher than the existing concession fee of PHP 300,000 annually they are currently remitting, excluding the 5% revenue share of the PAMB. However, though SAPA can provide significant and long-term income for MANP, the capacity and willingness of most potential SAPA holders to apply for SAPA were still undetermined. Thus, expected revenue from SAPA was still uncertain. According to REECS (2014), the problem of limited fund sources of PAs

in the Philippines is due to the limited efforts of site-level PA managers to generate revenues internally, particularly in creating innovations to improve revenue generation.

CONCLUSION

Overall, this study proves that MANP shares the problem of fund sufficiency and effectiveness of fund administration with other site-level PAs. The problems of MANP cut across different aspects of PA financing. The most critical and needing immediate actions are the elements under the

business planning and tools for cost-effective management (Component 2) and the tools for revenue generation (Component 3). Sufficient legal, regulatory, and institutional frameworks (Component 1) exist and are up for adoption, which the PAMB and PASu can explore and optimize to address the weaknesses of its financing system.

The results showed that the problem was not solely the lack of funds but also how well the management plan is crafted, how sound and viable the financial and business plans are, and how the activities indicated in these tools are funded and implemented. Thus, there are issues both on the “demand-” side and “supply-” side of the PA financing system of MANP. The “demand” side issue includes the proper identification of the financing needs, which could be precisely estimated using activity-based cost (ABC) accounting (Flores *et al.* 2008, REECS 2014, BMB Technical Bulletin No. 2019-05) upon updating of its PA management plan. The “supply” side can be addressed by assuring revenue collection from existing revenue-generating mechanisms is optimized by investing in human resources and institutional capacity building, particularly in administering revenue and funds. In addition, developing and implementing alternative revenue-generating schemes, creating incentives that would attract social entrepreneurs for conservation and ecotourism development, and building stronger collaboration with LGU and other organizations are also key factors that need to be improved in MANP for financial sustainability.

As Emerton *et al.* (2006) stated, sustainable financing is not merely about how much a PA has but how PA managers spend the funds. It includes how and for what they spend their fund and how well they monitor the funds that go in and out of their financing system. In general, the results showed that the issues of the financing system of MANP and the solutions were interlinked with each component.

The proposed strategic plans to address issues across the three different components were presented in the SWOT analysis template for each component. This study recommends prioritizing the management plan’s updating, formulating a comprehensive financial and business plan, and establishing a more functional and effective revenue collection system. To make this feasible, the PA managers should create a technical team to formulate an updated PA Management Plan following the recent DENR Guidelines (BMB Technical Bulletin No. 2016-08), including a sound financial plan and a viable business plan. Representatives from the academe, LGUs, POs, Department of Tourism (DOT), National Economic and Development Authority (NEDA), and PA Management Office staff may form the core members of the technical team, with staff from the regional office as technical supervisors. In addition, the CDD of the DENR Regional Office can create a technical working group to review, verify and assess each PAMP.

The PAMB and the PASu should also immediately assign and train necessary SCO, as required by the DENR guidelines, if feasible. Both agencies should also provide sufficient administrative staff to support user fee collection, visitor management, as well as revenue recording and reporting.

For collaborative management, the PAMB, PASu, and the DENR Regional Office need to review existing guidelines on Special-Use Agreement and other guidelines related to co-management schemes. They can provide potential development partners with the necessary legal and administrative support for them to materialize potential SAPA applications and other co-management agreements feasible. Other feasible alternative financing options can be identified during the financial and business plan development. Finally, there should be a continuing capacity-building program for PASu, PA staff, and PAMB members as recommended by the BMB (2014) and Anda & Atienza (2013), particularly regarding financial and business planning, development of alternative financing mechanisms, and fund administration, in general. The CDD may include this aspect as one of its regular capacity-building activities for PA managers and staff in Central Luzon.

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