

DRAFT

**Nyungwe National Park
Management Plan
2012-2021**

Rwanda
Development
Board

Tourism &
Conservation
Department





The Nyungwe National Park Management Plan 2012-21 has been developed by the Rwanda Development Board Tourism & Conservation Department through a participatory planning process involving a broad cross section of NNP stakeholders.



The Strengthening Biodiversity Conservation Capacity in the Forest Protected Area System of Rwanda (PAB) Project provided technical and financial support for the planning process, through the PAB Project Management Unit at the Rwanda Environment Management Authority.



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Approval Page

The Rwanda Development Board has approved the implementation of this management plan for the Nyungwe National Park, 2012-2021

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Executive Summary

Nyungwe National Park (NNP) is located in the south-west of Rwanda along the Congo-Nile divide, and protects a major expanse (1,019 km²) of lower montane forest that provides vital watershed protection for the country. The park supports an abundance of animal and plant life, including many rare and endemic species adapted to the montane forest landscape. However, the park is located in one of the most densely populated areas of Rwanda, where unsustainable agricultural practices have led to reduced crop yields, and park-adjacent communities have been driven to seek out alternative livelihoods. This has led to increasing pressure on the NNP's natural resources in the form of growing encroachment, poaching and other types of illegal resource extraction.

This new 10-year management plan (2012-2021) was commissioned by the Rwanda Development Board (RDB) Tourism & Conservation Department and builds upon and replaces the previous five-year NNP management plan (2006-2010). The planning process was carried out between October and November 2011 with technical and financial support from the GEF/UNDP Protected Areas Biodiversity (PAB) Project, and with the participation of a wide range of NNP stakeholders. The process used to develop the new NNP management plan has been strongly influenced by the Kenya Wildlife Service's Protected Areas Planning Framework (PAPF), which provides a practical framework for the development of management plans based on participatory, stakeholder driven planning, as opposed to top-down planning carried out by experts.

The management plan has six chapters. Chapter 1 provides an introduction to the national park and describes the planning process used to develop this management plan. Chapter 2 sets out a zonation scheme for the park, which aims to guide and influence the use and management of different parts of the park according to the desired conservation and development goals. Chapters 3-6 set out the plan's four management programmes that address the key aspects of the NNP's management: Ecological Management & Monitoring, Tourism Management & Development, Community Partnership, and Park Operations. Each of these chapters is summarised in the following paragraphs.

The NNP Zonation Scheme

The primary factors in establishing the NNP zonation scheme are the need to protect vulnerable habitats and biodiversity contained in the national park, and the need to manage and mitigate human impacts. In order for park managers to achieve different management aims in different parts of the protected area, four main zone types have been identified:

- ▶ Ecologically Sensitive Zone
- ▶ Tourism High Use Zone
- ▶ Wilderness Zone
- ▶ Buffer Zone

The **Ecologically Sensitive Zone** (ESZ) mainly comprises the NNP's wetland and bamboo forest habitats, which contribute to the park's uniqueness and feature high biodiversity including a number of endemic and rare species. Under this 10-year management plan, the ESZ will continue to be the primary zone set aside for ecological protection, and tourism will be restricted to bird, Owl-faced monkey and orchid watching, along defined trails. Research activities will also be limited in order to minimise the impacts of anthropogenic interference. Infrastructure development will not be permitted, with the exception of a limited number of trails for biodiversity viewing and research activities and hides for bird watching.

A key management issue for the ESZ is the conservation and restoration of the bamboo habitat. Due to shortages of bamboo outside of the forest, neighbouring communities have been harvesting bamboo for building houses and handicrafts, affecting not only the habitat itself but also the threatened and endemic animal species found in the area.

The **Tourism High Use Zone (THUZ)** comprises the areas of the NNP which are currently most heavily utilised for tourism, and where future tourism product and infrastructure development will be concentrated. Visitor activities permitted in the Zone include: trekking, nature walks, bird watching, adventure tourism, and educational visits. This Zone will also be a focal point for research activities in the park. A key management issue for the zone for the lifespan of this management plan will be the need to ensure that the environmental impacts of new infrastructure development are minimised, and that areas of primary forest or other high biodiversity habitats within this THUZ are preserved.

The **Wilderness Zone (WZ)** is largely inaccessible to visitors, with the exception of the Congo-Nile Divide trail. As a result, tourism use of this Zone is relatively low. The WZ features a continuum of vegetation types, ranging from low medium montane forest in the south-west to montane forest in the north, and under this new management plan it will be primarily managed for biodiversity conservation and the protection of its significant water catchment values. No new infrastructure is permitted in the WZ during the lifespan of this management plan, although existing trails such as the Congo-Nile Divide Trail and associated campsites will be maintained. Visitor activities will be restricted to trekking, nature walks, and bird watching, while research activities will be permitted provided they do not lead to the construction of new permanent trails.

The major management issues in the Zone are habitat restoration as a result of damage by fire and other human-induced impacts, and activities to address the problem of invasive species. The impact of climate change on the ecology and habitat gradation is also a potentially important research priority for the zone.

Unlike buffer zones in many other national parks, the NNP Park **Buffer Zone (BZ)** is a legally established entity, gazetted under the law establishing Nyungwe National Park itself. The BZ incorporates tea plantations, Pine and Eucalyptus forestry plantations and areas presently denuded areas. Until July 2011 the forestry plantation and denuded areas fell under the management authority of the Rwanda National Forestry Authority (NAFA). However, currently the New Forests Company, a UK-based sustainable and socially responsible forestry company, is responsible for the management of the existing BZ forestry plantations as well as for the replanting of denuded areas. Achievement of this management plan's aims for the BZ will therefore require collaboration between NNP management, RDB, NAFA and the New Forest Company.

The NNP BZ and neighbouring community areas will be an important focus of NNP management actions aimed at reducing human impacts through the promotion of conservation-compatible livelihoods and the strengthening of human-wildlife conflict mitigation measures. In this regard, it will also be important to carry out a Strategic Environmental Assessment (SEA) of areas adjacent to the national park, as a rational planning basis for the development of infrastructure in the region. The development of this SEA is the primary responsibility of the Rwanda Environment Management Authority (REMA).

The NNP Management Programmes

The four NNP management programmes were developed by NNP stakeholders during specialist working group meetings according to the Logical Framework Approach (LFA), and consist of a set of 10-year management objectives and their component management actions. Each programme also contains a 3-Year Activity Plan, to provide the vital link between the actions set out in the management plan and the day-to-day management activities in the NNP. This is achieved by breaking down a

programme’s individual management actions into a series of tangible management activities, and setting out the timeframe and responsibility for their implementation. The 3-Year Activity Plans are to be regularly rolled forward throughout the implementation of the management plan, thereby ensuring that the plan remains dynamic and flexible enough to adapt to unforeseen challenges.

Ecological Management and Monitoring Programme

The purpose of the NNP Ecological Management and Monitoring Programme is to enhance the conservation and understanding of the NNP’s ecological services and conservation values through targeted ecological management, research and monitoring. To achieve this, the Nature Conservancy’s Conservation Action Planning (CAP) methodology was used to help identify the NNP’s most important conservation values, their ecological requirements, and the threats impacting on them. The eight identified NNP conservation targets and their key ecological attributes (KEAs) are identified below:

Target	KEAs
Hydrological System	<ul style="list-style-type: none"> ▶ Water quantity, quality and seasonality ▶ Soil structure and composition ▶ Water sources
Primary Forest	<ul style="list-style-type: none"> ▶ Forest edges ▶ Size ▶ Species composition and distribution ▶ Connectivity - corridors ▶ Seed dispersers and pollinators
Secondary Forest	<ul style="list-style-type: none"> ▶ Size ▶ Species composition and distribution ▶ Forest edges
Bamboo Forest	<ul style="list-style-type: none"> ▶ Species composition ▶ Size and distribution ▶ Genetic variability (owl-faced monkey) ▶ Bamboo regeneration
Wetlands	<ul style="list-style-type: none"> ▶ Species composition and distribution ▶ Water levels and seasonality ▶ Size
Chimpanzee	<ul style="list-style-type: none"> ▶ Population size and distribution ▶ Health ▶ Genetic variability
Colobus Monkey	<ul style="list-style-type: none"> ▶ Reproduction ▶ Diet - food sources ▶ Connectivity ▶ Habitat size
Birds of Prey	<ul style="list-style-type: none"> ▶ Population size ▶ Prey species ▶ Habitat size and distribution ▶ Health

The NNP Ecological Management Programme aims to:

- ▶ Minimise the impacts of fire on Nyungwe NP ecological values
- ▶ Minimise the impacts of mineral extraction, illegal agriculture and infrastructure development
- ▶ Control invasive and alien species
- ▶ Strengthen the management of NNP research, in particular focusing research on priority park management issues

Forest fire has been a major source of habitat degradation in NNP in recent years. NNP managers have made significant progress in preventing forest fires through community awareness raising and controlling them once they occur, but fires remains one of the greatest threats to the conservation of NNP habitats.

In addition to forest fires and poaching, a variety of other human activities are impacting on Nyungwe's habitats, in particular **mining activities, illegal agriculture** within the NNP, and **infrastructure development**, especially in association with the major trunk roads passing through the park.

Invasive plant species, both indigenous and exotic, are another significant threat to the NNP's primary, secondary and bamboo forest habitats. In particular, the liana *Sericostachys scandens* is a widespread indigenous invasive climber that colonises recent forest gaps, leading to large mono-dominant forest patches that can span over many hectares. The resulting decrease in biodiversity is a serious concern for park management that will be addressed under this management plan.

Since the mid-1980s, **research** has mainly focused on the ecology of several of Nyungwe's primate species, as well as biodiversity surveys and ongoing monitoring of NNP's mammals, birds and tree species. Despite this strong existing research foundation, the links between research and the practical management of the NNP need to be strengthened so that research activities directly address key management issues of concern to NNP management. Enhanced cooperation between researchers and managers will be fostered so that the outcomes of research are in a format that managers can understand and use in day-to-day park management activities.

Tourism Management & Development Programme

This programme deals with the vital need to generate significant economic returns to meet the costs of park management. It also addresses the need to increase the support of neighbouring communities for the park's conservation through revenue sharing schemes and community participation. This management programme seeks to establish the NNP as Rwanda's leading ecotourism and adventure destination and to provide optimal economic benefits to neighbouring communities and the nation, at minimal environmental costs. The NNP has the potential to complement other leading Rwandan destinations such as Volcanoes National Park and the Akagera National Park by officering a new premium ecotourism and activity programme inside the park.

The Tourism Management & Development Programme aims to:

- ▶ Develop the NNP's ecotourism and adventure tourism product
- ▶ Improve the park's visitor services and experience
- ▶ Develop and promote the tourism value chain for park-adjacent communities
- ▶ Strengthen the management of NNP tourism products and services

The park's **ecotourism and adventure product** will be enhanced through the development of new visitor attractions and activities in and around the park, as well as appropriate tourism infrastructure to support these activities. An important aspect of developing NNP's tourism product will be the establishment of public-private partnerships, leading to a business environment that is conducive to private sector investment in new tourism infrastructure and activities in the NNP.

As the NNP tourism product offer expands and diversifies, the quality of the **visitor services** and **visitor experience** will be continually monitored and improved, in order to ensure visitor satisfaction and to achieve the Tourism Programme aim of establishing Nyungwe as Rwanda's leading ecotourism and adventure destination.

Community participation in the NNP's tourism industry remains relatively weak and the **tourism value chain** needs to be strengthened through increased community involvement. This will not only bolster the reputation and attractiveness of the ecotourism product, but also increase the economic benefits for NNP adjacent communities, which is crucial in strengthening community support for the park's conservation. The promotion and support of community-based tourism is a high priority for this management plan, and for the long-term achievement of the park's conservation goals.

Management of NNP tourism products and services will focus on the expansion of the NNP tourism industry over the lifespan of this management plan, both through the development of new tourism products and improvement existing ones. The park's tourism management and administration systems will be scaled up to ensure they keep pace with the anticipated increases in the scale and complexity of the NNP tourism product, while minimising impacts on the park's natural environment.

Community Partnership Programme

The Community Partnership Programme addresses the need to ensure that communities neighbouring the NNP benefit from the park and are empowered to achieve sustainable livelihoods through resource use practices beneficial to both the park and the communities themselves. As Nyungwe NP is located in one of the most densely populated areas of Rwanda, this presents major challenges. The main economic activity of park-adjacent communities is subsistence agriculture, and agricultural practices are generally poor and affected by low soil fertility. This increases already intense pressures for land and resources. An important goal of the Community Partnership Programme is to provide communities with positive economic and social benefits from the national park, thereby encouraging them to support conservation.

The Community Partnership Programme aims to:

- ▶ Reduce human-wildlife conflicts
- ▶ Enhance community livelihoods and sustainable resource use
- ▶ Strengthen NNP Revenue Sharing Programme
- ▶ Strengthen conservation education and awareness

Human-wildlife conflicts (HWC) affect over one third of households neighbouring NNP, mainly in the form of damage to crops caused by problem animals. In an area where communities are already struggling to achieve viable livelihoods, such wildlife damage may push farmers even further into poverty. In retaliation to HWC, people may kill wildlife or engage in other vengeful activities that oppose conservation efforts. Reducing and mitigating HWC is therefore a major step towards enabling communities to reduce their impacts on conservation, as well as securing community livelihoods in areas neighbouring the park.

Promoting **sustainable livelihoods and resource use** practices will improve community livelihoods for the benefit of society, while reducing pressures and threats to the NNP's exceptional biodiversity and habitats. The efforts to enhance community livelihoods are likely in the long run to provide benefits to the park in terms of a community that is stable, prosperous, supportive of conservation and has a sense of ownership over the park.

RDB's **Revenue Sharing Programme** aims to ensure sustainable conservation of the NNP with the participation of the neighbouring communities by contributing to the improvement of their living conditions. According to the RDB Revenue Sharing Policy & Guidelines, the target area for revenue sharing funding is limited to the "Zone of Influence" the park, which covers the sectors touching the park boundary.

Traditional **conservation awareness-raising and education programmes** continue to be an important mechanism for increasing community understanding and support for the conservation needs of the

park, and the role that the park and conservation approaches can potentially play in improving their own livelihoods.

Park Operations Programme

This programme deals with management systems that are critical to the effective management of the national park. This includes NNP's day-to-day management systems such as law enforcement, human resources management, administration and finance, infrastructure and equipment, and stakeholder collaboration mechanisms. Due to the increasing threats that the park is being subjected to from high population density around the park, the NNP's law enforcement efforts will have to be maintained and strengthened over the lifespan of this management plan in order to ensure the parks integrity and minimise environmental impacts.

The Park Operations Programme aims to:

- ▶ Strengthen law enforcement operations
- ▶ Improve the management of the main transit roads
- ▶ Improve NNP human resources, infrastructure and equipment in line with emergent management needs
- ▶ Strengthen transboundary collaboration in ecosystem management
- ▶ Design and implement sustainable financing mechanisms

It is essential to complement the management actions to be implemented under the Community Partnership Programme with effective **law enforcement operations** designed to deter illegal resource use in the NNP and encroachment on the park's borders. Efforts to build community partnership and support for conservation need to be coupled with a strong message that illegal activities in the NNP will not be tolerated.

On its south western border, the NNP adjoins the international boundary with Burundi and the neighbouring Kibira National Park. Therefore, effective law enforcement will require transboundary collaboration between the NNP and Kibira National Park, as well as between their parent agencies, RDB and Burundi's INECN.

The major **transit roads** that bisect the park, which are heavily used by through-traffic, are a significant threat to the NNP. Within the lifespan of this management plan traffic will undoubtedly increase, leading to more road kills, pollution and rubbish dumping, as well as a worsening of the edge effects caused by the road itself. Therefore, a series of actions will be implemented under this management plan aimed at mitigating these impacts.

In order for the NNP management team to successfully cope with the management challenges posed by increasing pressures on park resources, the RDB will need to increase investment in the NNP's **human resource capacity** as well as the park's **management infrastructure and equipment**. Park managers will have to ensure that sufficient and adequately trained staff are available to implement key aspects of this management plan, and that management facilities and infrastructure are able to cope with increasing demands.

Nyungwe National Park management have already made significant progress in developing **collaboration mechanisms with key stakeholders**, including the establishment of the NNP Joint Action Conservation Forum ("*JAF Tubungabunge Nyungwe*") which provides the primary platform for collaboration in park management issues. During the lifespan of this management programme further management actions will be implemented to strengthen these existing collaboration mechanisms, involving local communities, local administrations, NGO partners, and cross-border collaboration with the neighbouring park management authorities in Burundi.

Since it is not certain that the actions to be undertaken under the Tourism Management Programme will be sufficient to meet the mounting costs of park management activities, the need arises to establish **alternative financing mechanisms**, in particular related to the potential for developing Payment for Ecosystem Services (PES) mechanisms. Such mechanisms are especially promising when considering the NNP's exceptional national and regional importance as a water catchment, as well as its significant role in carbon sequestration and the protection of biodiversity and genetic resources. It is expected that much of the work to investigate and develop these alternative financing mechanisms will be spearheaded by NNP's partner NGOs, especially WCS.

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Acronyms

ANICO	Community Conservation Facilitator (Animateur de Conservation)
ANP	Akagera National Park
CAP	Conservation Action Planning (of TNC)
DRC	Democratic Republic of Congo
EAC	East African Community
EIA	Environmental Impact Assessment
GEF	Global Environment Facility
GPS	Geographical Positioning System
HWC	Human-wildlife conflict
ICS	Incident Command System
INECN	Institut National pour l'Environnement et la Conservation de la Nature (Burundi)
ITB	International Tourism Bourse, Berlin
IUCN	International Union for Conservation of Nature
JADF	Joint Action Development Forum
JAF	Joint Action Conservation Forum (of NNP)
KCCEM	Kitabi College of Conservation & Environmental Management
KEA	Key Ecological Attribute
KNP	Kibira National Park (Burundi)
KWS	Kenya Wildlife Service
LFA	Logical Framework Approach
MINIRENA	Ministry of Natural Resources
MININFRA	Ministry of Infrastructure
MIST	Management Information System
MOU	Memorandum of Understanding
NAFA	National Forestry Authority
NGO	Non-governmental organisation
NNP	Nyungwe National Park
NUR	National University of Rwanda
OGMR	Rwanda Geology and Mines Authority
ORTPN	Office Rwandais du Tourisme et des Parcs Nationaux (now replaced by RDB)
PA	Protected area
PAB	Protected Areas Biodiversity Project
PAPF	Protected Areas Planning Framework (of KWS)
PCFN	Projet Conservation de la Forêt Nyungwe (of WCS)
PES	Payment for Ecosystem Services
RBM	Ranger-based Monitoring
RDB	Rwanda Development Board
REDD	Reducing Emissions from Deforestation and Forest Degradation in Developing Countries Programme (of UN)
REMA	Rwanda Environment Management Authority
RNRA	Rwanda Natural Resources Authority
RS	Revenue sharing
SEA	Strategic Environmental Assessment
TNC	The Nature Conservancy
UNDP	United National Development Programme
USAID	United States Agency for International Development
VNP	Volcanoes National Park
WCS	Wildlife Conservation Society

Chapter 1.

Plan Foundations

1.1 Introduction

The Nyungwe National Park (NNP) Management Plan 2012-2021 was commissioned by the Rwanda Development Board (RDB) Tourism & Conservation Department. The planning process was carried out between October-November 2011 with technical and financial support from the GEF/UNDP Protected Areas Biodiversity (PAB) Project¹, and with the participation of a wide range of NNP stakeholders. The new management plan builds upon and replaces the previous five-year NNP management plan, 2006-2010.

As a foundation for the planning process, an initial stakeholder survey was undertaken, in which stakeholders were asked to provide feedback on the management objectives and actions contained in the previous NNP management plan, including whether the previous plan's actions are still relevant today, and if not, any other issues and challenges that should be addressed by the new management plan, and management actions that should be included. This stakeholder survey, the results of which are included in Annex 1 to this management plan, provided an important grounding for the subsequent NNP participatory planning workshops (see Planning Process below).

This chapter provides key background information concerning Nyungwe National Park as well as an introduction to the planning process used and the structure of the management plan.

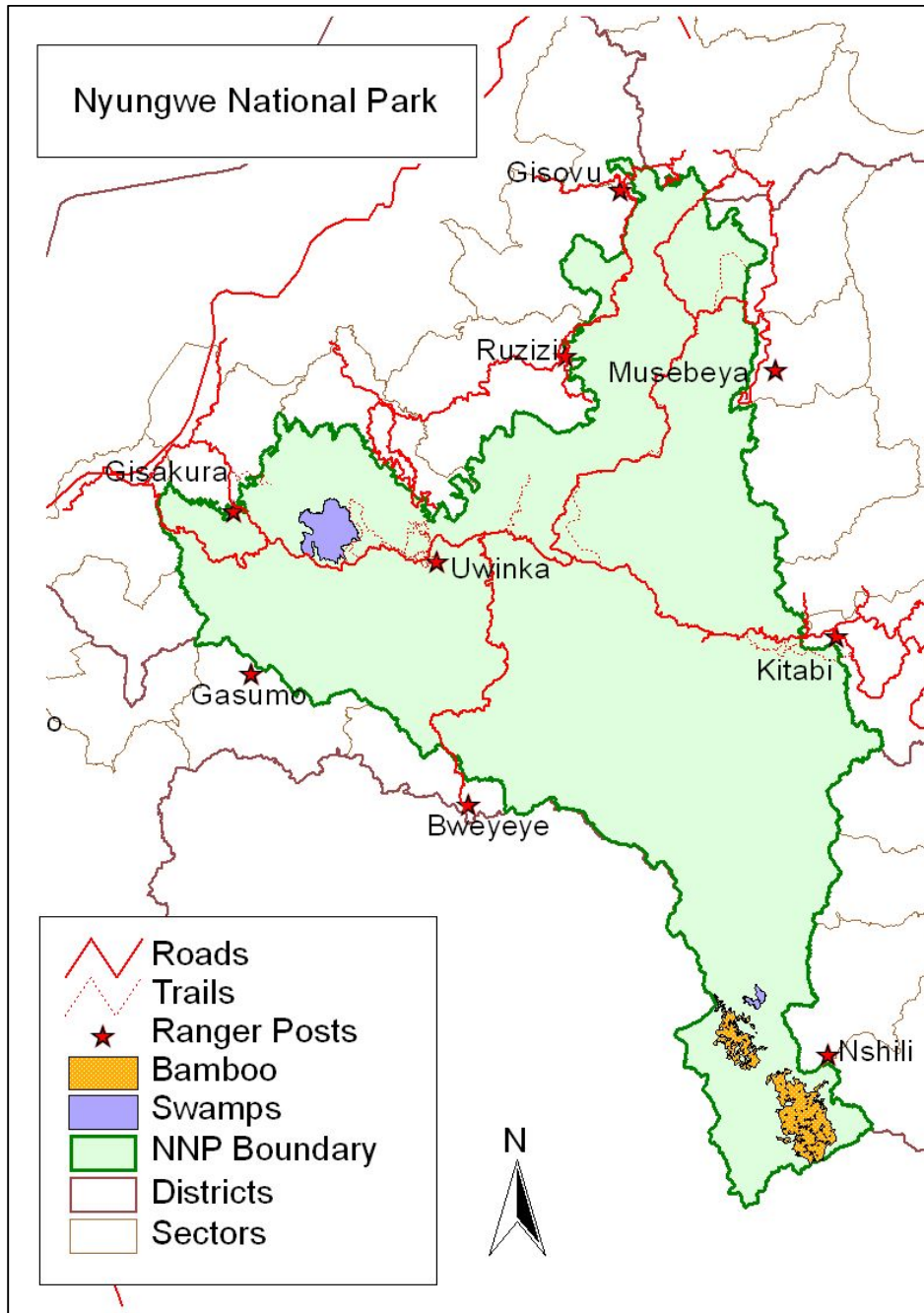
1.2 The Nyungwe National Park

Nyungwe National Park (NNP) and the adjoining Cyamudongo and Gisakura fragment forests are located in the south-west of Rwanda along the Congo-Nile divide. The park, which covers a total area of 1,019 km², falls within the Albertine Rift and is contiguous with the Kibira National Park across the international border in Burundi. The two parks together form the “*Nyungwe-Kibira transboundary landscape*”, which represents one of the largest blocks of lower montane forest in Africa. Together, the two parks provide vital watershed protection for Rwanda, Burundi and other nearby countries.

Although less species rich than other forests in the Albertine Rift, Nyungwe supports an abundance of animal and plant life, including many rare and endemic species. There are 14 species of primates, including the endangered Chimpanzee (*Pan troglodytes*), the vulnerable Owl-faced monkey (*Cercopithecus hamlyni*), L'hoests monkey (*Cercopithecus lhoesti*), and large troops of Black and white colobus (*Cercopithecus angolensis*). The park also supports a variety of other mammal species such as the Black-fronted duiker (*Cephalophus nigrifrons*), Bushpigs (*Potamochoerus porcus*), Serval cat (*Leptailurus serval*), and numerous species of rodents and bats, including the Ruwenzori sun squirrel (*Heliosciurus ruwenzorii*), an Albertine Rift endemic. Elephants and buffaloes also once occurred in Nyungwe, but are now extinct.

¹ The UNDP/GEF Strengthening Biodiversity Conservation Capacity in the Forest Protected Area System of Rwanda (PAB) Project.

Figure 1. Map of Nyungwe National Park and neighbouring districts and sectors



The NNP also has at least 280 species of birds, of which 26 are endemic to the Albertine Rift. Three bird species are listed as threatened by IUCN, including the Kungwe apalis (*Apalis argentea*), Grauer's swamp warbler (*Bradypterus graueri*) and Shelley's crimson wing (*Cryptospiza shelleyi*). The park also contains a variety of habitats including montane forest, bamboo, grasslands, swamps and bogs, each featuring a range of endemic and rare plant and animal species, including 148 identified orchids, 43 species of reptiles (including 10 Albertine rift endemics), and 31 species of amphibians (15 endemics). Nyungwe is especially known for its abundant and magnificent butterfly populations, with over 120 identified species, including 21 Albertine Rift endemics.

The NNP is located in one of the most densely populated areas of Rwanda, with an average population density of 400 inhabitants per km². Agriculture remains the main livelihood activity of the park-adjacent communities, but poor agricultural practices have resulted in significant problems with soil

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fertility and low crop yields, which in turn has led to growing encroachment pressures on the NNP, as communities search for new land to farm. Growing population densities as well as high levels of crop damage by wildlife in areas neighbouring the national park have both contributed to high levels of poverty. The need to seek out alternative livelihoods has in turn put increasing pressures on the NNP's natural resources, through poaching, resource extraction such as timber and firewood collection, and other illegal activities such as mining and cultivation inside the forest (e.g. marijuana gardens).

1.3 The Planning Process

The process used to develop the new Nyungwe NNP management plan, as well as that for the new Volcanoes National Park management plan, has been significantly influenced by the Kenya Wildlife Service's **Protected Areas Planning Framework (PAPF)**, which provides a practical framework for the development of management plans for Kenya's national system of protected areas. A key feature of the PAPF is its reliance on participatory, stakeholder driven planning, as opposed to planning carried out by experts. This ensures that the resulting management plans are realistic and appropriate, and that there is a high level of stakeholder understanding and support for the plan's implementation, not least the protected area managers themselves. The PAPF achieves this participation through a variety of stakeholder engagement mechanisms, including stakeholder workshops, specialist stakeholder working groups on particular aspects of the management plan, and a core planning team overseeing the entire planning process.

Because of the very limited time available to develop the new NNP management plan, it was necessary to scale down the amount of stakeholder participation in the planning process, while at the same time making efforts to ensure that there were adequate opportunities for stakeholders to input their ideas and issues into the planning process. This was achieved through a diversity of participation mechanisms as set out in Table 1 below.

Table 1. NNP planning events and timing

Timing	Planning Event
5 th August 2011	▶ Core Planning Team Plan Inception Meeting
September-October 2011	▶ Stakeholder Survey (e-mail questionnaire)
20 th and 22 nd October	▶ NNP community consultations
21 st October and 24 th – 27 th October 2011	▶ Specialist working groups (held at Kitabi College): <ul style="list-style-type: none">• Park Operations• Community Partnership• Tourism Management & Development• Ecological Management and Zonation
To be determined	▶ Stakeholder Plan Verification Meeting (held in Kigali)

The stakeholder attendance at the specialist working group meetings is given in Annex 2. In general, it was felt that an acceptable level of stakeholder participation was achieved during the planning process, despite the tight time constraints that were imposed on the process.

1.4 Plan Structure

The plan structure, which is also based on the PAPF planning approach, has been developed to be as simple as possible, and as such, easily understood by stakeholders and implemented by NNP manag-

ers. Table 2 below summarises the main chapters of the plan, and the key components of each chapter.

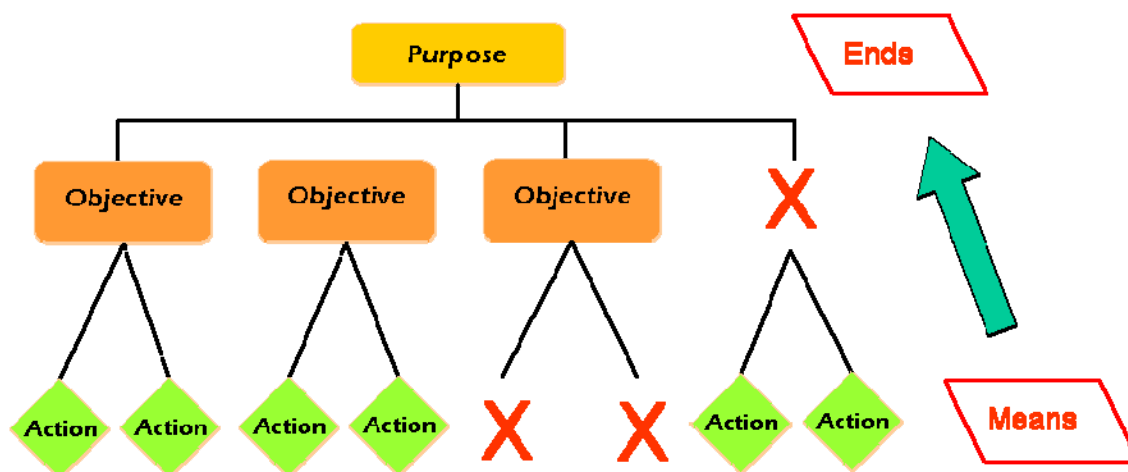
Table 2. Overview of plan structure and contents

Chapter	Function and contents
Chapter 1: Plan Foundations	<ul style="list-style-type: none"> ▶ Introduces the plan, and describes the plan’s structure and the process leading to the plan’s development ▶ Provides an introduction to the Nyungwe National Park, its location, key values and management challenges
Chapter 2: NNP Zonation Scheme	<ul style="list-style-type: none"> ▶ Provides a mechanism to enable the spatial management of the national park as well as the protection of key ecological areas ▶ Sets out areas of the NNP where different types of visitor use and tourism developments are permitted ▶ Provides specific prescriptions on the types of visitor activity allowed in each zone, and any related Limits of Acceptable Use
Chapters 3-6: NNP Management Programmes	<ul style="list-style-type: none"> ▶ Provides a framework to guide management activities in achieving a future desired state for specific aspects of PA management (i.e. ecology, tourism, community partnership and park operations) ▶ Includes a programme purpose statement that defines the desired future state for the NNP under each programme ▶ Contains management objectives that set out the specific goals that NNP management aims to achieve during the 10-year lifespan of the management plan ▶ Provides a set of specific management actions that management will implement to achieve these goals
3-Year Activity Plans	<ul style="list-style-type: none"> ▶ Provides the link between the 10-year management actions and the annual work planning and budgeting carried out by NNP management ▶ Breaks down a programme’s management actions into a series of tangible and explicit activities ▶ Sets out the timeframe for activity implementation, and allocates responsibility for completion
Annexes	<ul style="list-style-type: none"> ▶ Provide additional information generated by the planning process

The Logical Framework Approach to planning

One of the key tools used during the planning process to ensure that the plan’s structure is as coherent and lucid as possible was the **Logical Framework Approach**, or LFA. The power of the LFA is in its emphasis on establishing explicit and logical linkages between the desired end results that a particular management programme is aiming to achieve, and the means used to achieve them. Application of the LFA enables the development of a clear hierarchy of means-ends relationships through the management programme, starting with the ultimate end result, the programme purpose, down through the management objectives, and finally to the management actions. The application of the LFA helps to ensure that the plan is “**objective-oriented**”, and avoids the undesirable situations illustrated in Figure 2 below, where objectives are defined but with no actions to achieve them, or alternatively, where management actions are identified that do not contribute towards any obvious objective (both illustrated by the red crosses in the diagram). When rigorously applied, use of the LFA results in a plan that can be effectively and efficiently implemented, as well as more easily monitored and evaluated.

Figure 2. The Logical Framework Approach applied to management programme structure



1.5 Plan duration

Unlike the previous 5-year NNP management plan, the lifespan of this current management plan is 10 years. This is based on previous experience in protected area planning in East Africa, where it has been found that five years is generally too short a period to achieve the broader aims of the protected area as defined during the planning process (through the programme purpose statements and management objectives) and also that planning is too expensive a process both in terms of human resources and finance to carry out on more than a 10-year basis.

However, the downside of 10-year management plans which are inevitably more strategic in their nature is that the link between the management plan and practical park management can potentially be lost. This is the primary function of the 3-year activity plans contained in this management plan, which are designed to provide a bridge between the longer-term strategic objectives and vision set out in the plan’s programme purpose statements and management objectives, and the annual operational planning carried out on a routine basis by the park’s managers. It is intended that these three-year activity plans are rolled forward on a regular basis, just as is the case for the similar operational planning process adopted by the Rwanda Government.

Another potential disadvantage of planning for 10-years is that sometimes situations can alter so significantly that certain aspects of the management plan are no longer relevant or appropriate. To an extent, the 3-year activity planning cycle enables the park managers to adapt to changing circumstances, but in the case of radical change, this may not be sufficient. In these circumstances, it may be appropriate to carry out a “Mid-term Review” of the management plan at the end of the first five years of implementation, with the intention of building on lessons learnt to redirect the management plan, or parts of the management plan, as appropriate.

Chapter 2.

NNP Zonation Scheme

2.1 Introduction

Zonation is a powerful protected area management tool that enables the spatial management of a protected area to achieve both the **protection** of the area's key ecological features and sensitive habitats, alongside the sustainable **utilisation** of the area for tourism and other uses. Zonation allows managers to achieve different management aims in different parts of the protected area.

In the case of the Nyungwe National Park, the primary factors in establishing the zonation scheme are the need to **protect especially fragile and vulnerable habitats and biodiversity** contained in the national park, and the need to **manage and mitigate human impacts**, both from within the park itself, for example from visitor use, as well as from neighbouring community areas. The NNP's zonation set out in this management plan responds to these two major factors. Four main zone types have been identified:

- ▶ Ecologically Sensitive Zone
- ▶ Tourism High Use Zone
- ▶ Wilderness Zone
- ▶ Buffer Zone

ECOLOGICALLY SENSITIVE ZONE

Wetland and bamboo habitats featuring high biodiversity and a variety of rare and endemic species

Primary Purpose: Ecological protection

Prescriptions:

- ▶ Tourism use for bird, owl-faced monkey and orchid watching only, on prescribed trails
- ▶ No adventure tourism activities with the exception of hiking on prescribed trails on Bigugu peak
- ▶ No permanent or temporary tourism infrastructure except limited trails and bird watching infrastructure
- ▶ Carefully controlled research activities

Management issues:

- ▶ Fire management and monitoring
- ▶ Habitat restoration, especially bamboo

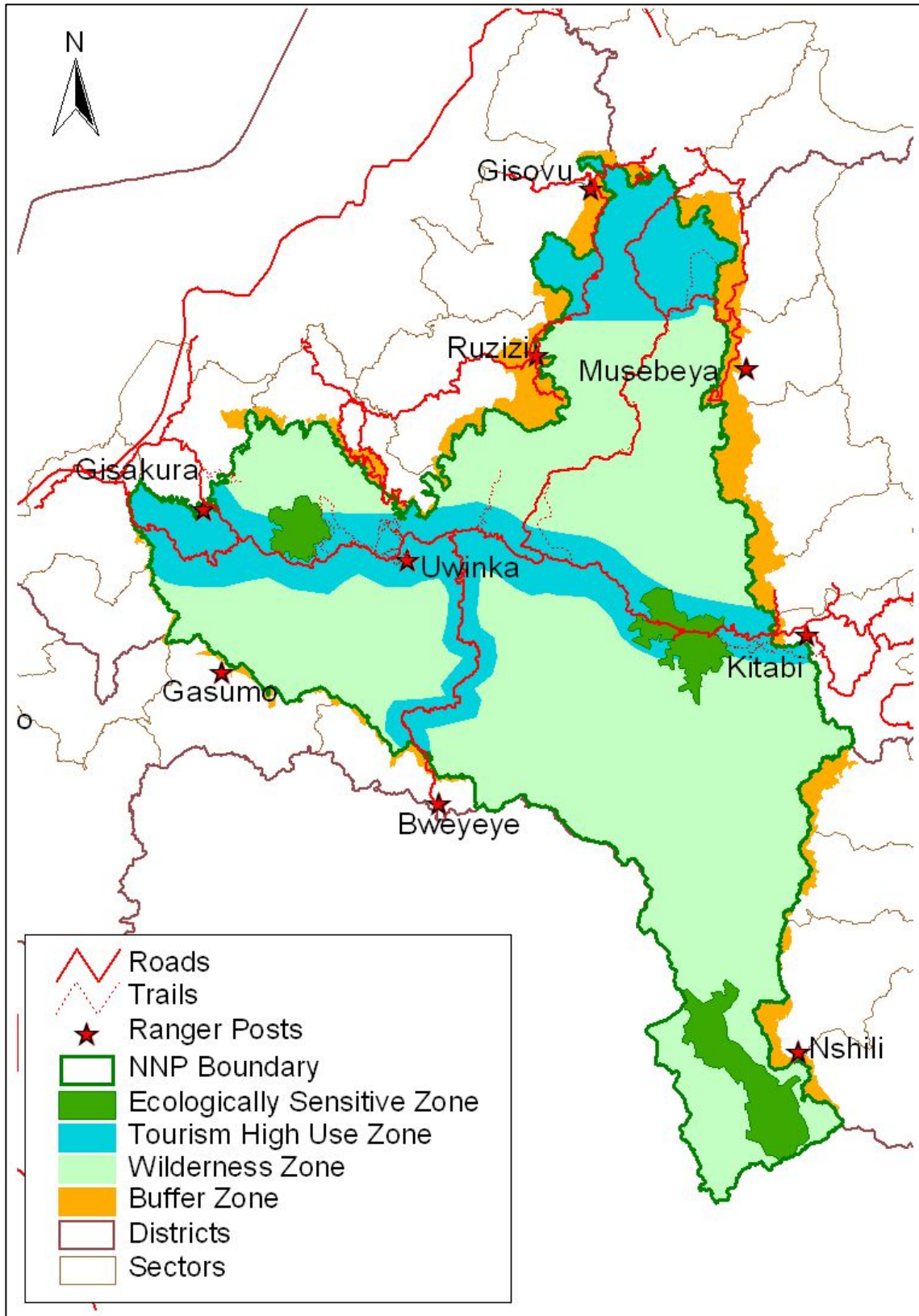
These zones are illustrated in Figure 3 overpage and described in further detail in the following sections.

2.2 Ecologically Sensitive Zone

The **Ecologically Sensitive Zone** mainly comprises the NNP's wetland and bamboo forest habitats, which in addition to being the park's most uncommon habitats, feature high biodiversity and a number of endemic and rare plant and animal species. The zone is shown in Figure 3 by the deep green shading, and corresponds with Zones 2A and 2B in the previous management plan, which was defined on the basis of being critical habitat for vulnerable species, including five birds species listed by IUCN as threatened or near threatened:

- ▶ Kungwe apalis (*Apalis argentea*)
- ▶ Grauer's swamp warbler (*Bradypterus graueri*)

Figure 3. Nyungwe National Park Zonation Map



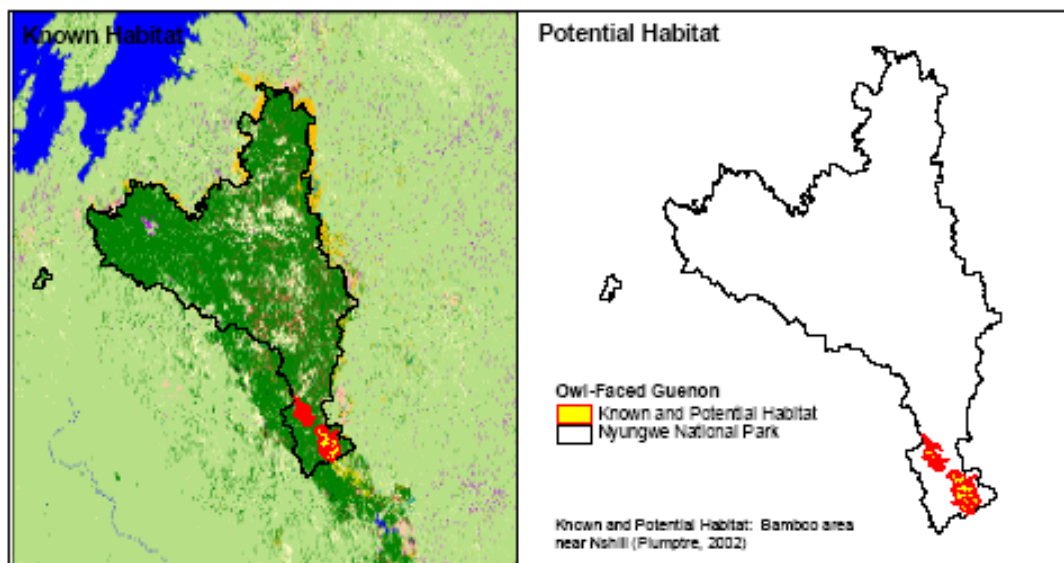
ZONATION SCHEME

- ▶ Shelley's crimson wing (*Cryptospiza shelleyi*)
- ▶ Red collared mountain babbler (*Kupeornis rufocinctus*)
- ▶ Kivu ground thrush (*Zoothera tanganjicae*)

The Ecologically Sensitive Zone includes three major high altitude swamp areas: the Kamiranzovu Swamp, covering an area of approximately 13 km² and one of the largest peat bodies in Africa, Uwasenkonko Swamp near to Kitibi Park Headquarters, and the much smaller Nshili Swamp adjacent to the park's bamboo habitat, and to Nshili ranger post. These swamps provide habitats for a variety of rare and endemic Albertine Rift plant and animal species, and also act as major water reservoirs for Rwanda that are exceptionally important in dry seasons.

The Ecologically Sensitive Zone's bamboo habitat is predominantly found in a small localized area at the southern extreme of Nyungwe NP near to Nshili (see Figure 3). This habitat is regarded as critical for several threatened and near threatened primates including the Owl-faced monkey (*Cercopithecus hamlyni*), as illustrated in Figure 4 below, as well as for a variety of Albertine Rift endemic bird species.

Figure 4. Known and potential habitat of the Owl-faced monkey (*Cercopithecus hamlyni*) in Nyungwe National Park



Under this 10-year management plan, the Ecologically Sensitive Zone will continue to be the primary zone set aside for ecological protection. In this regard, tourism use will continue to be carefully managed in the zone, with use only being allowed for bird, Owl-faced monkey and orchid watching, along defined trails. Research activities will also be carefully prescribed and limited, in order to minimise negative impacts of human activity in this area. Infrastructure development will not be permitted in this zone, with the exception of the construction of a limited number of trails for biodiversity viewing and research activities, as well as hides for bird watching.

A key management issue for the Ecologically Sensitive Zone is the conservation and restoration of the bamboo habitat, which as noted above is a critical habitat for the Owl-faced monkey and other rare and endemic biodiversity. Due to shortages of bamboo outside of the forest, the adjacent Nshili communities have been harvesting bamboo within Nyungwe's bamboo habitat for building houses and handicrafts. This harvesting is a threat not only to the habitat itself but also to the threatened and endemic animal species also found in the area. This aspect is addressed under Action 2.1 of the Community Partnership Programme.

Another important management issue for this zone is the need to control and mitigate the impacts of fire on the zone's fragile habitats. This will mainly be achieved through the implementation of the Nyungwe Fire Management Plan as described under Action 1.1 of the Ecological Management Programme.

2.3 Tourism High Use Zone

TOURISM HIGH USE ZONE

Areas of the park currently most intensively used for visitor activities, as well as those areas with maximum potential for future tourism development. The zone consists of areas adjacent to the main Kitabi-Gisakura trunk road, the branch road to Bweyeye and Burundi, and the Gisovu area in the north of the park. Besides its key importance for tourism, the zone also features both primary and secondary forest with significant biodiversity values.

Primary Purpose: Tourism development together with protection of key biodiversity and habitats

Prescriptions:

- ▶ Visitor activities including: trekking, nature walks, bird watching, adventure tourism and educational visits
- ▶ Tourism infrastructure including: trails, ecolodges, campsites, canopy walks, interpretation centres and viewing towers
- ▶ PA infrastructure, including ranger posts
- ▶ No infrastructure to be developed in primary forest or other ecologically sensitive/high biodiversity areas

Management issues:

- ▶ Regulation of tourism infrastructure development to minimise impacts on Nyungwe's environment and biodiversity values
- ▶ Habitat restoration in degraded areas
- ▶ Control of invasive species

The **Tourism High Use Zone** comprises those areas of the NNP that are currently most heavily utilised for tourism, and where future tourism product and infrastructure development will be concentrated. The zone is shown in Figure 3 by the blue shading, and primarily consists of those parts of the park directly adjacent to the Kitabi-Gisakura trunk road, as well as the linking trunk road to Bweyeye and onwards to Burundi to the south. Also included in the Tourism High Use Zone is the Gisovu area in the north of the park, which has considerable potential for the development of tourism, especially domestic tourism (see Action 1.5 of the Tourism Management & Development Programme). Lastly, the entire Cyamudongo Forest to the west of the main Nyungwe National Park but which is also part of NNP, is included in the Tourism High Use Zone, because of its extensive use for chimpanzee viewing.

A key feature of the zone is the existing visitor centre at Uwinka, from which nine of NNP's eleven existing walking trails radiate, and which also features an Interpretation Centre and canopy walk. Uwinka is the main area of NNP for primate viewing, with Black-and-white colobus monkey, Grey-cheeked mangabey, Blue monkeys and Chimpanzee all being found in this area. Four out of six visitor camps are also located in the Uwinka area of the Zone.

Other significant existing visitor attractions in the zone are the new viewing platform overlooking the Kamiranzovu Swamp to the west

of the Uwinka visitor area, the various visitor infrastructures and visitor trails around Gisakura on the western side of the park, and the developing visitor attractions in the Gisovu area to the north.

The development of tourism infrastructure is permitted in the Tourism High Use Zone, including: hiking trails, ecolodges, campsites, observation posts, canopy walks and interpretation centres, in addition to other protected area infrastructure such as ranger posts. Visitor activities permitted in

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the Zone include: trekking, nature walks, bird watching, adventure tourism, and educational visits. The Zone will also be a focal point for research activities in the park.

During the lifespan of this management plan, the Tourism High Use Zone will be the focal area for the development of new tourism accommodation infrastructure. In this regard, it will be essential to ensure that the development of this infrastructure is carried out in a way that minimises impacts on the Nyungwe environment and the park's conservation values. In addition to normal EIA provisions (see Action 2.4 of the Ecological Management & Monitoring Programme), this will necessitate the application of guidelines regarding the nature of the tourism infrastructure that will be permitted in the zone, as set out in Table 3 below. In addition, the limit on the total number of accommodation facilities that can be established in the zone over the lifespan of this management plan will also need to be determined, in order to ensure that the zone's conservation values as well as the tourism product itself are not negatively impacted. This aspect is discussed further under Action 1.1 of the Tourism Management & Development Programme.

It is important to note that the Tourism High Use Zone incorporates areas of both primary and secondary forest that were identified in the previous management plan as species rich and important for the conservation of NNP endemic species. In this regard, efforts will be made to ensure that any tourism infrastructure development in the zone over the lifespan of this management plan will **avoid areas of primary forest or other high biodiversity habitats**.

Table 3. NNP ecolodge guidelines

*****To be reviewed by NNP and RDB management*****

Feature	Guidelines
Bed capacity	<ul style="list-style-type: none"> ▶ Maximum 30 beds
Construction	<ul style="list-style-type: none"> ▶ Single storey only ▶ Wooden decking for base platforms and bathroom floors and walls; limited use of concrete or other permanent construction materials is permitted ▶ Natural construction materials used for all other structures or parts of structures (i.e. walls and roofs) ▶ Interior plumbing and electricity supply permitted in all buildings
Site management	<ul style="list-style-type: none"> ▶ Murrum or gravel car park and access roads ▶ Murrum, gravel or other non-permanent footpaths, terraces, seating areas etc. ▶ Site landscaping limited to essential clearance of vegetation only (no ornamental gardens, spotlights or artificial water features)
Guest amenities	<ul style="list-style-type: none"> ▶ Reception area, gift shop, a communal dining room and a lounge/bar ▶ No swimming pools, conference facilities or other additional visitor amenities
Guest accommodation	<ul style="list-style-type: none"> ▶ Detached individual bedrooms of natural construction materials with limited use of concrete ▶ Soaps, shampoos and other guest toiletries provided must be biodegradable
Ancillary facilities	<ul style="list-style-type: none"> ▶ Staff offices and vehicle garage/workshops ▶ No commercial petrol pumps; fuel stored in specialist containment tanks on heavy duty polythene lining or concrete base ▶ Must ensure no contamination of soil/water sources; no vehicle spray painting
Catering	<ul style="list-style-type: none"> ▶ Charcoal briquette or gas cookers (no other charcoal or dead wood) ▶ Kitchen, food store and electric cold storage facilities ▶ All soaps and detergents used to be organic and biodegradable
Water supply and use	<ul style="list-style-type: none"> ▶ Supplied from borehole or other permanent water source ▶ Maximum extraction of 350 litres per bed per day (or in line with borehole extraction permit) ▶ Dual flush toilets and low water use showerheads mandatory ▶ All laundry, vehicle and building washing to use organic and biodegradable soaps and detergents

Feature	Guidelines
Electricity supply and use	<ul style="list-style-type: none"> ▶ Minimum use of petrol/diesel generator (excess power stored and discharged when needed) ▶ Water heated by renewable sources (e.g. solar, charcoal briquettes) backed up by generator when necessary ▶ Energy efficiency measures mandatory (e.g. light bulbs, path markers, etc.)
Solid waste	<ul style="list-style-type: none"> ▶ All waste sorted, separated and removed from NNP ▶ Non biodegradable waste removed from NNP and incinerated ▶ Biodegradable waste removed from NNP and composted
Waste water	<ul style="list-style-type: none"> ▶ Multi-tank liquid waste polishing system or septic tanks with soak pits and secondary treatment chambers ▶ Systems must include mechanisms for trapping cooking fat

As a result of the Zone’s close proximity to major trunk roads passing through the park, the forest habitats in this zone are subjected to exceptionally high pressures from fire damage and other human-related threats. In this regard, habitat restoration activities will be an important management priority for this zone, as described in Action 1.4 of the Ecological Management & Monitoring Programme, as well as activities to address the problem of invasive species, as described under Objective 3 of the same Programme.

2.4 Wilderness Zone

WILDERNESS ZONE

A continuum of vegetation types ranging from low medium montane forest (at 1500m altitude in the south west of the Zone) to montane forest in the north of the Zone. Typical canopy species include the mountain mahogany (*Entandrophragma excelsum*), *Syzygium guineense*, and *Carapa grandiflora*. At higher elevations, *Podocarpus latifolius* is the predominant tree species. The Zone features both primary and secondary forest with high biodiversity and endemism, and has critical water catchment functions serving much of Rwanda.

Primary Purpose: Conservation of biodiversity and protection of NNP’s nationally and internationally important water catchment functions

Prescriptions:

- ▶ No new infrastructure
- ▶ Maintenance of existing trails and campsites
- ▶ Visitor use is limited to trekking, nature walks and bird watching on existing trails
- ▶ Research is permitted on existing trails

Management Issues:

- ▶ Habitat restoration
- ▶ Control of invasive species

The **Wilderness Zone** covers all remaining areas inside the national park, and is shown by the light green shading in Figure 3 above. The zone is largely inaccessible to visitors, with the notable exception of the Congo-Nile Divide trail, and as a result, tourism use of the Zone is relatively low.

The Wilderness Zone features a continuum of vegetation types ranging from low medium montane forest (at 1500m altitude in the south west of the Zone) to montane forest in the north of the Zone. Typical canopy species found in the Zone are the mountain mahogany (*Entandrophragma excelsum*), *Syzygium guineense*, and *Carapa grandiflora*. At higher elevations, *Podocarpus latifolius* is the predominant tree species.

Under this new management plan, the Wilderness Zone will be primarily managed for biodiversity conservation and the protection of the Zone’s significant water catchment values as identified in section 3.2 of the Ecological Management & Monitoring Programme. In this regard, the previous NNP management plan indicated that NNP contributes 70% of Rwanda’s rainfall to the country’s principal river systems, including the Nyabarongo and Akagera river systems of the southern Nile Basin to the east, and the Lake

ZONATION SCHEME

Kivu and Congo River systems to the west. The Wilderness Zone protects the majority of the primary and secondary forest habitats that make up NNP's water catchment areas, and that drain into the NNP's wetlands that are protected in the Ecologically Sensitive Zone as described under section 2.2 above.

No new infrastructure is permitted in the Wilderness Zone during the lifespan of this management plan, although existing trails such as the Congo-Nile Divide Trail and associated campsites will be maintained. Visitor activities will be restricted to trekking, nature walks, and bird watching on existing trails within the Zone. Research activities are also permitted within the Zone provided that this does not lead to the construction of permanent trails in addition to those that already exist.

The major management issues in the Zone are habitat restoration as a result of damage by fire and other human-induced impacts, as described under Action 1.4 of the Ecological Management & Monitoring Programme, as well as activities to address the problem of invasive species, as described under Objective 3 of the Ecology Programme. A potentially important research priority concerns the impact of climate change on the ecology and habitat gradation of the Zone.

2.5 Buffer Zone

Unlike buffer zones for many national parks, the NNP Park Buffer zone is a legally established entity, gazetted under the law establishing Nyungwe National Park itself (Law N° 22/2005 of 21st November 2005). Article 2 of the law states: *"There is hereby established a buffer zone of Nyungwe National Park with an area of ten thousand and eighty five hectares"*. The boundaries of the so-called "official" Buffer Zone are described in Annex 2 of the law, and these are the boundaries shown in Figure 3 above, as a yellow strip outside the park boundary. As can be seen from Figure 3, the Buffer Zone is of varying width at different places around the park, to the extent that in some areas it is only a few metres wide (those areas where the Buffer Zone is not visible in Figure 3). Even where not visible on the map however, the Buffer Zone is present around most of the park.

The law establishing the NNP Buffer Zone further states under Article 3 that *"the use and management of the buffer zone will be conducted in accordance with the laws in force, determining the use of land, environment and forests"*. However, other than this general prescription, the law does not provide any further detail as to how the NNP Buffer Zone will be managed, or specific prescriptions or regulations on the use of the area.

The NNP Buffer Zone comprises of tea plantations, Pine and Eucalyptus forestry plantations as well as areas presently denuded of trees. The forestry plantation and denuded areas currently fall under the management authority of the Rwanda National Forestry Authority (NAFA). However, in July 2011, the Ministry of Natural Resources and RDB signed a long-term management agreement for the NNP buffer zone with the New Forests Company, a UK-based sustainable and socially responsible forestry company with interests in forest plantation management in neighbouring Uganda and Tanzania. The company now has responsibility for the management of the existing Buffer Zone forestry plantations as well as for the replanting of denuded areas using enrichment planting regimes involving both indigenous hardwood trees as well as commercial forestry species such as pine. Achievement of this management plan's aims and prescriptions for the NNP Buffer Zone will therefore require collaboration between NNP management, RDB, NAFA and the New Forest Company – the managers on the ground. This aspect is addressed under Action 4.3 of the Park Operations Programme.

This management plan proposes that the following use and activity prescriptions should apply to the Buffer Zone:

- ▶ Conservation compatible and community friendly forestry practices – No charcoal production
- ▶ Environmentally friendly tea practices (e.g., no pesticide use, etc.)
- ▶ Conservation-compatible community natural resource use including beekeeping
- ▶ Regulated and appropriate tourism infrastructure development
- ▶ Removal of alien invasive species
- ▶ No mining
- ▶ No new human settlement or social infrastructure

These prescriptions are designed to mitigate the medium to long-term impacts of development and inappropriate land use practices on NNP. As indicated above, the prescriptions will need to be operationalised in collaboration and consultation with the management authority, NAFA, as well as the managers on the ground - the New Forest Company (see Action 4.3 of the Park Operations Programme).

The NNP Buffer Zone and neighbouring community areas will also be an important focus of NNP management actions under the Community Partnership Programme. Under this programme, a major aim will be to reduce human impacts on the national park through the promotion of conservation-compatible livelihoods and alternatives to resources within the national park, as well as to strengthen human-wildlife conflict mitigation measures through the promotion of crops that do not attract and/or repel wildlife. These aspects are described further under Objectives 1 and 2 of the Community Partnership Programme.

It will also be important to carry out a Strategic Environmental Assessment (SEA) of areas adjacent to the national park, as a rational planning basis for the development of new infrastructure in the wider region. The development of this SEA is the primary responsibility of the Rwanda Environment Management Authority (REMA).

BUFFER ZONE

A strip of land of varying width around the NNP boundary which is formally established under the law establishing Nyungwe National Park. The Buffer Zone is under the overall authority of the National Forestry Authority, but managed by a concession holder, the New Forests Company of the UK.

Primary Purpose: Economically viable forest production according to sustainable and socially-responsible forestry practices, alongside mitigation of the impacts of neighbouring communities on park biodiversity and habitats, and *vice versa*.

Prescriptions:

- ▶ No new human settlement and social infrastructure
- ▶ Conservation compatible and community friendly forestry practices
- ▶ Environmentally friendly tea practices
- ▶ Regulated and appropriate tourism infrastructure development
- ▶ No mining, charcoal production or pesticide use

Management issues:

- ▶ Collaboration with NAFA and concession holder in implementing buffer zone land use and development prescriptions
- ▶ Reforestation of denuded areas using enrichment planting with indigenous and commercial species
- ▶ Removal of alien invasive species
- ▶ Promotion of conservation-compatible livelihoods and alternatives to resource use within the national park
- ▶ Promotion of human-wildlife conflict mitigation measures
- ▶ Implementation of a Strategic Environmental Assessment for the Buffer Zone and other areas adjacent to NNP

Chapter 3.

Ecological Management & Monitoring Programme

3.1 Introduction

Nyungwe National Park is surrounded by dense human populations, with up to 400 people/km² in some park-adjacent areas (NNP Management Plan, 2006-10). High population densities coupled with land subdivision has meant that household plot sizes are now extremely small, and hardly sufficient to support families. This has led to growing pressure on the national park as a source of livelihood alternatives for park-adjacent communities, resulting in high levels of illegal use through poaching, firewood cutting, bamboo collection, mining, honey gathering and other natural resource extraction. Illegal activities in the forest as well as the close proximity to dense human settlement have also increased other threats to Nyungwe's habitats, in particular frequent forest fires and the spread of invasive species. Addressing these various human-induced threats represents a major challenge for Nyungwe's managers, and consumes a large proportion of the national park's financial and human resources. For this reason, the NNP's Ecological Management Programme set out in this chapter, which identifies the park's exceptional conservation values and their ecological requirements, the human-induced threats to these values, and defines appropriate ecological management actions to mitigate these threats, is one of the most critical components of this management plan.

The purpose of the NNP Ecological Management and Monitoring Programme as defined by stakeholders participating in the Ecological Management Working Group meeting is as follows:

To enhance the conservation and understanding of the Nyungwe National Park's outstanding conservation values and ecological services through targeted ecological management and management-oriented research and monitoring

In accordance with the PAPF planning approach adopted for this planning process, the Nature Conservancy's Conservation Action Planning (CAP) methodology was used to help identify the NNP's most important conservation values, their ecological requirements, and the threats impacting on them. The CAP methodology and its application in the case of the NNP are described in the following sections.

3.2 NNP Conservation Targets

The CAP method provides a mechanism for focusing ecological management by enabling the identification and development of an accurate definition and understanding of the area's most significant ecological features, and the major threats to these features. This methodology has now been applied in many conservation areas around the world, and it is based on the premise that, with limited human and financial resources available to managers, it is impractical to attempt to manage and moni-

tor every single aspect of the complex ecology of an area, and management effort is therefore best focused on a limited number of the area’s most important features.

The CAP methodology involves the initial identification of a limited number of “*conservation targets*”, which represent and capture the unique biodiversity contained within the NNP, or the ecological features that require specific management actions (such as particularly endangered species or habitats). The definition and understanding of each of these targets is complemented by the identification of the “*Key Ecological Attributes*” (KEAs), upon which the long-term survival of each conservation target depends. This in turn provides the foundation for the identification of the “*threats*” to these targets and attributes, and the subsequent prioritisation of these threats according to their significance.

The eight NNP conservation targets and their associated Key Ecological Attributes that were identified by NNP managers, ecologists and researchers at the Ecological Management Working Group meeting are detailed in Table 4 below.

Table 4. Nyungwe National Parks Conservation Targets and their Key Ecological Attributes

	Targets	Subsidiary targets	KEAs
Systems	Hydrological System		<ul style="list-style-type: none"> ▶ Water quantity, quality and seasonality ▶ Soil structure and composition ▶ Water sources
	Primary Forest	<ul style="list-style-type: none"> ▶ Endemic bird species ▶ Mahogany (<i>Entandrophragma</i>) spp. ▶ Orchids ▶ Macaranga spp. ▶ Polyscias sp. ▶ Ferns ▶ Medicinal and Melliferous plan spp. 	<ul style="list-style-type: none"> ▶ Forest edges ▶ Size ▶ Species composition and distribution ▶ Connectivity - corridors ▶ Seed dispersers and pollinators
	Secondary Forest		<ul style="list-style-type: none"> ▶ Size ▶ Species composition and distribution ▶ Forest edges
Communities/ Habitats	Bamboo Forest	<ul style="list-style-type: none"> ▶ Owl-faced monkey 	<ul style="list-style-type: none"> ▶ Species composition ▶ Size and distribution ▶ Genetic variability (owl-faced monkey) ▶ Bamboo regeneration
	Wetlands	<ul style="list-style-type: none"> ▶ Grauer’s swamp warbler ▶ Amphibians 	<ul style="list-style-type: none"> ▶ Species composition and distribution ▶ Water levels and seasonality ▶ Size
	Chimpanzee	<ul style="list-style-type: none"> ▶ 	<ul style="list-style-type: none"> ▶ Population size and distribution ▶ Health ▶ Genetic variability
Species	Colobus Monkey	<ul style="list-style-type: none"> ▶ Carnivores ▶ Duikers ▶ Bush pigs ▶ Other primates 	<ul style="list-style-type: none"> ▶ Reproduction ▶ Diet - food sources ▶ Connectivity ▶ Habitat size
	Birds of Prey	<ul style="list-style-type: none"> ▶ 	<ul style="list-style-type: none"> ▶ Population size ▶ Prey species ▶ Habitat size and distribution ▶ Health

3.3 Threats to Conservation Targets & KEAs

The definition of conservation targets and their KEAs enables the identification of the “*threats*” to these targets and attributes, and the subsequent prioritisation of these threats according to their significance. A threat is defined as “*any factor, resulting either directly or indirectly from human activities, which has the potential to destroy, degrade or impair a conservation target during the 10-year lifespan of the management plan*”. Table 5 on the next page shows the priority threats impacting or likely to impact on the NNP conservation targets and their KEAs as identified at the NNP Ecological Management Working Group meeting.

3.4 Management objectives and actions

The identification and ranking of the threats to the NNP’s conservation targets and their KEAs shown in Table 5 provides the basis for the subsequent development of the Ecological Management Programme’s management objectives and actions.

The four objectives for the NNP Ecological Management Programme identified at the Ecological Management Working Group meeting are:

Objective 1. Impacts of fire on Nyungwe NP ecological values minimised

Objective 2. Impacts of mineral extraction, illegal agriculture and infrastructure development in NNP minimised

Objective 3. Invasive and alien species in NNP controlled

Objective 4. Management of NNP research strengthened and focussed on priority park management issues

In addition to the critical threats addressed by the above objectives, the other major category of threats identified in Table 5 is poaching. However, this is addressed under the law enforcement component of the Park Operations Programme (see Objective 1 of that programme).

Each of these management objectives, and the management actions that have been developed to ensure their achievement are set out in detail in the following sections.

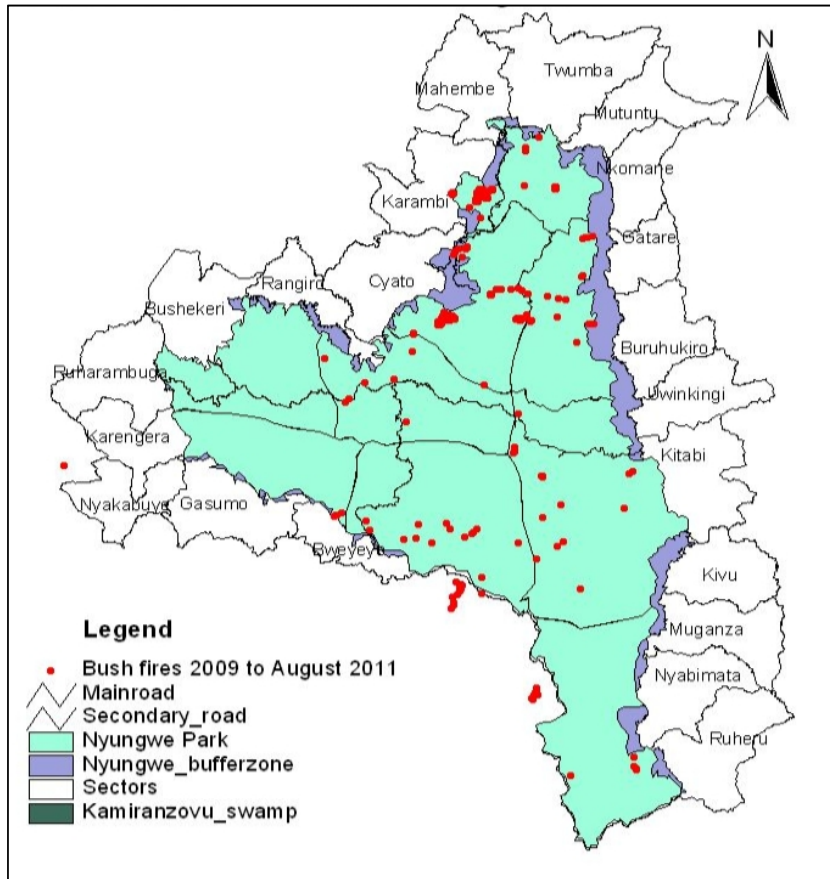
Objective 1. Impacts of fire on Nyungwe NP ecological values minimised

Forest fire, mainly caused by poachers and honey gatherers (who use fire to smoke out bees in search of honey) but also caused naturally by lightning, has been a major source of habitat degradation in NNP in recent years. Many areas that have been previously impacted by fire are yet to regenerate. Although NNP managers have made significant progress in preventing fires through awareness raising in the community, and controlling them once they occur, fire still represents one of the greatest threats to the conservation of NNP habitats, as shown in Table 5 above. The recent distribution of forest fires in NNP is shown in Figure 5 below. There is a close association between the occurrence of forest fires and honey gathering activities in NNP.

Table 5. Threats to NNP Conservation Targets organised by target and ranked by priority

THREATS	CONSERVATION TARGETS							
	Hydrological System	Primary Forest	Secondary Forest	Bamboo Forest	Wetlands	Chimpanzee	Colobus Monkey	Birds of Prey
Climate Change	Low							
Mining	High	High	Low	Low				
Road Construction		Medium	Medium	Medium				
Deforestation	Low							
Timber & Firewood Extraction		Medium	Medium	Medium	Low			
Habitat disturbance e.g. paths and camps		High	High	High				
Fire		Very High	Very High	Very High				
Pollution	Low							
Water Extraction	Low							
Invasive/Alien species		Medium	Medium	Medium				
Illegal agriculture, esp. Marijuana		High	High	High				
Poaching		Very High	Very High	Very High		Low	High	Medium
Road deaths		Medium	Medium	Medium				
Plant extraction					Low			
Drainage of wetlands outside park					Low			
Disease						Medium	Low	Low
Disturbance						High	High	
Habitat loss						Low	Low	Low
Lack of connectivity						High		

Figure 5. Distribution of bush fires in NNP, 2009 - August 2011



Action 1.1 Finalise and implement the Nyungwe NP Fire Management Plan

Future activities to prevent and mitigate the impacts of forest fires in NNP will be guided by the NNP Fire Management Plan, which is currently under preparation with the support of the United States Forest Service and the Wildlife Conservation Society (WCS). It is anticipated that the plan will provide information on NNP fire regimes (characteristic fire frequency, severity and locations) as well as protocols for fire fighting and preventing the spread of fire. The latter is likely to include the identification of the NNP human resources that will be involved in fire fighting, the special equipment that will be required, tactics to be employed to reduce the impacts of fire, and the specific activities to be undertaken to deal with fire outbreaks.

It is anticipated that these NNP’s fire fighting protocols and procedures that are established in the new NNP fire management plan will be integrated with the existing “Incident Command System” (ICS) that has already been established in the NNP. This will enable NNP managers to rapidly detect outbreaks of fire, and then to mount appropriate responses efficiently and effectively.

The NNP fire management plan is also expected to set out training requirements for mounting effective fire fighting responses, as well as a fire management training curriculum and schedule for NNP staff as well as for community members and local government agencies participating in NNP fire fighting. This training programme and its component fire management training modules are expected to be designed and delivered in collaboration with KCCEM in Kitabi.

Lastly, it is anticipated that the new fire management plan will address the issue of mechanisms for collaboration in fire fighting protocols, procedures and practice between Nyungwe NP and Akagera

and Volcanoes NP's. This may involve collaboration in designing and delivering fire management training programmes as well as potentially in exchange lessons learnt and best practice in practical fire fighting.

Action 1.1 will include activities relating to the finalisation of the NNP Fire Management Plan as well as its eventual implementation, according to the activity priorities that are set out in the new plan. However, some key fire management actions have already been identified by the Ecological Management Working Group, and these are detailed below.

Figure 6. Local community members participating in NNP fire fighting activities



Action 1.2 Establish and provide training to fire-wise community groups and committees

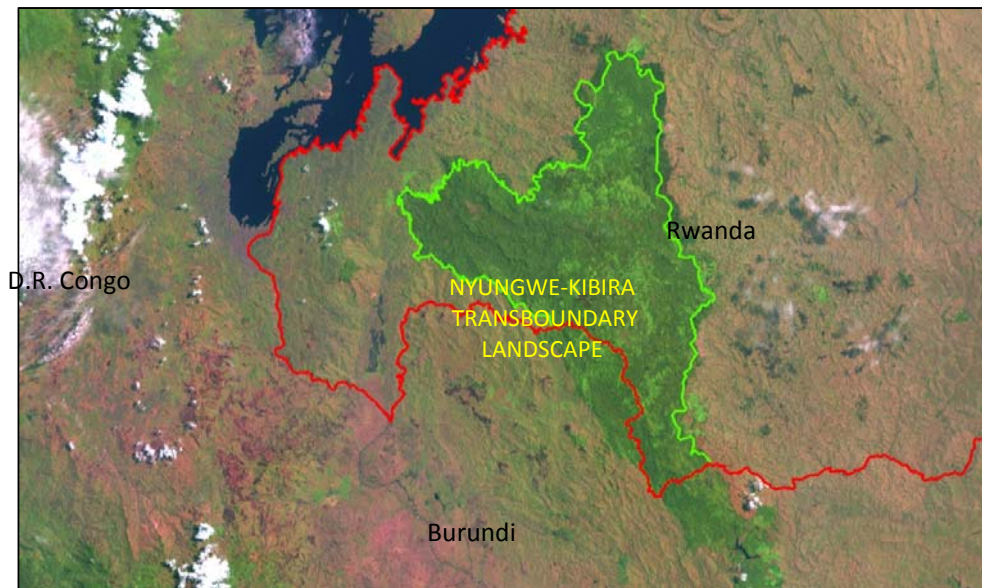
Collaboration with the NNP's neighbouring communities is certain to be vital to the success of fire prevention and fire fighting efforts. Community support will be needed both in reducing the incidences of fire, by the adoption of "fire-wise" practices, as well as in mounting fire fighting responses, through the establishment, training and support for community fire-fighting groups and associations. Under Activity 1.2, NNP management will encourage and support the establishment of fire-wise community groups and associations, and will provide these groups with the necessary training in fire-fighting protocols and procedures as established in the NNP Fire Management Plan developed under Activity 1.1. In addition, these fire-wise community groups will also be provided with necessary fire-fighting equipment, also as defined in the fire management plan.

Action 1.3 Establish/strengthen transboundary collaboration in fire prevention and control with Kibira NP

Nyungwe NP is part of the wider Nyungwe-Kibira Transboundary Landscape, which is made up of NNP and the contiguous Kibira National Park in Burundi to the south (see Figure 7 below). Together, the two parks represent the largest block of forest in East Africa. Collaboration between the two countries in the management of the transboundary landscape was first established in 2008, with the signing of an MOU between the then ORTPN and the Burundian Institut National pour l'Environnement et la Conservation de la Nature (INECN) for the protection of Nyungwe-Kibira Ecosystem. This collaboration is built upon the highly successful transboundary collaboration between Rwanda and the DRC and Uganda with regard the protected areas in the Greater Virunga landscape.

Although the formal framework for collaboration is already in place, unlike with the Virunga landscape, practical mechanisms for collaboration with the Kibira National Park authorities in fire prevention and control are yet to be fully established. Action 1.3 addresses this aspect. Once the NNP Fire Management Plan developed under Action 1.1 above is finalised, discussions will be organised between NNP and RDB managers and their counterparts in Burundi with regard the adoption of similar fire management protocols on the Burundi side of the landscape, as well as on practical mechanisms for cooperation in fire prevention, detection and control. See also action 4.4 of the Park Operations Programme for other aspects of transboundary collaboration with Kibira NP.

Figure 7. Satellite map showing the Nyungwe-Kibira Transboundary Landscape



Action 1.4 Restore areas impacted by fire

As indicated in the introduction to this objective, there are many areas in NNP that are yet to fully recover from the impacts of fire. Under Action 1.4, activities designed to restore fire damaged areas will be undertaken, including enrichment planting with appropriate indigenous tree species. This will involve the identification of priority areas for restoration - especially where this is required for maintaining continuity in habitats and for protection of key NNP biodiversity, followed by the establishment of protocols and practical mechanisms for replanting damaged areas. These mechanisms could potentially be developed in collaboration with the New Forests Company, the concessionaire for the NNP buffer zone - see section 2.5 of the NNP Zonation Scheme - which will be carrying out similar reforestation and restoration activities in denuded areas of the buffer zone.

Objective 2. Impacts of mineral extraction, illegal agriculture and infrastructure development in NNP minimised

As shown in Table 5, NNP’s primary, secondary, and bamboo forest habitats are all being impacted by a range of human pressures, including fire which was dealt with in Objective 1, and poaching, which is dealt with in Objective 1 of the Park Operations Programme. In addition to these two threats, a variety of other human activities are impacting on Nyungwe’s habitats, in particular mining activities, illegal agriculture being carried out within the forest, and infrastructure development, especially in association with the major trunk roads passing through the park. These various additional human threats to the integrity of the NNP are addressed in Objective 2.

Action 2.1 Understand the impacts of climate change and other threats on Nyungwe NP ecological processes

Forest fires from honey collection activities, illegal logging, mining, poaching, bamboo and tree cutting, coupled with large numbers of people entering the forest looking for firewood or medicinal plants are all serious stress factors impacting on the NNP ecosystem. Collecting information on the key threats is already a focus of the NNP Ecological Monitoring Framework set out in section 3.7 below (see Table 7). Much of this information will be generated by the NNP’s ranger-based monitoring (RBM) system, and the synthesis and analysis of RBM information related to threats and status of NNP’s biodiversity will be an important activity under Action 2.1.

To complement information provided by the NNP’s RBM systems, a vegetation monitoring database will also be established under Action 3.2, with the intention for providing baseline and ongoing information on Nyungwe’s habitats, and the impact of the various threats on these habitats. In addition, specific research will be undertaken to understand the impacts of priority threats, such as the removal of ferns in forested areas.

Illegal activities present an immediate, local threat to the Nyungwe NP, but the global, long-term threats posed by climate change also need to be researched in order to identify and implement appropriate adaptive management options. In the coming decades, East Africa is expected to be affected severely by climate change, and the major focus should be on issues of adaptation, both at a regional and at a local level. Currently insufficient data is available on the consequences of climate change for the NNP, and this deficiency will also be addressed under Action 2.1. As part of this process, weather and precipitation patterns will be closely monitored at the established weather stations of Uwinka and Bigugu.

Action 2.2 Collaborate with and raise awareness of law enforcement agencies around NNP in reducing mining activities in the park

Alongside fire and poaching, mining is one of the most serious threats to NNP habitats. Mining for gold began as early as 1935, following the introduction of alluvial mining techniques by the Belgian colonial administrators, and by the 1950s, there were an estimated 3,000 miners working in the Nyungwe watershed². More recently, mining for columbo-tantalite (“Coltan”), a vital component in mobile phones and other consumer electronic products, has also become a significant and economically important mining activity within the Nyungwe watershed. Figure 8 below shows the incidences of illegal mining activities in NNP over the period 2009 to August 2011. As can be seen, the majority of mining activities take place in the west of the park.

² Kristensen, K.A. and R.A. Fimbel. 1994. Gold mining activities within the UGZ4 Management Zone, Nyungwe Forest Reserve, Rwanda. Unpublished report, PCFN, Cyangugu, Rwanda. 58pp.

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Mining activities cause significant damage to NNP habitats as well as erosion of soils (see Figure 9 overpage). However, there is currently little awareness in the law enforcement agencies around NNP of the amount of damage to NNP's ecological and watershed values that mining is causing. Under Action 2.2, the NNP management will undertake a variety of activities to increase the awareness of these agencies of the environmental threats caused by mining, and to gain the support of these agencies in preventing illegal mining activities within the national park. As illustrated in Figure 8, these efforts will chiefly be focussed on the sectors surrounding the western side of the national park in Nyamasheke and Rusizi Districts, as well as in the south-east of the park in Nyamuguru District. See also Action 1.3 of the Park Operations Programme.

Under Action 2.2, activities will also be undertaken by NNP management to raise awareness of the impact of mining on NNP ecological and watershed values in the local media, including the use of local newspapers and community radios. These activities will be carried out as part of broader media campaigns to raise community awareness of conservation issues carried out under Action 5.3 of the Community Partnership Programme.

Figure 8. Distribution of mining activities in NNP from 2009 to August 2011

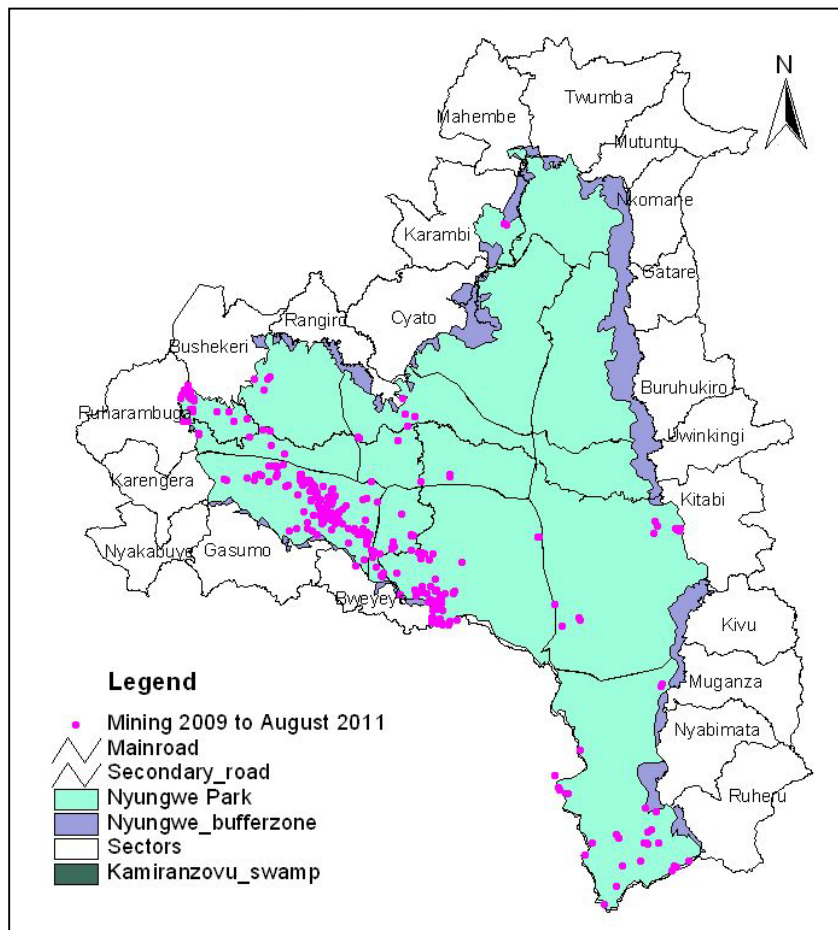


Figure 9. Soil and habitat disturbance caused by mining activities along the Nyabinjanga River, Ruharambuga Sector in the west of the park



Activity 2.3 Collaborate with the Rwanda Natural Resources Authority and the Rwanda Geology and Mines Authority in establishing mechanisms designed to proscribe minerals mined in NNP

The Rwanda Geology and Mines Authority (OGMR) is the responsible authority for supervising and monitoring all mining and mineral extraction activities within Rwanda. OGMR is part of the Rwanda Natural Resources Authority, which in turn is part of the Ministry of Natural Resources (MINIRENA).

In 2009, OGMR established a pilot certification scheme for Rwandan minerals, in collaboration with the German Federal Institute for Geosciences and Natural Resources. One of the major aims and benefits of the new certification scheme is to ensure that mineral resources are legally produced and traded in a transparent fashion, and that current informal mining in Rwanda is transformed into a formal and regulated industry. One of the main ways this is achieved is through ensuring that the origin and production volume of minerals from mining sites are traceable.

The implementation of this mineral certification scheme potentially has significant implications for the illegal mining operations currently underway in NNP, and if the scheme is successful, it will severely limit these illegal activities. Under Action 2.3, NNP management as well as RDB Headquarters will cooperate with the OGMR and RNRA in establishing mechanisms linked to the mineral certification scheme designed to ensure that minerals that are mined in NNP are proscribed and are not allowed to enter into Rwanda's legal and certified mineral supply chain.

Activity 2.4 Collaborate with law enforcement agencies in the eradication of marijuana farming in NNP

Illegal marijuana farming is another significant threat to NNP forest habitats (see Figure 10 over-page), and may occur deep inside the national park (see Figure 11).

Figure 10. NNP staff destroying marijuana gardens deep inside the park

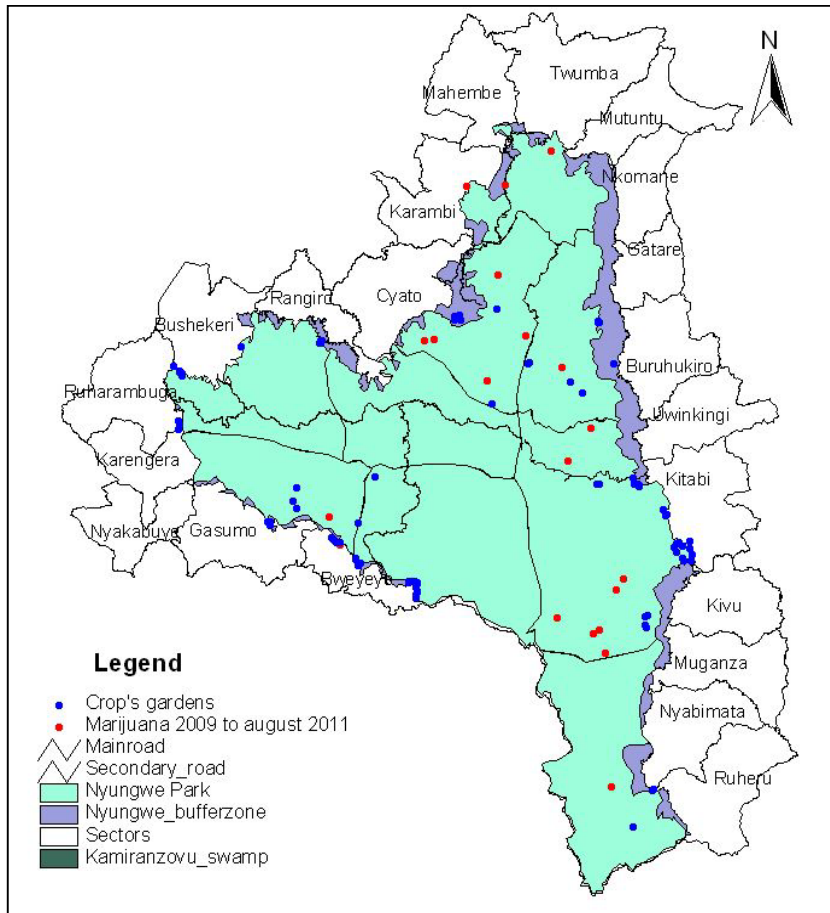


Under Action 2.4, NNP management will work with law enforcement agencies around NNP to strengthen efforts to prevent marijuana farming activities being carried out within the park, and also to detect and destroy existing marijuana gardens. These activities will be carried out as part of NNP management's efforts to improve broader collaboration with security and law enforcement agencies around NNP, as described in Action 1.3 of the Park Operations Programme. A related effort will include the strengthening of information networks concerning marijuana farming in NNP with the local communities, which will be carried out as part of community law enforcement intelligence operations carried out under Action 1.4 of the Park Operations Programme.

Action 2.5 Establish guidelines for EIA of infrastructure development within or neighbouring NPs

Nyungwe NP is coming under increasing pressure from infrastructure development, both in connection with the major trunk roads that transect the national park, as well as infrastructure development connected with the NNP's tourism product, which is expected to grow significantly over the lifespan of this management plan.

Figure 11. Distribution of Marijuana gardens in NNP, 2009-August 2011



Section 2.3 of the NNP Zonation Scheme provides guidelines for the development of ecolodges inside the national park, designed to ensure that new facilities have minimal impact on the Nyungwe environment and are compatible with the park’s desired eco-tourism product. However, in addition to these specific tourism infrastructure related guidelines, there is a need to put in place a broader set of guidelines relating to future environmental impact assessments (EIA) of proposed infrastructure developments both inside NNP associated with the existing road infrastructure, as well as in the NNP Buffer Zone and other park-adjacent areas. Action 2.5 is designed to develop these guidelines. It is anticipated that the RDB EIA section will take the lead in developing the appropriate guidelines, in collaboration with REMA, and that the new guidelines will be designed to be applicable to both NNP as well as Volcanoes National Park. In this regard, the new Volcanoes National Park management plan includes a similar management action for the establishment of infrastructure development guidelines for the VNP buffer zone (see Action 3.3 of the VNP management plan, 2012-21). See also section 4.3 of the Park Operations Programme.

The development of the new EIA guidelines should also be linked to the proposed Strategic Environmental Assessment of Nyungwe neighbouring areas, as set out under section 2.5 of the NNP Zonation Scheme. A similar SEA is also proposed for Volcanoes National Park adjacent areas in the new VNP management plan, 2012-21 (see section 3.2 of that plan).

Under this management action, it will also be important to monitor the environmental impacts of new infrastructure developments in and around NNP, so that mitigation measures can be applied as necessary to reduce environmental impacts, and also so that the EIA guidelines can be modified as necessary according to lessons learnt.

Objective 3. Invasive and alien species in NNP controlled

Invasive plant species, both indigenous and exotic, were identified by the Ecological Management Working Group as a medium ranking threat to the NNP's primary, secondary and bamboo forest habitats (see Table 5 above). In particular, the liana *Sericostachys scandens* is a widespread indigenous invasive climber that is reported to cover many parts of the park. The species colonises recent forest gaps, killing trees and bamboo and creating large mono-dominant forest patches that can cover many hectares of the forest. The spread of *Sericostachys* in the NNP may be related to the elimination of both elephants and buffaloes in the park, but it may also be connected with forest disturbance as a result of human activities, the opening up of forest gaps by fire, and may even relate to longer-term cycles in *Sericostachys* itself. Whatever the causes, the impacts that the liana has in suppressing the growth of other native flora on the distribution and abundance of other forest species and the resulting reduction in forest biodiversity is of significant concern to ecologists and NNP managers, and Objective 3 aims to address this issue.

The NNP also has problems with exotic invasive species, such as pines, Eucalyptus and black wattle have been planted during efforts to establish a buffer zone around NNP. In some parts of NNP, these trees have managed to establish themselves in the natural forest where they seem to be out-competing native species.

Action 3.1 Identify and characterise invasive species of key concern for management

As a foundation for addressing the problem of invasive species in NNP, the key invasive species including their distribution within the park and the size of invasive patches will be identified. One of the best ways of gathering this information is likely to be through the existing NNP ranger-based monitoring system. This may require some modifications to the RBM collection protocols to ensure that information on invasives is collected, as well as training in the identification of key invasive species. This information will provide the basis for determining the invasive species issues of key concern and for the design of strategies to eradicate them (see Action 3.2).

Action 3.2 Develop and pilot methods to eradicate invasive and alien species of key concern

Based on the identification and characterisation of key invasive species issues carried out under Action 3.1, Action 3.2 will develop and pilot methods for the eradication of invasive species of key concern, and will also carry out monitoring of the impacts of these initiatives. A key consideration here will be the necessity to avoid opening up gaps in the forest as a result of the removal of invasive species – which may simply compound the problem by encouraging other invasives such as *Sericostachys* to gain a foothold. Methodologies for dealing with invasive species will therefore also need to consider the requirement for enrichment planting with indigenous species in gaps left by the removal of invasives. These methodologies could potentially be developed in collaboration with the New Forest Company - the concessionaire working in the NNP buffer zone - which will also be addressing the issue of gap regeneration (see Action 1.4 above).

Objective 4. Management of NNP research strengthened and focused on priority park management issues

Research on Nyungwe's habitats and biodiversity has been underway since 1986, when WCS established the "Projet Conservation de la Forêt Nyungwe" (PCFN) to support the conservation of the NNP. Since then, PCFN has implemented a long-term research and monitoring programme and has col-

laborated with a variety of outside researchers, notably from the Universities of Wisconsin and Antioch in the U.S. The research has chiefly focused on the ecology of several of Nyungwe's primate species, as well as biodiversity surveys and ongoing monitoring of NNP's mammals, birds and tree species.

Despite this strong existing research foundation, there is concern that the link between research and the practical management of the NNP has yet to be firmly established. In this regard, the previous NNP management plan, 2006-10 stated:

“Although research has been carried out in NNP for over a decade, the park ecosystem has still not been studied sufficiently as to provide management with scientific information necessary for long term planning and management. Additionally, even though there are a significant number of studies which have been done within and surrounding the park, the potential application of findings has not been realized due to insufficient coordination between PCFN and ORTPN research departments. There is also limited capacity among park management staff to interpret or use research results. Improving communication between ORTPN, PCFN, and any organization conducting research in and around NNP will help maximize research benefits. Coordination of research projects will assist the emergence of an overall body of research pertaining to Nyungwe and will assist the development of environmentally and socially appropriate management schemes.”

The continuing weak linkages between research and practical management of the NNP were emphasised by stakeholders participating in the development of this new NNP management plan. In this regard, Objective 4 has been formulated in an effort to strengthen NNP research activities so that they address key management issues that are of concern to NNP management, and to build bridges between researchers and managers so that the outcomes of research activities are in a form that managers can understand and use in their day-to-day management activities.

Action 4.1 Compile, assess and disseminate NNP's accumulated research findings

There are now almost 25 years of accumulated research and monitoring data that has been generated by the PCFN project as well as a variety of other researchers that have worked in Nyungwe. However, much of this information has yet to be compiled and synthesised into a format that will be helpful to guide the ongoing management of NNP. In this regard, the PCFN project has already embarked on a process to evaluate the existing NNP research and monitoring information, and the outcomes of this exercise should provide a good foundation for ensuring that in future research and monitoring data is more accessible to NNP managers.

However, there is a danger that because the research compilation and synthesis exercise is being carried out by PCFN, this could further exacerbate the existing divide between research and management. In this regard, under Action 4.1, activities will be carried out to ensure that NNP managers and RDB are involved at an early stage in the process of evaluating and synthesising existing NNP research and monitoring data, and in the development of a management-oriented research database. This will involve initial workshops involving researchers, NNP managers and appropriate RDB staff to identify the most important research and monitoring issues of concern to management, and to determine how best to synthesise and present research information to meet management requirements. There will also be a need to decide on practical mechanisms for ongoing collaboration between NNP managers, RDB, PCFN and other relevant organisations/researchers in the further development of the research database, and its eventual application in the adaptive management of NNP.

An important aspect of this process is the integration of ranger-based monitoring data that is being collected by NNP management with the ecological monitoring data that is being collected by PCFN.

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Clearly, both sources of monitoring data are important for ensuring the adaptive management of NNP in future, and the impact will be greatest if means are found to integrate the two datasets into a unified NNP monitoring system. Potential ways of achieving this end will be investigated under Action 4.1, and activities to achieve this integration will be implemented as appropriate.

Action 4.2 Establish formal strategic partnerships with research institutions and universities

Stakeholders participating in the development of this new NNP management plan have emphasised the potential role that could be played by academic institutions in undertaking research activities, in particular the National University of Rwanda (NUR) which is located less than an hour from Nyungwe at Butare. In this regard, there is strong potential for the involvement of NUR biodiversity conservation students and their instructors in addressing NNP's future priority research themes. Under Action 4.2, it is proposed that formal strategic partnerships will be forged with NUR and other appropriate academic and research institutions in Rwanda and abroad, with a special focus on undertaking management-oriented applied research. This will involve collaborating with NUR in the initial identification of priority research themes, as well as in identifying and sourcing potential financing for these projects.

A key focus for potential research collaboration at NUR is the university's Conservation Biology Programme, and the related MSc Programme in Biodiversity Conservation, which was launched in 2011, and that is supported from RDB, WCS, KCCEM and a variety of other conservation actors. However, stakeholders have also emphasised that there is also an important need for socio-economic research around NNP, and therefore collaborations will also need to be developed with other NUR departments and research programmes as appropriate.

Also addressed under Action 4.2 will be the need to build stronger collaborative links with KCCEM. Although located at the NNP Headquarters site at Kitabi, the significant opportunities and synergies for collaborating with KCCEM in identifying and addressing management-oriented research priorities have been insufficiently explored up until now. Yet because of its role in training PA managers, KCCEM potentially provides a good mechanism for ensuring that research activities address management priorities and are accessible to managers. Under Action 4.2, a framework for collaborating with KCCEM in undertaking and guiding NNP research activities will be developed and implemented. See also Action 3.2 of the Park Operations Programme.

Lastly, because of the potential economic importance of Nyungwe's biodiversity as genetic material for the development of new medicines, opportunities for establishing research partnerships with pharmaceutical companies will also be investigated under this action. However, while such partnerships offer a potentially important future source of funding for biodiversity research activities in the NNP, they will need to be developed carefully and with an awareness of the potential intellectual property rights issues with regard biodiversity of pharmaceutical importance that may arise from such arrangements.

Action 4.3 Establish RDB Research Coordination Unit

In addition to the establishment of strategic research partnerships with key institutions addressed under the previous action, the need to put in place institutional structures within RDB to coordinate research activities in Nyungwe as well as Volcanoes and Akagera National Parks has been identified as a priority. Such an RDB Research Coordination Unit would act as a "one-stop centre" for research coordination – including identification of research priorities, approvals for new research activities, overseeing the implementation of research work, and maintaining and compiling records of all research works. Although the scope of this action goes beyond the remit of this management plan, it

has nevertheless been included under this objective because of its importance to the coordination and promotion of appropriate management-oriented research activities in NNP. A similar management action is also included in the new Volcanoes National Park Management Plan, 2012-21 (see Action 6.3 of the VNP Ecological Management Programme).

Action 4.4 Support and promote research on key park management research priorities

This action addresses the need for NNP management to actively engage with key partners in initiating research activities that address priority management-oriented research topics. This will include preparing and regularly updating and disseminating a simple NNP research plan that defines research priorities from the perspective of NNP management, and then working with partners as well as the Research Coordination Unit at RDB Headquarters (when established) to ensure that appropriate research activities are initiated and that they receive the necessary logistical and other support to ensure their success.

A potential list of key NNP research priorities was prepared at the NNP Ecological Management Working Group meeting based on stakeholder feedback, and is given in Table 6 below. Under this action, a shortlist of priority research topics will be established, perhaps involving a workshop attended by NNP managers, key research partners such as PCFN, KCCEM and NUR, RDB Headquarters and appropriate independent researchers. This list of priority research topics will need to be updated on a regular basis to take account of changing circumstances in NNP, as well as the lessons learnt and recommendations generated by ongoing research activities.

Table 6. NNP Research Priorities identified at the Ecological Management Working Group Meeting

Ongoing studies	<ul style="list-style-type: none"> ▶ Determining the potential impacts of climate change on key wildlife species and habitats in order to develop adaptation and mitigation plans for the park. Including altitudinal shifts ▶ Establishing the PES value of NNP- hydrology, pollination, climate regulation etc (ongoing study in collaboration with REMA) ▶ Edge effects and buffer zone type (land use type) – impacts on forest structure, function and composition
Previous Studies requiring additional work	<ul style="list-style-type: none"> ▶ Identifying threatened, endangered, rare, near extinct and extinct species in NNP, especially those that act as key indicators of habitat quality, climate change, etc. Biodiversity survey every 5 years (may need to focus attention on some aspects not already covered) ▶ Maintaining a socio-economic baseline for surrounding communities (ongoing - needs to be repeated after 5 years) ▶ Continue preparing inventory of lesser known taxa
New studies	<ul style="list-style-type: none"> ▶ Primate behaviour and health related to tourism (priority study) ▶ Study of tourism around Banda (priority) ▶ Contribution of revenue sharing projects to NNP biodiversity conservation. E.g., community conservation efforts, tourism facilities, etc. (priority) ▶ Ethno-botanical study of forest plants used by communities (medicinal, melliferous, etc.) and how to make available to communities outside the park ▶ Impact of revenue sharing on community livelihoods and participation in conservation ▶ Status of the NNP Owl-faced monkey population, and potential for tourism use ▶ Study on movement of park wildlife outside the park ▶ Study on appropriate conservation compatible and alternative crops that can be promoted in buffer zone ▶ Study on understanding the impact of tourism on biodiversity as a basis for tourism impact monitoring (see Tourism Programme) ▶ Study of negative environmental impacts of mining and mineral extraction in Nyungwe ▶ Study of negative impacts of road use on Nyungwe conservation values ▶ Study on development of beekeeping around Nyungwe and of Nyungwe bee species

Also addressed under Action 4.4 is the need to improve the infrastructure (accommodation and research facilities) currently provided for researchers at Uwinka and Gisakura. Presently, the facilities available for researchers are inadequate to meet the growing demand to undertake research in NNP, and will need to be improved and expanded during the lifespan of this management plan to ensure that the NNP's requirement for management-oriented applied research are met, as well as to fulfil an important practical training requirement for building Rwanda's indigenous biological research capacity.

3.5 NNP Ecological Monitoring Framework

In addition to the programme's management objectives and actions, the other key component of the Ecological Management Programme is the NNP Ecological Monitoring Framework, based on the conservation targets, key ecological attributes and associated threats identified at the beginning of the programme. The use of the NNP's conservation targets, KEAs and threats also ensures that there is a direct link between the components of the ecosystem that are being monitored and this programme's management objectives and actions. As such, the Ecological Monitoring Framework provides a basis for both monitoring overall ecosystem health ***and*** assessing the effectiveness of, and recommending adaptations to, the management actions under this programme.

The Ecological Monitoring Framework is set out in Table 7 overpage. As shown in this table, the plan framework is set out by conservation target. The indicators of change provide easily measurable attributes for assessing the status and trends of the KEAs or threats to each conservation target. The indicators selected also provide an early warning of any serious threats that may develop during the lifespan of this plan, which may potentially require the development of new management actions. The framework also outlines the data collection methodology, which sets out how, when, where and who will collect the data for the indicators.

Table 7. NNP Ecological Monitoring Framework

<u>KEA/Threat</u>	Indicator of change	Method of measurement	Collection frequency	Data source	Responsibility	Data currently collected?
Conservation Target: Hydrological System						
<u>KEA</u> : Water quantity and seasonality <u>(Threat</u> : Climate change)	Water level, water flow, rainfall	Graduated meter method, rate of flow, weather stations	Monthly	RBM	RDB, WCS, NUR	Yes, weather stations
<u>KEA</u> : Water quality <u>Threat</u> : Pollution <u>(Threat</u> : Mining)	Substances in the water	pH, turbidity	1 year	NUR	RDB, WCS, NUR	No
<u>KEA</u> : Soil structure and composition <u>Threat</u> : Mining						
<u>KEA</u> : Water sources <u>(Threat</u> : Water extraction)	Water level, water flow	Rate of flow	Seasonally	RDB, WCS, NUR	RDB, WCS, NUR	No
Conservation Target: Primary Forest						
<u>KEA</u> : Forest edges	Changes in fruiting, flowering, leaf cover, forest cover, forest dynamic	Phenology, forest inventory	Quarterly, and every 5 years	WCS	RDB, WCS	Yes
<u>KEA</u> : Forest size <u>Threat</u> : Deforestation	Forest cover	Satellite image analysis, habitat mapping	5 years	WCS	RDB, WCS	Yes
<u>KEA</u> : Connectivity - corridors						
<u>KEA</u> : Species composition and distribution	Number of species	Plant survey and inventory	5 years	WCS	RDB,WCS	Data collected in 2009
<u>Threat</u> : Habitat disturbance						
<u>Threat</u> : Timber and firewood extraction	Encounter rates cut trees/km	RBM	Daily	RDB	RDB	Yes
<u>Threat</u> : Mining						
<u>Threat</u> : Fire	Frequency of fire and size of area affected	RBM, satellite image analysis	Seasonally	RDB	RDB	Yes
<u>Threat</u> : Invasive/alien species	Distribution and abundance of invasive species	Invasive plant survey and inventory	5 years	WCS	RDB, WCS	Yes

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<u>KEA/Threat</u>	<u>Indicator of change</u>	<u>Method of measurement</u>	<u>Collection frequency</u>	<u>Data source</u>	<u>Responsibility</u>	<u>Data currently collected?</u>
<u>Threat:</u> Illegal agriculture	Size of affected area	RBM, satellite image analysis	Daily	RDB	RDB	Yes
<u>Threat:</u> Poaching	Encounter rates of poaching/km	RBM	Daily	RDB	RDB	Yes
Conservation Target: Secondary Forest						
<u>KEA:</u> Forest edges	Changes in fruiting, flowering, leaf cover, and forest dynamics	Phenology, forest inventory	Quarterly, and every 5 years	WCS	RDB, WCS	Yes
<u>KEA:</u> Forest size <u>(Threat:</u> Deforestation)	Forest cover	Satellite image analysis, habitat mapping	5 years	WCS	RDB, WCS	Yes
<u>KEA:</u> Species composition and distribution	Number of species	Plant survey and inventory	5 years	WCS	RDB, WCS	Yes
<u>Threat:</u> Habitat disturbance						
<u>Threat:</u> Timber and firewood extraction	Encounter rates tree cut/km	RBM	Daily	RDB	RDB	Yes
<u>Threat:</u> Mining						
<u>Threat:</u> Fire	Frequency of fire and size of area affected	RBM, satellite image analysis	Seasonally, and every 5 years	WCS, C-GIS	RDB, WCS	Yes
<u>Threat:</u> Invasive/alien species	Distribution and abundance of invasive species	Invasive plant survey and inventory	5 years	WCS	RDB, WCS	Yes
<u>Threat:</u> Illegal agriculture	Size of affected area	RBM, satellite image analysis	Seasonally, and every 5 years	WCS, C-GIS	RDB, WCS	Yes
<u>Threat:</u> Poaching	Encounter rates of poaching/km	RBM	Daily	RDB	RDB	Yes
Conservation Target: Bamboo forest						
<u>KEA:</u> Forest size <u>Threat:</u> Deforestation	Changes in bamboo cover	Satellite image analysis	5 years	WCS, C-GIS	RDB, WCS	Yes
<u>KEA:</u> Species composition and distribution	Number of species	Plant survey and inventory	5 years	WCS	RDB, WCS	Yes
<u>KEA:</u> Bamboo regeneration	Dynamics of bamboo forest	Plant survey and inventory	5 years	WCS	RDB, WCS	Data collected in 2007

KEA/Threat	Indicator of change	Method of measurement	Collection frequency	Data source	Responsibility	Data currently collected?
<u>KEA</u> : Genetic variability (Owl-faced monkey)	Variability of DNA	DNA analysis	5 years	Lab report	RDB, WCS	No
<u>Threat</u> : Habitat disturbance	Changes in bamboo cover	Satellite image analysis	5 years	WCS, C-GIS	RDB, WCS	Yes
<u>Threat</u> : Timber and firewood extraction	Encounter rates tree cut/km	RBM	Daily	RDB	RDB	Yes
<u>Threat</u> : Mining	Frequency of mining and size of area affected	RBM, satellite image analysis	Every day, and every 5 years	RDB, WCS, C-GIS	RDB, WCS	Yes
<u>Threat</u> : Fire	Frequency of fire and size of area affected	RBM, satellite image analysis	Seasonally, and every 5 years	WCS, C-GIS	RDB, WCS	Yes
<u>Threat</u> : Invasive/alien species	Extent of invasive species	Invasive plant survey and inventory	5 years	WCS	RDB, WCS	Yes
<u>Threat</u> : Illegal agriculture	Size of affected area	RBM, satellite image analysis	Seasonally, and every 5 years	WCS, C-GIS	RDB, WCS	Yes
<u>Threat</u> : Poaching	Encounter rates of poaching/km	RBM	Daily	RDB	RDB	Yes
Conservation Target: Wetlands						
<u>KEA</u> : Species composition and distribution	Number of species	Survey				
<u>KEA</u> : Water levels and seasonality	Water level, water flow	Graduated meter method, rate of flow, weather stations	Seasonally, monthly	RBM	RDB, WCS, NUR	Weather stations
<u>KEA</u> : Size	Wetland cover	Satellite image analysis, habitat mapping	5 years	WCS, C-GIS	RDB, WCS	Yes
<u>Threat</u> : Timber & firewood extraction						
<u>Threat</u> : Plant extraction	Extent of plant collection	Survey, RBM	5 years	WCS	RDB, WCS	Yes
<u>Threat</u> : Drainage of wetlands outside park	Water level, water flow	RBM	Seasonally	RDB, NUR	RDB	No
Conservation Target: Chimpanzee						
<u>KEA</u> : Population size and distribution	Population size and structure	Survey	5 years	WCS	RDB, WCS	Yes

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<u>KEA/Threat</u>	<u>Indicator of change</u>	<u>Method of measurement</u>	<u>Collection frequency</u>	<u>Data source</u>	<u>Responsibility</u>	<u>Data currently collected?</u>
<u>Threat</u> : poaching	Encounter rate of poaching/km	RBM	Daily	RDB	RDB	Yes
<u>Threat</u> : Disturbance						
<u>KEA</u> : Habitat size (<u>Threat</u> : Habitat loss)	Forest cover	Satellite image analysis, habitat mapping	5 years	WCS, C-GIS	RDB,WCS	Yes
<u>KEA</u> : Health <u>Threat</u> : Disease	Health status	Faecal and blood analysis	3 years	Lab report	RDB	Yes
<u>KEA</u> : Genetic variability (<u>Threat</u> : Lack of connectivity)	Variability of DNA	DNA analysis	5 years	Lab report	RDB	No
Conservation Target: Colobus Monkey						
<u>KEA</u> : Population size and distribution	Number of groups, population size	Survey	5 years	WCS	WCS/NNP	Yes
<u>Threat</u> : Poaching	Encounter rates of poaching/km	RBM	Daily	RDB	RDB	Yes
<u>KEA</u> : Diet - food sources	Species composition and distribution	Survey	5 years	WCS	WCS/NNP	Yes
<u>KEA</u> : Habitat size <u>Threat</u> : Habitat loss	Forest cover	Satellite image analysis, habitat mapping	5 years	WCS	WCS/NNP	Yes
<u>KEA</u> : Genetic variability (<u>Threat</u> : Lack of connectivity)	Variability of DNA	DNA analysis	5 years	Lab report	RDB	No
<u>KEA</u> : Health <u>Threat</u> : Disease	Health status	Faecal and blood analysis	3 years	Lab report	RDB	No
<u>Threat</u> : Disturbance						

<u>KEA/Threat</u>	<u>Indicator of change</u>	<u>Method of measurement</u>	<u>Collection frequency</u>	<u>Data source</u>	<u>Responsibility</u>	<u>Data currently collected?</u>
Conservation Target: Birds of Prey						
<u>KEA</u> : Population size	Population size	Survey	5 years	WCS	RDB, WCS	No
<u>Threat</u> : Poaching	Encounter rates of poaching/km	RBM	Daily	RDB	RDB	Yes
<u>KEA</u> : Habitat size and distribution <u>Threat</u> : Habitat loss	Forest cover	Satellite image analysis, habitat mapping	5 years	WCS, C-GIS	RDB, WCS	No
<u>KEA</u> : Prey species	Number of species	RBM, survey	Daily, and every 5 years	RDB, WCS	RDB, WCS	No
<u>KEA</u> : Health <u>Threat</u> : Disease	Health status	Faecal and blood analysis	3 years	Lab report	RDB	No

3.6 Ecological Management & Monitoring Programme Activity Plan

Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
Objective 1 Impacts of fire on Nyungwe NP ecological values minimised														
Action 1.1 Finalise and implement the Nyungwe NP Fire Management Plan														
1.1.1 Identify critical areas for fire prevention and control	Consultant fees	RMW, LEW												
1.1.2 Develop/finalise new VNP fire management plan setting out the aims of fire management and fire management strategies and protocols	Consultant fees	CPW, LEW, PRMW, CCW, admin												
1.1.3 Implement the recommendations outlined in the new fire management plan	Coordination and training costs	RDB, CPW, LEW												
1.1.4 Carry out basic fire-fighter training integrated within the existing Incident Command System (ICS)	USFS and WCS staff time	CPW, LEW, PRMW												
1.1.5 Establish fire zones and fire towers (lookout sites)		CPW, LEW, PRMW, CCW, admin												
1.1.6 Identify and control primary illegal activities within the VNP which constitute potential fire hazards	Operation costs	CPW, RMW, LEW												
1.1.7 Carry out routine fire reconnaissance		LEW, PRMW, CCW												
1.1.8 Carry out regular monitoring on the responses of flora and fauna to fire	Operation costs	RMW												
Action 1.2 Establish and provide training to fire-wise community groups and committees														
1.2.1 Design and produce fire prevention tools	Consultant fees	CPW, CCM, NGOs,												
1.2.2 Train key facilitators in the use of fire prevention tools	Consultant fees	CPW, CCM, NGOs, CCW												
1.2.3 Organize fire prevention campaigns (social marketing)		CPW, CCW, NGOs												
1.2.4 Set up community fire-fighter groups		CCW, NGOs												

Management Actions and Activities	Input Requirements	Responsible person	Timeframe													
			2012				2013				2014					
			1	2	3	4	1	2	3	4	1	2	3	4		
1.2.5 Provide fire fighting uniforms or other recognition for community fire fighters		CPW, CCM, NGOs,														
1.2.6 Train community fire-fighters in fire-fighting protocols and procedures as established in the NNP Fire Management Plan developed under Activity 1.1.		CCW, LEW, CPW, NGOs														
1.2.7 Make firefighting equipment available to community fire-fighters	Tender	CPW, CCM, NGOs														
Action 1.3 Establish/strengthen trans-boundary collaboration in fire prevention and control with Kibira NP																
1.3.1 Liaise with Kibira National park authorities to develop a fire management protocol for Kibira NP		CPW, NGOs														
1.3.2 Organize basic fire fighting training in ICS, fire leadership and fire fighting		CPW, NGOs														
1.3.3 Organize a preliminary meeting on fire prevention campaign with Kibira park authorities	WCS costs															
1.3.4 Organize joint fire prevention campaigns with communities and fire leaders around Kibira National Park	Workshop costs, Media costs	CPW, NGOs														
Action 1.4 Restore areas impacted by fire																
1.4.1 Identify priority areas for restoration		WCS														
1.4.2 Organize communities for fern removal																
1.4.3 Organize removal of ferns in identified areas		PRMW, WCS														
1.4.4 Liaise with the concessionaire of the buffer zone in carrying out reforestation and restoration using indigenous species within the buffer zone		CPW, Buffer zone management														
Objective 2. Impacts of mineral extraction, illegal agriculture and infrastructure development in NNP minimised																
Action 2.1 Understand the impacts of climate change and other threats to Nyungwe NP ecological processes																
2.1.1 Produce a report on RBM 5-year data	WCS costs	CPW, PRMW														
2.1.2 Synthesize research findings on removal of ferns in forested areas	WCS costs	RMM, CPW, PRMW														
2.1.3 Establish vegetation monitoring database based on fixed point photography and numbering of vegetation in selected areas of the park	Consultant fees	RMM, CPW, PRMW														
2.1.4 Record weather observation data on a daily basis in established weather stations (Uwinka, Bigugu)	Consultant fees	CPW, PRMW														
2.1.5 Support monitoring activities to understand the impact of climate change on NNP/regional biodiversity	WCS costs	RMM, CPW, PRMW														

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Management Actions and Activities	Input Requirements	Responsible person	Timeframe														
			2012				2013				2014						
			1	2	3	4	1	2	3	4	1	2	3	4			
Action 2.2 Collaborate with and raise awareness of law enforcement agencies around NNP in reducing mining activities in the park																	
2.2.1 Share RBM quarterly reports with all key park partners		RPRMW, CCW, LEW															
2.2.2 Investigate the network of illegal mining and trade in collaboration with Law Enforcement Agencies		RPRMW, CCW, LEW															
Action 2.3 Collaborate with the Rwanda Natural Resources Authority (RNRA) and the Rwanda Geology and Mining Authority in establishing mechanisms designed to proscribe minerals mined in NNP																	
2.3.1 Collaborate with OGMR and RNRA to develop a programme for proscribing illegally mined minerals and their trade	Consultant fees	CPW, LEM, LEW, PRMW															
2.3.2 Monitoring the implementation of the proscribing programme		PRMW, LEW, CCW, LGt, Security															
Action 2.4 Collaborate with law enforcement agencies in the eradication of marijuana farming in NNP																	
2.4.1 Provide law enforcement agencies with the bi-annual RBM reports on marijuana concerns	Workshop costs	PRMW, LEW, CCW															
2.4.2 Collaborate with communities in information gathering on marijuana farming																	
2.4.3 Conducting joint patrols with law enforcement agencies as well as local leaders to destroy marijuana gardens	Staff time	LEW, PRMW, CPW															
Action 2.5 Establish guidelines for EIA of infrastructure development within or neighbouring NPs																	
2.5.1 Develop guidelines for infrastructure development within and around the NNP boundaries	Consultant fees	EIA, DAI, CPW, IP															
2.5.2 Carry out a quarterly inspection of infrastructure development within and neighbouring NNP to ensure compliance with guidelines	Field work costs	TW, EIA, CPW, PDP															
Objective 3 Invasive and alien species in NNP controlled																	
Action 3.1 Identify and characterise invasive and alien species of key concern for management																	
3.1.1 Carry out mapping and monitoring of the distribution and abundance of key invasive and alien species	Consultant fees	CPW, RMM, PRMW															
Action 3.2 Develop and pilot methods to eradicate invasive and alien species of key concern																	
3.2.1 Investigate options for controlling invasive and alien species, focusing on solutions that do not open up gaps in the forest leading to further colonisation by invasives	Consultant fees	CPW, RMM, PRMW															
3.2.2 Pilot the options for control invasive and alien species in NNP	Consultant fees	CPW, RMM, PRMW															

Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
3.2.3 Closely monitor effects of the invasive species removal programme	Consultant fees	CPW, RMM, PRMW												
Objective 4 Management of NNP research strengthened and focussed on priority park management issues														
Action 4.1 Compile, analyse and disseminate NNP's accumulated research findings														
4.1.1 Develop NNP biodiversity conservation database	Consultant fees	CPW, RMM, PRMW												
4.1.2 Provide appropriate equipment and software to manage the database	WCS costs	CPW, RMM, PRMW												
4.1.3 Train key park staff in research/monitoring design, data collection and data analysis	WCS costs	CPW, RMM, PRMW												
4.1.4 Train and supervise field staff for effective data collection and data entry	WCS costs	CPW, PRMW												
4.1.5 Present NNP research findings at monthly conservation forum		RMM, CPW												
4.1.6 Avail research findings on RDB/NNP website		IT RDB HQ, PRMW												
4.1.7 Create a list serve of key stakeholders in NNP research to facilitate dissemination		RMM, CPW												
4.1.8 Ensure that hard/soft copies of research findings and studies are housed in NNP library		RMM, CPW, PRMW												
4.1.9 Organize an annual national research symposium to disseminate research findings	MINEDUC costs, WCS costs	RMM, CPW, Head of Division												
Action 4.2 Establish formal strategic partnerships with research institutions and universities														
4.2.1 Establish partnerships with external researchers for data analysis and publication and dissemination of research findings		RMM, CPW												
4.2.2 Harmonize guidelines and MoU template for guiding interactions with research institutions and Universities		RMM												
4.2.3 Update research priorities for NNP on annual basis in collaboration with partners	Workshop costs, symposium proceedings costs	RMM, CPW, PRMW												
4.2.4 Make the list of priority research projects available to partner research and academic institutions	Website and workshop costs	RMM, CPW, PRMW												

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Management Actions and Activities	Input Requirements	Responsible person	Timeframe														
			2012				2013				2014						
			1	2	3	4	1	2	3	4	1	2	3	4			
4.2.5 Allocate funds annually to carry out research on crucial NNP conservation issues		RMM, CPW, Head of Division															
4.2.6 Investigate the possibility of partnering with pharmaceutical companies to link their research to NNP	Consultant fees	RMM, CPW, Head of Division															
Action 4.3 Establish RDB Research Coordination Unit																	
4.3.1 Set up Research Coordination Unit within RDB to coordinate research activities in Nyungwe National Park as well as Volcanoes and Akagera National Parks	Consultant fees	SCO, CPW, RMW															
4.3.2 Organize and implement capacity building for RDB Research Coordination Unit staff	Research costs	SCO, CPW, RMW															
Action 4.4 Support and promote research on key park management research priorities																	
4.4.1 Prepare/update and disseminate a simple NNP research plan that defines research priorities from the perspective of NNP management	Workshop costs	CPW, RMW															
4.4.2 Collaborate with partners as well as the RDB Research Coordination Unit established in Action 4.3 to ensure that appropriate research activities are initiated and that they receive the necessary logistical and other support	Research costs	CPW, RMW															

Chapter 4.

Tourism Management & Development Programme

4.1 Introduction

The development of Nyungwe National Park's tourism product is vital to the long-term conservation of the park. Tourism has the potential to generate significant economic returns to meet the costs of park management and, through RDB's revenue sharing scheme as well as community participation in delivering NNP's tourism product, to increase the support of neighbouring communities for the conservation of the park, while at the same time helping to improve the livelihoods of these communities.

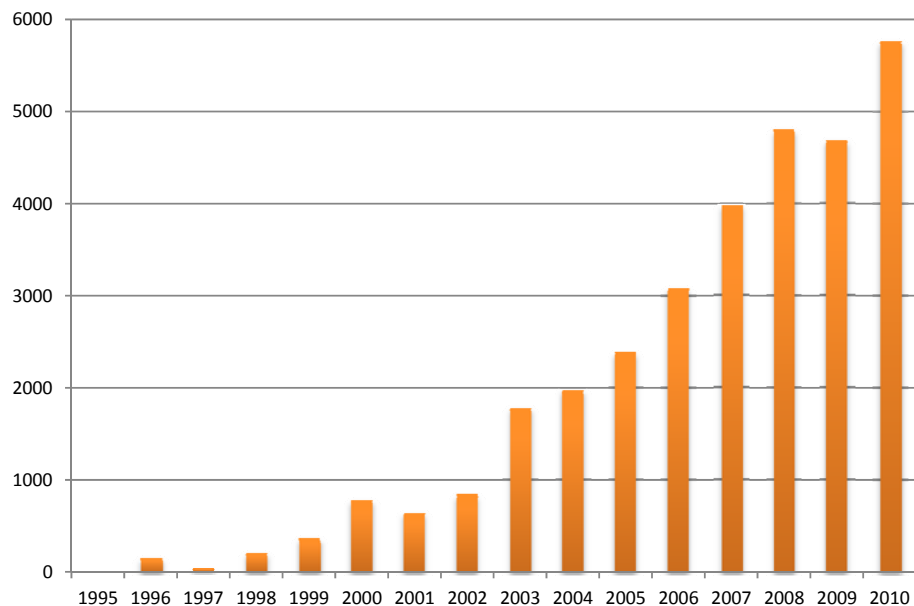
The development of the NNP's tourism product is also important because the park offers a range of different visitor activities and attractions to those on offer in either Volcanoes NP or Akagera NP. As a relatively small and fragile national park that is already experiencing high levels of visitation for Mountain gorilla viewing, Volcanoes National Park has little room for diversifying visitor attractions and activities inside the park, and the focus of the new VNP management plan is therefore mainly on the development of new visitor attractions outside of VNP. On the other hand, Akagera National Park offers a more traditional savannah wildlife viewing-based tourism product similar to that on offer in East African game parks. In the case of Nyungwe, there is considerable scope for building a new premium ecotourism and activity-based tourism product inside the national park, based on the park's outstanding scenery and habits, the excellent opportunities for primate and bird watching, and the chances for hiking and other adventure activities linked to the park's extensive trails network. These comparative advantages of NNP tourism are reflected in the purpose of the NNP Tourism Development & Management Programme, which states:

The Nyungwe National Park is established as Rwanda's leading ecotourism and adventure destination that complements other leading Rwandan tourism destinations and provides optimal economic benefits to neighbouring communities and the nation.

The development of the NNP tourism product was also a major objective of the previous NNP management plan, 2006-2010, and while there has been steady growth of visitor volumes in recent years (see Figure 12 overpage), visitor numbers have not grown as rapidly as anticipated and, at 5,755 visitors in 2010, they remain at relatively low levels compared with Volcanoes NP (23,372 visitors in 2010) and Akagera NP (16,180 visitors in 2010).

With the support of USAID, RDB is currently implementing the **Nyungwe Forest Ecotourism Project**, which is supporting and promoting the development of ecotourism in and around the NNP. The project has the following major aims:

Figure 12. Growth in NNP visitor numbers 1995-2010



- ▶ To position Nyungwe NNP as an alternative and complementary tourism destination to gorilla trekking in Volcanoes National Park
- ▶ Conservation of biodiversity by balancing tourism with protecting the forest's sensitive and diverse plant and animal life
- ▶ Addressing the economic needs of local communities that may be linked to tourism in and around the project's targeted areas

It is therefore anticipated that the Nyungwe Ecotourism Project will be an important mechanism for assisting with the implementation of a number of the management actions set out in the Tourism Management & Development Programme.

At the NNP Tourism Working Group meeting held at KCCEM, stakeholders identified several key principles that should influence the implementation of this Tourism Programme and the achievement of the Programme Purpose as stated above:

1. Tourism development should be carried out in a way that doesn't compromise NNP's outstanding ecological and biodiversity values
2. The continuing reputation and appeal of NNP's tourism product will depend on ensuring optimal visitor satisfaction
3. Partnerships need to be established with both communities and investors in developing the NNP tourism product (public-private partnerships)
4. To achieve the desired growth in the NNP tourism product, it will be vital to create an enabling and conducive environment for investors

These key principles are reflected and responded to in the Tourism Programme's management objectives and actions described in the following sections.

4.2 Management objectives & actions

Four management objectives have been defined for the Tourism Management & Development Programme aimed at achieving the Programme Purpose outlined above, as follows:

Objective 1. NNP’s ecotourism and adventure tourism product developed

Objective 2. NNP visitor services and experience improved

Objective 3. The tourism value chain for communities living around NNP developed and promoted

Objective 4. Management of NNP tourism products and services strengthened

Each of these management objectives, and the management actions that have been developed to achieve them are set out in detail in the following sections.

Objective 1. NNP’s ecotourism and adventure tourism product developed

Objective 1 is the main focus of this management plan’s efforts to build tourism in the NNP, through the development of new visitor attractions and activities in and around the park, as well as the required tourism infrastructure to support these activities. In line with the principles set out in the introduction to the programme, an important aspect of developing NNP’s tourism product will be the establishment of public-private partnerships, which will be closely tied to the creation of a conducive business environment that promotes private sector interest and investment in new tourism infrastructure and activities in the NNP. The promotion of private sector investment in the development of the NNP tourism product will be an important aim of Objective 1.

The management actions under this objective that have been developed to address these issues, and to ensure that NNP visitor activities and supportive infrastructure are expanded and diversified, are elaborated in the following sections.

Action 1.1 Carry out a review of existing NNP Ecotourism Plan as a basis for future tourism product development

Although not addressed in the previous NNP management plan, a comprehensive ecotourism development plan was prepared for Nyungwe NP during 2004 and 2005 by the ecotourism planners Hitesh Mehta Design working together with the US landscape architect firm, EDSA. The **NNP Ecotourism Plan** included a tourism zoning plan for the park, proposals for a variety of new NNP ecotourism products in and around the park, as well as architectural sketches and site layout plans for a variety of new ecotourism facilities.

As a foundation for the achievement of Objective 1, therefore, the existing NNP Ecotourism Plan will be revisited and reviewed by NNP managers working together with appropriate RDB Headquarters tourism staff and representatives of Rwanda’s tourism industry. This review will identify the key elements of the plan that are still relevant today, which will provide the foundation for the development and promotion of specific tourism investment opportunities as described in Action 1.2 below. The review of the plan could potentially be an initial activity for the planned NNP Tourism Coordination Committee (see Action 4.2 below).

An important aspect that will also need to be addressed under Action 1.1 is the need to establish “limits of use” for tourism development in the NNP Tourism High Use Zone (see section 2.3 of the Zonation Scheme), aimed at ensuring that the principles outlined in the introduction to this Programme: i.e. protection of the NNP’s outstanding ecological and biodiversity values and ensuring

optimal visitor satisfaction, are fulfilled. This is likely to require the identification of an initial round of investment opportunities, followed by the implementation of a monitoring programme designed to assess the environmental and tourism product impacts of the new tourism developments. If time allows, this could then potentially be followed by a second round of investment within the lifespan of this current management plan, depending on whether it is decided that the limits of use on tourism development in NNP have been reached. See also Action 4.1 below.

It will also be necessary to apply the NNP ecolodge guidelines as detailed in section 2.3 of the NNP Zonation Scheme, as well as carrying out EIAs of all future tourism development in accordance with Action 2.5 of the Ecological Management Programme.

Action 1.2 Promote investment in development of NNP tourism

One of the reasons that the previous NNP management plan did not achieve the level of tourism development in NNP than had been hoped for was that the plan's tourism objectives and management actions take a somewhat reactive, "back seat" approach towards the development of tourism and the promotion of private sector investment in the NNP's tourism product. While the old management plan has a good focus on building the capacity of NNP staff to manage tourism, and on tourism marketing and visitor satisfaction, there are few activities in the plan that are designed to proactively promote and facilitate private sector investment in NNP tourism development. Action 1.2 is designed to rectify that deficiency through several targeted activities that are designed to create the conditions necessary to encourage and enable the private sector to invest in the NNP.

The first step in creating these conditions will be the finalisation of the NNP tourism concession and investment policy, including the provision of appropriate incentives to encourage investors to invest in NNP tourism products, such as concessionary lease terms for the start-up period of new developments. Work on this investment policy is already underway in RDB, with the assistance of the Nyungwe Ecotourism Product. Following on from the establishment of the investment policy, it will then be necessary to finalise information concerning the priority tourism development sites and designs in the NNP. Once again, work on the identification and elaboration of these sites is already in process. The selection process will, however, need to take into account the outcomes of the review of the Nyungwe Ecotourism Plan as described under Action 1.1 above, since this review may have an influence on the final selection of the priority tourism development sites.

As part of the process of finalising the identification of tourism sites and assembling the information about these sites, it may be useful to undertake a "**Tourism Site Assessment Visit**" to each of the shortlisted sites. Such a visit would involve NNP management staff, RDB HQ tourism and conservation staff, ecologists (to act as a watchdog on the likely environmental impacts of the proposed sites), and representatives from the Rwanda tourism industry. The latter would participate in the Site Assessment Visit in their capacity as representatives of the tourism industry, rather than as potential future investors in the NNP.

Once the priority tourism development sites have been confirmed and information on the sites assembled, the next stage will be to develop a "**Nyungwe Tourism Prospectus**" designed to provide summary information on all of the proposed tourism development sites, the nature of the accommodation that the site is appropriate for, the visitor activities that are possible in the vicinity of the site, the concession terms and any incentives that will be provided to investors, and other relevant information. The Nyungwe Tourism Prospectus, once finalised, will then form the basis of an international Call for Expressions of Interest for investment in tourism development in the NNP, which should be widely distributed in Rwanda, regionally within East Africa, as well as internationally.

One important aspect of the Nyungwe Tourism Prospectus will be the potential to access matching funds for tourism infrastructure development in NNP that is expected to be made available through

the Nyungwe Ecotourism Project. The availability of potential matching funds is likely to be a strong incentive for private sector investment in NNP, and it will be important that the Tourism Prospectus describes the terms and conditions of these funds and how they can be accessed.

Another important aspect of the Tourism Prospectus will be the requirement to create linkages between the proposed tourism infrastructure and product investments and community-based tourism products in the area surrounding the tourism site. It will be important that the Nyungwe Tourism Prospectus identifies the potential community tourism products neighbouring each site, and requests potential investors to indicate how they would propose to link with and support those community tourism initiatives (see also Action 3.1 below).

Under Action 1.2, a tender process based on responses received to the Call for Expressions of Interest will also be implemented. The tender process should be carried out in line with the NNP tourism investment and concession policy as described above, as well as being in line with Rwanda government tendering procedures. An integral part of the tendering process will be negotiations regarding access to matching funds for the private sector investments, as well as concerning linkages and support for adjacent community tourism products, as discussed above.

Private sector involvement, or public-private partnerships, will also be encouraged under Action 1.2 to develop and manage other visitor attractions in the NNP, such as the canopy walk, and visitor shops at the main visitor centres at Uwinka, Gisakura and Kitabi. The opportunities for and feasibility of such private sector involvement in delivering NNP's visitor attractions and services will be investigated, and proposals developed for how to achieve this where appropriate. An important starting point for this work is the Nyungwe Concessions Plan that has been prepared by the US National Parks Service under the Nyungwe Ecotourism Project.

An important consideration will be that all private sector involvement in delivering the NNP's visitor attractions will need to be subject to strict guidelines for the protection of the NNP environment as well as the safety of NNP's visitors.

Action 1.3 Improve access to tourism sites

Crucial to the success of the new tourism infrastructure and visitor products that will be promoted through Action 1.2 will be to ensure that access roads to the new tourism sites are developed and improved as required. While the investors in tourism accommodation sites can be expected to play a role in maintaining their access roads in the long-run, the initial construction and/or upgrading of the various access roads will require inputs from NNP management. However, since this initial construction work is likely to require significant capital and material investments, it is expected that RDB HQ will itself take the lead role in the implementation of Action 1.3, in collaboration with other relevant government agencies as appropriate. In the first instance, a schedule for the development of the required access roads together with the scope of the construction works required will be developed once the priority tourism development sites have been firmed up under Action 1.2 above.

Action 1.4 Establish visitor attractions focusing on Nyungwe biodiversity and endemism

Nyungwe National Park is regarded by many as one of the best places to witness and explore the exceptional biodiversity and endemism of the Albertine Rift. Besides its 14 primate species, of which six species have already been habituated for visitors (Chimpanzees, Grey-cheeked mangabeys, Blue monkeys, Angolan colobus, L'hoest's monkeys and Owl-faced monkeys), the national park also contains 280 bird species, 26 of which are endemic to the Albertine Rift, more than any other site in East Africa.

There is a strong potential to develop specific NNP visitor attractions focusing on this exceptional special biodiversity and endemism, including birds, butterflies, orchids and other species. Under Action 1.4, the opportunities to develop additional biodiversity-related visitor attractions and activities will be explored, and specific visitor activities will be designed and developed, in association with specialist tourism companies as appropriate. Action 1.4 will also involve the development of necessary infrastructure to support these new visitor attractions, including building new trails, for example for orchid viewing. These aspects are also addressed under Action 2.1 below (for bird watching) and Action 2.2 (for trails improvement).

Action 1.5 Develop Gisovu as a tourism destination

The Gisovu area in the north of Nyungwe has been identified as a key area for future tourism development in and around NNP. The area is included in the NNP Tourism High Use Zone (see Figure 3 in the NNP Zonation Scheme). Tourism attractions inside the park in this area include trekking to the Source of the Nile which is located within the Gisovu area, and chimpanzee viewing. Other visitor attractions outside the park include the Gisovu Tea Route experience to the north of Nyungwe. Presently, the existing tourism accommodation servicing this area are the hotels at Kibuye to the north on the shores of Lake Kivu, or at one of the two tourist lodges at Gisakura on the western side of NNP.

One of the reasons that the Gisovu area has good tourism potential is that it is located near to the Kivu lakeside road connecting Kamembe on the southern end of Lake Kivu with Gisenyi at the northern end of the lake. This road is in the process of being upgraded, and once complete, this will greatly improve access to the NNP from the northern part of Rwanda, including a faster and more scenic link with Volcanoes National Park. The Gisovu area of NNP will be one of the first stopping places for visitors travelling on this lakeside route. It is also anticipated that the Gisovu area is of particular importance for the development of domestic tourism.

Under Action 1.5, activities to increase the attractiveness of Gisovu as a tourism destination will be undertaken, including the potential development of a new tourism accommodation facility in the area. In this regard, the existing accommodation complex at Gisovu which was formerly developed by the National Forest Authority but has never been completed is a potential suitable site for the establishment of a tourism accommodation concession. Under Action 1.5, RDB will hold discussions with NAFA to clarify the ownership of the facility and its potential conversion to tourism accommodation, following which, if these discussions are favourably concluded, the site will be included in the list of priority tourism development sites that will be established under Action 1.2 above.

Objective 2. NNP visitor services and experience improved

Alongside the expansion of the NNP tourism product addressed under Objective 1, it will also be important to continually improve the quality of the NNP tourism product and visitor experience, in order to ensure visitor satisfaction and to achieve the Tourism Programme Purpose of establishing Nyungwe as Rwanda's leading ecotourism and adventure destination. These aspects are addressed under Objective 2, which includes a variety of management actions to improve NNP visitor attractions, activities and services.

Action 2.1 Implement the Nyungwe Bird Watching Action Plan

The opportunity to see a wide variety of Albertine Rift endemic bird species coupled with the park's hilly terrain which allows good views of the forest canopy, makes Nyungwe an ideal place for bird watching. In order to further develop Nyungwe as a bird-watching destination, the US National Park

Service under the auspices of the Nyungwe Ecotourism Project has developed a **Nyungwe Bird Watching Action Plan**, which makes a series of proposals for improving guiding services; developing new bird watching trails and signage, and designing new maps and brochures.

Under Action 2.1, the Nyungwe Bird Watching Action Plan will be reviewed by NNP managers as well as by the RDB T&C Department. As appropriate and feasible, specific activities to implement the plan will then be identified, together with input requirements, timeframes and responsibilities. These activities will then be incorporated into the Tourism Management Programme 3-Year Action Plan under Action 2.1 (see section 4.4 below).

Figure 13. Visitors bird watching on an NNP nature walk



Action 2.2 Finalise and implement the NNP trails plan

Nyungwe National Park has an extensive network of well-maintained walking trails, which are a vital part of the NNP's tourism product. Construction of the trail system began in the late 1980s with the support of the PCFN project, and currently consists of 13 trails, 10 of which are in the Uwinka area in the middle of the park, two from the Gisakura area in the west of the park, and one from the Kitabi area in the east of the park.

These trails are constantly being impacted by vegetation growth, soil erosion from water run-off, and there is a constant need for repair and maintenance activities to keep trails open and safe for visitors. As a result of the proposed expansion of the NNP's tourism product and visitor attractions over the lifespan of this management plan as detailed under Objective 1, there is also a need to establish new trails providing access to new parts of the forest, and relieving pressure on the main trails network at Uwinka. The development of new trails and the ongoing maintenance requirements of the existing trails are dealt with in the NNP Trails Plan, which is currently under development. Under Action 2.2, the Trails Plan will be finalised, following which priority activities to implement the plan will be defined and implemented. It is anticipated that the existing six community trails cooperatives, as well as additional cooperatives as required, will be involved in the implementation of the Trails Plan, which should also include any necessary training activities that may be needed.

Figure 14. Nyungwe waterfall trail



Action 2.3 Improve NNP pricing scheme and booking system

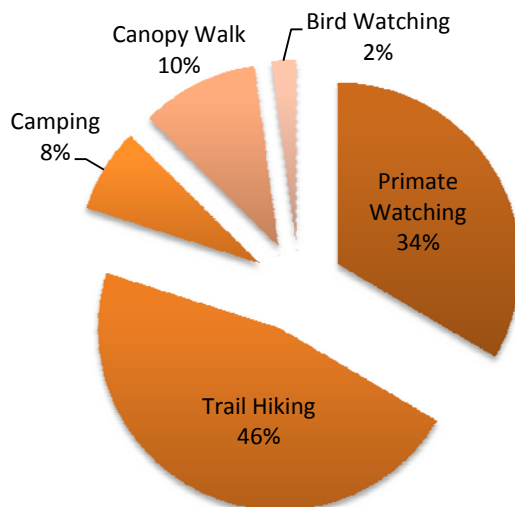
Figure 15 overpage shows the proportion of NNP visitors undertaking each of the main types of NNP visitor activities during 2010. As can be seen, almost half of the visitors (46%) were engaged in trail hiking, with a further 34% undertaking primate watching. Comparatively few visitors are involved in the other three major NNP visitor activities, the canopy walk (10%), camping (8%) and bird watching, with just 2% of the total visitor activities. However, the number of visitors using the canopy walk is certainly an underestimate, since this visitor activity only opened for visitors in September 2010.

One of the reasons given by tourism stakeholders for the low uptake of some of NNP's alternative visitor activities is the high charges levied on these activities, such as bird watching. Currently, the NNP has a complicated visitor activity pricing structure, which depends on the type of activity undertaken, the length of the visitor's stay, and in the case of trail hiking, the length of the trail involved.

For example, a 0-5km trail costs \$40 for a one day permit for a foreign non-resident visitor, while a 5-10km trail costs \$50, and the Congo-Nile Trail (30kms) costs \$120. Chimpanzee watching costs \$90 per day, while other primates cost \$70 per day. Bird watching costs \$70 per day, and camping \$50 per day³.

³ All prices quoted are in US\$ and for foreign non-resident visitors. Prices for foreign resident and Rwandan nationals are lower than the prices quoted, and Rwandan nationals are charged in Rwandan francs. There are additional prices for the East African Community (nationals and residents) as well as for students and children.

Figure 15. Proportions of visitors undertaking different NNP visitor activities in 2010



In sum, the existing NNP pricing scheme is complex to administer and confusing for visitors. In addition, the costs for visitors to the NNP quickly mount up, since visitor activities are currently charged separately. For example, if a visitor undertakes and pays for forest trekking, s/he will, under the existing tariff scheme, not be permitted to undertake bird watching while on the trek, since this is considered a separate activity.

The complexity and high costs associated with the NNP's existing tariff structure undermines the overall attractiveness of the NNP visitor product. At this stage in the development of the NNP's tourism product, the primary aim should be to **increase visitor volumes and build the reputation of the NNP as Rwanda's leading ecotourism destination**, rather than to achieve high revenues from a relatively small number of visitors.

In June 2011, RDB commenced a process designed to simplify the pricing scheme. Under Action 2.3, this review and revamping of the pricing scheme will be completed and implemented, in order to ensure that the new pricing scheme is simpler and more visitor-friendly. Once the new NNP pricing scheme is finalised and approved by RDB, it will then be necessary to raise awareness of the new tariffs both with the tourism industry as well as the general public (for example by advertising in the daily newspapers and posting on the RDB tourism website).

Alongside the revamping of the NNP pricing scheme, there is also a need to improve the NNP's booking and payment systems, also with the aim of making them more visitor friendly and thereby increasing the attractiveness of the NNP to visitors. Action 2.3 will therefore also undertake activities designed to improve these booking and payment systems, including the use of credit cards for the payment of park fees, and the possible development of a web-based booking portal. A similar revamping of booking and payment systems is also planned for Volcanoes National Park under the new VNP management plan 2012-21, and it will be most cost effective and efficient to integrate both the VNP and NNP booking systems into a single structure (see Action 2.5 of the VNP Tourism Management & Development Programme).

Figure 16. The new Uwinka Canopy Walk, opened for visitors in September 2010



Action 2.4 Improve NNP visitor facilities

NNP visitor facilities have been greatly enhanced over the lifespan of the previous NNP management plan, 2006-10, with in particular the development of the Uwinka Centre infrastructure being an especially important achievement, including a Visitor Reception, Interpretation Centre, and other visitor amenities. Under Action 2.4, other NNP visitor facilities will be rehabilitated and/or constructed as appropriate. This will include the rehabilitation and routine upkeep of the visitor entrance facilities at both Gisakura and Kitabi, as well as the establishment of new visitor information centres/displays at both Gisakura and Kitabi. This action will be linked with Action 3.3 of the Park Operations Programme.

Action 2.5 Improve Nyungwe visitor information and marketing materials and carry out promotional events

An important aspect of delivering a premium tourism product in NNP is to ensure that visitors are provided with high quality information materials about the park itself, as well as the various visitor attractions and activities on offer. For example, visitors need to be provided with information on specific NNP visitor activities and attractions, including what the visitors can expect to see, what is involved in undertaking the activity (especially concerning strenuous or hilly trails that may be difficult for older visitors), and how much time is needed. Providing visitors with realistic information regarding chimp trekking, including the likelihood of seeing chimps and how long is involved, will be especially important, as many visitors coming to Nyungwe for chimp viewing have high expectations which are not always met. Visitor information on the transport options for getting to and around the NNP will also be needed for those visitors who use public means to travel to the park.

Figure 17. Uwinka visitor interpretation centre



Under Action 2.5, the existing NNP visitor information materials will be reviewed, after which activities designed to improve and expand the availability of visitor information will be identified. Various media for disseminating visitor information will be considered, including further development of printed materials (e.g. a combined NNP map and information brochure), as well as the use of Internet-based platforms such as the RDB Rwanda Tourism website (www.rwandatourism.com). The development of Nyungwe-specific visitor information on the Rwanda Tourism website should ideally go hand-in-hand with the development of similar visitor information relating to Volcanoes National Park (see Action 2.4 of the VNP Tourism Management & Development Programme in the new VNP management plan).

In addition to the dissemination of visitor information in print and through the Internet, there are also opportunities to carry out interactive visitor awareness events, such as talks and presentations by NNP researchers on different aspects of Nyungwe’s exceptional biodiversity and habitats, as well as the possibility of accompanying researchers into the field for more hands-on exposure to Nyungwe’s natural history. Another opportunity is the development of a “Nyungwe Story” presentation/talk which provides visitors with a history of the Nyungwe Forest and orientates them to the various activities and attractions they can experience during their visit, to be given by NNP staff. Under Action 2.5, the feasibility of undertaking these visitor awareness and information events will be examined, and specific awareness events will be designed and delivered where realistic and cost effective.

Besides these information materials, another important activity to be carried out under this management action will be the development of a regular NNP e-newsletter providing news about the latest developments at NNP. The e-newsletter will be developed by NNP management and distributed on a twice-yearly basis. This will involve the establishment of a distribution database for the newsletter, including previous NNP visitors, international and local tour operators using Nyungwe, and other supporters, as well as the design of a simple and clear e-newsletter format, most likely using one of the online e-newsletter engines such as Constant Contact or Mailchimp.

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To complement the efforts under this objective to improve NNP visitor services and, under Objective 1, to develop new tourism products, it will also be important to strengthen the marketing of NNP visitor attractions and activities over the lifespan of this management plan. In this regard, many components of an NNP marketing plan have already been developed, and what is now needed is for these components to be consolidated into a single plan to guide future marketing activities. Therefore, under Action 2.5, the NNP marketing plan will be finalised and consolidated, as a basis for other marketing activities under this management action. The work to consolidate the plan will be carried out in collaboration with key tourism industry partners to ensure that the marketing activities set out in the plan are realistic and appropriate.

While the detail of future NNP marketing activities will be defined in the marketing plan, there are several marketing activities that are already known and that will be implemented under Action 2.5. In particular, NNP tourism managers and RDB HQ tourism staff will organise and facilitate familiarisation visits to NNP by local and international tour operators and media representatives to promote and raise awareness of the diverse range of NNP visitor activities. These familiarisation visits will also be attended by NNP and RDB HQ reservations staff as well as staff at NNP lodges, so that they are better able to promote and explain NNP visitor attractions and activities. Besides organising familiarisation visits, NNP and RDB HQ will also facilitate similar visits that are organised by the tourism industry and others, for example by waiving entrance fees for visits that are genuinely regarded as being important for the marketing and promotion of the NNP and its visitor attractions.

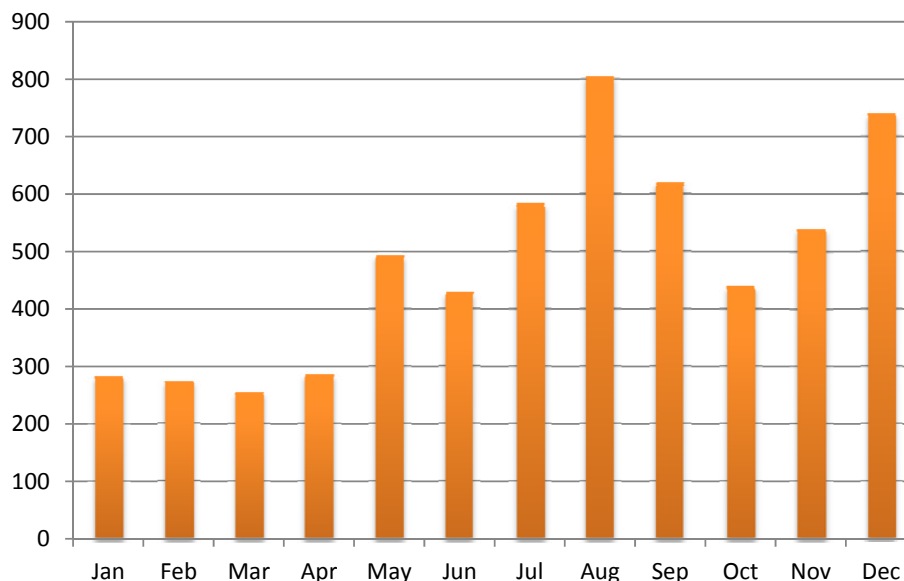
Another important activity under Action 2.5 will be to review the requirement for new and additional NNP promotional materials and to produce these as necessary. This activity may be linked to efforts to develop visitor information materials, but additional and tailor-made NNP promotional and marketing materials may also be required.

Lastly, an important ongoing activity to promote NNP and its visitor attractions will be RDB HQ's participation in key international travel events, which provide excellent opportunities to showcase a lesser-known destination like Nyungwe NP to a wide range of international tour operators, agencies and consolidators. However, to be most effective, it is best that participation in these events is through a public-private collaboration between RDB and representatives of Rwanda's tourism industry.

Action 2.6 Develop concessionary visitor packages for regional and domestic tourists

The vast majority of visitors to NNP are from outside Rwanda. For example, in 2010, NNP received 5,755 visitors of which 70% were overseas visitors, with the remainder made up of Rwandan citizens (14%) and Rwandan residents (16%). This dramatically compares with Akagera National Park, where the balance is the other way around – in 2010 for example, 67% of Akagera's visitors were locals. The development of domestic tourism in NNP is therefore a priority during the lifespan of this management plan. Besides building up the NNP's tourism volumes in general, domestic tourism can provide for more stable growth of the tourism product which is less subject to international economic, security and climatic factors, which international tourism is very vulnerable to. Domestic tourism also has the potential of overcoming seasonal peaks and troughs in visitor volumes which respond to European and north American holiday periods. These seasonal variations in visitor numbers are shown in Figure 18 overpage, for 2010.

Figure 18. Monthly NNP visitor numbers, 2010



Under Action 2.7, a variety of activities will be carried out to promote increased domestic and regional tourism in NNP, especially during periods of the year when overseas visitor numbers are low (e.g. January-April – see Figure 18 above). These will include marketing activities specifically focussed on domestic markets (See Action 2.6), as well as the development of concessionary packages for low season visitation by domestic and regional tourists. Such packages will need to be developed in close collaboration with tourism industry partners, and should comprise both visitor accommodation and activities. Under Action 2.7, the opportunities for developing other domestic tourism specific visitor attractions and activities will also be investigated and developed as appropriate (see also Action 1.5 above regarding the further development of the Gisovu area of NNP).

Besides developing domestic tourism, Action 2.7 will also investigate and pursue ways of collaborating with neighbouring countries in the eastern Africa region in the establishment of Nyungwe as part of a region-wide integrated tourism circuit. Lead responsibility for developing such a regional tourism circuit will rest with the RDB Headquarters Tourism & Conservation Department, and will be pursued through appropriate regional collaboration forums such as the East Africa Community (EAC). In this regard, in 2010 the EAC Council of Ministers adopted the draft “Protocol on EAC Tourism and Wildlife Management” which is designed to provide for the establishment of mechanisms and institutions for the coordination, promotion and facilitation of responsible tourism and sustainable wildlife management within the EAC. At the same time, an EAC Tourism and Wildlife Marketing Plan Strategy has also been developed, which is also relevant to the promotion of an integrated tourism product within the region. See also Action 4.4 of the Park Operations Programme.

Objective 3. The tourism value chain for communities living around NNP developed and promoted

The strengthening of community involvement in delivering the NNP’s tourism product was an important objective of the previous NNP management plan. While some progress has been made in achieving this over the last few years, community participation in the NNP’s tourism industry remains relatively weak. Increased community involvement in delivering the NNP’s ecotourism product will not only bolster the reputation and attractiveness of the tourism product, but will also strengthen the ways in which NNP adjacent communities can gain positive economic benefits from the park, which is crucial in strengthening community support for the NNP’s conservation. Community-based tourism is

also an important mechanism for promoting conservation-compatible development and sustainable livelihood improvements in areas neighbouring NNP. The promotion and support of these initiatives is therefore a high priority for this management plan, and for the long-term achievement of conservation goals in NNP (see the Community Partnership Programme in the next chapter). The further development of Nyungwe's community ecotourism activities and products is an important objective of the USAID-sponsored Nyungwe Ecotourism Project (see section 4.1 above).

Action 3.1 Provide support and training to communities in developing viable ecotourism enterprises to effectively participate in NNP tourism

One of the main reasons that it is so difficult to develop viable community ecotourism products and activities is that communities lack the required knowledge and skills to both develop and deliver these products. Specialist skills are needed in the delivery of visitor attractions and activities that appeal to visitors, as well as the necessary business skills that are essential to running a viable and profitable tourism enterprise. Under Action 3.1, the NNP Tourism and Community Conservation Departments will provide and/or facilitate the required support and capacity building needed to enable community cooperatives to establish and deliver viable ecotourism enterprises. Additional training of these staff, and/or specialist technical inputs, are likely to be required to ensure that the appropriate tourism-oriented expertise is provided to the community members concerned.

Providing communities with business management skills in running enterprises is an especially important aspect for the success of these tourism ventures, and the need to enhance business skills is also addressed under Action 2.2 of the Community Partnership Programme. Other capacity building that will be important relates to visitor handling and how to behave in the presence of visitors, and in the development of appropriate cultural tourism activities.

Besides support from the NNP Tourism and Community Conservation Departments, the opportunities for developing community-private sector partnerships and joint ventures in the delivery of ecotourism products will also be investigated under Action 3.1, and support provided in promoting and establishing such partnerships as appropriate. This will be directly linked to the development of new NNP tourism investment as detailed under Action 1.2 above, which will specifically encourage partnerships with communities in the delivery of tourism activities and visitor attractions.

As discussed previously in this programme, it is anticipated that there will be a significant growth in the NNP's tourism industry over the lifespan of this management plan. If the local community is to get a fair share of the economic benefits delivered by this growth in tourism, thereby enhancing community livelihoods and support for the NNP, it will be important that they gain access to the new employment opportunities that are created in the coming years, as well as developing their own tourism enterprises as described in the previous management action. Action 3.1 aims to identify and develop ways of ensuring that community members are able to gain access to these emerging employment opportunities, for both skilled and unskilled workers. This may involve providing opportunities for local communities to undergo appropriate training in collaboration with tourism operators in NNP, as well as developing programmes to enable community members to work as trainees in various tourism-related capacities, either within the NNP Tourism Department or with NNP tourism industry partners.

Action 3.2 Identify and mobilise funding sources for developing community ecotourism initiatives

The community ecotourism enterprises that will be promoted and supported under this objective are likely to need significant financial support if they are to be realised. Under Action 3.3, potential sources of funds for the development of community tourism enterprises will be identified by NNP

management working together with its conservation partners, and then mobilised in support of the most promising tourism initiatives. See also Action 2.4 of the Community Partnership Programme.

Objective 4. Management of NNP tourism products and services strengthened

This chapter sets out an ambitious programme for the expansion of the NNP tourism industry over the lifespan of this management plan, both through the development and delivery of new tourism products (both investor and community led), as well as improvement of the tourism products already on offer in the NNP. To ensure that tourism management keeps pace with these anticipated increases in the scale and complexity of the NNP tourism product, it will be essential that the NNP's tourism management and administration systems are scaled up accordingly. Objective 4 addresses key aspects of this strengthening of the NNP's tourism management systems, in order to ensure that the park's tourism products continue to be effectively and efficiently delivered, and that NNP tourism has minimal impacts on the park's natural environment.

Action 4.1 Improve the capacity of NNP tourism staff

With the anticipated expansion of tourism activities in NNP over the lifespan of this management plan, it will be especially important to improve the capacity of NNP's tourism staff, especially those staff that interact with visitors, such as tour guides, community guides, and park guides. This will require the recruitment of additional staff in the Tourism Department to accommodate the expansion of visitor attractions and activities, as well as the provision of training for new staff, and refresher training for existing staff. With regard the recruitment of new staff, it will be especially important that efforts are made to enhance recruitment standards such that the calibre of new recruits is adequate to meet the required level of visitor services. For existing NNP tourism staff, an important activity to be undertaken under this management action will be the introduction of professional guide standards for the NNP, and the provision of the necessary training to ensure that staff meet these standards. The introduction of such a scheme should ideally be introduced by RDB on a system-wide basis rather than just in NNP, and should draw on similar professional guide schemes in operation elsewhere in East Africa.

As a basis for undertaking training programmes under this action, it will be necessary to identify the key training needs of the NNP Tourism Department, and to work out a training scheme for the provision of training, involving *in situ* short courses as well as *ex situ* longer training as appropriate. Some of the key training aspects that have been identified by the NNP Tourism Department are: training in hospitality techniques; nature interpretation, including bird and plant identification; tracking and guiding skills; and first aid training. These training activities are linked to broader training activities for all NNP staff that will be implemented under Action 4.1 of the Park Operations Programme.

Action 4.2 Review and revise Nyungwe tourism regulations

Increasing numbers of visitors and an expanding array of tourism activities and attractions over the lifespan of the management plan is certain to increase pressures on Nyungwe's exceptional biodiversity and habitats. Without careful management, there is also the possibility that expansion of tourism will also undermine the quality and reputation of the NNP tourism product itself - through inadequate controls on visitor and guide behaviour, or excessive visitor densities at key attractions and activities. Under Action 4.2, the NNP Tourism Management Department in collaboration with the RDB Tourism & Conservation Department and key NNP tourism industry stakeholders will undertake a review of the existing tourism regulations with a view to ensuring that they are adequate to cope with future tourism expansion and increased visitor numbers in the NNP. This will include a review of the NNP Visitor Code of Conduct as well as limits of acceptable use on tourism development and

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visitor use of key attractions and activities (such as primate viewing or hiking on popular trails). See also Section 2.3 of the NNP Zonation Scheme and Action 1.1 above.

Once the NNP's tourism regulations have been reviewed and revised as necessary, it will be necessary to raise awareness of these regulations with NNP tourism industry stakeholders, visitors, and NNP tourism staff such as guides and trackers. With regard the Visitor Code of Conduct, it will also be necessary to disseminate these to visitors, for example by providing a small leaflet at NNP entrance gates, in NNP accommodation facilities, and at NNP interpretation centres and other visitor facilities. It will also be necessary to improve signage to raise awareness of NNP tourism rules, for example, at key visitor attractions.

One particular issue that will need to be addressed in the review of NNP tourism regulations is what to do about casual viewing of wildlife by people travelling along the main transit roads within the park, or casual viewing of particular wildlife species such as primates while visitors are on nature walks. Whereas it is clearly important that such casual viewing remains within bounds (because of the loss of revenue and also the environmental impacts that may result), it is also important that Nyungwe NP remains an essentially visitor-friendly destination, rather than one which applies severe and unreasonable rules, which is likely to eventually lead to greater loss of revenues for NNP than the rules are designed to prevent. In this regard, NNP management will make efforts to apply best practice procedures to deal with such casual viewing of wildlife, showing flexibility as far as is possible so as to ensure that the NNP remains a preferred destination for visitors. In practice, this means that NNP management should tolerate casual viewing of wildlife on the NNP's transit roads provided that this is clearly not being carried out in an attempt to avoid paying NNP fees, and should also allow visitors to look at any birds and primates on nature walks should they encounter them incidentally while in the forest.

Action 4.3 Establish NNP Tourism Cluster

Tourism investors and operators are major stakeholders in the NNP, and their concerns and advice need to be regularly solicited in order to successfully realise the area's tourism potential, and to implement a number of the actions set out in this programme. For example, ensuring that NNP's tourism regulations developed under the previous management action are realistic and reasonable from the standpoint of the visitor and tour operators will require a high degree of communication and cooperation between NNP management and the NNP's tourism industry stakeholders. This collaboration will also be important in ensuring that the anticipated development of Nyungwe's tourism products that is envisaged under Objective 1 of this programme is optimal from both a tourism and environmental perspective, and that the improvements in NNP's tourism products that will be spear-headed under Objective 2 are optimal.

Under Action 4.3, an NNP Tourism Cluster will be established to improve communication and collaboration between NNP managers and tourism stakeholders. The committee will hold scheduled meetings twice a year chaired by the NNP Chief Warden or Tourism Warden.

The previous NNP management plan, 2006-2010, also envisaged the establishment of an NNP Tourism Cluster, but for various reasons this has not happened up until now. However, with the anticipated growth in NNP tourism over the lifespan of this management, it is all the more urgent that the committee now be established. Under Action 4.3, the Terms of Reference for the Cluster will be developed, as well as the membership of the Cluster and practical arrangements for meetings, etc.

The NNP Tourism Cluster will be responsible for overseeing and monitoring the implementation of management actions under this Programme, as well as addressing emerging NNP tourism issues. One of the early responsibilities of the new Cluster will be to establishing guidelines for reviewing and approving future tourism infrastructure developments within NNP, the implementation of which will

be an important ongoing responsibility of the Cluster (see also Action 1.2 of this Tourism Programme as well as the Ecology Guidelines given in Table 3, section 2.3 of the NNP Zonation Scheme).

It is anticipated that the NNP Tourism Cluster will also be represented on the NNP Joint Action Forum, which has lead responsibility for coordinating all activities and developments impacting on NNP (see Action 4.1 of the Park Operations Programme).

Action 4.4 Carry out Visitor Satisfaction Surveys

One of the main aims of Objective 4 as well as of Objective 2 above is to implement a process of continual improvement of the NNP tourism product, in order to achieve the overall purpose of the Tourism Programme: making the NNP a leading ecotourism destination in Rwanda as well as in East Africa. Achieving this aim requires that NNP management has the ability to understand what visitors think of the NNP visitor experience. One of the best ways of collecting this information is through the implementation of regular visitor satisfaction surveys targeting visitors that are about to leave the park. NNP visitors are best placed to provide feedback on what aspects of the NNP tourism product they especially liked, and where improvements can be made. In this regard, visitor satisfaction surveys in NNP have already been carried out by RDB in collaboration with WCS, and a new survey is currently being planned by the Nyungwe Ecotourism Project.

Under Action 4.4, the NNP Tourism Management Department will carry out an annual visitor satisfaction survey by administering a simple questionnaire addressing issues such as the availability of interpretive information, perceived quality of visitor activities and attractions, acceptability of fees for different activities, accommodation standards, etc. This questionnaire will need to be kept short and simple so as not to take up too much of visitors' time, and to keep the data that the survey yields focused and manageable. Once the content and format of the survey has been agreed and designed, this survey can then be implemented by NNP tourism staff, such as guides, as well as collaborating tourism lodges and tour operators, at the end of the visitors' stay. The format of the questionnaire should take into account lessons learnt from previous visitor satisfaction surveys carried out by RDB and its partners in the NNP as well as in Volcanoes and Akagera National Parks.

If appropriately analysed, these annual visitor surveys will enable NNP management to understand trends in visitor attitude and experience over time. This should in turn form the basis for the continual improvement of the NNP tourism product through Objectives 2 and 4 of this Programme, overseen and coordinated by the NNP Tourism Coordination Committee established under Action 4.3 above.

Action 4.5 Implement NNP tourism monitoring system

As indicated above, adaptive management has a key role to play in the future effective delivery of the NNP tourism products, and in minimising any negative environmental and social impacts. The establishment of a tourism monitoring system was also an objective of the previous NNP management plan, but although some tourism monitoring information is being collected, this is not comprehensive and is not being carried out systematically. Under Action 4.5, a simple framework for NNP tourism monitoring will be developed, including the establishment of a database on key tourism parameters such as the number and category of visitors, method of arrival, length of stay, and activities undertaken. The database will allow the regular analysis of the delivery of the NNP tourism product, which in turn will inform annual meetings of the NNP Tourism Coordination Meeting as described under Action 4.3 above.

Alongside developing an understanding of NNP tourism and visitor statistics, and of visitor satisfaction as addressed under the previous management action, it will also be important to understand the impact of tourism on the NNP's exceptional resource values and on the livelihoods of NNP's

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neighbouring communities, especially as a result of the anticipated increases in visitor numbers and tourism infrastructure. Action 4.5 will also address these aspects, through the application of a Limits of Acceptable Change approach in which a series of indicators with associated **thresholds of key environmental and social parameters** likely to be impacted by tourism will be established, and thereafter routinely monitored to ensure that the impacts of tourism on the NNP environment remains within acceptable limits.

Action 4.6 Establish tourist safety and emergency response plan

Nyungwe NP's dense forest habitats and varied and rugged terrain make for a challenging and hazardous environment for both visitors and VNP staff alike. Moreover, there are significant dangers inherent in close proximity to wild animals in a forest environment, as well as from landslides, particularly following heavy precipitation in areas impacted by deforestation.

All these potential dangers, coupled with the increasing visitor numbers in the park which are expected over the lifespan of this management plan, underscore the crucial importance of establishing an NNP safety and emergency response plan which sets out mechanisms for first response to emergencies, as well as standardised protocols and procedures for dealing with specific health and safety scenarios. Action 4.6 aims to put in place such a plan, including the establishment of an MoU with one or more healthcare facilities bordering the NNP, and the provision of appropriate safety and emergency training for NNP staff as required.

Action 4.7 Strengthen collaboration with Kahuzi-Biega NP management on tourism development

In the context of increased and improved tourist visitation that is the expected outcome of the actions set out earlier in this Tourism Programme, collaboration with other parks in the region will be extremely important, adding to and potentially complementing the NNP tourism product offering. In this respect, tourism stakeholders participating in the NNP Tourism Working Group felt that it would be especially beneficial to enhance the tourism links and collaboration between Nyungwe National Park and Kahuzi Biega National Park in the eastern Democratic Republic of the Congo.

Under Action 4.7, knowledge and expertise sharing events such as study tours and exchange programmes for park management staff will be organised, with the aim of identifying opportunities for collaboration in tourism development between the two parks.

4.3 Tourism Management & Development Programme Activity Plan

Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
Objective 1 NNP’s ecotourism and adventure tourism product developed														
Action 1.1 Carry out a review of existing NNP Ecotourism Plan as a basis for future tourism product development														
1.1.1 Review the existing NNP Ecotourism Plan and revise as necessary	Consultant fees	CPW, PDP, DAI												
1.1.2 Identify key aspects of the Ecotourism Plan requiring implementation and revise Tourism Programme Actions and Activity Plan accordingly	Workshop costs	CPW, PDP												
1.1.4 Monitor implementation of the Ecotourism Plan and adapt Tourism Actions according to lessons learnt	Field work and reporting costs	CPW, PDP, TW												
Action 1.2 Promote investment in development of NNP tourism														
1.2.1 Finalise NNP tourism concession and investment policy		CPW, DAI, Marketing Division												
1.2.2 Organise and carry out NNP Tourism Site Assessment Visit	Field work and transport costs	CPW, DAI, Marketing Division												
1.2.3 Develop NNP Tourism Prospectus incorporating information on NNP tourism investment opportunities and disseminate to appropriate investors		CPW, DAI, Marketing Division												
1.2.4 Organise familiarization trips to development sites for investors and meetings to facilitate private investment in NNP tourism	Meeting room, transport and catering costs	CPW, DAI, Marketing Division												
1.2.5 Implement NNP tourism site tender process		CPW, DAI, Marketing Division												
1.2.6 Finalise agreements with selected investors and support facility development as necessary		CPW, DAI, Marketing Division												
Action 1.3 Improve access to tourism sites														
1.3.1 Assess the existing access road network linking established NNP tourism sites														
1.3.2 Assess the need to improve existing roads or develop new access roads for new tourism sites														
1.3.3 Develop a schedule for the construction of the required access roads and the improvement of existing ones														
1.3.4 Implement road construction and maintenance according to schedule														

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Management Actions and Activities	Input Requirements	Responsible person	Timeframe													
			2012				2013				2014					
			1	2	3	4	1	2	3	4	1	2	3	4		
Action 1.4 Establish visitor attractions focusing on Nyungwe biodiversity and endemism																
1.4.1 Identify and map sites with high endemism and high biodiversity	Field work costs, GPS	TW, DAI, WCS, PDP														
1.4.2 Develop at least 3 new tourism attractions (orchids, butterflies, owl-faced monkey)	Field work costs	PDP, DAI, TW														
1.4.3 Develop required facilities at the sites	Concession and NNP budget costs	TW, CPW, PDP														
1.4.4 Develop interpretive materials for identified sites		DAI, CPW, TW, PDP														
Action 1.5 Develop Gisovu as a tourism destination																
1.5.1 Clarify and formalise the ownership of the infrastructures in Gisovu		CPW, HoD T&C														
1.5.2 Ensure continuous habituation of chimpanzees in Gisovu	Field equipment	TW, CPW, DAI, WCS														
1.5.3 Develop and upgrade hiking trails around Gisovu	Field work costs	TW, WCS, CPW, PDP														
1.5.4 Organise tea plantation and processing tours around Gisovu		TW, CPW, DAI														
1.5.5 Assist community cooperatives in developing a community camp site	Field work costs	TW, CPW, PDP														
1.5.6 Develop and promote branding of the source of the Nile as a visitor attraction		Marketing Division, TW														
1.5.7 Develop chimp habituation as a visitor experience		TW, CPW														
1.5.8 Review chimp visitation and habituation protocols																
Objective 2 NNP visitor services and experience improved																
Action 2.1 Implement the Nyungwe Bird Watching Action Plan																
2.1.1 Develop Nyungwe bird-watching infrastructure as per Action Plan	Consultant fees	TW, DAI														
2.1.2 Develop Bird-watching Certification Programme	Consultant fees	RBA, DAI, PDP														
2.1.3 Maintain and repair existing birding infrastructure	Field work costs	TW, DAI, CPW														
Action 2.2 Finalise and implement the NNP trails plan																
2.2.1 Finalise the NNP trails plan	Consultant fees	PDP, CPW														
2.2.2 Recruit a trails manager		CPW, T&C														
2.2.3 Organise training of local cooperatives on the implementation of NNP trails plan		TW, CPW, DAI														
2.2.4 Implement NNP trails management plan	Field work costs	TW, CPW														
Action 2.3 Improve NNP pricing scheme and booking system																
2.3.1 Review and approve the pricing and booking system as recommended by DAI	Consultant fees	DAI, TW, Marketing Department														
2.3.2 Communicate the new pricing scheme and booking system to stakeholders		TW														
2.3.3 Implement the new pricing scheme and booking system	Meeting costs	PDP, Marketing Division, TW														

Management Actions and Activities	Input Requirements	Responsible person	Timeframe												
			2012				2013				2014				
			1	2	3	4	1	2	3	4	1	2	3	4	
Action 2.4 Improve NNP visitor facilities															
2.4.1 Upgrade Uwinka, Bigugu and Ngabwe campsites and bungalows	Contractor costs	TW													
2.4.2 Make an inventory of signpost needs in NNP		DAI, TW, CPW, PDP													
2.4.3 Install signposts at identified tourism sites		TW, CPW, PDP													
2.4.4 Install ecologically-friendly toilets at key sites	Field work costs	DAI, TW, CPW, PDP													
2.4.5 Establish a visitor centre at Gisakura Gate	Field work costs	DAI, TW, CPW, PDP													
2.4.6 Establish an Educational Centre at Uwinka	Field work costs	DAI, TW, CPW, PDP													
2.4.7 Place new information panels at Uwinka	Field work costs	DAI, TW, CPW, PDP													
Action 2.5 Improve Nyungwe visitor information and marketing materials and carry out promotional events															
2.5.1 Review existing NNP visitor information materials and design activities to improve the quality and availability of visitor information and marketing materials	Consultant fees	DAI, TW													
2.5.2 Develop improved, high quality NNP information materials	Consultant fees	DAI, TW													
2.5.3 Develop hard and soft copies of trail guides and make them available through the NNP website		DAI, CPW, TW, Marketing Division													
2.5.4 Attend local and international events featuring NNP		DAI, CPW, TW, Marketing Division													
2.5.5 Upgrade the Nyungwe website and implement e-marketing via the RDB website		DAI, CPW, TW, Marketing Division													
2.5.6 Organize familiarization programmes for multi-segment tour operators	Transport and catering costs	DAI, CPW, TW, Marketing Division													
2.5.7 Approach popular TV programmes and publications such as National Geographic, Discovery Channel, Cosmos, regional media, etc.		DAI, CPW, TW, Marketing Division													
2.5.8 Organise a presentation on NNP's tourism potential and current developments at ATA's annual US-Africa Tourism Seminar		DAI, CPW, TW, Marketing Division													
2.5.9 Organize talks and presentation by NNP researchers on different aspects of Nyungwe for visitors															
Action 2.6 Develop concessionary visitor packages for regional and domestic tourists															
2.6.1 Investigate and select key options for developing concessionary visitor packages attractive to regional and domestic visitors		PDP, DAI, CPW													
2.6.2 Organize a meeting to share the new concessionary packages policy with key stakeholders	Meeting room and catering costs	PDP, CPW													
2.6.3 Carry out regional and national advertising campaign for existing and new NNP attractions through tourism, wildlife and travel media, and the RDB website															

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Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
Objective 3 The tourism value chain for communities living around NNP developed and promoted														
Provide support and training to communities in developing viable ecotourism enterprises to effectively participate in NNP tourism														
3.1.1 Identify viable community ecotourism products														
3.1.2 Assess the skills of Cyamudongo, Kitabi, Banda and Gisovu community cooperatives for viable community ecotourism product development	Transport and catering costs	DAI, TW												
3.1.3 Build the capacity of Cyamudongo, Kitabi, Banda and Gisovu community cooperatives for viable community ecotourism product development as per Training Needs Assessment		DAI, TW												
3.1.4 Develop identified products		PDP, TW												
3.1.5 Identify and support the establishment of market channels for the developed products		Marketing Division, TW, CPW												
3.1.6 Establish links between community ecotourism products and the private sector	Meeting costs	Marketing Division, TW, CPW												
3.1.7 Identify key opportunities for community members to gain access to emerging employment opportunities in tourism														
3.1.8 Provide opportunities for local communities to undergo tourism training in collaboration with tourism operators in NNP														
3.1.9 Develop programmes to enable community members to work as trainees in tourism-related capacities, within the NNP Tourism Department or with NNP tourism industry partners														
Action 3.2 Identify and mobilise funding sources for developing community ecotourism initiatives														
3.2.1 Identify potential partners and funding agencies for community ecotourism products development		DAI, TW, CPW, PDP												
3.2.2 Facilitate development of viable project proposals by communities		DAI, TW, CPW, PDP												
3.2.3 Initiate and facilitate community-private partnership agreements		DAI, TW, CPW, PDP												
3.2.4 Monitor and evaluate the implementation and development of community-private partnerships	Field work costs	DAI, TW, CPW, PDP												
Objective 4 Management of NNP tourism products and services strengthened														
Action 4.1 Improve the capacity of NNP tourism staff														
4.1.1 Conduct Training Needs Assessment for tourism staff		TW, CPW, PDP												
4.1.2 Train guides in different field of study as per Training Needs Assessment	Expert, transport, catering and equipment costs	DAI, TW, CPW												

Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
4.1.3 Organize a study tour for guides	Transport and catering costs	DAI, TW, CPW												
4.1.4 Provide field equipments to tourism staff	Transport costs	DAI, TW, CPW												
Action 4.2 Review and revise Nyungwe tourism regulations														
4.2.1 Revise and implement chimpanzees tracking protocols proposed by JGI		TW, WCS, DAI												
4.2.2 Revise and implement park guides code of conduct		TW, CPW												
4.2.3 Develop, validate and implement tourists rules and regulations for Nyungwe		NNP staff, DAI, WCS												
Action 4.3 Establish NNP Tourism Cluster														
4.3.1 Identify key cluster members for NNP	Transport and catering costs	CPW, TW												
4.3.2 Define role and responsibilities of the NNP tourism cluster														
4.3.3 Organise biannual meetings with NNP tourism cluster	Meeting room and catering	CPW, TW												
Action 4.4 Carry out Visitor Satisfaction Surveys														
4.4.1. Develop the survey design														
4.4.2 Determine the methods for executing the survey														
4.4.3 Analyze the data from the survey														
4.4.4 Implement the lessons learnt from the survey														
Action 4.5 Implement NNP tourism monitoring system														
4.5.1 Develop Limit of Acceptable Change process as a tool to assess Visitor Impact Monitoring system	Field work costs	DAI, CPW, RDB, WCS, TW												
4.5.2 Carry out annual LAC assessment	Field work and report costs	DAI, CPW, RDB, WCS, TW												
4.5.3 Organise a meeting with stakeholders to share LAC process		DAI, CPW, RDB, WCS, TW												
4.5.4 Implement the recommendations from LAC process	Field work costs													

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Management Actions and Activities	Input Requirements	Responsible person	Timeframe												
			2012				2013				2014				
			1	2	3	4	1	2	3	4	1	2	3	4	
Action 4.6 Establish tourist safety and emergency response plan															
4.6.1 Develop tourist safety and emergency response plan	Consultant fees	PDP, CPW													
4.6.2 Develop MoUs with key partners and stakeholders		PDP, CPW													
4.6.3 Build capacity of tourism staff in safety and emergency response	Training room, transport and catering costs	HR, CPW, PDP													
Action 4.7 Strengthen collaboration with Kahuzi-Biega Management on tourism															
4.7.1 Facilitate improved tourism links between NNP and Kahuzi Biega NP in the eastern DRC	Tourism cluster costs	TPD, CPW													
4.7.2 Organize exchange study tour between the two parks		TPD, CPW													

Chapter 5.

Community Partnership Programme

5.1 Introduction

According to census data presented in the previous NNP management plan, Nyungwe NP is located in one of the most densely populated areas of Rwanda, with an average population density of 400 inhabitants per km². The main economic activity of these communities is agriculture, with over 90% made up of subsistence crops including wheat, maize, sweet potatoes, Irish potatoes, peas, beans and soybeans, and the remainder made up of cash crops such as tea and coffee. (Plumptre *et al*, 2004)⁴. Agricultural practices are generally poor and the communities experience significant problems with soil fertility. This increases pressure for land resources which is already intense because of the high population densities and the customary practice of subdividing land between family members.

The diminishing size of household plots is in turn impacting on the ability of NNP's neighbouring communities to support themselves. As a result, according to Plumptre *et al* (2004), a high percentage of these communities live in poverty, which is characterised by lower education levels, large family size, poor housing, and limited access to basic infrastructure.

Inevitably, Nyungwe National Park is not immune from the situation in its neighbouring communities. For example, increasing scarcity of arable land around the park is forcing communities to look to the park itself as a source of land, encouraging them to encroach on the forest itself. Poverty and inadequate livelihoods in the communities also encourages the community to look to the forest as a potential source of livelihood, either through poaching of wild animals, collecting of natural resources such as bamboo and honey, and exploitation of the NNP's mineral resources through illegal mining operations. All these pressures represent a major and growing threat to the NNP's exceptional biodiversity and habitats, as set out in section 3.3 of the Ecological Management & Monitoring Programme.

On the other hand, the national park also has negative impacts on the livelihoods of the neighbouring communities, in particular because of problem animals leaving the national park and causing damage to community crops, and even potentially to human life. In addition, there is evidence from national parks elsewhere in East Africa that communities neighbouring national parks are often marginalised in wider development processes, with infrastructure and social development initiatives mainly taking place in more accessible towns served by roads and other facilities, while the more remote communities near the protected areas are often ignored.

⁴ Plumptre, A.J., Kayitare A., Rainer, H., Gray, M., Munanura, I., Barakabuye, N., Asuma, S., Sivha, M., Namara, A. (2004). The socio-economic status of people living near protected areas in the Central Albertine Rift. Albertine Rift Technical Reports.

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For all these reasons, it is not surprising that parks and their neighbouring communities have often difficult and confrontational relationships. Yet it is in the best interests of both sides that parks and their neighbours work together in partnership to overcome shared challenges. A supportive community can help reduce threats to the national park from poaching, encroachment and other illegal activities, while a supportive national park can help to minimise and mitigate human-wildlife conflicts, and can be a positive economic force in bettering the livelihoods of the community. Better livelihoods will in turn lead to reduced pressure on the national park resources, so that the circle is closed, with a potential win-win situation for both the park and its neighbours.

With these aims in mind, the NNP Community Conservation Department has been working to implement a package of community partnership initiatives as set out in the previous NNP management plan, 2006-2010. This current NNP Community Partnership Programme builds on this strong foundation.

The Purpose of the NNP Community Partnership Programme for the next 10 years as defined by stakeholders participating in the Community Partnership Working Group meeting is as follows:

Local communities neighbouring Nyungwe National Park are positively benefitting from the park and are empowered in achieving sustainable livelihood and resource use practices that benefit both the park and the community.

The emphasis of the purpose is to ensure that communities are gaining positive economic and social benefits from the national park, which can be achieved both by increasing the benefits to the community as well as reducing costs, such as through problem animals. The provision of positive benefits will encourage communities to support the conservation of the national park, which is also in turn likely to provide positive benefits for the park itself, in terms of reduced pressure from illegal activities. The second emphasis of the purpose statement is on achieving sustainable livelihoods and resource use practices, which is also likely to reduce pressures on NNP's natural resources.

Stakeholders taking part in the NNP Community Partnership meeting identified several key principles that should influence the implementation of this Community Partnership Programme over the lifespan of this management plan:

1. The ultimate aim of the Programme should be to achieve a sense of community ownership and support for the national park
2. To assist in achieving this, mechanisms need to be established to as far as possible enable community participation in the conservation and management of the NNP
3. In addition, it will be important that NNP's neighbouring communities understand their role in conservation, using innovative education strategies to achieve this

These key principles are reflected and responded to in the Community Partnership Programme's management objectives and actions described in the following sections.

5.2 Management objectives and actions

Four management objectives have been defined for the Community Partnership Programme aimed at achieving the Programme Purpose outlined above, as follows:

Objective 1. Human-wildlife conflicts reduced

Objective 2. Community livelihoods and sustainable resource use enhanced

Objective 3. NNP Revenue Sharing Programme strengthened

Objective 4. Conservation education and awareness strengthened

Each of these management objectives, and the management actions that have been developed to achieve them are set out in detail in the following sections.

Objective 1. Human-wildlife conflicts reduced

Human-wildlife conflicts (HWC) can be defined as “*disagreements or contentions relating to destruction, loss of life or property and interference with rights of individuals or groups that are attributed directly or indirectly to wild animals*”. According to Plumptre *et al* (2004)⁵ as many as 37% of households neighbouring NNP experience some form of human-wildlife conflicts, mainly in the form of problem animal⁵ damage to their crops. In an area where communities are already struggling to achieve viable livelihoods, such wildlife damage may push community members even further into poverty. HWC can be highly emotive for the affected communities, as important resources that contribute to their livelihood are destroyed, property can be damaged, social systems disrupted and there may even be risks to human life. In retaliation, people may kill wildlife or engage in other vengeful activities such as setting fires, illegal logging, poaching, or grazing of livestock within the national park, or otherwise oppose conservation efforts.

Instigating mechanisms and activities aimed at reducing and mitigating such human-wildlife conflicts is therefore a top priority in enabling communities to reduce their costs of conservation, and in securing and improving community livelihoods in park-adjacent areas. This in turn is likely to help one of the three principles of the Community Partnership Programme set out above: increased community support and sense of ownership for the park, as well as contributing to the overall Programme Purpose of communities benefitting positively from the park.

Action 1.1 Develop a human-wildlife conflict management strategy

There are a variety of ways in which the NNP managers can potentially reduce wildlife-human conflicts around NNP, several of which have already been piloted under the previous management plan. These include encouraging communities to grow crops that are resistant to crop raiding by wildlife, such as tea, as well as helping communities to deal with problem animals when they leave the park, and potentially providing compensation to households that are impacted by crop raiding. To date, the NNP Community Conservation Department has not elaborated a specific conflict management strategy that sets out the mechanisms to be used in employing each of these approaches, the pros and cons of each mechanism, and the specific activities that should be undertaken. Under Action 1.1, the NNP Community Conservation Department in collaboration with key partners will put in place such a conflict management strategy to guide its conflict mitigation work over the lifespan of this management plan. The strategy will address such issues as how the NNP park management will go about influencing and implementing the delivery of the new HWC compensation process, as detailed in Action 1.5 below. It will be important to involve the local authorities neighbouring NNP in the development of this strategy, because these authorities have lead responsibility in improving the livelihoods of the local communities and in addressing factors that seriously undermine these livelihoods, such as problem animals.

While the development of the conflict management strategy will provide an important framework for delivering NNP’s HWC mitigation actions over the lifespan of this management plan, there are a number of actions that have already been defined by stakeholders as being especially critical, and these are defined below.

⁵ Animals that are involved in HWC are often termed “problem animals.”

Action 1.2 Support communities in establishing associations to mitigate crop raiding

Over the lifespan of the previous NNP management plan, NNP management with support from its partners has already achieved significant success in promoting and supporting the establishment of community cooperatives and associations for a variety of purposes, including five ex-poachers cooperatives that are engaged in income-generating activities such as livestock rearing, six cooperatives that are engaged in the maintenance of the NNP's trails system, two community tourism cooperatives at Kitabi and Cyamudongo, two women's handicraft cooperatives, as well as participation of community groups in the NNP's law enforcement operations. Under Action 1.2, these initiatives will be expanded to include support for the establishment and training of community "Crop Ranger" associations that will have responsibility for defending crop fields and safely chasing problem animals back into the forest. The NNP Community Conservation Department, in association with appropriate NGOs and sector-level administration will provide training and support to help establish these associations, as well as to existing associations such as the ex-poachers cooperatives mentioned above, so that these groups can also play a role in mitigating crop raiding.

Action 1.3 Strengthen capacity of ANICOs to address HWC issues

ANICOs, or community conservation facilitators, are community members appointed in different sectors adjacent to the park to carry out conservation awareness-raising campaigns among the local population. Although the ANICOs receive training and some limited support from the park, their role is mainly voluntary. As a direct liaison between the park management and community members at the grass roots level, ANICOs have a potentially important role to play in helping to solve community issues relating to the park and conservation, such as human-wildlife conflict issues, as well as providing a mechanism through which key problems and issues can be brought to the attention of park managers.

Under Action 1.3, the NNP Community Conservation Department will provide training and support to the ANICO team to provide them with the knowledge and skills so that they are better able to assist the park's neighbouring communities in solving human-wildlife conflict issues. For example, ANICOs could potentially play an important role in helping with the establishment of Crop Ranger associations as described in the previous management action, in assisting communities to grow crops that are not attractive to problem animals (see Action 1.4 below), and even assisting communities to understand their rights and responsibilities with regard the implementation of the new wildlife damage compensation law (see Action 1.5 below).

Support for the ANICOs with regard building capacity to address HWC issues will be carried out as an integral part of broader support for ANICOs working around NNP, which will be delivered under Action 5.2 below.

Action 1.4 Assist communities to establish alternative crops that mitigate HWC

One of the main potential ways in which human-wildlife conflict issues can be addressed around NNP is by promoting the cultivation of crops that are not attractive to, or otherwise resistant to, problem animals, including crops such as tea, tobacco, sisal, and chilli pepper. These crops can be planted as a barrier between the national park and areas where more edible food crops are being grown. One of the most successful and potentially important such crops around NNP is tea, which is unpalatable to baboons, bush pigs and primates, and provides an effective barrier to problem animals, as well as being economically important for communities. An added advantage of tea plantations is that the presence of tea workers during the day deters problem animals from crossing into community fields.

Although tea is an important mechanism for preventing HWC, it is not the only mechanism, and some ecologists believe that the promotion of a tea monoculture around the NNP's boundaries may in the long-term be highly detrimental to forest species composition in the forest edges. It is therefore important that the NNP management promote a diversity of problem animal resistant crops in the NNP's buffer areas, which will be the major focus of Action 1.4.

As a first activity, it will be important that an assessment of potential crops that are resistant to problem animal damage be undertaken to identify crop species that can be trialled around NNP, based on international experience and best practice, but also taking into account the preferences and traditional knowledge of the neighbouring communities themselves. In this regard it is helpful to note that similar assessments have already been undertaken for other national parks facing HWC problems in the region, such as by CARE (2003)⁶.

Once the most promising crops for mitigating HWC have been identified, the NNP Community Conservation Department in collaboration with partners and with sector-level administration will undertake activities to raise community awareness of the most appropriate crops, and provide other support to enable communities to test their viability and effectiveness in deterring problem animals. These activities will be closely linked to broader activities by the NNP Community Conservation Department to assist communities to establish alternative crops that reduce the use of park resources, carried out under Action 2.1 below.

Action 1.5 Assist with implementation of new Compensation Law for NNP HWC

While preventative methods for addressing HWC such as those described in the previous management actions are clearly the ideal way of solving HWC problems, even if they are successful it is likely that human-wildlife conflicts and problem animal attacks will happen from time to time. In these circumstances, a number of countries in Africa and around the world have instigated compensation schemes to recompense households for wildlife damage to crops, property and human beings.

Experience in implementing such compensation schemes is mixed. Generally, the cost of these schemes can be extremely high, especially where there is substantial crop loss, which in the long run may not be sustainable. The implementation of these schemes also involves other costs such as verifying the amount of crop loss and complications in deciding what should be eligible for compensation (e.g. personal injury versus small-scale damage to crops). In this regard, other countries that have experimented with compensation schemes have found that it is often extremely difficult to determine a fair value for losses that have been incurred. In addition, some other countries have experienced widespread cheating and exaggeration of compensation claims. For example, in Zimbabwe, a compensation scheme tried in one district was abandoned when the number of claims quadrupled in the second year of operation and the compensation budget was exceeded. There were not only exaggerated claims for compensation, but most importantly, farmers reduced the effort to defend their crops (Taylor, 1993)⁷.

The Rwanda government is currently in the process of promulgating new wildlife legislation which will include provisions for the establishment of mechanisms for compensating community members that suffer damages to property, injuries, and loss of life as a result of wildlife straying out of the national parks⁸. This compensation mechanism will be shortly rolled out for areas neighbouring the

⁶ CARE (2003). Reducing the Costs of Conservation to Frontline Communities in Southwest Uganda. Knowledge Base Review Report. CARE International in Uganda. Unpublished manuscript, pp 1-126.

⁷ Taylor R.D. 1993. Elephant management in Nyaminyami District, Zimbabwe. Turning a liability into an asset. Pachyderm 17: 19-29.

⁸ Specifically, the "Law on Compensation for Damages Caused by Animals"

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three national parks, Nyungwe, Volcanoes and Akagera. The establishment and implementation of the scheme will mainly be the responsibility of other departments both within RDB and in other government agencies. However, it will of course be vital to the overall success of the compensation mechanism that NNP management, in particular the NNP Community Conservation Department, are involved in providing support for setting up appropriate mechanisms for field-trialling the compensation process in the context of NNP, and in particular for assisting with/facilitating assessment of damage claims. Action 1.5 will provide this support for the implementation of the new compensation legislation at the NNP park level.

One of the most important roles to be played by the NNP Community Conservation Department under this management action will be to undertake activities designed to raise community awareness of the compensation process, and their rights, responsibilities and obligations in implementing the scheme. An important aspect of this awareness raising will be to avoid the pitfalls described above that other compensation schemes have experienced elsewhere in Africa, for example, encouraging communities not to cheat on claims or exaggerate claims, and not to deliberately leave their fields unprotected in an effort to secure grounds for making claims. It will be important to explain to the community that the long-term viability of the new compensation scheme will depend on the good faith of the community.

Since this is a new process, there will be a need for strong coordination between NNP management and those responsible for designing and rolling out the new compensation arrangements at the national level, as well as with the launch of the compensation process in the other two national parks (see Action 4.2 of the VNP management plan, 2012-21). There will also be a need to monitor and evaluate progress in the implementation of the compensation process as applied in NNP, and to develop lessons learnt to ensure that the compensation process is a transparent, efficient and cost effective one that benefits those members of the NNP community that are most affected by problem animals. Such an evaluation exercise should ideally be carried out after three years of implementation at the NNP level.

Objective 2. Community livelihoods and sustainable resource use enhanced

Objective 2 addresses one of the central aims of this Community Partnership Programme as set out in the Purpose Statement: *“the empowerment of NNP’s neighbouring communities in achieving sustainable livelihood and resource use practices that benefit both the park and the community”*. In this regard, it is important to recognise the dual aim in promoting such sustainable livelihood and resource use practices – improving community livelihoods for the benefit of society, while at the same time reducing pressures and threats to the NNP’s exceptional biodiversity and habitats. In fact, even the efforts to enhance community livelihoods, while a very worthwhile goal in themselves, are likely in the long run to provide benefits to the park in terms of a community that is stable and prosperous, and that is supportive of conservation and has a sense of ownership over the park.

Action 2.1 Assist communities to establish alternative crops that reduce use of park resources

As indicated in Table 5 in the Ecological Management & Monitoring Programme, there are significant threat to Nyungwe’s habitats and biodiversity from the illegal use of park resources, including tree and bamboo cutting (see Figures 19 and 20 overpage), honey gathering and beekeeping (see Figure 21 overpage), livestock grazing, and firewood collection. The NNP’s law enforcement efforts are one key strategy for addressing these illegal uses, and this aspect is discussed under Objective 1 of the Park Operations Programme. An alternative strategy is to assist communities in developing alterna-

Figure 21. A traditional beehive found in the NNP with associated fire damage



The initial activity under Action 2.1 will be to identify the key park resources that communities need to collect from within NNP, as a basis for developing strategies to support communities in developing suitable alternatives outside the park. These strategies are likely to include supporting communities to establish fuelwood plantations and to adopt fuel-efficient stoves, and support for developing bamboo propagation and processing outside the park.

Activities under Action 2.1 will be closely linked to activities undertaken under Action 1.4 above designed to assist communities to develop alternative crops to mitigate human-wildlife conflicts.

Action 2.2 Assist income-generating groups with business approaches in order to achieve financial viability

Several well-intentioned and seemingly promising income-generating initiatives that have been supported in recent years by NNP management and collaborating NGOs in areas around NNP have failed to achieve viability. These disappointments can often be attributed to lack of business and financial management skills in the community groups concerned, as well as the failure of the supporter concerned to assist the community group with identifying viable markets for their products, and then assisting them in the marketing itself. It is unrealistic to expect community groups that are not used to running business enterprises to acquire these skills without providing suitable training and capacity building opportunities.

Under Action 2.2, community income-generating groups will be provided with appropriate training and support in developing their business and financial management skills and in market identification and marketing of their products. As far as the marketing of new products is concerned, this support will be provided with the support of the RDB Agro-Business Department which has specific capacity

in this area, as well as other appropriate development partners. Also included under Action 2.2 will be the provision of support for the establishment of new income-generating cooperatives around NNP, once again in association with appropriate development partners.

Action 2.3 Identify and support innovative community enterprises or concessions

In addition to the support for the establishment of income-generating activities around NNP, stakeholders participating in the Community Partnership Working Group meeting felt that it would also be important to identify and facilitate the establishment of one or more flagship community enterprises or concessions, similar to the SACOLA Community Ecolodge next to Volcanoes National Park. Besides having the opportunity to produce significant community income and employment opportunities, such flagship initiatives have the potential to demonstrate to communities the positive benefits that conservation can benefit in a way that smaller income-generating schemes are not able to.

Under Action 2.3, the possible opportunities for the establishment of such a large-scale community enterprise linked to the conservation of NNP will be identified, and a feasibility study will be undertaken of the most promising possibilities. Once the priority scheme is identified, NNP management together with appropriate partners will develop a project proposal for the provision of support in establishing the scheme, for fund-raising with appropriate donors. At the same time, NNP management will embark on a process of discussions with relevant community representatives as well as district and sector officials to provide the political and operational foundation for the establishment of the scheme.

Action 2.4 Support the establishment of a community conservation fund

Achieving success with the income-generating enterprises and initiatives described in the previous actions is certain to require the injection of funds to support the purchase of materials, training, and other activities that will be required to support the concerned community groups. For large-scale community enterprises as discussed under Action 2.3 above, it may be possible to secure support from donors. However, other mechanisms are likely to be required for supporting smaller-scale community income-generating activities. One of the most likely sources of these funds is the RDB Revenue Sharing Programme described in Objective 3 below, although the funding available under this scheme is limited, and already heavily subscribed. Another potential source of funding is NNP visitors. As tourism and visitor numbers in the NNP grow in the years ahead as a result of the actions delivered through the Tourism Management Programme, there is a significant potential for raising funds from NNP visitors to support community livelihoods and sustainable development activities, if a simple mechanism can be found to enable donations to be given to these projects.

In this regard, Action 2.4 will investigate the possibility of establishing a “**Community Conservation Fund**” designed to receive visitor contributions towards community initiatives, as well as donations from other sources. A similar Community Conservation Fund is also planned for Volcanoes National Park under Action 3.3 of the Community Partnership Programme in the new VNP management plan. It therefore makes sense to collaborate with VNP managers in the design of the two funds, and in the development of practical operational mechanisms. With regard the latter, it also makes practical sense to integrate operational mechanisms such as project identification and selection procedures with those already established for the NNP Revenue Sharing Programme, as described in the following Objective.

Objective 3. NNP Revenue Sharing Programme strengthened

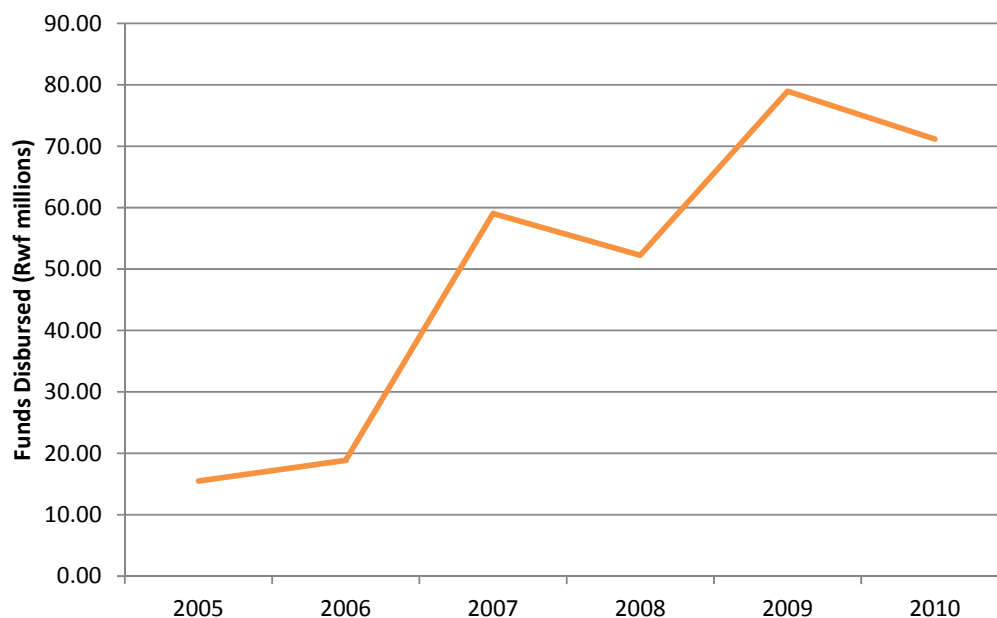
RDB’s Revenue Sharing Programme is a crucial mechanism for achieving the aims of this Community Partnership Programme. Launched in 2005, the overall goal of the Revenue Sharing Programme as set out in the **Tourism Revenue Sharing Provisional Policy & Guidelines** is as follows:

- ▶ To ensure sustainable conservation of the National Parks with the participation of the neighbouring communities by contributing to the improvement of their living conditions

The total amount of revenue sharing is currently established as 5% of the total annual gross tourism revenues earned by RDB, distributed according to the ratio: 40% to Volcanoes National Park, 30% to Nyungwe National Park, and 30% to Akagera National Park. The higher percentage for Volcanoes reflects the fact that VNP is currently responsible for generating the vast majority of tourism revenues earned by the three national parks. According to the Revenue Sharing Policy & Guidelines, the target area for revenue sharing funding is limited to the “Zone of Influence” of each park. In practical terms, this Zone of Influence has subsequently been defined as the sectors touching the park boundary.

Nyungwe National Park has now been implementing revenue sharing for the past six years, with a total of approximately Rwf 300 million having been allocated to a range of community development projects in the park-adjacent sectors. The upward trend in annual disbursement of funds is illustrated in Figure 22 below.

Figure 22. Disbursements of Revenue Sharing funds 2005-2010 (in millions of Rwf)



Action 3.1 Implement key recommendations of revenue sharing review

The Revenue Sharing Programme has now been underway in all three national parks since 2005, giving more than six years of practical experience of field implementation of the programme. As such, it is now an appropriate time to evaluate the strengths and weaknesses of the Programme, with a view to generating lessons learnt for its future implementation. In this regard, a review of the RS scheme is currently underway in all three national parks, and is expected to produce its findings and recommendations early in 2012. Based on this evaluation exercise, it is anticipated that there will be a need to revise the RS Policy and Guidelines, and this is addressed by Action 3.1.

Although it is premature to anticipate the outcomes of the RS review exercise, some of the issues that NNP stakeholders have indicated need to be addressed in the policy and guidelines revision include:

- ▶ The mechanism for selecting RS projects and areas of intervention needs to be revised. In particular, there needs to be greater community consultation in the identification of projects to be implemented
- ▶ RS needs to target women as well as the poorest and most vulnerable people who are most dependent on park resources
- ▶ RS should be linked to the community's performance in conservation as well as at reducing threats to the park
- ▶ There is a need to increase the percentage of tourism revenues shared with communities

Under Action 3.1, the NNP Community Conservation Department working together with RDB HQ staff responsible for administering the Revenue Sharing Programme as well as local government administrators will review and revise the RS project identification and delivery mechanisms in NNP in accordance with the outcomes of the evaluation exercise.

Action 3.2 Strengthen the role and capacity of communities in developing and selecting revenue sharing activities

While the RDB Revenue Sharing Programme is generally regarded as a success, NNP stakeholders participating in the Community Partnership Working Group meeting expressed the concern that the current process used to identify and select RS projects tends to favour infrastructure projects that benefit the wider district and sector communities, rather than the community members and groups that may be most directly impacted by the park and the achievement of conservation objectives. Whereas these infrastructure projects are important to the wider community, too great a focus on infrastructure will mean that the RS Programme fails to address two of the programme's priority aims: reducing illegal activities in the park by providing alternatives for park resources, and reducing human wildlife conflicts. These are the aspects that are addressed under Objectives 1 and 2 of this Community Partnership Programme and, if NNP management are to succeed in achieving the overall Community Partnership Programme Purpose, they also need to be priorities for the RS Programme.

Stakeholders are agreed that to re-orientate the focus of RS activities away from infrastructure development towards more sustainable natural resource management and conflict reduction priorities, there needs to be an increased the involvement of grassroots community members in the implementation of the RS Programme. This applies to all aspects of the programme, from building community capacity for the initial identification of appropriate RS projects, through to the communities' role in selecting projects to be supported, as well as implementing the projects.

Under Action 3.2, NNP management will initiate a variety of activities designed to strengthen the role of community members in identifying, selecting and eventually implementing RS projects, taking into account the recommendations of the RS Programme review exercise currently underway. One possible forum for achieving greater community participation is through the NNP Joint Action Conservation Forum (see Action 4.1 of the Park Operations Programme). At the same time, it will also be important to provide practical training to community members in the identification and development of potential RS projects.

As indicated in Action 3.1 above, an especially important aim of the future efforts to refocus RS projects will be the need to target vulnerable groups living around NNP, who are most dependent on the use of NNP resources, and are also especially impacted by human-wildlife conflicts. Although prob-

lematic, it will be important to ensure that these groups are represented in the RS project identification and selection process, and also receive the required training.

Objective 4. Conservation education and awareness strengthened

The management actions described in the three previous objectives in this Programme, focussing on reducing and mitigating the occurrence of human-wildlife conflict, promoting and supporting conservation-compatible and sustainable natural resource use practices and income-generating activities around the park, and providing direct community benefits from tourism revenue sharing projects, are all likely to go a long way towards achieving the Purpose of the Community Partnership Programme. However, more traditional conservation awareness and education programmes will also continue to be an important mechanism for increasing community understanding and support for the conservation needs of the park, and the role that the park and conservation approaches can potentially play in improving their own livelihoods. These conservation education and awareness approaches are addressed in Objective 4.

Action 4.1 Develop an NNP conservation education and awareness strategy

The NNP Community Conservation Department has been carrying out a variety of educational activities for a number of years according to activities defined in the previous NNP management plan. However, stakeholders participating in the Community Partnership Working Group meeting and responding to the stakeholder questionnaire at the start of the management planning process suggested that there is now a need to put in place an explicit NNP conservation education and awareness strategy to prioritise and focus educational activities for both youth and adult education, and to define specific messages and approaches for each audience group. Action 4.1 aims to develop and implement such an NNP conservation education and awareness strategy. The development of the strategy will include an initial analysis of the existing capacity of relevant groups and institutions towards which conservation and awareness raising activities will be targeted, with a view to defining the appropriate capacity building needs that will be addressed in the following action.

Action 4.2 Build capacity and support key conservation education and awareness facilitators in dissemination conservation messages and information

This action is designed to build the capacity and provide support to the groups and institutions that are identified as priorities for conservation education and awareness activities under Action 4.1. These are likely to include the NNP ANICO or community conservation facilitator network (see below), as well as teachers responsible for school environmental clubs, district environment and education officers, and other leaders of youth and adult environmental clubs and committees. Under Action 4.2, the NNP Community Conservation Department will organise training opportunities for these conservation education and awareness leaders, including workshops on conservation and environmental issues, and study visits to the park to examine specific conservation priorities, issues and threats. An important aim of these training sessions will be to formulate specific conservation messages and approaches that the conservation leaders can utilise in their respective forums.

The NNP's ANICO network currently comprises of 53 individuals, and represents an especially important mechanism for promoting conservation education and awareness at the grassroots level. The ANICOs are directly drawn from the community, are volunteers and, because they live in the communities, have the opportunity to interact with other community members on a day-to-day basis. The provision of support and training for the NNP's ANICOs and the further expansion of the ANICO network will, therefore, continue to be a priority under the current management plan.

Action 4.3 Implement targeted conservation awareness campaigns

In addition to the support and capacity building of conservation education and awareness leaders working around NNP, the NNP Community Conservation Department will continue to implement conservation awareness campaigns to disseminate specific conservation messages using a variety of different media, including community radios and newspapers. As a basis for these campaigns, the CC Department will routinely identify the key conservation issues or events to be introduced to the local media, as well as a schedule for disseminating these messages.

Also under Activity 4.3, the CC Department together with partners will develop and produce specific educational materials such as posters and brochures for dissemination through the various environmental clubs and groups and other mechanisms that are supported under Action 4.2 above. Conservation awareness signboards will also be developed for display along the transit roads in NNP, which will not only help raise conservation awareness but also reduce threats to the NNP environment through pollution or other human activities (see also Action 2.2 of the Park Operations Programme). NNP staff will also participate in appropriate local and national environmental awareness events, as well as organising special events and competitions relating to conservation awareness-raising about NNP.

Action 4.4 Collaborate with relevant agencies to sensitise communities in family planning

As has been noted elsewhere in this management plan, Nyungwe National Park is located in one of the most densely populated regions in Rwanda, and the human population continues to grow at a rapid pace. An important objective of the previous NNP management plan was to control human population increase in areas bordering NNP through family planning activities, in an effort to reduce pressures on NNP natural resources. However, the management plan also recognised that family planning is beyond the mandate of NNP management, and that it would therefore be necessary for NNP to work together with other government and non-government agencies to achieve this aim.

Stakeholders participating in the Community Partnership Working Group meeting were doubtful about the ability of NNP managers to influence family planning issues in neighbouring communities, even if working in collaboration with other agencies. Nevertheless, because of the long-term importance of this issue to the viability of the NNP, it was felt important that addressing the issue of family planning should still be retained as a management action in this Community Partnership Programme. Under this action, therefore, the NNP Community Partnership Programme will investigate ways in which they can promote family planning awareness raising in the neighbouring community, in collaboration with other government agencies and non-governmental organisations as appropriate. This will include the potential inclusion of family planning messages in conservation awareness campaigns carried out under Action 4.3, as well as in training and capacity building activities carried out under Action 4.2. How best to address family planning issues should also be considered in the conservation education and awareness strategy developed under Action 4.1.

Action 4.5 Carry out conservation awareness and attitudinal surveys

Under this new NNP Community Partnership Programme, a wide variety of activities will be undertaken to build a stronger partnership between the NNP and its neighbours, and to gain their support for the conservation of the park. It will be important to understand the impact of all these initiatives on the neighbouring community's understanding of conservation, and attitudes towards the park, so that lessons learnt can be generated and management actions adapted accordingly. In this regard, under Action 4.5, the NNP Community Partnership Programme in partnership with appropriate partners and in conjunction with sector-level administrators will undertake a conservation awareness and

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attitudinal survey around NNP, with the aim of providing both qualitative and quantitative information on the level of community awareness of conservation issues, community attitudes towards the national park, and conservation-related issues of key concern to community members.

In undertaking the conservation awareness and attitude surveys, it will be especially important to understand how the community links specific community conservation and support activities with its attitude towards conservation and the national park – for example, the link between revenue sharing activities and community attitudes to the park, problem animal control, etc. In this regard, important earlier work on these issues has been carried out around Bwindi Impenetrable Forest National Park in Uganda which could serve as a reference point for designing attitudinal surveys for NNP (Blomley *et al*, 2010⁹)

It is proposed that this conservation awareness and attitudinal survey will be carried out on three occasions over the lifespan of this management plan: at the start of implementation of the management plan to provide baseline data, mid-way (5 years) in the implementation of the plan, and at the end of the plan (10 years). The outcomes of this survey will have important implications for the possible adaptation of Community Partnership activities in the second half of plan implementation, as well as for the design of the Community Partnership Programme in the next management plan.

⁹ Blomley, T., Namara, A., McNeilage, A., Franks, P., Rainer, H., Donaldson, A., Malpas, R., Olupot, W., Baker, J., Sandbrook, C., Bitariho, R. and Infield, M. (2010). Development and gorillas? Assessing fifteen years of integrated conservation and development in south-western Uganda, Natural Resource Issues No. 23. IIED, London. Download from: <http://www.iied.org/pubs/display.php?o=14592IIED>

5.3 Community Partnership Programme Activity Plan

Management Actions and Activities	Input Requirements	Responsible person	Timeframe														
			2012				2013				2014						
			1	2	3	4	1	2	3	4	1	2	3	4			
Objective 1 Human-wildlife conflicts reduced																	
Action 1.1 Develop a human-wildlife conflict management strategy																	
1.1.1 Identify and map problem areas, problem animal species and crops associated with human-wildlife conflict	Survey	CCW, NGOs	■	■	■												
1.1.2 Organise study visits to places with comparable HWC issues	Staff time	CCW, NGOs				■											
1.1.3 Identify key HWC issues and develop an HWC management strategy	Consultant fees	CPW, CCM, NGOs				■											
1.1.4 Implement the HWC management strategy	Staff time	CCW, NGOs					■	■	■	■	■	■	■	■	■	■	■
1.1.5 Develop a monitoring system for HWC	Staff time	CPW, NGOs				■											
Action 1.2 Support communities in establishing associations to mitigate crop raiding																	
1.2.1 Establish community crop rangers associations	Staff time	CCW, NGOs			■	■	■	■									
1.2.2 Train crop rangers associations and ANICOs in HWC data collection and HWC mitigation techniques	Consultant fees	CPW, NGOs						■									
1.2.3 Provide necessary equipment to crop rangers associations	Staff time	CPW, NGOs						■									
1.2.4 Organise study visits to places with comparable HWC issues for crop rangers associations representatives and ANICOs	Staff time	CPW, CCM, NGO									■						
1.2.5 Organize training for crop rangers on compensation laws	Staff time	CCW, NGOs			■												
Action 1.3 Strengthen capacity of ANICOs to address HWC issues																	
1.3.1 Identify key capacity and training needs for ANICOs	Staff time	CPW, NGOs	■														
1.3.2 Provide training and capacity building events for ANICOs to improve their ability to assist communities in solving HWC issues	Staff time	CPW, NGOs		■	■	■											
1.3.3 Support ANICOs as needed in their activities addressing HWC	Staff time	CPW, NGOs						■	■	■	■	■	■	■	■	■	■

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Management Actions and Activities	Input Requirements	Responsible person	Timeframe													
			2012				2013				2014					
			1	2	3	4	1	2	3	4	1	2	3	4		
Action 1.4 Assist communities to establish alternative crops that mitigate HWC																
1.4.1 Carry out a study on the feasibility of using alternative crops to reduce crop raiding	Consultant fees	CPW, CCM, NGOs														
1.4.2 Organise a study tour of areas where crops that mitigate HWC are grown	Staff time	CPW, CCM, NGOs														
1.4.3 Sensitise local communities on alternative crops that mitigate HWC	Staff time	CCW, NGOs														
Action 1.5 Assist with implementation of new Compensation Law for NNP HWC																
1.5.1 Participate in the establishment of a committee to deal with compensation issues	Staff time	CCM, CCW, NGOs														
1.5.2 Disseminate the new Compensation Law to all stakeholders	Ministerial order costs	CCM, CCW														
1.5.3 Monitor and evaluate progress in achieving Compensation Law objectives	Staff time	CCW														
Objective 2 Community livelihoods and sustainable resource use enhanced																
Action 2.1 Assist communities to establish alternative crops that reduce use of park resources																
2.1.1 Identify and map key park resources needed by neighbouring communities	Survey	CCW, NGOs														
2.1.2 Assist communities in developing suitable alternatives to NNP resources exploitation outside the park	Staff time	CCW, NGOs														
2.1.3 Monitor and evaluate the progress and efficiency of the adopted alternatives	Staff time	CCW, NGOs														
Action 2.2 Assist income-generating groups with business approaches in order to achieve financial viability																
2.2.1 Identify capacity gaps within the existing community initiatives	Consultant fees	CPW, CCM, NGOs														
2.2.2 Provide training and support in developing business and financial management skills, and address other capacity needs identified in Activity 2.2.1	Consultant fees	CPW, CCM, NGOs														
2.2.3 Identify in collaboration with key partners new income generating opportunities	Consultant fees	CPW, CCM, NGOs														
2.2.4 Organise capacity building events such as study visits, exhibitions, etc. to acquire new knowledge, skills and expertise	Staff time	CCW, CCM, NGOs														
Action 2.3 Identify and support innovative community enterprises or concessions																
2.3.1 Identify opportunities for establishing community enterprises linked to the conservation and conduct a feasibility study of the most promising options	Consultant fees	CPW, CCM, NGOs														
2.3.2 Develop a concept for at least one viable community enterprise	Consultant fees	CPW, CCM, NGOs														

Management Actions and Activities	Input Requirements	Responsible person	Timeframe													
			2012				2013				2014					
			1	2	3	4	1	2	3	4	1	2	3	4		
2.3.3 Identify existing community enterprises in the area and organise a study tour to learn from their experiences	Staff time	CPW, CCM, NGOs														
2.3.4 Identify potential donors and other sources of funding	Consultant fees	CPW, CCM, NGOs														
2.3.5 Mobilise community groups and engage with public officials to provide political and operational foundation for the establishment of community enterprises/concessions	Staff time	CCW, NGOs														
Action 2.4 Support the establishment of a community conservation fund																
2.4.1 Investigate possibility of establishing a CCF to receive visitor contributions and donations from other sources	Consultant fees	CCM, HoD														
2.4.2 Develop ToRs for CCF fund establishment and collaborate with VNP managers on CCF design	Consultant fees	CCM, HoD														
2.4.3 Organise fundraising activities for the CCF	Consultant fees	CCM, HoD														
Objective 3 NNP Revenue Sharing Programme strengthened																
Action 3.1 Implement key recommendations of revenue sharing review																
3.1.1 Complete the review of the RS program	Consultant fees	CCM, NGOs														
3.1.2 Share the recommendations of RS review with stakeholders	Staff time	CCM, CCW, NGOs														
3.1.3 Revise the mechanism for selecting RS projects and areas of intervention (by involving key stakeholders particularly local communities, women groups, poorest groups and marginalized group linked to the community's performance in conservation as well as at reducing threats to the park)	Consultant fees	CCM, CPW, NGOs														
3.1.4 Publish and communicate new RS guidelines to communities	Staff time	CCW, NGOs														
3.1.5 Lobby for increasing the percentage of tourism revenues shared with communities	Staff time	HoD, NGOs														
Action 3.2 Strengthen the role, responsibility and capacity of communities in developing and selecting revenue sharing activities																
3.2.1 Assess the capacity of communities to develop and manage RS projects and identify key training needs	Consultant fees	CCM, CPW, NGOs														
3.2.2 Train communities according to training needs assessment recommendations	Consultant fees	CCM, CPW, NGOs														
3.2.3 Harmonise planning, reporting and monitoring of RS projects	Staff time	CCM, NGOs														

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Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
Objective 4 Conservation education and awareness strengthened														
Action 4.1 Develop an NNP conservation education and awareness strategy														
4.1.1 Identify gaps in conservation education and awareness programme	Consultant fees	CCM, CPW, NGOs												
4.1.2 Develop ToRs for conservation education and awareness strategy	Staff time	CCM, NGOs												
4.1.3 Identify key groups/institutions to be targeted for conservation education and engage stakeholders in developing education and awareness strategy	Staff time	CCM, CCW, NGOs												
4.1.4 Develop and obtain up-to-date interpretive educational materials	Consultant fees	CCM, NGOs												
4.1.5 Develop and equip an education centre within NNP	Consultant fees	CPW, NGOs												
4.1.6 Implement the conservation education and awareness strategy	Staff time	CCW, NGOs												
4.1.7 Monitor and evaluate the implementation of the conservation education and awareness strategy	Staff time	CCW, NGOs												
Action 4.2 Build capacity and support key conservation education and awareness facilitators in dissemination conservation messages and information														
4.2.1 Organise training opportunities and workshops for conservation education and awareness leaders	Consultant fees	CCM, CPW, NGOs												
4.2.2 Organize visits to the park for conservation educators to examine specific conservation priorities	Staff time	CCW, NGOs												
4.2.3 Provide education and conservation awareness materials to facilitators	Staff time	CCW, NGOs												
4.2.4 Train school teachers in the use of the conservation awareness package for schools	Consultant fees	CPW, CCM, NGOs												
4.2.5 Stimulate nature-focused awareness raising activities, ideas and debates in schools (including activities such as tree planting etc.)	Staff time	CCW, NGOs												
4.2.6 Organize environmental education competitions in schools (songs, poems, drama, football tournaments, etc.)	Staff time	CCW, NGOs												
4.2.7 Organize park visits for school children	Staff time	CCW												
Action 4.3 Implement targeted conservation awareness campaigns														
4.3.1 Ensure consistent collaboration with the media in conservation education and awareness-raising	Media	PR, CCM, CCW												
4.3.2 Organize special events and competitions relating to NNP and conservation awareness-raising	Staff time	CCM, HoD, PR												

Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
4.3.3 Continue supporting other conservation outreach programs	Staff time	CPW, NGOs	■	■	■	■	■	■	■	■	■	■	■	■
4.3.4 Establish partnerships with private sector enterprises such as telecommunication companies, breweries etc. to support conservation awareness	Staff time	HoD, marketing				■				■				■
Action 4.4 Collaborate with relevant agencies to sensitise communities in family planning														
4.4.1 Identify and collaborate with relevant health agencies	Staff time	CCW, NGOs	■											
4.4.2 Identify 3 pilot sites from sectors surrounding NNP	Staff time	CCW, NGOs	■											
4.4.3 Sensitise, educate, and train communities in family planning in collaboration with identified health agencies	Staff time	CCW, NGOs		■	■	■	■	■	■	■	■	■	■	■
4.4.4 Monitor and evaluate all the sensitising activities	Staff time	CCW, NGOs				■				■				■
Action 4.5 Carry out conservation awareness and attitudinal surveys														
4.5.1 Design survey tools and methodology	Consultant fees	CPW, NGOs								■				
4.5.2 Conduct surveys in identified focal areas	Consultant fees	CPW									■			
4.5.3 Synthesise and disseminate survey results to relevant stakeholders	Consultant fees	CPW, CCM										■		

Chapter 6.

Park Operations Programme

6.1 Introduction

The Park Operations Programme, the last programme in this management plan, deals with the NNP's day-to-day management systems – including law enforcement, human resources management, administration and finance, infrastructure and equipment, and stakeholder collaboration mechanisms. That is, all the management activities of the park that have not so far been addressed by the three preceding programmes dealing with ecological management, tourism and community aspects. All these management systems are critical to the effective and efficient management of the national park, as well as to the successful delivery of the other three programmes set out in this management plan.

Nyungwe National Park cannot be effectively managed and conserved if the park does not have the required human resources, infrastructure and equipment, nor if the park managers do not have good relationships and collaborative arrangements with the park's stakeholders. Most importantly, considering the high levels of threats that the NNP is being subjected to from the dense human populations around the park, as well as the likelihood that these threats will intensify in the years ahead, it will be especially important to ensure that the NNP's law enforcement efforts are maintained and strengthened over the lifespan of this management plan.

The Purpose of the NNP Park Operations Programme for the next 10 years is:

To ensure the integrity of, and minimise environmental impacts on Nyungwe National Park's outstanding biodiversity, ecological and economic values through the implementation of an effective, efficient and sustainably financed management system.

The management objectives that NNP stakeholders have defined to achieve this Programme Purpose are set out in the following sections.

6.2 Management objectives and actions

Five management objectives have been defined for the NNP Park Operations Programme aimed at achieving the Programme Purpose outlined above, as follows:

Objective 1. NNP law enforcement operations strengthened

Objective 2. Management of NNP main transit roads improved

Objective 3. NNP human resources, infrastructure and equipment improved in line with emerging management needs

Objective 4. Local and transboundary collaboration in ecosystem management strengthened

Objective 5. NNP sustainable financing mechanisms designed and operational

Each of these management objectives, and the management actions that have been developed to achieve them are described in the following sections.

Objective 1. NNP law enforcement operations strengthened

Although the management actions that will be implemented under the Community Partnership Programme set out in the preceding chapter can be expected to lead to a strengthening of community support and sense of ownership for the NNP as well as reduced human pressures on the park, it will be vital to complement these approaches with effective law enforcement operations designed to deter illegal natural resource use activities in the national park and encroachment on the park's borders. I.e., a "carrot and stick" approach that balances efforts to build community partnership and support with a strong message that illegal activities in the NNP will not be tolerated is certain to achieve the best outcomes in the long-run both for NNP biodiversity and habitat conservation as well as community support.

On its south western border, the NNP adjoins the international boundary with Burundi and the neighbouring Kibira National Park. Achieving effective law enforcement in NNP will therefore also be dependent on transboundary collaboration in law enforcement and other park management activities between the NNP and Kibira National Park, and between their parent agencies, RDB and Burundi's INECN. These transboundary collaboration aspects are addressed under Objective 4 below.

Action 1.1 Strengthen capacity of NNP law enforcement section

The NNP Law Enforcement Department employs a variety of patrolling techniques to meet its aims, including camping patrols where the rangers stay in the field for an extended period of up to seven days each, shorter duration shock patrols usually in response to specific intelligence information, and joint patrols with other security organs, for example in the case of firefighting and for destroying marijuana gardens. Each patrol varies from 3-5 members, although this will depend on the level of the threat anticipated. In 2009 and 2010, approximately 90% of the patrols carried out by the NNP Law Enforcement Department were camping patrols, so this patrol method is by far the most important law enforcement technique employed in the NNP.

Table 8 below shows the patrol intensity (number of patrols and patrol days) over the period 2009 to August 2011, as well as the incidences of illegal activities encountered during these patrols. As can be seen, there is a disturbing increase in illegal activities despite the decline in the number of patrol days. For example, even though the data for 2011 is only for eight months of the year, there are already as many snares recorded as for 2010, and this is much higher than for 2009. Figure 23 over-page shows NNP law enforcement patrol coverage of NNP spatially for the year 2010.

Table 8. Patrol intensity and illegal activities encountered in NNP from 2009 until August 2011

Patrol Intensity/ Illegal Activities Encountered	2009	2010	2011
Security patrols	384	297	194
Patrol days	1,856	1,706	1,212
Poachers	25	25	16
Miners	23	64	35
Charcoal burners	0	2	2
Cultivators	15	23	6
Herbalists	31	0	6
Fire setters	1	0	1
Snares	2,209	2,977	2,961
Beehives	311	129	83
Dead animals	154	43	69

Figure 23. Law enforcement patrol coverage of NNP in 2010

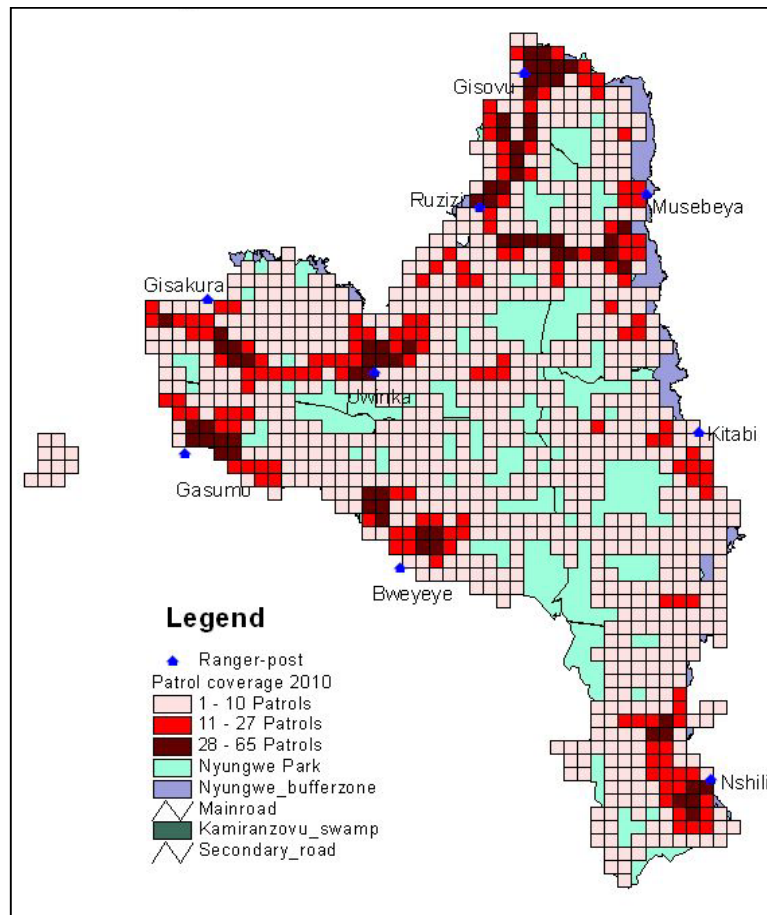


Figure 24. NNP rangers on patrol



Taking into account this trend in illegal activities, and the likelihood that illegal activities in NNP will intensify over the lifespan of this management plan, it is vital that the capacity of the NNP Law Enforcement Department is progressively strengthened to keep pace with the growing threat of illegal activities, and also to ensure that all parts of NNP are adequately covered by law enforcement patrols (see Figure 23 above). Action 1.1 is designed to address this need, and will achieve this through a variety of activities.

One important aspect that will be addressed under Action 1.1 is the need to review and revise the NNP Law Enforcement Department establishment structure to ensure an effective deployment of human resources to combat mounting illegal activities, as well as to better motivate Patrol Zone Coordinators, Team Leaders and other cadres. This will include a review of staffing numbers, their grades and responsibilities, and their location. The end aim of this review will be to ensure that the NNP Law Enforcement Department is a modern, effective and efficient law enforcement unit that is capable of addressing mounting human pressures on the NNP, and that practices adaptive management taking into account ranger-based monitoring information and lessons learnt (see Action 1.2 below).

This review of the NNP Law Enforcement Department establishment structure will be closely linked to the overall review of the NNP career development and training structure that will be carried out under Activity 3.1 of Objective 3 of the Park Operations Programme in collaboration with RDB headquarters Human Resources Department. It will also be linked to a similar review of law enforcement staffing to be carried out in Volcanoes National Park (see Action 1.2 of the new VNP management plan, 2012-21). Ideally, it makes practical sense that these two reviews be carried out as a single exercise.

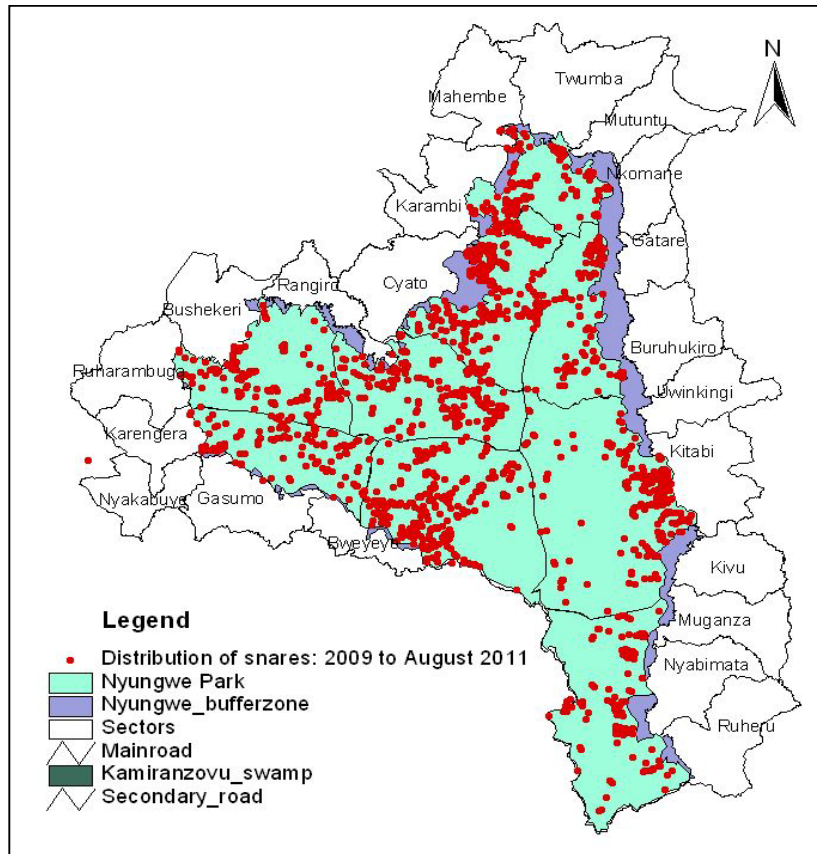
Action 1.1 will also address the ongoing training needs of the NNP Law Enforcement Department, through the provision of induction training for new recruits as well as refresher training for existing rangers. Under Action 1.1, regular training will be provided to NNP's law enforcement staff, either *in situ*, where necessary using specialised instructors brought in specifically for the purpose, or through *ex situ* training programmes provided by appropriate law enforcement training facilities both in Rwanda and in neighbouring countries as appropriate.

Action 1.2 Strengthen monitoring of illegal activities to guide law enforcement efforts

As is illustrated in the data presented in this Park Operations Programme as well as elsewhere in this management plan, the Nyungwe National Park has a first-rate ranger-based monitoring system which is based on the MIST (Management Information System) methodology for ranger-based monitoring information collection, synthesis and analysis. The data produced by the NNP RBM system are vital for the targeting of law enforcement patrols and effort within the park, as is illustrated by Figure 25 overpage which shows the distribution of snares encountered on ranger patrols between 2009 and August 2011. RBM data is also crucial for guiding other management activities in NNP, including community partnership activities, tourism activities, and ecological management activities.

While the NNP RBM system is now well established and tested, there is a continuing need for activities to improve the system to increase the quality and reliability of the information that is produced. These activities include refresher training for rangers undertaking RBM activities, as well as continual improvement of the equipment utilised, such as GPS' and the means of information collection, storage, and analysis. These needs will be addressed under Action 1.2 in an effort to ensure that RBM in NNP continues to be a best practice example for the region.

Figure 25. Distribution of snares encountered in NNP, 2009 – August 2011



Another aspect that will be addressed under Action 1.2 is the need to link ranger-based monitoring data and trends with building a better understanding of the link between illegal activities and the underlying drivers of these activities. Developing a greater understanding of the drivers of illegal activities will be important in influencing the adaptive management of NNP’s law enforcement activities, as well as activities undertaken in the Community Partnership Programme to address the root causes of threats to NNP natural resources.

Action 1.3 Improve collaboration with law enforcement entities around Nyungwe to improve implementation of wildlife laws

NNP’s law enforcement efforts will only fully succeed if there is an effective deterrent in place to discourage offenders from repeating their illegal activities. If offenders do not receive an adequate punishment to match the offence they have committed, and if the penalty is less than the benefits they gain from their illegal activities, then it is certain that they will simply go back to what they were doing, and illegal activities will continue to mount in NNP. For this reason, the effective implementation of the wildlife laws through the prosecution process is vital to the success of NNP’s law enforcement efforts. This will require improved collaboration between NNP management and the law enforcement and prosecution services around NNP, which is addressed under Action 1.3.

In this regard, the effectiveness of the prosecution of wildlife crimes in NNP is relatively poor, and offenders frequently are either released without charge because of deficiencies in the prosecution case, or are let off with minimal penalties. The underlying causes of this situation relate to the lack of understanding of wildlife laws in law enforcement agencies and the judiciary, the fact that wildlife crimes are often regarded as minor offences and therefore offenders are treated leniently, and the

lack of skills of NNP staff in preparing charge sheets and the prosecution case, with the result that cases may be dismissed in the courts on technicalities.

To address these issues, Action 1.3 will work to strengthen collaboration and awareness between NNP management and government law enforcement agencies and the judiciary, with the aim of improving prosecution rates as well as general understanding of the impacts of wildlife-related offences on the NNP's ecology. This will involve activities such as study tours to NNP by law enforcement agencies and the judiciary designed to raise awareness of the extent and impacts of illegal activities on NNP biodiversity and habitats, and to increase understanding of the key provisions of the relevant legislation dealing with law enforcement in the national parks. The NNP Law Enforcement Department will also organise regular information sharing meetings between NNP managers and law enforcement agencies concerning specific law enforcement issues and needs, as well as participating in district-level security meetings as appropriate.

Under Action 1.3, NNP management will also work with the law enforcement agencies and the judiciary to develop ways of streamlining the arrest and prosecution process for wildlife-related offences so that the NNP management can take lead responsibility for drafting the charge sheets for the offenders they arrest, together with the related training activities for NNP staff.

Action 1.4 Strengthen intelligence-gathering mechanisms involving local communities

Intelligence gathering is a vital dimension of successful and efficient protected area law enforcement operations. An effective intelligence system can provide PA managers with advanced warning of illegal activities before they occur, and can also help pinpoint where these activities are going to occur. Action 1.4 has been developed with the aim of strengthening the NNP's intelligence-gathering systems.

Community members can be a vital source of intelligence information because poachers and other illegal resource users live and operate within the community. Under Action 1.4, the NNP Law Enforcement Department in close collaboration with the Community Conservation Department will work to strengthen the NNP informant network embedded in the local community, through the development of specific systems and protocols for managing the informant network, followed by their practical application.

It will also be important to improve the handling of intelligence information, including the synthesis, analysis and verification of intelligence data, the establishment of an intelligence database, and the design of mechanisms by which intelligence data can be incorporated into law enforcement patrol efforts. Developing this intelligence management capacity in NNP is likely to require additional specialised human resources and/or training, and this aspect will be addressed through Actions 1.1 and 3.1 of this Park Operations Programme.

Community groups and individuals that are already cooperating with NNP, such as ANICOs and ex-poacher cooperatives, are a potentially important source of intelligence information. However, in the case of ANICOs, it will be important that the NNP takes great care in using the ANICOs as informants, because this could compromise their role as go-betweens between the park and the community, and lead to the community regarding the ANICOs as stooges, rather than as trusted members of the community.

Objective 2. Management of NNP main transit roads improved

One of the major sources of environmental threats in the NNP is the major transit roads that bisect the park, and which are heavily used by through-traffic bound for Lake Kivu towns as well as onwards to the DRC and to Burundi. With the ongoing process of upgrading of these roads, it is certain that the NNP will experience greater volumes of higher speed traffic over the lifespan of this management plan, with consequent increasing impacts on the NNP environment through road kills, pollution such as rubbish dumping and other human wastes, road-related infrastructure development, and the edge effects on NNP ecology that are created by the road itself.

Taking account the significant impacts of these transit roads on the NNP's ecology and environment, Objective 2 defines a series of management actions aimed at minimising and mitigating these impacts over the lifespan of this management plan. In implementing these actions, the findings and recommendations of the REMA Joint Commission Field Mission to look at the NNP's roads and buffer zones should be taken into account as and where appropriate (REMA, 2007)¹⁰.

Action 2.1 Update/Establish NNP road regulations in collaboration with Ministry of Infrastructure and relevant law enforcement agencies

The NNP's transit roads are national trunk roads, not park roads, and responsibility for their upkeep and management rests with the Transport Sector of the Ministry of Infrastructure (MININFRA), while lead responsibility for law enforcement on the roads rests with the Police. However, because of the high environmental impacts of these roads on the Nyungwe environment, coupled with the safety issues for driving on the NNP's winding and precipitous roads, with many blind corners, there is a need to implement NNP-specific traffic regulations. These should include speed restrictions within the national park as well as prohibition of waste disposal, lighting fires including cigarette disposal, transport of domestic livestock within the park, collection of flora and fauna along the roads, and other regulations designed to minimise environmental impacts.

Under Action 2.1, NNP management in collaboration with RDB Headquarters will carry out a consultation process with the responsible section in MININFRA as well as with relevant local and/or national law enforcement agencies with the aim of developing a set of road regulations that are specific for the NNP situation. The main aim of these regulations will be to minimise the environmental impacts of road traffic and related activities on NNP habitats and biodiversity, as well as to ensure the safety of road users transiting NNP. These consultations will also consider the possibility of levying specific fines relating to infringement of NNP road regulations, and will establish the mechanisms for implementing penalties if such a system is considered appropriate and feasible.

Also under Action 2.1, NNP management and RDB will work with the appropriate agencies to have the NNP road regulations formalised in law under the relevant subsidiary road traffic legislation.

¹⁰ Rwanda Environment Management Authority (2007). *Nyungwe Park Buffer Zone and Road Issues. Report of the Joint Commission Field Mission, April 2007*. Manuscript pp. 1-13. Download from: http://www.rema.gov.rw/rema_doc/publications/PAB.NyungweNPBufferZoneReport.20Apr07.final.pdf

Figure 26. Road accident along an NNP transit road



Action 2.2 Establish an NNP road patrol unit

Once the NNP-specific road regulations have been developed under Action 2.1, mechanisms will need to be developed to ensure that the regulations are enforced, and that drivers are aware of the specific traffic regulations that apply within the NNP. In this connection, under Action 2.2, an NNP Road Patrol Unit will be established with responsibility for enforcing traffic regulations and raising driver awareness. The Road Patrol Unit will need to be equipped with an appropriate vehicle for undertaking road patrols, which will be procured under this management action, as well as appropriate training provided to the Unit members.

One important mechanism for raising driver awareness of the specific traffic regulations applying to NNP is through the development of signage along the roads. These signs will be of both a general and specific nature, with general signs designed to raise driver awareness of the environmental values of the NNP as well as the key NNP road regulations – such as no cigarette disposal, any overall speed limit, no collection of NNP flora and fauna, etc, no disposal of waste, etc – and also informing drivers of any fines for park-related traffic offences. Specific signs can be placed at strategic locations along the road to warn of any particular hazards, such as steep inclines, animal crossing points, etc. Once again, the main aims of such signage will be to mitigate the environmental impacts of road use and to increase the safety of road users. See also Action 4.3 of the Community Partnership Programme.

Action 2.3 Improve sanitation and waste management infrastructure

Sanitation and waste related issues are a particularly important environmental impact of the NNP’s transit roads. On a daily basis, numerous long distance buses pass through the national park on their way to and from the towns on the shores of Lake Kivu, as well as internationally to the DRC and Burundi. Frequently, these buses stop inside of the NNP to allow their passengers to relieve themselves, which is an especially dangerous practice as far as the NNP’s animals are concerned, with real risks of human-wildlife disease transmission, especially for the NNP’s primates. Similarly, other road users

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stop on their journey through the NNP to dump domestic and commercial waste (see Figure 27 below).

Figure 27. A waste dump along an NNP transit road



Under Action 2.3, activities will be implemented to improve sanitation and waste infrastructure and processes on the NNP transit roads. This will include the construction of one or more specific rest spots and conveniences at strategic locations along the road that can be used by buses and other transit vehicles, as well as the erection of clear signage advertising the location of these facilities as well as the prohibition on taking rest stops elsewhere along the roads, and associated penalties. Activities to be carried out will include the identification of a suitable location(s) for the establishment of the rest stop, the development of an appropriate environmentally friendly and aesthetic design for the rest stop infrastructure, the mechanism for supplying the rest stop with water and the disposal of waste, carrying out of an environmental impact assessment of the planned development, and the eventual construction of the rest stop infrastructure, most probably through a tendering process.

Objective 3. NNP human resources, infrastructure and equipment improved in line with emerging management needs

This new NNP management plan describes the diversity of management challenges and issues confronting the NNP management team, many of which relate to the high human densities around the national park as well as the growing transit traffic on the NNP's main roads (see Objective 2 above). The scale and complexity of these challenges is expected to increase significantly over the lifespan of this management plan. If the NNP management team is to successfully cope with these emerging management challenges, there will be a need for RDB to increase investment in the NNP's human resource capacity as well as the park's management infrastructure and equipment.

Objective 3 therefore sets out a number of management actions that have been developed to ensure that NNP management have sufficient and adequately trained staff to implement key aspects of this

management plan, and that management facilities and infrastructure are of sufficient quality and suitably located to ensure managers can effectively carry out their duties.

Action 3.1 Establish a career development and training structure for NNP management in collaboration with RDB headquarters

Adequate and appropriately trained and motivated staff with clear work responsibilities and career development prospects is vital for achieving the overall Programme Purpose of effective and efficient park management. In this regard, stakeholders participating in the Park Operations Working Group meeting were of the opinion that the current NNP career development and training structure is inadequate to meet the growing demands on park management, as well as to effectively implement the range of management actions that this management plan defines.

Action 3.1 is designed to address this need. Under this action, a comprehensive review of NNP's human resource requirements to implement this management plan will be carried out by NNP managers in close collaboration with the RDB Human Resources Department. The review will look at the needs, job responsibilities, powers and reporting lines under the current system, and will develop a revised career structure and progression system for NNP staff, including the revision/further development of the related job descriptions and the definition of qualifications and training needs associated with different grades and job positions in NNP.

An important aspect of the review will be to look at best practice career development practices in other East African protected areas. It will also be important to consider any specific additional human resource needs for delivering this management plan, such as Action 1.1 above which deals with future human resource needs of the NNP Law Enforcement Department, Action 2.2 which addresses the need to establish a Road Patrol Unit, and Action 4.1 of the Tourism Management Programme, which deals with the specific capacity building needs associated with the growth of the NNP's tourism product during the lifespan of this management plan.

The management of Volcanoes National Park are planning to carry out a similar review of the VNP's human resource and career development requirements associated with the implementation of the new VNP management plan 2011-21, together with the RDB Human Resources Department. Ideally, therefore, Action 3.1 should be implemented as a joint NNP and VNP exercise, especially since the HR issues involved and future needs are similar for the two parks (see Action 3.4 of the VNP management plan).

Action 3.2 Define opportunities for special training programmes for NNP management for implementation in collaboration with KCCEM

The Kitabi College of Conservation and Environmental Management (KCCEM) offers a unique facility for the training of protected area managers and other conservation professionals right on the doorstep of Nyungwe National Park, and neighbouring the NNP's Kitabi Headquarters. Stakeholders participating in the Park Operations Working Group meeting felt that it makes good sense to make use of this facility for the development and implementation of special training programmes for NNP staff, to address the various capacity building requirements that have been identified in this management plan.

Under Action 3.2, NNP managers and the RDB Tourism & Conservation and Human Resources Departments will work together with KCCEM leadership to identify and plan the specific training programmes that are needed, the groundwork that these programmes need to cover, and how best to carry them out (for example, through the involvement of external instructors if needed). Since these special training programmes are also likely to be of equal relevance to Volcanoes NP and Akagera NP

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managers, it will be important to ensure that staff from these two parks also have an opportunity to participate in the training programmes, and also to provide suggestions on the type of training programmes that are needed.

Action 3.3 Carry out construction/rehabilitation of NNP ranger posts and other park buildings

The Nyungwe National Park Headquarters complex at Kitabi is a first-rate facility providing good access to the national park. The complex is of relatively recent construction and has been recently refurbished. As such, only relatively minor rehabilitation work is expected to be required at this site over the lifespan of this management plan. However, other NNP outposts are in a poorer state of repair, and it is anticipated that several ranger posts as well as other park buildings will be in need of comprehensive repair work over the lifespan of this management plan, which is addressed under Action 3.3. The action will also include the need to upgrade services and facilities at both the Kitabi Headquarters and outposts as required, including the installation of solar energy systems to provide lighting and power. In addition, there will be a need to construct selected infrastructure, including a radio communication controller station at Rushoka, and a new ranger post at Gahurizo.

Under Action 3.3, the NNP Administration Department will develop or update a rehabilitation and upgrading plan for all NNP park buildings, including a definition of the scope of the works involved and the schedule for undertaking them. Once finalised and approved by RDB Headquarters, a variety of repair and upgrading initiatives will be launched over the lifespan of this management plan, as defined in the rehabilitation plan.

Action 3.4 Strengthen NNP's internal and external communications

Communication systems are an essential part of effective and efficient protected areas management, especially for the implementation of law enforcement operations and for ensuring the safety of the park's ranger force. Under Action 3.4, the NNP's VHF radio system will be upgraded as necessary to ensure a high standard of communication between the Kitabi Headquarters and ranger posts, and with field ranger patrols. This will also include the installation of lightning protection at radio repeater stations.

Also addressed under Action 3.4 will be the need to establish communication mechanisms and protocols between NNP and the neighbouring Kitabi National Park, including the establishment of a common radio frequency for use between the two parks, and agreement on radio communication protocols and schedules. Any necessary infrastructure such as repeater stations to facilitate communication between the two parks will also be established under this action. See Action 4.4 below.

Action 3.5 Improve the equipment acquisition system

Sufficient and appropriate field equipment is vital to the effectiveness and efficiency of the NNP's operations, in particular the park management's law enforcement efforts. In this regard, regular maintenance and upgrading of the NNP ranger force's equipment are essential for both the safety and the morale of the force. The Nyungwe forest environment is especially difficult and hazardous for patrol efforts, and factors such as the VNP's rugged terrain, uneven topography and humidity, all have adverse impacts on the durability of the equipment. In addition, to maximise the effectiveness of the law enforcement effort, it is vital that the NNP Law Enforcement Department stays up to date with the latest technology available, such as GPS units, night vision equipment, and mobile radio communication units.

Under Action 3.5 key equipment needs will be identified and the equipment acquisition system will be enhanced, including the development of a comprehensive procurement plan and the definition of detailed technical specifications that the equipment to be procured must meet.

While all aspects of park operations will be covered under Action 3.5, the NNP Law Enforcement Department in particular has highlighted the need to improve and regularly replace field equipment items such as ranger uniforms, raincoats, boots and backpacks, firearms, tents, sleeping bags, sleeping mats, GPS units, and mobile radio units. In addition, it will be necessary to upgrade the fixed communication systems for the ranger outposts and Kitabi Headquarters through the provision of 11 fixed VHF radio units, and to provide motorbikes to support law enforcement operations.

Objective 4. Transboundary and regional collaboration in ecosystem management strengthened

Nyungwe National Park cannot be effectively and efficiently managed without the collaboration of the park's key stakeholders. In this regard, the previous NNP management plan places emphasis on the establishment of a range of strategic partnership arrangements to support the implementation of the plan. NNP management have already made significant progress in developing these collaboration mechanisms, including the establishment of the NNP Joint Action Conservation Forum ("*JAF Tubungunge Nyungwe*") which provides the principle platform for collaboration in management issues relating to the park. Under Objective 4, a variety of management actions will be implemented designed to further strengthen these collaboration mechanisms, involving local communities, local administration, NGO partners, and cross-border collaboration with the neighbouring park management authorities in Burundi.

Action 4.1 Develop the role of the NNP Joint Action Conservation Forum as the primary NNP conservation collaboration mechanism

Building on the local government Joint Action Development Forum (JADF) model (see Action 4.2 below), NNP management has established a specific NNP Joint Action Conservation Forum ("*JAF Tubungunge Nyungwe*") involving NNP stakeholders and with the overall aim of improving understanding, coordination and involvement in NNP management issues. Under Action 4.1, NNP management will continue to organise regular JAF meetings, as well as carrying out any related capacity building activities that may be required to ensure that the forum can function effectively and efficiently. An important aspect will be the inclusion in the forum of representatives of women, youth and disadvantaged groups, since these groups are likely to be crucial for the achievement of conservation aims. It will also be important to ensure that mechanisms are put in place to empower the forum participants, so that the forum is truly a dialogue mechanism between the different interest groups, rather than a platform that the park management can use to promote their own special interests.

An assessment of forum performance and achievements during the lifespan of the management plan and the implementation of any required adjustments according to lessons learnt will also be an important activity under this action.

Action 4.2 Participate in local government Joint Action Development Forums

In addition to the effort to strengthen the NNP JAF described in Action 4.1 above, it will also be important that NNP management makes efforts to ensure that conservation issues and concerns are incorporated into local government planning at the sector and district level. Without this effort, there is a real danger that development will proceed in areas adjacent to NNP without taking into account the conservation needs of the national park, and perhaps even in direct opposition to those

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needs. In this regard, one of the main mechanisms available for ensuring that NNP's development issues and concerns are incorporated into the planning process is through the district-level Joint Action Development Forums (JADFs).

The JADFs are an innovative mechanism designed to improve service delivery and economic development at the local level, and to enable collaboration and integration between local government, the private sector, and civil society. The JADF mechanism, which is a key aspect of Rwanda's decentralisation strategy, provides a space where public private partnerships in implementing development can evolve, and the scope for non-governmental organisations to take up tasks and to complement government efforts is enhanced. JADF's are currently mainly active at the district level, although it is ultimately intended that they should be active at the sector level as well. JADFs enable the participation of a wide cross section of stakeholders in development at the local level, including citizens groups, service providers, cooperatives, companies, NGOs, faith-based organisations, as well as local government itself.

Under Action 4.2, NNP management will participate in the district-level JADF's for the five districts neighbouring NNP (Rusizi, Nyamasheke, Karongi, Nyamagabe and Nyaruguru). In addition, NNP management will also participate in other district development planning processes where such opportunities present themselves.

Action 4.3 Collaborate with key partners in enhancing the management of the NNP buffer zone

As detailed under section 2.5 of the NNP Zonation Scheme, the NNP is unusual because it has a legally-gazetted buffer zone - a variable-width strip of land around the park comprising of Pine and Eucalyptus forestry plantations and tea plantations (see Figure 3 in the NNP Zonation Scheme chapter). As its name suggests, the buffer zone is designed to provide a gradual land-use transition between the dense human development and land-use practices of the surrounding community areas and the conservation-oriented land uses practiced within the national park.

In July 2011, the Ministry of Natural Resources and RDB signed a long-term management agreement for the NNP buffer zone with the New Forests Company, a UK-based sustainable and socially responsible forestry company. As a result, the company now has lead responsibility for the management of the existing Buffer Zone forestry plantations and for achieving the conservation and sustainable land-use functions of the zone. As indicated in the Zonation Scheme, the delegation of management responsibility for the zone to the New Forests Company means that it will be vital to develop a strong collaboration between NNP management, RDB, NAFA and the Company in the definition of the buffer zone's management and conservation requirements and the subsequent implementation of management principles and activities in the zone. Action 4.3 has been developed to address the requirement for this management collaboration.

As an initial activity, it will be important to review any existing NNP buffer zone policy and regulatory frameworks, should they exist. This will be important for developing an understanding of how these policy and regulatory frameworks guide and influence management activities in the zone. As discussed in the NNP Zonation Scheme chapter, the law establishing the NNP buffer zone provides very little guidance on how the buffer zone should be managed. However, NNP management will instigate a review of any other relevant policies and regulations that may influence how the zone should be managed.

Based on the review of the buffer zone policy and regulatory framework, NNP management and RDB will commence a dialogue with the New Forests Company, NAFA and the neighbouring districts to determine the optimal and appropriate land use and management options for the buffer zone, designed to achieve sustainable management of the area for the benefit of forest ecology as well as

community livelihoods, and also to provide a viable economic return for the concession holder. Developing this understanding of land-use options may require additional technical inputs, which could potentially be secured through a technical workshop or study, or a combination of the two. The outcomes of these activities should ultimately be a set of management strategies and guidelines for the buffer zone that are agreed upon by all concerned parties.

Also under Action 4.3, it will be important to put in place prescriptions on specific activities that are permitted and/or not allowed in the buffer zone, in order to preserve the zone's role as a buffer between the dense human settlement areas and the national park itself. The outline of these prescriptions is provided in section 2.5 of the NNP Zonation Scheme. Under Action 4.3, these prescriptions will be further developed and elaborated and incorporated into the management strategies and guidelines for the NNP buffer zone. See also section 2.5 of the Ecological Management Programme.

Action 4.4 Strengthen collaboration with Kibira NP Management in addressing transboundary PA management issues

As discussed under Action 1.3 of the Ecological Management Programme, Nyungwe NP is part of the wider Nyungwe-Kibira Transboundary Landscape, which is made up of NNP and the contiguous Kibira National Park in Burundi to the south (see Figure 7 in the Ecological Management Programme) and together makes up the largest block of forest in East Africa. Collaboration between the two countries in the management of the transboundary landscape was first established in 2008, with the signing of an MOU between the then ORTPN and Burundi's INECN for the protection of Nyungwe-Kibira Ecosystem. This collaboration is built upon the highly successful transboundary collaboration between Rwanda and the DRC and Uganda with regard the protected areas in the Greater Virunga landscape.

Collaboration between RDB and INECN at the institutional level, and between NNP and KNP management at the field level, is essential for a variety of reasons, including cooperation in the prevention of forest fires as outlined in Action 1.3 of the Ecological Management Programme, and cooperation in law enforcement. Under Action 4.4, VNP management and RDB Headquarters will implement a variety of activities designed to strengthen transboundary collaboration with the Burundi authorities at both institutional and field levels. Some of the key activities already identified include:

- ▶ Facilitating the ratification of the 10-year trans-boundary strategic plan by the Rwandan and Burundi governments
- ▶ Planning and implementing a targeted and coordinated trans-boundary protection strategy consisting of coordinated patrols, information sharing, etc.
- ▶ Collaborating with KNP and INECN to ensure that the management plans of both parks contain compatible trans-boundary activities
- ▶ Holding joint annual planning meetings with senior INECN staff from Burundi
- ▶ Carrying out regular quarterly meetings between NNP and KNP management staff
- ▶ Organising joint study tours between NNP and KNP to share lessons learnt and management approaches
- ▶ Planning and sharing between NNP and KNP common research skills and approaches for species, threats and habitat monitoring
- ▶ Collaborating with KNP in developing integrated fire management strategies for NNP and KNP (see Action 1.3 of the Ecological Management Programme)

In addition to these collaborative activities with Kibira National Park and INECN, under Action 4.4 NNP management in collaboration with the RDB Tourism & Conservation Department will also establish contacts with Kahuzi-Biega National Park in the DRC and any other relevant authorities and partners, to investigate ways of facilitating greater tourism flow between the NNP and Kahuzi-Biega.

Objective 5. NNP sustainable financing mechanisms designed and operational

The Purpose Statement for this Park Operations Programme emphasises the need to establish a “sustainably financed” management system for NNP. While the management actions to be delivered under the Tourism Management Programme are likely to result in greater revenue flows to the park as a result of increasing visitor volumes over the lifespan of this management plan, it is not certain that these will be sufficient to meet the mounting costs of park management activities, as well as the growing need to provide support to the neighbouring communities in the form of revenue sharing and other livelihood and sustainable resource use related activities. For these reasons, stakeholders participating in the Park Operations Working Group meeting emphasised the need to investigate and establish alternative financing mechanisms, in particular related to the potential for developing Payment for Ecosystem Services (PES) mechanisms. Such mechanisms are especially important and promising when considering the NNP’s exceptional national and regional importance as a water catchment, as well as its significant role in carbon sequestration and in the protection of biodiversity and genetic resources. The development of long-term alternative financing mechanisms will also fill the gap that is currently being filled by less-permanent projects underway in and around the NNP, such as WCS’ Nyungwe Forest Conservation Project and USAID/DAI’s Nyungwe Tourism Project when these financial interventions eventually come to an end.

It is expected that much of the work to investigate and develop these alternative financing mechanisms will be spearheaded by NNP’s partner NGOs, especially WCS. However, Objective 5 has been established to underscore the long-term importance of these mechanisms for securing the future conservation of the NNP, with one management action as described below.

Action 5.1 Collaborate with and support efforts to establish alternative finance mechanisms for NNP including Payment for Ecosystem Services approaches

As indicated above, the NNP has considerable potential for the development of Payment for Ecosystem Services mechanisms based on the national park’s exceptional importance in terms of water catchment, biodiversity, genetic and carbon sequestration values. In this regard, a number of initiatives are currently underway or planned to investigate the feasibility of these mechanisms, and to develop them as appropriate. These include a Payment for Ecosystem Services study that is being carried out in collaboration with REMA which will determine the PES values of NNP in terms of hydrology, pollination, climate regulation, and other values, and the potential establishment of a REDD project initiative involving the NNP and neighbouring forest areas in the buffer zone and community areas¹¹. This will involve the development of a Project Identification Note or PIN for a potential future NNP ecosystem REDD initiative, developed detailed financial projections for potential returns from a REDD scheme, and supported various studies with regard the establishment of such an initiative.

Under Action 5.1, NNP management and RDB will collaborate with partner organisations and other relevant agencies in exploring these potential alternative financing mechanisms for the NNP, and will provide political, technical and material support as needed for the development of the necessary project proposals required for developing appropriate and realistic financing options.

¹¹ REDD: The United Nations Collaborative Programme on Reducing Emissions from Deforestation and Forest Degradation in Developing Countries

6.3 Park Operations Programme Activity Plan

Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
Objective 1 NNP law enforcement operations strengthened														
Action 1.1 Strengthen capacity of NNP law enforcement section														
1.1.1 Determine optimum number of law enforcement staff for NNP		CPW, LEM	■				■				■			
1.1.2 Revise the recruitment process with clear criteria		Park Coordinator, HR				■				■				■
1.1.3 Develop code of conduct for park rangers		CPW, LEM, LEW	■	■	■	■	■	■	■	■	■	■	■	■
1.1.4 Develop career development plan for park rangers	Consultant fees	HR, Head of Department			■				■				■	
1.1.5 Review, finalize and expedite the Wildlife Act	Consultant fees	Head of Division, LEM		■										
1.1.6 Ensure effective legal support to park staff		Head of department, Legal Officer, CPW	■	■	■	■	■	■	■	■	■	■	■	■
1.1.7 Assess and evaluate ranger performance		CPW, LEW		■				■				■		
1.1.8 Establish a transparent system of performance-based motivation incentives		Head of Department, HR, CPW	■	■	■	■	■	■	■	■	■	■	■	■
1.1.9 Organize specific training on patrol techniques and organization, para-military operations, conflict resolution and management for rangers	Police and Army costs	LEM, CPW, LEW		■				■				■		
Action 1.2 Strengthen monitoring of illegal activities to guide law enforcement efforts														
1.2.1 Intensify RBM/MIST training to RDB staff	WCS costs	CPW, PRM, WCS	■											
1.2.2 Select qualified staff to take over RBM/MIST data analysis	WCS costs	CPW, PRM, LEW		■										
1.2.3 Provide necessary equipments for RBM/MIST	WCS costs	CPW, WCS	■											
1.2.4 Organize monthly meetings between PRM and law enforcement to plan appropriate patrols		PRM, LEW	■	■	■	■	■	■	■	■	■	■	■	■
1.2.5 Provide feedback and supervision for effective planning on monthly basis		PRM, LEW	■	■	■	■	■	■	■	■	■	■	■	■

PARK OPERATIONS PROGRAMME

Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
Action 1.3 Improve collaboration with law enforcement entities around Nyungwe to improve implementation of wildlife laws														
1.3.1. Organize workshops with law enforcement agencies on legislation related to conservation of wildlife	Workshop costs	CPW, LEW												
1.3.2 Organize field visits with law enforcement agencies and media to publicise the threats to NNP	Field visit costs	CPW, PR												
1.3.3 Organize quarterly meetings with law enforcement agencies to discuss key threats and potential mitigation measures	Meeting costs	CPW, LEW												
1.3.4 Organize joint operations with security forces in highly threatened areas		CPW, LEW												
1.3.5 Review and improve communication strategy with law enforcement agencies	Consultant fees	CPW, PR												
Action 1.4 Strengthen intelligence-gathering mechanisms involving local communities														
1.4.1 Develop an intelligence-gathering network and guidelines to maintain informers motivated		CPW, LEW												
1.4.2 Select and train informers for intelligence gathering system	Police and Army costs	CPW, LEW												
1.4.3 Provide incentives to informants for reliable information leading to arrests/contacts		LEW, Admin												
1.4.4 Put in place a structure for intelligence gathering and analysis	Police and Army costs	CPW, LEW												
Objective 2 Management of NNP main transit roads improved														
Action 2.1 Update/establish NNP road regulations in collaboration with Ministry of Infrastructure and relevant law enforcement agencies														
2.1.1. Revive, validate and implement the road regulations related to the main road and to the feeder roads	MININFRA costs	LEM, CPW, LEW												
2.1.2 Organise a meeting to share and validate the NNP road regulations in collaboration with Ministry of Infrastructure and relevant law enforcement agencies	Workshop costs, MININFRA costs, LE agencies costs	LEM, CPW, LEW												
2.1.3 Carry out workshop and sensitization meetings with road users on road regulations		CPW, LEW, CCW, PR												
2.1.4 Develop sensitization materials, improve road signs and use the media to publicise road safety regulations	Consultant fees	PR, CPW, LEW												
2.1.5 Liaise with Police to ensure Road Patrol Unit has a clear mandate to enforce road regulations	Police costs	Head of Department, Division Manager												

Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
2.1.6 Implement the road regulations	LE agencies costs, road patrol unit and patrol car costs	CPW, LEW												
Action 2.2 Establish an NNP road patrol unit														
2.2.1 Design and put in place signage to raise driver awareness of the specific traffic regulations applying to NNP		CPW, LEW, Head of Department												
2.2.2 Make available an appropriate vehicle for road patrols two or three times a week		LEW												
2.2.3 Train road patrol unit members	LE agencies costs	CPW, LEW												
2.2.4 Plan road patrols along the road in collaboration with Kitabi, Uwinka and Gisakura patrol posts		CPW, Admin, LEW												
2.2.5 Organize additional road patrols with patrol posts identified under Activity 2.2.4														
2.2.6 Seek support of traffic police if necessary														
Action 2.3 Improve sanitation and waste management infrastructure														
2.3.1 Identify specific locations at which to improve sanitation and waste management		CPW, LEW, TW, Admin												
2.3.2 Develop waste management plan	Consultant fees	LEM, CPW, LEW												
2.3.3 Design environmentally friendly and aesthetically pleasing rest stops infrastructure	Consultant fees	LEM,CPW,LEW												
2.3.4 Rehabilitate Uwasenkoko and Gasare rest stops	DAI costs	CPW,ADMIN LEW												
2.3.5 Construct new rest stops at sites identified under Activity 2.3.3	DAI costs	CPW,ADMIN, LEW												
2.3.6 Put in place signage advertising the location of rest stops														
2.3.7 Organize regular cleaning of the rest stops														
2.3.8 Carry out an EIA of the rest stops														
2.3.9 Put in place dustbins along the road														
2.3.10 Organize regular collection of waste in dustbins														
2.3.11 Carry out a quarterly EIA of planned development														
Objective 3 NNP human resources, infrastructure and equipment improved in line with emerging management needs														
Action 3.1 Establish a career development and training structure for NNP management in collaboration with RDB Headquarters														
3.1.1 Carry out a comprehensive review of NNP's human resource requirements in close collaboration with the RDB Human Resources Department	Consultant fees	HR, Head of Department												

PARK OPERATIONS PROGRAMME

Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
3.1.2 Develop a revised career structure and progression system for NNP staff based on review	Consultant fees	HR, Head of Department												
3.1.3 Implement a hierarchical system for NNP staff based on best practice career development structures in other East African protected areas	Consultant fees	HR, Head of Department, CPW												
Action 3.2 Define opportunities for special training programmes for NNP management for implementation in collaboration with KCCEM														
3.2.1. Carry out a training needs assessment for NNP staff	Consultant fees	Head of Division, HR, CPW												
3.2.2 Develop a 10-year training plan for NNP staff	Consultant fees	Head of Division, HR, CPW												
3.2.3 Mobilise funding for the training plan	DAI, WCS, RDB costs	Head of Division, HR, CPW												
3.2.4 Implement specific training as per training needs assessment recommendations	DAI, WCS, RDB costs	Head of Division, HR, CPW												
Action 3.3 Carry out construction/rehabilitation of NNP ranger posts and other park buildings														
3.3.1 Identify park infrastructure rehabilitation needs and costs	Contractor costs	LEM, CPW, LEW												
3.3.2 Construct Rushoka radio communication controller station	Contractor costs	LEM, CPW, LEW												
3.3.3. Rehabilitate Kitabi, Bweyeye, Musebeya, Gasumo, Nshili and Uwinka ranger patrol posts	Contractor costs	LEM, CPW, LEW												
3.3.4 Construct a new ranger post at Gahurizo	WCS costs	LEM, CPW, LEW												
Action 3.4 Strengthen NNP's internal and external communications														
3.4.1 Carry out a needs assessment for the NNP radio system and upgrade it as required	Consultant fees	LEM, CPW, LEW												
3.4.2 Carry out regular system maintenance and servicing repairs		LEM, CPW, LEW												
3.4.3 Explore the possibility to share frequency with Kibira NP	RURA, MINADEF costs	LEM, CPW, LEW												
3.4.4 Explore the possibility to acquire independent frequency for NNP (MONUC interferences for the moment)	RURA, MINADEF costs	LEM, CPW, LEW												
3.4.5 Explore with service providers the possibility of acquiring toll free number for reporting of illegal activities (particularly fire)		Head of Department, Head of Division												
Action 3.5 Improve the equipment acquisition system														
3.5.1 Identify key equipments needs		LEW, CPW, LEM												
3.5.2 Develop a comprehensive procurement plan		LEW, admin, CPW,												

Management Actions and Activities	Input Requirements	Responsible person	Timeframe											
			2012				2013				2014			
			1	2	3	4	1	2	3	4	1	2	3	4
		LEM												
3.5.3 Develop a system for clearly indicating technical specifications of equipment to be procured		LEW, admin, CPW, LEM												
3.5.4 Purchase and distribute the equipment to field staff as needed		LEW, admin, CPW, LEM												
3.5.5 Perform regular maintenance the purchased and distributed equipment		LEW, admin												
Objective 4. Transboundary and regional collaboration in ecosystem management strengthened														
Action 4.1 Develop the role of the NNP Joint Action Conservation Forum as the primary NNP conservation collaboration mechanism														
4.1.1 Define and clarify the role and responsibilities of the NNP Joint Action Conservation Forum	Consultant fees	CPW, CCM, NGOs, CCW												
4.1.2 Extend the membership to the JACF to additional key stakeholders	Consultant fees	CPW, CCM, NGOs, CCW												
4.1.3 Develop mechanism for following up decisions taken in JACF	Consultant fees	CPW, CCM, NGOs, CCW												
4.1.4 Organize quarterly JACF meetings to address major issues		CCW												
4.1.5 Assess the performance of JACF and implement recommendations where needed	Consultant fees	CCW, CPW, CCM, NGOs												
Action 4.2 Participate in local government Joint Action Development Forums														
4.2.1 Take part in the district-level JADFs for the districts neighbouring NNP (Rusizi, Nyamasheke, Karongi, Nyamagabe and Nyaruguru)		CCW, CPW, CCM												
4.2.2 Participate in other district development planning processes where opportunities arise		CCW, CPW, CCM												
4.2.3 Integrate conservation programs into district-level development plans		CCW, CPW, CCM												
Action 4.3 Collaborate with key partners in enhancing the management of the NNP buffer zone														
4.3.1 Review existing buffer zone policy and regulatory frameworks		CPW, CCM, NGOs												
4.3.2 Establish effective dialogue with New Forest Company, NAFA and neighbouring districts on appropriate management options for the buffer zone		CPW, CCM, NGOs												
4.3.3 Explore with stakeholders the opportunities for buffer zone management that maximises benefits for communities as well as forest biodiversity	Consultant fees	CPW, CCM, NGOs												
4.3.4 Initiate discussions with stakeholders on planting options following pine harvesting		CPW, CCM, NGOs												

PARK OPERATIONS PROGRAMME

Management Actions and Activities	Input Requirements	Responsible person	Timeframe												
			2012				2013				2014				
			1	2	3	4	1	2	3	4	1	2	3	4	
Action 4.4 Strengthen collaboration with Kibira NP Management in addressing transboundary PA management issues															
4.4.1 Ratify the 10-year trans-boundary strategic plan jointly developed by Rwanda and DRC	WCS costs	LEM, Head of Department	■	■											
4.4.2 Elaborate annual joint action plan	WCS costs	LEM, CPW, LEW						■					■		
4.4.3 Organize quarterly coordinated transboundary patrols	WCS costs	LEM, CPW, LEW	■	■	■	■	■	■	■	■	■	■	■	■	■
4.4.4 Support joint research and monitoring of wildlife/habitat/threats actions	WCS costs	RMM, CPW, PRM			■			■					■		
4.4.5 Further develop mechanism for sharing information, skills, experience and capacity between the two parks	WCS costs	RMM, LEM, CPW, PRM, LEW		■				■					■		
4.4.6 Organize quarterly meetings between security officers, local authorities and park management of the two countries	WCS costs, LE agencies costs	LEM, CPW, LEW	■	■	■	■	■	■	■	■	■	■	■	■	■
Objective 5 NNP sustainable financing mechanisms designed and operational															
Action 5.1 Collaborate with and support efforts to establish alternative finance mechanisms for NNP including Payment for Ecosystem Services approaches															
5.1.1 Explore key NNP financial sustainability options	Consultant fees	Head of Department, CFO				■							■		
5.1.2 Update the NNP business plan	Consultant fees	Head of Department, CFO					■						■		
5.1.3 Develop carbon project for assisted regeneration in NNP	Consultant fees	Head of Department, Head of Division, Investment Division, CPW				■						■			■
5.1.4 Undertake valuation of ecosystem services to demonstrate NNP value to key stakeholders	Consultant fees	RMM, CPW, PRM, Head of Division				■						■			■
5.1.5 Develop carbon management scheme for rural communities around NNP	Consultant fees	CCW, CPW, Head of Division, Investment Division			■				■					■	
5.1.6 Undertake feasibility studies of market for NNP watershed services	Consultant fees	CCW, CPW, Head of Division, investment promotion		■					■				■		

Annex 1: NNP Management Plan Stakeholder Survey: Summary of Key Responses

NNP Park Operations Programme

Theme	Key Activities	Key Responses
Anti-poaching	<ul style="list-style-type: none"> ▶ Reduce poaching incidences in NNP 	<ul style="list-style-type: none"> ▶ Poaching may be a more significant problem than previously understood, and research into the causes is needed. ▶ Increase involvement and efficiency of local authorities, prosecution service, army, police and community participation in protection and law enforcement activities. <ul style="list-style-type: none"> ○ Update conservation law and wildlife policy ○ Develop collaboration mechanism ○ Trans-boundary collaboration with Kibila ▶ Improve patrols to cover uncovered places ▶ Work with local authorities, community and security organs in pursuing those involved in tree-cutting activities inside the park ▶ Emphasise and improve collaboration with security and judicial organs ▶ Fight encroachment, i.e. any menace that has objective to change the official / recognised boundary of the park, being temporarily or permanently
Road management and safety	<ul style="list-style-type: none"> ▶ Minimise motor accidents involving wild animals ▶ Reduce disposal of wastes along roads 	<ul style="list-style-type: none"> ▶ Existing resolution related to road use needs to be implemented ▶ Establish and implement road regulations, including speed regulation (see 2007 study) ▶ Organize regular mobile road patrols for enforcing road regulations ▶ Establish a transparent system of fine collection including how these should be ploughed back into NNP management / rehabilitation of damages / restoration ▶ Introduce spot fines to all those caught littering or polluting in the park- especially road vehicles on the main road ▶ Regulate the rehabilitation of roads ▶ Carry out education and sensitization campaign for taxi drivers and road users ▶ Introduce warning signs to motorists about speed and crossing animals ▶ Sensitize and increase Road user's participation in road cleaning activities. i.e. using mobile dustbins in their cars ▶ Carry out waste management and collection
NNP Buffer Zone	<ul style="list-style-type: none"> ▶ 	<ul style="list-style-type: none"> ▶ Put in place a policy for the management of the current buffer zone in collaboration with the Forest Department ▶ Some kind of deliberative process, perhaps using multi-criteria analysis, might be good for making decisions about the

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Theme	Key Activities	Key Responses
		<p>buffer zone</p> <ul style="list-style-type: none"> ▶ Increase community participation (possibly community-based management) in the buffer zone as a form of compensation for living near the park and human-wildlife conflict ▶ Provide cells (or else people with land on the periphery of the park) with annual funding and allow them to organize, patrol and sometimes lose some crops to wildlife in fields near the periphery ▶ Elaborate regulations for establishment of new infrastructure in and around the PA ▶ Minimize public infrastructure development such as roads inside the park ▶ Study of the impact of the buffer zone on the natural forest, and buffer zone planting options ▶ Tea may create a hard edge along the NNP, changing forest structure and composition and causing increased tree damage and changes to the forest regeneration dynamics. Pine plantations possibly blend into forest edge better and create a 'softer' edge ▶ Encourage alternatives to tea: Community forest development; Bamboo plantation in Nshili ,etc.
Transboundary Collaboration	▶	<ul style="list-style-type: none"> ▶ Ensure that the 10-year trans-boundary strategic plan is ratified by host governments ▶ Hold joint annual planning meetings with senior INECN staff from Burundi ▶ Ensure that park management meets with counterparts from Kibira on a quarterly basis ▶ Organise study tours to share lessons learnt and management approaches with Kibira NP ▶ Ensure that the management plans of both parks contain compatible trans-boundary activities ▶ Plan and implement a targeted and coordinated trans-boundary protection strategy consisting of coordinated patrols, information sharing etc. ▶ Plan and share common research skills and approaches for species, threats and habitat monitoring ▶ Investigate the possibility of extending fire management strategies from Nyungwe to Kibira NP ▶ Liaise with Kahuzi-Biega NP in DRC and any other relevant authorities and partners to investigate ways of facilitating greater tourism flow between Nyungwe and Kahuzi -Biega
Management Capacity	▶	<ul style="list-style-type: none"> ▶ Develop a PA management practice guideline or document ▶ Revise law enforcement department structure in strengthening and establishing a hierarchical system, motivating Patrol zone Coordinators and Team leaders ▶ Build capacity and ensure adequate training of law enforcement staff ▶ PA managers should know their powers, understand international conservation and wildlife laws to guide them in decision making, etc. ▶ Define legally extent of competency of park related law enforcement organs/ staff (avoid confusion with other LE structures /organs)

NNP Community Conservation Programme

Theme	Key Activities	Key Responses
Human-wildlife conflict	<ul style="list-style-type: none"> ▶ Encourage the population to cultivate tea in buffer zone and non-buffer zone areas adjacent to the park ▶ Develop and diversify community-based activities to repel problem animals ▶ Encourage rangers to control crop raiding animals ▶ Encourage the cultivation of crops not preferred by animals in areas near the park 	<ul style="list-style-type: none"> ▶ Develop and implement a human/wildlife conflict management strategy ▶ Put in place regulations to protect communities against crop raiding for some animals like baboons ▶ Implement compensation law ▶ It is difficult for rangers to control crop-raiding animals in NNP ▶ Put in place a task force for managing human wildlife conflicts ▶ Involve ANICOs in conflicts management / resolution ▶ Why tea, is it the only crop that is not damaged by animals? Would probably be good to leave the choice to community ▶ Carry out an assessment and promote crops that decrease human-wildlife conflict. Need to help communities understand comparative advantages of different crops ▶ Train and encourage communities to deal with problem animals and to guard their farms, including animal behaviour and the use of traditional and biological methods for deterring problem animals ▶ Assist communities to organise into associations against crop-raiding (this is now a practice in Akagera Park) ▶ Minimize interactions between wildlife and people (e.g. along the road where people are feeding wild animals, and forest edges where animals are raiding crops) ▶ Encourage Patrol Zone Coordinators to control crop raiding animals ▶ Culling of animals (especially baboons)
Community livelihoods and sustainable resource use	<ul style="list-style-type: none"> ▶ Identify the needs and problems faced by population ▶ Sensitise local people to engage in income generating activities ▶ Train and support associations in project formulation, development and monitoring ▶ Identify markets that will assure the sale of produce generated by associations ▶ Identify other income-generating activities that may benefit people ▶ Sensitise, educate, train and communicate against HIV/AIDS (only relevant if focussed on park and partner staff) 	<ul style="list-style-type: none"> ▶ Identify the park resources needed and find alternatives ▶ Develop the economic cooperatives movement for income-generating activities ▶ Develop off-farm activities ▶ Provide financial support for crop cultivation and alternative livelihoods such as beekeeping as alternatives to park resources ▶ Monitoring of the effectiveness of these strategies should be included as part of an adaptive management framework ▶ Promote agroforestry to improve plant availability in villages and modern stoves to limit wood demand ▶ Support cultivation and planting of native secondary trees by actively allowing community members to collect seed from the park ▶ Develop short-term alternatives for fuelwood, etc: e.g. subsidized fuel sources (biogas, wood from plantations) and bamboo cultivation (3-6 years to harvest) ▶ Introduce animal rearing including birds, fowls etc ▶ Assist income-generating groups with market identification and marketing, financial management, etc., in order to achieve financial viability ▶ Strengthen collaboration with various agencies and development partners working around NNP ▶ Promote the link between local people and outside partners who can fund the peoples' projects ▶ Address the issue of availability of fuelwood for community from buffer zone. Expansion of tea cultiva-

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Theme	Key Activities	Key Responses
		<p>tion will reduce fuelwood supply</p> <ul style="list-style-type: none"> ▶ Identify and support a long term income generating project for communities around NNP(Hotel) ▶ Reduce expenses on staff salaries & other benefits for project implementation for the projects or NGOs, and concentrate the funds on socio-economic development for local people
Human population control	<ul style="list-style-type: none"> ▶ Analyse the existing information and statistics on population densities for all sectors around the park ▶ Collaborate with other agencies to sensitise the population on family planning ▶ Provide training on family planning techniques for community groups and associations particularly women associations 	<ul style="list-style-type: none"> ▶ Collaborate with and support government family planning programmes (beyond the mandate of NNP management) ▶ Use the existing information from other relevant government bodies/local authorities, instead of the collection / analysis being carried out by the park itself ▶ Start with the RDB staff particularly rangers that often live in communities and may lead by example ▶ Bringing religious leaders on board will be important
Community in-park resource use	<ul style="list-style-type: none"> ▶ Identify the natural resource needs for the neighbouring local populations ▶ Establish modalities of natural resource harvesting in the forest ▶ Prospect the availability of resources inside the forest ▶ Provide and plant adaptive species outside the forest ▶ Support the guided harvest of NTFPs in regulated areas ▶ Evaluate the impact of natural resource use and adapt use as needed 	<ul style="list-style-type: none"> ▶ Strong monitoring and control systems required ▶ Plant collection to be accepted on cooperatives promoting traditional medicine ▶ Use of NNP natural resources should only be for short-term genetic materials and research ▶ Needs assessment first and shortlist all plants that are mostly collected from the forest ▶ Examine experience and lessons learnt on similar projects elsewhere as a basis for defining approach in NNP (e.g. RBM data and WCS technical reports) <ul style="list-style-type: none"> ▶ Expand experiment with guided harvesting, as is already done with medicinal plants ▶ This may also be possible in pine plantation buffer zones
Education and awareness	<ul style="list-style-type: none"> ▶ Organise workshops and meetings to show films on conservation and the environment ▶ Disseminate conservation awareness through newspapers, radio and television ▶ Produce and print educational materials (Posters, Brochures...) ▶ Organise educational tours 	<ul style="list-style-type: none"> ▶ Elaborate and implement NNP Conservation Education and Outreach Strategy based on a general understanding of present attitudes and threat levels (with specific messages / approaches to each audience group) ▶ Organize trainings for communities leaders on conservation issues ▶ Build capacity and support ANICOs and District Education Officers in disseminating conservation messages and information ▶ For schools, District Environmental Officers, teachers and others who can act as important channels for conservation messages ▶ Reinforce environmental clubs and ensure their sustainability in partnership with REMA ▶ Develop graphical posters along the roads and within some areas of the park boundary

Theme	Key Activities	Key Responses
Revenue sharing	<ul style="list-style-type: none"> ▶ Develop a mechanism that shall guide the selection of revenue sharing projects ▶ Develop at least one development project in each sector neighbouring the park (e.g. beekeeping project) ▶ Identify the projected benefits to conservation and community of the revenue sharing project ▶ Develop evaluation criteria for the projects realised ▶ Monitor change of attitudes to conservation regularly 	<ul style="list-style-type: none"> ▶ Develop environmental education programmes in surrounding schools. This can also be supported by scholarships and field tours. Focus on primary schools ▶ Carry out baseline education, outreach and attitudinal surveys every 5 years ▶ Mechanism is developed and is operational ▶ Carry out review of the Revenue Sharing guidelines and establish a mechanism for selecting projects and areas of intervention ▶ Carry out an evaluation of the effectiveness and efficiency of RS distribution (how much has been given? To who? And what are the outcomes?) ▶ Revenue sharing needs to also target poorest of poor who are likely more detrimental to the park (resource extraction because no other alternatives for them) ▶ Target revenue sharing at women and vulnerable people ▶ Link revenue sharing to conservation performance, i.e. linked with effort in reducing threats / illegal, and also to problem solving (e.g., water taps to the place where they fetch water from the park) where it is possible ▶ Identify leaders in the community, whether adults or children, who have or can take action for forest conservation ▶ Communities should have ownership over revenue sharing and it should be part of the performance contracts of local administrative entities, which should actively monitor progress of the revenue sharing projects ▶ Include community consultation in the identification of projects to be implemented ▶ Increase revenue sharing percentage ▶ Harmonize revenue sharing budget with District budgets to avoid activity delay ▶ Some of these activities could be done in collaboration with the new Master's program in Biodiversity Conservation, so that the NNP community conservation staff could work together with Master's students on developing the research and monitoring projects that would evaluate the effectiveness of these activities to conserve biodiversity
Collaboration mechanisms	<ul style="list-style-type: none"> ▶ Identify potential areas for community collaboration and integration ▶ Create environmental committees at the village and sector level ▶ Ensure participation of communities and other relevant organisations at all park planning and management processes 	<ul style="list-style-type: none"> ▶ Proposed objective: To enhance the planning system and partnership for collaboration with all NGOs, local communities and international agencies operating in Nyungwe ▶ Participate regularly in NNP Joint Action Forum as a means of improving understanding, coordination, involvement and reduction of threats and to ensure that PA management is concerned and reported on ▶ Plan PA activities with local government and ensure their participation ▶ Collaborate with local authorities in establishing conservation objectives and initiatives in District Development Plans, so that there is integrated planning ▶ Support participation of user groups (beekeepers, bamboo artisans, ex-poachers, etc) ▶ Put in place the supporting community livelihood fund open for all volunteers and partners ▶ Carry out integrated monitoring of project implementation (quarterly/ annually/ bi-annual) ▶ Build capacity of ANICO and insure active participation of ANICO in conservation activities ▶ Establish stronger link with NUR and the Biodiversity Conservation programmes

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Theme	Key Activities	Key Responses
		<ul style="list-style-type: none"> ▶ Forest researchers should give regular talks to staff about how their research applies and can help management, and also create platforms for researchers to interface with community members to enhance conservation efforts ▶ Establish and maintain a strong ethical code of conduct governing interactions between park staff and communities ▶ Potential for greater community involvement in NNP management: Define how communities will participate in management and protection of the park as they get in Village Committees

NNP Tourism Programme

Theme	Key Activities	Key Responses
Visitor services and experience	<ul style="list-style-type: none"> ▶ Train tourist guides and park staff in relevant tourism-related skills ▶ Build entrance gates at park entrances ▶ Improve communication infrastructures ▶ Develop and maintain new and existing trails ▶ Develop and distribute a code of conduct to control behaviours of visitors, staff, and tour operators <ul style="list-style-type: none"> ▶ Improve and standardise signage inside and outside Nyungwe park ▶ Elaborate a new tourism pricing policy ▶ Improve external communication (telephone, fax and email) to facilitate tourist bookings ▶ Provide central booking capabilities in Kigali 	<ul style="list-style-type: none"> ▶ Provide refresher training for tour guides, community guides and park guides for wild and nature interpretation, tracking and guiding skills and visitor management/customer care (at international recognised professional guide level) ▶ Organize study tours for trackers, guides and park staff ▶ Elaborate a trails management plan, recruit trails management coordinator and re-train all community teams and foremen. Ensure quality control at all times and on all trails ▶ Establish booking system for NNP tourists products, including improved payment system (both Kigali and Nyungwe reception offices) ▶ Review the NNP pricing structure and its value for money compared to neighbouring countries with similar products and services. ▶ Establish clear mechanisms / procedures for updating prices when appropriate ▶ Enhance the trail maintenance and experience within NNP ▶ Rehabilitate and strengthen management of Kitabi and Gisakura entrance gates ▶ Build a reception centre at Gisakura gate ▶ Improve camping facilities (e.g. water supply and picnic table) ▶ Improve transport for visitors into park from Kitabi and Gisakura
Tourism product diversification	<ul style="list-style-type: none"> ▶ Encourage and support private sector investments in tourism development which emphasise quality in products and services offered ▶ Establish canopy walks and appropriate and environmentally sensitive view towers ▶ Develop overnight trekking leading to the source of Congo Nile rivers ▶ Develop other tourism products specialized for interna- 	<ul style="list-style-type: none"> ▶ Establish policies such as concession policies, PPP policies, that encourage private sector investments in tourism development ▶ Promote concession policy with strict adherence to limits of acceptable change and EIA's ▶ Carry out study tour for tourism staff in order to develop tourism products ▶ Increase the number of tourist and quality tourism products (birding, nature walk, chimps experiences, Nyiramujandi Waterfall) ▶ Develop customized birding packages particularly with focus on the Central Albertine

Theme	Key Activities	Key Responses
	<p>tional tourists (e.g. chimpanzee at Cyamudongo, tea plantation and processing plant tour, lake tour)</p> <ul style="list-style-type: none"> ▶ Develop trails and other attractions at Kitabi to encourage locals to visit the park 	<p>Rift endemics in Nyungwe. Branding and packaging will be key</p> <ul style="list-style-type: none"> ▶ Emphasise the habituation of Colobus and chimpanzees ▶ Diversify and develop ecotourism activities around the park ▶ Carry out a study on the potential link of Nyungwe visit with VNP and Lake Kivu ▶ Develop a zip line as a new tourism product??? ▶ Carefully develop the Kitabi and Gisakura area of the park to promote more site-based tourism opportunities ▶ Develop guidelines for adventure tourism (this will help us to manage tourists undertaking these long treks or any other adventurous activity. It also include some disclaimers) ▶ Identify a new place for camping sites (bigger than the existing one) ▶ Set-up of 3 luxury permanent camping sites ▶ Improve the canopy experience. Including improved marketing ▶ Carry out follow up studies and evaluations to ensure these initiatives are functioning as planned. NUR students can assist with this ▶ The trail is there, but we need to improve its marketing strategy
Marketing and promotion	<ul style="list-style-type: none"> ▶ Develop and establish a communication strategy for NNP ▶ Regularly monitor and update information on products, services, and prices in support of the communication strategy ▶ Produce print materials for use in promoting tourism in Nyungwe ▶ Produce a newsletter for Nyungwe ▶ Develop and regularly update a Nyungwe website to help promote tourism in Nyungwe ▶ Open Nyungwe tourism centres in most towns to promote tourism in Nyungwe ▶ Identify government institutions that facilitate holidays for their staff and encourage them to consider Nyungwe 	<ul style="list-style-type: none"> ▶ Improve and regularly update the communication strategy for NNP ▶ In particular, consider the option of promoting budget and mid-range tourists, including cost of camping at Uwinka, introduction of an annual park pass and reduced costs for children ▶ Ensure proper distribution of tourism information in newspapers and regularly update the NNP website ▶ Organise international and local media familiarization trips to promote Nyungwe ▶ Ensure Nyungwe tourism information are distributed to key local and international tour operators ▶ Consider information hotline, recorded messages that can be accessed by phone
Visitor information and interpretation	<ul style="list-style-type: none"> ▶ Establish an interpretation and reception centre at the Kitabi complex ▶ Develop interpretation materials for Kitabi Uwinka tourist centre ▶ Develop interpretation points at all tourism sites ▶ Revise, update and reprint information on all signboards ▶ Create posters, leaflets or interpretation boards for distribution ▶ Develop a research and conservation-based tourism product (illustrated talks to tourists) 	<ul style="list-style-type: none"> ▶ Interpretation Centre at Kitabi, reception centre at Uwinka ▶ Set up reception centre/canteen at Gisovu ▶ Set up a canteen/café at Kitabi complex ▶ Improve the quality of information materials ▶ Establish visitor orientation information at Mayebe, Cyamudongo etc ▶ Interface with researchers in NNP who can provide cutting edge information and may help to attract tourism

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Theme	Key Activities	Key Responses
Community ecotourism	<ul style="list-style-type: none"> ▶ Educate visitors on possible negative impacts that may be caused by their actions ▶ Ensure maximum direct employment opportunities for local communities neighbouring NNP ▶ Provide training of community associations on importance of tourism in developing and implementing tourism initiatives including cultural tourism ▶ Support study visits to other areas where community tourism has taken off ▶ Identify cultural tourism products e.g. traditional dancing etc. ▶ Collaborate with development NGOs and other partners to support financially the community tourism projects ▶ Assist the development of local cooperatives to supply locally produced products (e.g. fruits, handicrafts, etc.) 	<ul style="list-style-type: none"> ▶ Combine tea tours, cultural tours and birding within communities as a way to encourage community participation in tourism development ▶ Training alone is not enough for communities. Need to develop greater community incentives ▶ And identify and develop outlets for these products
Tourism management	<ul style="list-style-type: none"> ▶ Establish a steering committee to oversee the tourism development in Nyungwe ▶ Improve communication and coordination with tour operators ▶ Undertake regular market research and visitor satisfaction surveys ▶ Refine current data collection and analysis protocols to improve efficiency and maintenance of feedback from and communication with stakeholders ▶ Convene contacts with partners regularly (community groups and tour operators) to obtain feedback regarding improved tourism products and services and potential development opportunities ▶ Train guides and managers about visitor impacts and monitoring techniques ▶ Carry out a study on dynamics of tourism development in the park ▶ Initiate studies to determine possible negative impacts of current tourist activities ▶ Coordinate environmental impact assessments in all NNP areas to be developed ▶ Improve transport for PA management 	<ul style="list-style-type: none"> ▶ Revamp RDB's guide/personnel system (training, promotion potential), i.e., career building. No motivation/incentive for guides to better themselves ▶ The Steering Committee could be a sub-committee of NNP Joint Action Forum ▶ Develop guidelines or activity plan for this committee ▶ Develop a tourism impact monitoring system monitor and evaluate products, services and information <ul style="list-style-type: none"> ▶ Monitor impacts of tourism on wildlife, to mitigate potential negative outcomes ▶ Strengthen linkages between communities, researchers and tourism managers in the development of the NNP tourism product ▶ Work with tourism schools/universities on tourism research in Nyungwe ▶ Develop guidelines for tourists who want to volunteer in NNP tourism development ▶ Cooperate with international tourism associations and schools on the development of tourism in NNP ▶ Work with other regional and international national parks on the cooperation in tourism development in PAs ▶ Carry out visitor feedback surveys

NNP Ecological Management & Monitoring Programme

Theme	Key Activities	Key Responses
Threat reduction	<ul style="list-style-type: none"> ▶ Reduce mineral exploitation significantly ▶ Remove exotic plants from the forest ▶ Reduce plant collections/cuttings ▶ Control and reduce marijuana planting 	<ul style="list-style-type: none"> ▶ Liaise with relevant ministries to avoid mining-conservation conflicts (mining on southern park boundary and govt. mining concessions) ▶ Identify the market for minerals from the Park ▶ Educate and develop mechanisms to collaborate with miners ▶ Reintroduction of large mammals is still appropriate, in terms of diversifying the fauna of NNP ▶ Elephant reintroduction programme ▶ Establish and implement a strategy for the systematic removal of exotic plants from the forest and to avoid creating gaps, especially along main road ▶ Increase efficiency of local authorities, prosecution service, army, police and community participation in eradication of marijuana farming and identifying its market ▶ Address issue of bio-prospecting in NNP ▶ Promote military to use exotic species as firewood ▶ Develop management plan for marijuana involving local authorities and security organs ▶ Reduce infrastructures inside the Park ▶ Reduce the number of illegal trails in the park ▶ Reduce the number of illegal passengers in the park ▶ Implement restoration measures for damaged areas ▶ Fight against any form of pollution (including fuel leakages) : just need to enforce existing law ▶ Enforce EIA procedures to become common practice for any activity likely to affect habitat: just need to enforce law
Fire Management	<ul style="list-style-type: none"> ▶ Minimise occurrence of fire and its related impacts 	<ul style="list-style-type: none"> ▶ Fire Management Plan under development and should be annexed to revised MP ▶ Develop a Fire Management Plan including to guide annual fire danger season operations, including: <ul style="list-style-type: none"> ○ Community based Fire Management (Sensitize and train population on Fire fighting techniques this can help us to formalize a Fire Brigade& Cooperatives in communities through Community Policing Committees) ○ Fire Wise Community (Educate People and keep educating children at their Schools.) ○ Train Rangers and other Park Staff in Fire fighting techniques ○ To adopt Smokey Bear as Nyungwe Fire Prevention Symbol ○ Posting lookout network to the strategic view points in the Forest ▶ Purchase of fire equipment ▶ There needs to be a deeper understanding of the causes of fire in the forest, and the role of fire – this can help the activity of minimizing fire. Simply reacting to fires is okay but may be more effective to understand and predict fire occurrence. Monitoring or research to guide these actions is needed. ▶ Training of local community in fire management techniques
Research priori-	<ul style="list-style-type: none"> ▶ Carry out a feasibility study for re-introduction 	<ul style="list-style-type: none"> ▶ Develop understanding of the potential impacts of climate change on key wildlife species and habi-

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Theme	Key Activities	Key Responses
ties	<p>of large mammals Not a priority. Done for elephants</p> <ul style="list-style-type: none"> ▶ Carry out a study on dynamics of human activities ▶ Carry out ecosystem services valuation of the park (forest) ▶ Carry out inventory and ecology of lesser known taxa (flora and fauna) ▶ Carry out ecological and sociological assessment of the NNP buffer zone ▶ Develop a framework to provide accurate and timely monitoring information ▶ Carry out threat reduction assessment 	<p>tats in order to develop adaptation and mitigation plans for the park. Including altitudinal shifts</p> <ul style="list-style-type: none"> ▶ Establish the PES value of NNP- hydrology, pollination, climate regulation etc Ecosystem services study started to continue in collaboration with REMA ▶ Carry out an updated study on the threatened, endangered, rare, near extinct and extinct species in Nyungwe National Park, especially those that act as key indicators of habitat quality, climate change, etc. ▶ Maintain socio-economic baseline for surrounding communities ▶ Edge effects and buffer zone type (land use type) – impacts on forest structure, function and composition. ▶ Primate behaviour and health related to tourism especially ▶ A case study of tourism around Banda might give good information in terms of lessons learned ▶ A new project evaluation research initiative - how projects have contributed to biodiversity conservation – the community conservation efforts, the tourism facilities, etc.
Research management	<ul style="list-style-type: none"> ▶ Develop a research policy to guide research collaboration ▶ Make the policy available to all partners and research institutions (on ORTPN webpage, etc.) ▶ Avail the list of priority research projects to partner research institutions particularly universities ▶ Identify funding sources and prepare proposals for identified research projects ▶ Identify potential research partners to write joint proposals and help raise funds ▶ Train local researchers to write proposals and fundraising strategies Not NNP's mandate ▶ Identify international forums, workshops, and conferences that ORTPN research staff can attend ▶ Provide access to scientific information ▶ Organize training workshops on specific topics ▶ Organize annual public lectures on research findings and research opportunities in NNP ▶ Create a physical infrastructure for field studies (e.g., computers, digitizing pads, small GIS lab, public lecture space, herbar- 	<ul style="list-style-type: none"> ▶ Establish and regularly update a research policy/guideline designed to focus research on priority management issues and to validate research results and their management applicability ▶ Meet on an annual basis with WCS and key research partners to prioritize research needs for each year ▶ Develop standard MoU's and guidelines for researchers wanting to work in NNP (either directly through RDB or through one of RDB's partners such as WCS) ▶ Coordinate and disseminate research results ▶ Develop a database of researchers and research topics conducted in NNP using MIST/ GIS ▶ Identify and ensure participation of RDB to international forums, workshops and conferences that can raise awareness on Nyungwe NP ▶ Strengthen linkages between researchers currently in Nyungwe and the NNP staff ▶ The NUR biodiversity conservation students and their instructors could really help meet these goals ▶ Post research list on the Nyungwe forest webpage ▶ Collaborate with NUR in establishing research themes for projects and accessing funding ▶ Establish a framework of collaboration and integration of KCCEM ▶ Investigate and access potential new sources of funding, e.g. including carbon markets ▶ Carry out and implement the carbon project study ▶ Adopt the REDD projects in the new management plan: What are the costs and benefits...how can it be incorporated in the new management plan? ▶ Develop and implement PES mechanisms ▶ Establish a framework for the conservation forum initiated in 2008 ▶ Clarify/expedite research permit application process ▶ Establish a website clearing process linking past and future researchers ▶ Is the research centre operational? If not, why not to have it part of the NNP management plan! ▶ Establish research centre at Kitabi

Theme	Key Activities	Key Responses
	<p>ium, rooms for students at Kitabi)</p> <ul style="list-style-type: none"> ▶ Organize annual meetings between Kahuzi-Biega, Bwindi, and Nyungwe staff and researchers to facilitate research networking ▶ Work with Community-Based Conservation Officers to create programs for local leaders and community members to relay information from research projects in Nyungwe and surrounding communities 	<ul style="list-style-type: none"> ▶ Improve infrastructure for researchers (e.g. at Uwinka or Gisakura) ▶ Include Kibira National Park ▶ Build the capacity of park staff in biodiversity / threat monitoring and survey techniques ▶ Ensure that biodiversity monitoring data collected in the park is analysed on a regular basis and results/findings shared with RDB

Annex 2: Participation in Planning Events

Name	Position/Organisation	Ecological Management & Zonation	Tourism Management	Community Partnership	PA Operations
Bizimungu, Francois	RDB Tourism & Conservation Department	✓	✓	✓	✓
Buvumuhana, Innocent	Wildlife Conservation Society/PCFN			✓	
Fawcett, Katie	NUR	✓			✓
Gapusi, Jean	ISAR	✓			
Habiyambere, Cip Gerard	Police/Nyamagabe				✓
Hakizimana, Vicent	Wildlife Conservation Society/PCFN			✓	
Hategekimana, Roger	Nyungwe National Park	✓	✓	✓	✓
Irakunda, Vanissa	Nyungwe Chimp T.A.		✓		
Kambogo, Ilidephonse	RDB/Tourism Warden	✓	✓		✓
Karasira, Faustin	RDB/Head of Product development & Planning		✓		
Karegire, Norbert	RDB/Nyungwe National Park/CCW	✓	✓	✓	✓
Karekezi, Capt Jacques	RDF/Nyamagabe				✓
Katararwa, Scovia	PAB/REMA	✓	✓	✓	✓
Malpas, Robert	Conservation Development Centre (Planning Facilitator)	✓	✓	✓	✓
Mariza, Donnah	DAI			✓	✓
Masozera, Michel	Wildlife Conservation Society	✓			
Mpayana, Raphael	REMA/PAB Coordinator	✓		✓	✓
Mudakikwa, Tony	RDB/T&C	✓	✓	✓	✓
Mulisa, Alex	National Consultant	✓	✓	✓	✓
Musabyimana, Elie	RDB/CCW/Nyungwe National Park	✓	✓	✓	✓
Muvunyi, J. Damascene	HELPAGE			✓	✓
Nasafira, Richard	KCCEM	✓		✓	✓
Ndikubwimana, Innocent	RDB/Nyungwe National Park	✓	✓	✓	✓
Ngabire, Rumanzi Adrien	RDB/T&C		✓		
Ngoga, Telesphore	RDB		✓	✓	
Nicholas, Aaron	Wildlife Conservation Society/NNP				✓

Name	Position/Organisation	Ecological Management & Zonation	Tourism Management	Community Partnership	PA Operations
Nsengimana, Serge	ACNR	✓	✓	✓	
Nsengiyumva, Barakabuye	Nyungwe T.V.H.H.		✓	✓	
Nshutiyayesu, Samuel	NUR	✓			
Ntare, Nicholas	Wildlife Conservation Society	✓	✓		
Ntihemuka, Pierre	RDB/Admin. and Finance Nyungwe National Park	✓	✓	✓	✓
Nzamuye, Patrice	RDB/Nyungwe National Park	✓	✓	✓	✓
Rubagumya, K. Claudine	RDB/Senior Tourism Development Officer		✓		
Rugerinyange, Louis	RDB/Nyungwe National Park	✓	✓	✓	✓
Seyler, Jim	DAI		✓		
Shirimpundu, M. Chantal	REDO			✓	
Tumwesigye, Boaz	DAI	✓	✓		
Uwizeye, Janvier	RDB				✓
Were, Jemy	Nyungwe Forest Lodge		✓		