

Kanuku Mountains Protected Area



Management Plan 2015-2019



Kanuku Mountains Protected Area - Management Plan 2015-2019

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FOREWORD

APPROVAL PAGE

EXECUTIVE SUMMARY

The Kanuku Mountains, located in the Rupununi region in southwestern Guyana, were identified by the Government of Guyana as one of five priority sites for protection. In 2011, part of the area was declared as a National Protected Area following the passage of the Protected Areas Act 2011, and extensive consultations with national and local stakeholders, including the 21 communities that are found adjacent to the area. The total area of the Kanuku Mountains Protected Area (KMPA) is 611,000 ha which represents 2.8% of the total area of Guyana.

The KMPA has traditionally been used sustainably by the indigenous people whose knowledge of the area is very important to continued conservation of the area. Although the impacts of the communities on the biodiversity and other natural resources have been relatively minimal, there are several growing pressures on the biodiversity and stability of the area. In order to further the objectives of the protected area, this management plan has been developed with the following twenty-year vision in mind: "The KMPA demonstrates sustainable resource utilisation while ensuring the conservation of biodiversity and ecosystem services. It promotes collaboration with stakeholders for management and decision making, generates benefits which improve human well-being, and serves as a model to the world".

The realisation of the vision, goal and objectives of any protected area is based on the selection of the most appropriate management strategies and actions. Here, we use a logical framework approach to develop the management strategies. The KMPA is to be managed in accordance with the IUCN classification category VI: A managed resource protected area. This means that the management aim is to meet local resource use needs from the PA while also ensuring ecosystem stability.

The management structure of the KMPA comprises the Protected Areas Commission, which is governed by a Board of Directors, and a Site level Authority. The Site level Authority will function in an advisory capacity and will comprise both public and private stakeholders including indigenous and local representatives. It is proposed that management plan implementation costs be covered through funding from donor agencies, foundations and the Guyana Protected Areas Trust as well as funds generated by the KMPA itself.

The main purpose of this management plan is to provide a framework and a tool for the effective management of the KMPA by the PAC and other stakeholders. This plan is divided into two sections. The first section is the main part of the plan, where the area, its management framework, and the plan's implementation are summarised. This is intended to provide a brief overview of the management plan. The second part comprises appendices and contains in-depth detail on KMPA and its management strategies. A glossary of terms, which helps to explain some of the terms used in this document, can be found in Appendix 17.

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ACRONYMS

CBD	Convention on Biological Diversity
CI-G	Conservation International-Guyana
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
CM	Community Monitoring
KCOCA	Kanashen Community Owned Conservation Area
CO ₂	Carbon dioxide
CRE	Community Resource Evaluation
CTPM	Conservation Target and Pressure Monitoring
EPA	Environmental Protection Agency
GFC	Guyana Forestry Commission
GGMC	Guyana Geology and Mines Commission
GL&SC	Guyana Lands and Surveys Commission
GIS	Geographic Information System
GoG	Government of Guyana
GPAS	Guyana Protected Areas System
GPAT	Guyana Protected Areas Trust
GT&T	Guyana Telephone and Telegraph Company
ha	hectares
IUCN	International Union for Conservation of Nature
KAP	Knowledge, Attitude and Perception
KfW	German Development Bank
km	kilometres
KMCRG	Kanuku Mountains Community Representative Group
KMPA	Kanuku Mountains Protected Area
KNP	Kaieteur National Park
M&E	Monitoring and Evaluation
masl	Meters above sea level
MoAA	Ministry of Amerindian Affairs
MoP	Ministry of the Presidency
METT	Management Effectiveness Tracking Tool
MOU	Memorandum of Understanding
MP	Management Plan
NBAP	National Biodiversity Action Plan
NGO	Non-governmental Organisation
NPAS	National Protected Areas System
NTFP	Non-Timber Forest Products
PA	Protected Area
PAC	Protected Areas Commission
PAO	Protected Areas Officer
RBM	Ranger-Based Monitoring
RDC	Regional Democratic Council
REDD	Reducing Emissions from Deforestation and Degradation
SBPA	Shell Beach Protected Area

SLA	Site Level Authority
SOP	Standard Operating Procedure
UNCLOS	United Nations Convention on the Law of the Sea
UNCCD	United Nations Convention to Combat Desertification
UNESCO	United Nations Education, Scientific and Cultural Organisation
UNFCCC	United Nations Framework Convention on Climate Change

1. KANUKU MOUNTAINS PROTECTED AREA (KMPA) INTRODUCTION

1.1 The Kanuku Mountains

The Kanuku Mountains are located in the Rupununi region of southwestern Guyana, a tropical country sitting on the northern coast of South America within the highly forested Guiana Shield. The Rupununi is part of administrative Region Nine (Upper Takutu, Upper Essequibo), the largest of the 10 administrative regions of the country.

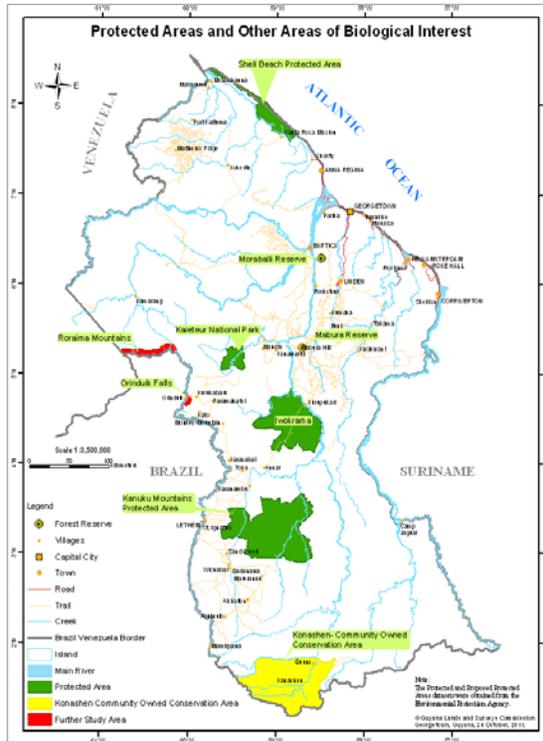


Fig 1: Map of existing Protected Areas in Guyana

The area is drained by the Takutu River in the west and by the Rupununi River to the east. The Takutu drains into the Rio Branco in Brazil before joining the Amazon Basin. The Rupununi River flows into the Essequibo, Guyana's largest river.

Historically, pressures on Kanuku's biodiversity and other natural resources have been relatively minimal, however there are at present a number of growing pressures. Unsustainable wildlife hunting and trapping, fishing, logging and mining, as well as land encroachment and forest clearing for agricultural expansion remain existing and growing pressures. Further, increasing population, as well as the movement of people into the area as a result of immigration and colonisation, and associated infrastructure development, is putting and will continue to put pressure on the resources of the KMPA.

The Rupununi is considered to be one of the most ecologically diverse areas in the country with healthy populations of many regionally and globally important species surviving in its forests, riverine and savannah areas. The region is home to 70% of all mammal species and 53% of all bird species known to occur in Guyana, as well as a large number of fish species. Approximately 1,577 plant species have been recorded in the region. For detailed species lists see Appendix 16.

The area around the Kanuku Mountains is populated mainly by the indigenous Macushi and Wapishana people who live in 21 communities. These communities interact with and use the resources of the mountains to sustain their mainly subsistence lifestyle. There is also a mix of coastland, Brazilian and western cultural influences in the region.

There is a single wet season (May – August) and a long dry season (September – April).

1.2 KMPA Establishment

The KMPA was first proposed as a potential Protected Area in 1999 as part of establishing a National Protected Areas System (NPAS) for Guyana - which was identified as a priority in the National Biodiversity Action Plan (NBAP).

As part of the implementation of the NBAP, the Kanuku Mountains were recognised for their significant biodiversity and cultural values, and the Government of Guyana (GoG), having appointed Conservation International-Guyana (CI-G) as the lead agency, established the mountains as a protected area. Subsequently, with funding support from the Government of Germany, through Kreditanstalt für Wiederaufbau (KfW), the Guyana Protected Areas System (GPAS) Project was established, with activities focused on building and supporting a Protected Areas System in Guyana.

In 2007, the delineation process (see Appendix 1) for the area began and a participatory approach was used involving a core group of stakeholders that included representation from indigenous communities, state agencies responsible for resource use in and around the protected area (PA), local and national government bodies, as well as other regional and national groups and agencies not already included in the core group.

Subsequently, the enactment of the Protected Areas Act in 2011 provided the legal mechanism for the recognition and declaration of the Kanuku Mountains Protected Area (KMPA) as one of Guyana's national protected areas. A more detailed description of the legal framework, as well as the international and national context can be found in Appendices 2 and 3.

1.3 KMPA Purpose

A protected area's purpose outlines the reasons why it has been established, and helps to explain the function of the PA.

KMPA Purpose is:

To conserve the high biodiversity values and the hydrological and environmental services of the Kanuku Mountains, including the forest and savannah habitats, while contributing to the social and economic security of present and future generations of local communities and people in the wider region

Additional purposes of the KMPA are:

- To become a model PA for Guyana and the world.
- To support the sustainable agricultural and natural resource use practices of rightful users to ensure that important resources do not run out in the future.
- To encourage and support scientific research and education.
- To conserve traditional ecological knowledge and cultural heritage.
- To create a focal point for eco-tourism to develop so as to increase benefits and contribute to the local and national economy.

1.4 KMPA Description

The KMPA is approximately 611,000 ha in size (11% of Region 9 and 2.8% of the total area of Guyana) and has a perimeter of approximately 590 km. It includes significant portions of the western Kanuku Mountains and almost the entire eastern range (Fig. 2)

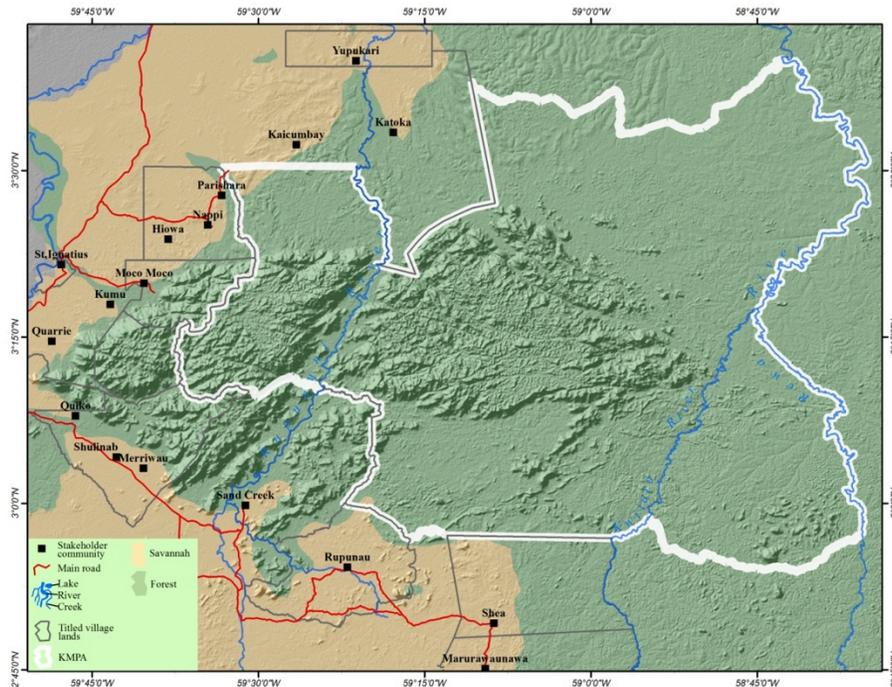


Fig. 2: Map of Kanuku Mountains Protected Area

KMPA is comprised of approximately 99% forest (approximately 4% of Guyana's total forested area, storing approximately 151-242 million tons of carbon) and 1% savannah. The major forest types occurring in the area are: (i) mixed forest with some areas of swamp/marsh forests, (ii) deciduous forests, and (iii) liana forests. The more diverse mixed forest type has been divided into gallery forest, hill forest, and cloud forest, each with a number of its own distinct microhabitats. A more detailed description of KMPA can be found in Appendix 4.

The PA is of high biodiversity value, as well as being particularly important in terms of plant endemism. A number of charismatic species, such as the harpy eagle, cock-of-the-rock, and jaguar, as well as other special interest species, including 11 of Guyana's 12 mammal species listed in the IUCN Red Data Book occur within the PA.

The KMPA is managed in accordance with the IUCN category VI classification: A managed resource protected area. This means that the PA will be managed to provide natural products and services to meet local needs while also protecting natural ecosystems and maintaining ecosystem services. A unique element of this IUCN classification is that the sustainable use of natural resources is used as a means to achieve nature conservation, along with other more conventional methods such as resource protection. KMPA was assigned to category VI since it has a long history of local Amerindian communities carrying out traditional small-

scale livelihood activities with minimum impact on nature such as fishing, gathering of non-timber forest products, and subsistence hunting.

1.5 KMPA Exceptional Values

The KMPA is valuable for many reasons, some of which are outlined in Table 1 below. The values listed are those that contribute most to the purposes for which the PA was established, and are considered “exceptional”. This does not imply that other values are not important. The exceptional values (Appendix 5, summarised in Table 1) of the KMPA are considered features that are most important for maintaining the ecological character and function of the area, and that provide the main benefits to local, national and international stakeholders.

The KMPA is important as it encompasses a range of ecological communities, from lowland and sub-montane moist forests to savannah types. It has been identified as a site of high diversity and plant endemism, as well as an important area for climate change mitigation and the regulation of hydrological processes. The KMPA also has significant social and cultural importance, with local communities dependent on many of its natural resources for food, medicine, shelter, and for other traditional uses.

In this plan, "natural" values are those that have ecological and environmental value; "social" values are those that provide a use benefit (direct or indirect) to PA stakeholders; and "aesthetic" and "cultural" values tend to encompass the intrinsic values of the PA.

Table 1: Values of the Kanuku Mountains Protected Area

<p>Natural</p> <ul style="list-style-type: none"> • Extensive and pristine forest coverage • Endemic, endangered and high diversity of mammal species • Diversity and abundance of bird species • Very high diversity of fish species • Control of water flow and quality - Rupununi River • Carbon storage 	<p>Social</p> <ul style="list-style-type: none"> • Climate regulation • Water catchment • Timber <i>spp.</i> • Non-Timber Forest Products • Firewood <i>spp.</i> • Research and Education
<p>Aesthetic</p> <ul style="list-style-type: none"> • Mountain peaks • Pristine rainforest • Lakes and streams 	<p>Cultural</p> <ul style="list-style-type: none"> • Traditional practices, knowledge and beliefs

2. MANAGEMENT PLAN INTRODUCTION

2.1 Management Plan Purpose

The primary purpose of this management plan is to outline the principles and strategies for the five-year development and management of the KMPA.

In addition to this, the management plan also has the following functions:

- To outline the strategies that will be employed to achieve the KMPA's vision.
- To outline the roles and responsibilities of implementers.
- To function as a public relations document for key stakeholders by providing a written description of KMPA's management strategies.
- To solicit donor funding by clearly outlining the management framework, priorities and input requirements.
- To provide continuity in management as managers, policy makers or partner projects change.
- To provide a framework for the participation of and coordination among all stakeholders, including local communities, government, PA partners and/or donors.

2.2 Management Planning Process

This management plan is prepared in accordance with the Protected Areas Act 2011, under which the Protected Areas Commission is to develop and obtain approval for management plans for all protected areas, and to use these plans to ensure the proper management of these areas. The first version of this plan was produced in 2009 with funding and technical support from KfW, Germany and Conservation International.

The plan was developed through a participatory process that used a series of national, regional and local workshops (for details see Appendix 6) to identify the purpose, values and pressures of the KMPA, as well as management programmes and strategies to enhance and manage the PA. Descriptions of these pressures and a detailed SWOT analysis can be found in Appendices 7 & 8).

The revised management plan, which is based on the 2009 plan, has been restructured and reviewed to incorporate a logical framework (a widely used conservation planning tool), and to ensure its adherence to the PA Act 2011. This process involved reviewing the management programmes and strategies with community representatives in 2013, ensuring that they are still relevant, and reorganising the management programmes across the NPAS, while maintaining specific considerations for the Kanuku Mountains Protected Area.

As a result, the 10 previously identified management programmes for KMPA have been grouped together under five common themes. Table 2 shows how the original programmes are now placed within the new revised structure. In addition, associated programme strategies have been structured to follow the logical framework approach considering programme goals, objectives, outputs and actions. In this manner, all strategies (in

accordance with PA Act 2011) identified in the 2009 management plan, have been incorporated into this new framework.

This revised plan is valid from 2015-2019.

Table 2: Revised management plan amended programmes

No.	Programmes used in this plan	Programmes used in 2009 plan
1	Operations and adaptive management	1. Law enforcement and regulations 2. Infrastructure and communications 5. Research, surveys and monitoring 7. Co-management programme
2	Land use and sustainable natural resource management	8. Land tenure and land management 9. Land use planning/zoning
3	Benefit sharing and livelihood development	6. Benefits and livelihoods
4	Education, awareness and outreach	3. Education and awareness 10. KMPA model
5	Capacity building	4. Capacity building

3. KMPA MANAGEMENT FRAMEWORK

KMPA 20-year Vision

“The KMPA demonstrates sustainable resource utilisation while ensuring the conservation of biodiversity and ecosystem services. It promotes collaboration with stakeholders for management and decision making, generates benefits which improve human well-being, and serves as a model to the world.”

3.1 Management Targets

Management targets are key features of an area that PA managers focus on in order to achieve the goals of the protected area. Strategies and actions are then developed for these targets. The 14 targets for the KMPA have been divided into conservation targets and thematic targets (Table 3). Appendix 9 describes the management targets in detail.

Conservation targets represent the biological entities or natural processes (species/groups of species, habitats/ecosystems, or ecological processes) that managers intend to conserve or manage for the achievement of the PA’s management goals. It is assumed that the successful management of conservation targets will ensure the long-term conservation of the protected area’s biological value.

Thematic targets on the other hand, are non-biological themes that, in the case of KMPA, reflect the interests of local stakeholders. These targets help to focus and develop the management strategies that will lead to the sustainable use of the PA’s natural resources, and the effective management of the PA, in partnership with local stakeholders.

Table 3: KMPA Management Targets

	Management Targets
<i>Conservation Targets</i>	1. Game and threatened species
	2. Riparian forests
<i>Thematic Targets</i>	3. Sustainable use of natural resources
	4. Sustainable agriculture
	5. Income generation
	6. Benefit sharing
	7. Management-relevant research
	8. Capacity building for improving collaboration with communities for management and decision making
	9. Awareness of the KMPA
	10. Preservation of traditional knowledge and language
	11. Land title and extensions
	12. Sustainable commercial use of resources by communities (e.g. community tourism)
	13. Sustainable commercial use of resources by external interests (e.g. private lodge operators, tour operators)
	14. KMPA as a model protected area

3.2 Management Programmes and Specific Goals

Five management programmes encompassing the 14 targets identified (Table 4) were developed to help guide the management actions of the KMPA. These programmes follow a logical framework (log frame) approach, commonly considered the best approach for development and conservation planning, and which brings together common areas according to park management responsibilities. The log frame outlines, for each of the five programmes, a long-term goal, objectives, general actions needed to meet the objectives, and milestones by which progress towards the goal can be measured. It provides the overall planning as well as monitoring and evaluation frameworks for managing the KMPA. A summary of the programmes is found below. The complete detailed logical framework can be found in Appendix 10. In order to facilitate site level planning and management (one of the purposes of this management plan), the log frame actions have been placed in a separate operational planning framework (Appendix 11).

Table 4: KMPA Management programmes and their Targets

Management Programmes	Mangement Targets
1. Operations and adaptive management	1. Game and threatened species, 2. Riparian forests, 7. Management-relevant research, 14. KMPA as a model protected area
2. Land use and sustainable natural resource management	3. Sustainable use of natural resources, 4. Sustainable agriculture, 11. Land title and extensions, 12. Sustainable commercial use of resources by communities (e.g. community tourism), 13. Sustainable commercial use of resources by external interests (e.g. private lodge operators, tour operators)
3. Benefit sharing and livelihood development	5. Income generation, 6. Benefit sharing
4. Education, awareness and outreach	9. Awareness of the KMPA, 10. Preservation of traditional knowledge and language
5. Capacity building	8. Capacity building for improving collaboration with communities for management and decision making

It is recognised that each programme in itself will carry an education, awareness and outreach, as well as a capacity building component. However, since these two areas are of great interest and importance to communities and are major management activities, these have been regarded as individual programmes. This will further assist with planning and fundraising activities. Programme details are listed below.

3.2.1 Operations and Adaptive Management

Goal: Ensuring the effective and adaptive management of KMPA, its biodiversity and its resources

Establishing appropriate and adaptive management systems, along with physical infrastructure, is crucial to the effective management of a PA. These systems include

appropriate human resource and administrative structures, effective law enforcement, improved knowledge of KMPA through research, and the monitoring of conservation targets and pressures. It is also under this programme that success towards achieving management plan goals and objectives will be measured and fed back into management to adapt actions where necessary. A preliminary research priority list has been developed (Appendix 12). This list identifies urgent information gaps in order for KMPA staff to be able to manage the PA effectively.

Objectives

- To establish appropriate management structures and systems for the effective management of KMPA.
- To promote management-relevant research and its use for evidence-based decision making.
- To establish an operational and effective law enforcement unit.

3.2.2 Land Use and Sustainable Natural Resource Use

Goal: Ensuring the sustainable use of natural resources inside KMPA, while supporting the development and implementation of land use plans for local communities and KMPA

Sustainable land use can only be achieved through proper planning and with support from resource users. As such developing land and sustainable resource use plans for inside the KMPA is important and must be done with the participation of communities. Based on the fact that activities outside the protected area will influence activities inside the protected area, and that a greater understanding of, and participation in, sustainable resource use outside the PA will ultimately lead to a greater appreciation of sustainable resource use inside the PA, this programme will also support land use and sustainable natural resource management (SNRM) in surrounding villages.

Objectives

- To develop a land use plan for inside KMPA in a participatory manner and in accordance with the Protected Areas Act 2011, and the Amerindian Act 2006.
- To secure community support for the sustainable use of resources inside the KMPA.
- To facilitate customary protection of village resources.

3.2.3 Benefit Sharing and Livelihood Development

Goal: Enhancing and equitably sharing the direct benefits of KMPA and its resources for and with surrounding communities

This programme aims to improve benefits to communities from KMPA by supporting existing livelihoods and examining possibilities to begin new conservation-compatible livelihoods and income generating activities. By examining best practice benefit-sharing

models, it is aimed that management will improve the equitable sharing of benefits across and within communities.

Objectives

- To increase sustainable livelihood and income generating opportunities available to communities.
- To promote the equitable sharing of direct benefits from KMPA.

3.2.4 Education, Awareness and Outreach

Goal: Improving awareness of KMPA, its values, and management strategies, locally nationally and internationally

Developing thematic publications and awareness campaigns/events aimed at differing target audiences such as communities, schools, tourists, and international donors, will be key activities of this programme. KMPA will be promoted at every opportunity and proactively through developing social media web pages and by seeking formal international recognition. Lastly, KMPA lessons learnt will be disseminated appropriately to show the potential of KMPA as a model protected area globally.

Objectives

- To increase awareness of the importance of KMPA's biodiversity, resources and management activities in youth and adults from local communities.
- To improve awareness of KMPA and its value both nationally and internationally.
- To ensure KMPA is recognised and supported as a globally important protected area.

3.2.5 Capacity Building

Goal: Building the capacity of key stakeholders for PA and resource management to achieve KMPA's vision and goals

In order for a PA to be managed effectively, the capacity of stakeholders needs to be built. Capacity needs were extracted from each of the above programmes to identify where capacity is required in order to implement this management plan. This programme focuses on the two main stakeholders: the PAC (including site level staff) and the surrounding communities. Methods and specific training programmes/capacity needs for both target stakeholders will be identified as a primary component of this programme.

Objectives

- To improve the capacity of PAC and site level staff for KMPA management.
- To improve the capacity of communities for KMPA management, land use and livelihood development.

4. MANAGEMENT PLAN IMPLEMENTATION

4.1 Guiding Principles

The following principles guide the implementation of this management plan and are fundamental to the management of KMPA:

- Management targets take precedence in all actions.
- Partnerships with stakeholders, particularly associated communities, are a key component of management plan implementation and KMPA decision making.
- Management will consider biodiversity conservation as well as impacts, benefits and relationships with communities in all protected area-related decisions.
- Management systems will be responsive and adaptive to changing circumstances and knowledge.
- KMPA annual operation plans should be developed within the framework of the 5-year management plan.

4.2 Governance and Management Structures

For the management of the KMPA to be effective a reliable, fair, and transparent governance structure is required. Guyana's Protected Areas Act 2011 established the Protected Areas Commission, which falls under the Ministry of the Presidency (MoP), and is charged with managing the country's protected areas.

The PAC is governed by a Board of Directors that is responsible for overseeing the operations and approving the programmes and budget of the Commission. In addition, the site-level governance structure will also reflect the active involvement of local communities, central and local governments, private sector, non-governmental organizations, and other interest groups. It is proposed that a site level authority (SLA) be established for the KMPA, comprised of sixteen members, one representative each from the following stakeholder groups: Regional Democratic Council – Region 9, PAC, Environmental Protection Agency (EPA), Ministry of Amerindian Affairs (MoAA), Guyana Forestry Commission (GFC), Guyana Geology and Mines Commission (GGMC), Guyana Lands and Surveys Commission (GLSC), CI-Guyana, Civil Society, Business Society; five representatives of the Kanuku Mountains Community Representative Group (KMCRG); and the KMPA Site level Manager. External experts may be called upon at meetings to provide background information to the authority if required. The primary function of the SLA is to make recommendations to the PAC with regard to decisions involving the KMPA.

A participatory approach involving stakeholders in decision making and decentralisation of governance will be employed for onsite implementation of the management plan, a process which will be managed by a site level manager, recruited and overseen by the PAC. Staffing structure at the site level is still to be determined and will be in line with the PAC's institutional strategy.

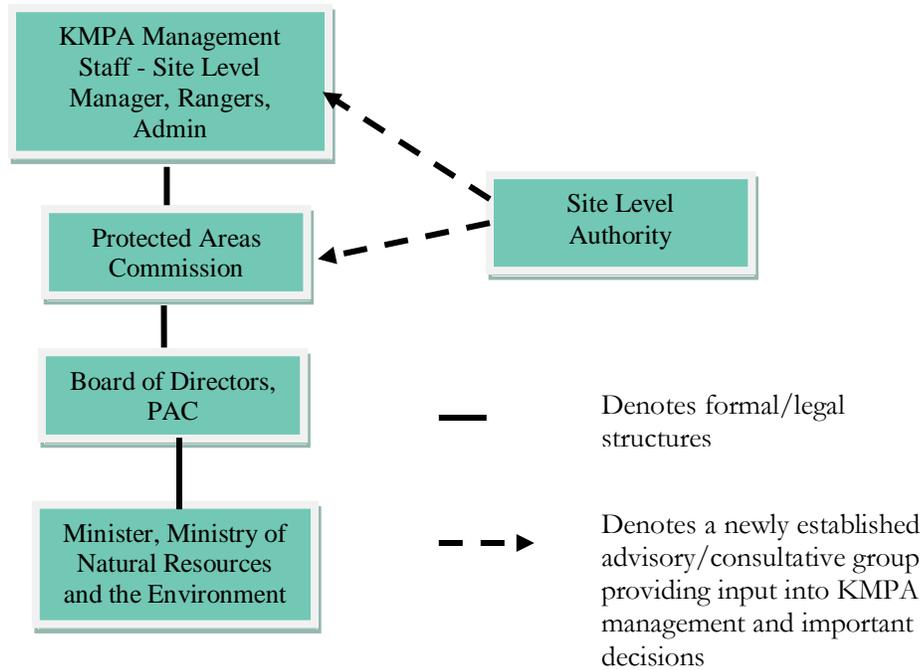


Fig.4 Organizational chart for KMPA Management.

4.3 Operational Planning

A five-year operational plan based on the management plan’s log frame has been developed (Appendix 11). The plan is meant to be adaptive and change with increased knowledge and information. The operational plan will form the framework from which more detailed annual operational plans will be developed and against which the progress of activities is reported. Annual operational plans and budgets will be developed by the site level manager and the senior management team at the PAC, using these planning frameworks.

4.4 Management Plan Monitoring/Evaluation

The KMPA management plan is designed to be dynamic, flexible and adaptive to changing information, management and community needs. The log frame provides indicators as a measure of success in achieving programme goals, objectives and outputs. The log frame also provides the framework for a monitoring and evaluation (M&E) plan (Appendix 13), where frequencies of data collection as well as institutional responsibilities have been identified. The M&E plan comprises two components that:

- i) determine whether KMPA management is achieving its goals and objectives.
- ii) monitor the progress of management plan implementation against foreseen outputs. This part of the M&E framework can be used in conjunction with staff performance appraisals; however, it should not be used as a sole measure of performance.

By assessing progress towards achieving goals, objectives, and outputs, KMPA management will be able to integrate this information into annual operational plans and activities, and

adapt their interventions to allow for more effective and efficient implementation of this management plan.

Ultimately, the implementation of an M&E plan will provide managers and key stakeholders with up-to-date information on the progress and results of KMPA management interventions. An annual review of M&E results will be summarised in KMPA annual reports, and M&E activities will subsequently be incorporated into annual operational plans. In order to monitor the overall effectiveness of KMPA management, the World Bank and the World Wide Fund for Nature (WWF)'s Management Effectiveness Tracking Tool (METT) that was developed in 2007 (Appendix 13) will be used.

4.5 Sustainability

The long-term sustainability of management outcomes within the PA is dependent on continued and appropriate budgetary support. Without this support, sustainable PA management will be challenging. The PAC is working closely with the GoG, MoP, and donors to ensure that the resources are available to ensure longevity of the impacts of PAC's interventions relating to the KMPA.

The PAC's interventions relating to sustainability are:

i) Financial: A Guyana Protected Areas Trust (GPAT) has been established which intends to provide long-term funds to assist with PA management. This fund will allow for the PAC to ensure core-funding needs are met while also trying to secure further third party grants.

ii) Capacity: Developing plans to improve staff capacity and complete training at all levels. This will ensure that knowledge and skills are built across all relevant staff, and capacity needs are assessed regularly. In addition, the staff based at the PAC's Georgetown Office will adopt a mentoring role to site level staff and continuously provide on-the-job training. The PAC staffing structure also allows room for lateral and upward movement within the organisation, thus promoting staff retention and with that institutional capacity and knowledge.

iii) Infrastructure: Ensuring infrastructure needs for on-going activities are addressed, and infrastructure is maintained regularly, as well as identifying new needs when circumstances change.

iv) Collaboration: Collaboration with communities with respect to KMPA management and decisions will help achieve long-term sustainability of activity outcomes from implementing this management plan. The greater the collaboration and consultation with communities the more supportive they will be for the protected area and its management. In all of its activities, the PAC will actively encourage and promote gender equality.

4.6 Finances

Below outlines the main headquarters and site management costs for implementing this management plan. Developing a detailed cost for implementing the management plan and all its activities is a key activity to be carried out during year one.

4.6.1 PA management costs

Table 5a and Table 5b show the estimated capital and recurrent costs, respectively (see Appendix 14 for more detail). For effective implementation of this plan, capital investment for infrastructure development and equipment procurement (Appendix 15), as well as recurrent costs associated with human resources, administration, travel, and infrastructure maintenance will be required.

These figures are broad estimates only and are meant to serve as a guide for management plan implementation fundraising only. More detailed and accurate management plan implementation costing will be conducted in line with annual operational plans.

Table 5a: Capital cost estimates for PA management

	Amount (GY\$)					Total (G\$)
	2015	2016	2017	2018	2019	
Infrastructure	-	94,000,000	25,000,000	5,000,000	5,000,000	129,000,000
Transportation	1,500,000	11,000,000	3,500,000	7,000,000	-	23,000,000
Office Equipment	580,000	3,430,000	700,000	600,000	-	5,310,000
Communication Equipment	-	7,846,000	2,500,000	-	-	10,346,000
Field Equipment	-	1,400,000	800,000	-	-	2,200,000
Power Generation	-	6,750,000	2,250,000	-	-	9,000,000
Total GY\$	2,080,000	124,426,000	34,750,000	12,600,000	5,000,000	178,856,000
Approx. US\$ 1US\$ =GY\$ 200	10,400	622,130	173,750	63,000	25,000	894,280

Table 5b Recurrent cost estimates for this 5 year KMPA management plan

	Amount (GY\$)					Total (G\$)
	2015	2016	2017	2018	2019	
Human Resource	2,754,000	5,508,000	10,206,000	10,206,000	10,206,000	38,880,000
Services	240,000	940,000	1,540,000	1,540,000	1,540,000	5,800,000
Office and Meetings	1,900,000	2,650,000	3,775,000	2,275,000	2,275,000	12,875,000
Travel	765,000	945,000	1,020,000	1,140,000	1,140,000	5,010,000
Contractual	-	-	-	-	-	-
Infrastructure & Equipment Depreciation, Maintenance	416,000	13,718,667	18,543,267	20,563,267	21,063,267	74,304,467
Total GY\$	6,075,000	23,761,667	35,084,267	35,724,267	36,224,267	136,869,467
pprox 1US=GY\$ 200	30,375	118,835	175,421	178,621	181,121	684,347

4.6.2 Income Generation Strategies

A number of strategies (existing and to be developed) have been identified for KMPA management. These are:

Existing

- Government funding
- Guyana Protected Areas Trust (GPAT)
- Third party donors

To be developed

- Fees for services such as research and training
- Business partnerships with the private sector based on the sustainable utilisation of the resources of the PA (NTFPs, tourism, etc.)
- Tourism service provision (entrance fees; accommodation fees, etc.)
- Income from branding and concessions (tourism, etc.)
- Ecosystem services

5. LIST OF APPENDICES

A.1. KMPA Boundary

A.2 Legal and Institutional Framework

A.3. Regional and National Context

A.4 Detailed Site Description

A.5 Values of the KMPA

A.6 Core participants in KMPA management plan development workshops

A.7 Pressures on the KMPA

A.8 SWOT analysis

A.9 KMPA Management Context

A.10 KMPA Logical Framework

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A.12 KMPA Management-Relevant Research Priorities

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A.14 Detailed Estimates for Implementation of KMPA's Management Costs

A.15 Personnel, Infrastructure and Equipment

A.16 Species Lists for the Kanuku Mountains Area

A.17 Glossary