

FINANCIAL STRUCTURING OF PROTECTED AREAS ACCORDING TO THE CONSERVATION MEASURES PARTNERSHIP CLASSIFICATION SYSTEM OF ACTIONS

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ABSTRACT

Protected areas represent the cornerstone of biodiversity conservation. While their governance can take many forms, optimising their management is essential to achieve their protection, restoration, and sustainable use. This requires that concepts and methodologies are applied in a standardised way in both their financial planning and the management of their conservation actions. In order to describe the financial structure of protected areas in a globally accepted language, the financial information of 19 randomly chosen public Colombian protected areas was analysed and their institutional management actions were standardised based on the Conservation Measures Partnership (CMP) classification of actions. The financial plans were built based on the budgetary implementation reports, management effectiveness assessments and management plans of each protected area; the institutional management actions were taken from the three components of the current management plans and the institutional management actions in accordance with the CMP classification; and a total funding gap of US\$ 47,547,554 was calculated. Protected areas around the world follow a similar financial structure, however, a wide variety of management actions is reported among them. Standardisation of cost categories according to the CMP classification of actions would support comparative investigations in financial sustainability and allow analyses of the financial needs of protected areas worldwide.

Key words: Funding gap, protected areas, management, strategic planning, financial planning, biodiversity conservation, Conservation Measures Partnership

INTRODUCTION

The Convention on Biological Diversity (CBD), signed in 1992, recognised biological diversity as a priceless global commodity for the survival of present and future generations, and sought to establish effective measures to be implemented at a global level in order to achieve its conservation. One of the commitments adopted by the CBD member countries and reiterated in subsequent meetings was to foster the creation of complete, effectively managed and ecologically representative systems of protected areas (CBD, 2004). In 2010, one of the priorities established in the Strategic Plan for Biological Diversity and the Aichi Targets was to deepen efforts in providing adequate financial resources, mainstreaming the issues and values related to biological diversity, and effectively applying adequate policies (CBD, 2010). To this end, Achim Steiner, Executive Director of the UN Environment Programme,

highlighted that one of the key areas for significantly reducing the rate of biodiversity loss and to achieve sustainability in the 21st century is the integration of economics in the conservation of biological diversity and ecosystem services (Secretary of the CBD, 2010).

These economic aspects include the adequate development of protected area strategic planning, which forms the basis for the structuring of financial plans and to calculate the funding gap. Financial structuring sets out the needs and income in a time horizon separated at the level of the operation costs, investment and income by source of funding.

The IUCN guidelines on sustainable financing of protected areas (Emerton et al., 2006) provide a basis for promoting homogeneity in the financial structure of protected areas worldwide based on government revenue and cooperation, and operational and investment needs. This structure also allows linking the priorities of the protected area to available resources (Worboys & Trzyna, 2015; Thomas & Middleton, 2003).

The operational needs are defined as the requirements for all of the activities necessary to operate the protected area; such as the personnel required, infrastructure and basic supplies, services to the public, travel costs and allowances. The investment needs are the significant costs, along with those incurred for the protected area to finance its future development, including those costs of establishing the baseline or basic protected area information as a starting point for strategic actions (species inventories, community censuses, etc.) (TNC, 2005). Funding gaps for protected areas can be calculated by quantifying the financing needs of a single protected area or a system of areas. For this, it is necessary to compare the currently available financial resources, which are taken as the baseline and the resource needs under different scenarios (FAO-OAPNN, 2010).

In Colombia, the CBD was ratified in 1994, and from this date the government has worked to align its conservation actions towards established international commitments. The Colombian National Natural Parks System (PNN) plays a vital role in meeting these commitments, as it is the governmental entity responsible for the administration of the protected areas, which are prioritised for in situ conservation of biodiversity. Currently, there are 59 protected areas within the PNN located throughout the country, totalling 174,670 km² (RUNAP, 2018). The Colombian protected area classification is regulated by Decree 2372 of 2010 and the protected areas managed by PNN include IUCN management categories I to III, (RUNAP, 2018; DANE, 2015; Dudley, 2008). The PNN also coordinates the National Protected Area System made up of public and private protected areas, social and institutional actors and the management strategies and instruments that define them, which together contribute to meeting the general conservation objectives of the country (Decree 2372 of 2010) and currently total 310,304 km² protected in different categories (RUNAP, 2018).

The protected areas managed by PNN contribute 0.9 per cent (US\$ 2.77 billion) to GDP annually; protect four of the country's six most important water catchments and more than 62 per cent of national aquifer sources; supply water to 25 million people in cities such as Bogota, Cali, Manizales, Neiva, Santa Marta and Valledupar; provide at least US\$ 884 million by way of water supplies to the agricultural sector; and provide around 50 per cent of the country's hydroelectric energy, contributing at least US\$ 502 million to the energy sector (PNN, 2014).

Many countries have analysed the income and financial resource needs of their protected areas and their variation over time (Balmford et al., 2003; Bezaury et al., 2011; Binet et al., 2015; Bovarnick et al., 2010). In doing so, they estimate funding gaps using different levels of analysis and methodological focuses, as well as forming scenarios which allow decision makers to direct resources to protected area needs and develop funding mechanisms. Once the funding gap has been calculated, the identification, design and implementation of sustainability strategies are facilitated, and it becomes possible to prioritise resource allocation and management to achieve them (FAO-OAPNN, 2010). However, a standardised language is yet to be adopted that would allow the conservation community to apply a more systematic approach to financial structuring and which could, as a result, be easily shared and replicated among different categories of protected areas around the world.

The Conservation Measures Partnership (CMP) classification system of actions was an initiative of IUCN and a consortium of internationally-recognised conservation organisations, whose mission is to improve biodiversity conservation practice by developing and promoting common standards for the conservation process and measuring its impact. From 2002 onwards, these organisations carried out a number of independent projects on conservation practice (Salafsky et al., 2002; CMP, 2005; IUCN, 2005a; IUCN, 2005b; IUCN-CMP, 2006; IUCN-CMP, 2007). Recognising that it was more effective to have one globally-accepted classification of actions and threats, they published an article in 2008 entitled "A Standard Lexicon for Biodiversity Conservation: Unified Classifications of Threats and Actions" (Salafsky et al., 2008). As described in this study, the generalised adoption of these classifications would aid project groups to identify appropriate threats and actions more systematically, help managers to define priorities and assign resources more efficiently, and, more importantly, facilitate the learning and development of a systematic science of conservation.

Clearly, the financial structuring of protected areas should be accomplished in line with the strategic actions proposed in the management or conservation master plans. The CMP classification system represents an internationally-accepted system for classifying these actions to optimise conservation practice and data coding by using a common language. Therefore, the goal of this study was to establish the financial structuring of the protected areas managed by PNN by aligning the institutional actions with the CMP classification system of actions in the design of financial plans and calculating the funding gap.

METHODS

The financial structuring was undertaken for the period 2017–2021, with 19 randomly chosen marine and terrestrial protected areas within the PNN, corresponding to IUCN management categories Ib, II and III. It was carried out in three stages: the development of financial plans, the standardisation of actions, and the calculation of the funding gap. The results of the financial plans and calculation of the funding gap were analysed by descriptive statistics and presented in US\$ and percentages that represent the proportion of the total (per cent), respectively.

Information from the following technical and financial planning instruments of the protected areas were used to develop the financial plans: Integrated Financial Information System budgetary implementation reports from March 2017; financial information of the International Affairs and Cooperation Office of PNN from 2012 through 2016; Analysis of the Effectiveness of the Management of Protected Areas with Social Participation (AEMAPPS) reports for 2012, 2013, 2014 and 2016 from the Departments of Human Resource Management and Resource Management; and protected area management plans or the legal declaration of the protected area for those that did not have an adopted management plan. The Integrated Financial Information System reports were used to determine the which income component, for the current approximation for each protected area was projected as a real growth of 3 per cent based on the inflation projected by the country's central bank (Republic of Colombia Bank, 2018) and the financial information of the International Affairs and Cooperation Office of PNN was used to determine the extent of external technical, scientific or financial support expressed in monetary terms.

The AEMAPPS reports were used to quantify the operating needs, which included required personnel, infrastructure, office and field equipment, services to the public, fuel, travel costs and provisions. This tool



The last remnants of tropical dry forest that remain in Colombia are preserved $\,$ in Tayrona National Park ${f {f C}}$ Julia Miranda

allowed additional operation requirements for the next annual period of the protected area management to be included in the study. A protected area coefficient of management (Figure 1) was developed to ensure that the values assigned for the operating needs were adjusted according to the distance of the protected area to the closest regional city providing supplies for the operations, relative transportation costs and the cost of living expressed by the Consumer Price Index of the region where the protected area was located.

Management plans were used to determine investment needs. For protected areas that did not have a current management plan, investment needs were calculated by the unit value per hectare affected by human pressure (US\$/ha), by taking into account the management information contained in the legal declaration of the protected area: the conservation status, ecosystems present, conservation targets and actions and their technical correspondence with a reference protected area having an adopted management plan (Appendix 1 Supplementary Online Material).

For the standardisation of actions, the actions described in each of the components of the management plan

PA coefficient of management =	$\frac{\rm km \ of \ PA \ from \ capital \ city}{\rm Average \ km \ TD} \times \frac{\rm CPI \ City \ PA}{\rm Average \ CPI \ TD} \times$			
Average fuel efficiency of means of transport TD Average fuel efficiency of means of transport TDs + 1				
Where,				
km of PA from capital city	Corresponds to the distance in kilometres from the PA's operating centre or the closest reference point to the PA - to the closest capital city registered by National Department of Statistics (DANE) in the variation of the Consumer Price Index (CPI)			
Average km TD	Corresponds to the average distance in kilometres from the PA's operating centres by Territorial Direction or closest reference points to these PA - to the closest capital cities registered by DANE in the variation of the CPI			
CPI City PA (%)	Variation of the CPI of the closest capital city to the PA, in the years 2012-2017 registered by DANE.			
Average CPI TD (%)	Average variation of the CPI of the closest capital cities registered by DANE by Territorial Direction.			
Average fuel efficiency used by the means of transport TD (km/gal)	Average value of fuel efficiency of the means of transport used in Territorial Direction, defined as a regional administrative unit of the PNN			
Average fuel efficiency used by the means of transport TDs (km/gal)	Average value of fuel efficiency of the means of transport used in the Carribean and North- Eastern Andean Territorial Directions			

Figure 1. Equation for calculating the updated values coefficient by protected area

(Diagnostics, Zoning and Uses, Strategic Planning) were collected and grouped in categories and subcategories according to their conceptual bases in the institutional policies currently in place (Appendix 2 Supplementary Online Material). Finally, the categories and subcategories were compared and contrasted with the CMP current classification system of actions, consisting of three larger groups (level 0) of independent but complementary actions, which in turn contain two further levels (1 class and 2 category) and a proposal of a comprehensive sub-level 3 that contains concrete examples of actions to facilitate the conceptual alignment in the practice of conservation (IUCN-CMP, 2006; CMP, 2016) (Figure 2).

To calculate the funding gap, the difference between the operation costs and the allocated resources was established. It was then possible to estimate the difference between the operation and investment needs and the total resources of the protected areas in the study. The results for values obtained for 2017 were then adjusted to 2019, taking into account the increase in prices in Colombia for 2018 and 2019, being 3.18 per cent and 6 per cent, respectively.

RESULTS AND DISCUSSION

The financial plans of the protected areas in the study display financial information on the operation and investment needs, and the income from, and investment in, the operation (Table 1). In the present study, the financial plans were analysed through six operation categories (equipment, personnel, travel costs and allowances, infrastructure, maintenance, public services) and nine investment categories (institutional strengthening, environmental authority, eco-tourism, education and communication, risk management, investigation and monitoring, restoration, sanitation, sustainable systems for conservation) (Table 2).

As an effectiveness analysis, the AEMAPPS used in the present study constitutes a realistic tool that complements protected area operational planning as it is applied on a regular basis by protected area teams at the regional and national level. It is also considered a versatile tool as the itemised needs can be incorporated in the following annual work plan. There is a direct relationship between the effectiveness analysis and the scope of protected area planning. The planning incorporates the management plan or legal protected area declaration variables and their compatibility with other planning tools such as annual operating plans, planning level, zoning and limits (Zambrano et al., 2007; Cifuentes et al., 2000).



Figure 2. Conceptual diagram of the different levels of conservation actions: actions which directly reduce stress on the conservation target (A), actions for the reduction of direct threats (B), and actions which intervene on the indirect threats or opportunities favouring the conditions for actions A and B to take place (C). (Modified from CMP, 2016)

Table 1. Financial plans of the 19 PNN protected areas expressed in US\$

	Management categories of UICN,	Needs		Incomes		
Protected Area	International Union for Conservation of Nature	Operation	Investment	Operation	Investment	Cooperation
Estoraques	111	1,391,022	1,038,504	417,068	181,227	198,887
Bahía Portete	П	207,909	1,135,574	44,371	697,665	101,113
Catatumbo Bari	П	359,286	1,394,733	325,416	242,066	0
Corales de Profundidad	П	708,986	1,296,793	51,468	398,938	32,801
El Cocuy	П	4,039,527	4,354,342	1,034,344	3,284,991	672,117
Macuira	П	2,903,064	594,554	516,646	644,512	269,936
Old Providence	П	1,597,378	2,420,908	599,820	301,705	72,833
Pisba	П	1,719,309	2,610,045	499,859	247,168	0
Sierra Nevada de Santa Marta	II	4,156,135	2,951,823	608,992	619,590	114,805
Tamá	П	1,490,953	1,031,314	561,497	332,057	89,423
Tayrona	П	4,313,740	59 <i>,</i> 683	596,761	1,924,173	233,471
Acandí		364,630	197,186	274,686	460,719	0
Cienaga Grande de Santa Marta	lb	1,723,961	2,836,109	550,725	349,296	119,750
Corchal	Ib	2,015,333	815,068	540,315	139,753	95,522
Flamencos	Ib	1,698,134	999,228	496,771	222,770	0
Guanentá	Ib	1,441,837	2,443,184	588,505	575,123	363,106
lguaque	Ib	1,886,308	2,352,391	563,118	180,596	165,022
Los Colorados	Ib	1,156,057	2,186,135	592,068	362,867	232,011
Vía Parque Isla de Salamanca	Ш	1,920,156	3,335,201	602,962	1,143,410	339,190
Total US\$ to 2017		35,093,724	34,052,775	9,465,394	12,308,626	3,099,987
Total US\$ updated to 2019		37,690,681	36,572,701	10,165,839	13,219,472	3,329,387

In standardising the PNN actions according to the classification of actions of the CMP, the correspondence between categories of actions in PNN financial plans and CMP actions was determined (Table 2). Although there are many publications on the use of the unified classification of actions of the CMP in the practice of conservation (Kapos et al., 2010; Redford et al., 2018), no studies have incorporated this classification into the financial structuring of protected areas. Rather these studies represent а more conceptual and methodological application of the classification of actions of the CMP regarding the planning of conservation projects or strategies; primarily as part of the implementation of adaptive management using the Open Standards for the practice of conservation (CMP, 2013). However, the 'implementation and monitoring of actions' step of these standards involves a detailed development of action plans and ensuring sufficient resources for the planned actions; in other words, a financial structuring in line with the strategic plan. For example, Salafsky et al. (2002) emphasise that effective conservation requires clarity concerning its goals, the actions necessary to achieve them, the method to measure progress, and an analysis of the results which allows feedback and adaptation of management. However, these efforts would not be effective if there is

a lack of consistency between the needs and the availability of resources to carry out these actions.

Finally, a funding gap of 30 per cent was calculated for Colombia's protected areas from the study estimates in the timeframe of five years, the annualised figure would be 0.0014 per cent of GDP. These calculations also show that the funding gap would be scarcely 0.007 per cent of the direct foreign investment associated with the mining and petroleum sector (Table 3).

Different protected areas around the world have similarly analysed their financial information based on planning tools such as the annual planning or management plans, however, they do not incorporate management effectiveness assessments as an input to estimate the operation needs. In the case of Guatemala, six cost categories of operation were identified (personnel, materials and supplies, transferences, property, plant, equipment and intangibles, transport and training), and investment was determined according to twelve cost categories (land tenure, communication plan, management capacity, conflict resolution, environmental education plan, master plan, necessary personnel, resources of the protected area in the management plan, investigation programmes, legal

Table 2. Correspondence	of PNN actions	with the CMP	classification	system o	f actions
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Categories of actions of	Correspondence with the CMP system of actions (CMP, 2016)					
the PNN protected areas financial plans	Level 2	Level 1	Level 0			
Restoration	1.2. Ecosystem and Natural Process (Re)Creation	1. Land/Water Management	A. Target restoration/stress			
Eco tourism	1.1. Site/Area Stewardship		reduction actions			
Eco-tourism	5.5. Non-monetary values					
	5.1. Linked Enterprises & Alternative Livelihoods	_				
Environmental Authority	5.2. Better Products & Management Practices 5. Livelihood, Economic & Moral Incentives 5.3. Market-Based Incentives 5. Livelihood, Economic & Moral Incentives					
Livironniental Authority						
	5.4. Direct Economic Incentives		B. Behavioural change/threat reduction actions			
	4.1. Detection and arrest					
Sustainable Systems for Conservation	4.2. Criminal Prosecution and Arrest 4. Law Enforcement & Prosecution					
	4.3. Non-Criminal Legal Action					
Education and	3.1. Outreach & Communications	3. Awareness Raising				
Communication	9.2. Training & Individual Capacity Development	9. Education & Training				
a 15 51	6.1. Protected Area Designation &/or Acquisition					
Sanitation	6.2. Easements & Resource Rights		C. Enabling condition actions			
Infrastructure Maintenance Public Services	6.5. Site Infrastructure	6. Conservation Designation & Planning				
	8.1. Basic Research & Status Monitoring					
Research and Monitoring	8.2. Evaluation, Effectiveness Measures & Learning	8. Research & Monitoring				
Equipment Income Personnel Travel Costs and Allowances Institutional Strengthening	10.1. Internal Organisational Management & Administration	10. Institutional Development				
Risk Management	10.3. Alliance & Partnership Development					

Table 3. Funding gap in the PNN protected areas for the different actions standardised according to the CMP classification system

Protected areas management actions of the PNN aligned to	Funding Gap		
CMP actions	%	US\$	
Institutional Development	53.68	23,767, 323	
Conservation Designation & Planning	16.98	7,515,544	
Land/water management (referred to restoration)	4.90	2,169,063	
Land/Water Management and Livelihood, Economic & Moral	4.43	1,962,473	
Incentives (both referred to eco-tourism)			
Awareness Raising, Education & Training (both referred to	1.68	745,588	
Education and Communication)			
Research and monitoring	4.38	1,939,837	
Law enforcement and prosecution	13.94	6,171,612	
Total US\$ to 2017	100	44,271,440	
Total US\$ updated to 2019	100	47,547,554	

status, legal registration, and long-term financing plan) (USAID, 2009; PNUD, 2018). In the United States, the calculation of costs of protected areas was estimated through six categories, namely control and surveillance, enlargement of protected areas, administration, participative planning, community development and environmental education (TNC, USAID and WCS, 2001).

Costa Rica and Chile used other methodologies related to the structure of their protected area financial plans. In Costa Rica, the methodology of the Financial Sustainability Scorecard of the UNDP was used through the implementation of surveys to determine the level of operation and investment needs and the different financing sources. In Chile, the needs were established from the conservation categories of the National System of Protected Wildlands of Chile according to the requirements of the management plans, third-party conservation monitoring, and conservation monitoring with trained rangers (Bovarnick et al., 2010).

In Mediterranean and North African countries, the structure of the financial plans was formed from surveys in 2014, in order to obtain the activities and components included in the current management of the protected areas, including the costs of the activities necessary to achieve the areas' goals. Likewise, samples of protected areas were selected for the survey with respect to their ability to provide information about the costs associated with their establishment, the costs associated with identified 'effective' management parameters and the income arising from their resources (Binet et al., 2015).

With respect to Guatemala, the funding gap calculated for 2008 for the eight protected areas came to US\$ 12.7 million, and it was determined that the item which most required resources was personnel. In Costa Rica, the gap for public protected areas was calculated at US\$ 11.7 million; the most important item being the

operation of protected areas including personnel (69 per cent). For Chile, the funding gap was calculated at US\$ 36 million for its public protected areas in 2012, with personnel accounting for 56 per cent. In this study, it was estimated that the funding gap for the 19 protected areas amounted to US\$ 8.8 million for the year 2017, and that personnel corresponded to 52 per cent of the gap (USAID, 2009; Bovarnick et al., 2010). Similar to our study, a study conducted in Mexico calculated the funding gap using financial information from an effectiveness analysis tool, which considers changes in the availability of resources as variations in management needs due to environment changes and incorporates historical real data from the budget spent by the protected area. It showed that when more financial information is included in the calculation of the funding gap as described in the effectiveness analysis, more accurate results are obtained for the protected area funding gap (Bezaury et al., 2011).

All these exercises are valuable to evidence the funding gap of an individual protected area. The funding gap should be considered as a snapshot of the needs and income of a protected area at a point in time, being constantly updated for practical aspects (Cifuentes et al., 2000). However, Balmford et al. (2003) highlight that there is a wide variability when comparing the funding gaps between protected areas worldwide, due to the wide variability in the criteria used to determine the needs of protected areas. Funding gaps are calculated to range from US\$ 0.1/km² in the Russian Arctic, an average of US\$ 20/km2 for the Amazon or the Himalayas, to US\$ 130/km2 to US\$ 5,000/km2 for Latin American, African and Asian protected areas located close to populated cities, to more than US\$ 1,000,000/km² in some protected areas in Western Europe. Moreover, this variation is also related to the severity of the anthropogenic pressures and the management conservation actions required as a result. It is essential to obtain conceptual homogeneity of conservation actions if we are to build and compare financial data on protected areas around the world.

CONCLUSION

The structuring of financial plans for calculating the funding gap of protected areas in different countries is grounded on the knowledge acquired in the implementation of adaptive management in these countries that generates financial information, but currently this does not follow a specific standardised system. The use of standardised financial plans based on actions in CMP's classification system, and calculating the funding gap using this common language, allows one to understand and demonstrate consistency between the



Local community members assist in identifying the conservation values of the Guanentá Alto Río Fonce Flora and Fauna Sanctuary, as part of a policy of social participation adopted by the National Natural Parks of Colombia. This protected area has the largest number of Espeletia species in the country and constitutes an important water factory for the municipalities of Boyacá and Santander © Karina Vilés

strategic planning and financing of protected areas. If such a standardised approach was adopted it would be possible to perform not only retrospective, comparative or experimental analyses between protected areas, but also would research on financial sustainability within the conservation scientific community.

Without underestimating the particularities and complexity of individual protected areas around the world and their management, a precise database of threats and actions is increasingly required, not only for biodiversity monitoring and research but for financial management. Currently, an important series of IUCN guidelines have been published and are widely used as the basis for protected areas' conservation management worldwide. However, the CMP unified classification of conservation actions and threats based on the Open Standards is still rarely used due to it lacking a broad description in these guidelines. It would represent a significant contribution for the IUCN to facilitate the understanding and in-field application of this approved and standardised lexicon of conservation actions by including the CMP classification in the current conservation guidelines.

SUPPLEMENTARY ONLINE MATERIAL

Appendix 1 Calculation of investment needs for protected areas without a management plan. An example Appendix 2 Process for the definition of categories and subcategories in the PNN

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RESUMEN

Las áreas protegidas representan la piedra angular de la conservación de la biodiversidad. Si bien su gobernanza puede adoptar muchas formas, la optimización de su gestión es fundamental para lograr su protección, restauración y uso sostenible. Para ello es necesario que los conceptos y las metodologías se apliquen de forma estandarizada tanto en cuanto a la planificación financiera como a la gestión de sus acciones de conservación. Para describir la estructura financiera de las áreas protegidas en un lenguaje internacionalmente aceptado, se analizó la información financiera de 19 áreas protegidas públicas colombianas elegidas al azar y se estandarizaron sus acciones de gestión institucional con base en la clasificación de acciones establecida por la Alianza para las Medidas de Conservación (CMP, por sus siglas en inglés). Los planes financieros se construyeron a partir de los informes de ejecución presupuestaria, las evaluaciones de la eficacia de la gestión y los planes de gestión de cada área protegida; las acciones de gestión institucional se tomaron de los tres componentes de los planes de gestión actuales y de las políticas institucionales del órgano administrativo gubernamental. Se estandarizaron ocho categorías de costos a partir de 17 acciones de gestión institucional de acuerdo con la clasificación de la CMP; y se calculó un déficit de financiación total de USD47.547.554. Las áreas protegidas de todo el mundo siguen una estructura financiera similar; sin embargo, entre ellas existe una amplia variedad de acciones de gestión. La estandarización de las categorías de costos de acuerdo con la clasificación de acciones de la CMP apoyaría las investigaciones comparativas en materia de sostenibilidad financiera y permitiría analizar las necesidades financieras de las áreas protegidas en todo el mundo.

RÉSUMÉ

Les aires protégées constituent la pierre angulaire de la conservation de la biodiversité. Bien que leur gouvernance prenne souvent de nombreuses formes, l'optimisation de la gestion s'avère essentielle pour assurer leur protection, leur régénération et leur fonctionnement durable. Cela exige une application normalisée de concepts et de méthodologies, aussi bien dans leur planification financière que dans la gestion de leurs actions de conservation. Afin de présenter la structure financière des aires protégées dans une langue acceptée à l'échelle mondiale, nous avons analysé les informations financières de 19 aires protégées publiques colombiennes choisies de manière aléatoire, puis leurs actions de gestion institutionnelle ont été normalisées sur la base de la classification du Partenariat de l'UICN pour les mesures de conservation (CMP). Des plans financiers ont été élaborés pour chaque aire protégée en fonction des rapports d'implémentation budgétaire, des évaluations de l'efficacité de gestion et des plans de gestion. Les mesures de gestion institutionnelle ont été basés sur les plans de gestion actuels et les politiques institutionnelles de l'organisme administratif gouvernemental. Huit catégories de coûts ont été normalisées à partir de 17 mesures de gestion institutionnelle conformément à la classification CMP, et un déficit de financement total de 47.547.554 \$ US a été calculé. Les aires protégées à travers le monde suivent une structure financière similaire, cependant il existe une grande variété d'actions de gestion parmi elles. Une normalisation des catégories de coûts en fonction de la classification de ces actions pourrait faciliter des études comparatives sur la viabilité financière et rendrait possible l'analyse des besoins financiers des aires protégées à travers le monde.