



IISDREPORT

Conflict-Sensitive Conservation in Nyungwe National Park: Conflict analysis

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Acronyms

CSC	conflict-sensitive conservation
IISD	International Institute for Sustainable Development
NAFA	National Forestry Authority
NFC	New Forests Company
NGO	non-governmental organization
RDB	Rwanda Development Board
WCS	Wildlife Conservation Society

Introduction: Conflict-Sensitive Conservation in Nyungwe National Park

In September 2011 the Wildlife Conservation Society (WCS) and the International Institute for Sustainable Development (IISD) initiated a two-year collaborative project on conflict-sensitive conservation in Nyungwe National Park in southwest Rwanda. The collaboration focuses on building the capacity of the Rwanda Development Board (RDB) and Nyungwe-area district representatives to understand, manage and resolve conflicts. The work is funded by the U.S. Agency for International Development.

Conflict-sensitive conservation (CSC) is conservation programming and implementation that takes into account the causes and impacts of conflict and the actors in it, in order to minimize conflict risks and maximize peace-building opportunities (Hammill, Crawford, Craig, Malpas & Matthew, 2009). As a central part of the project, a two-day workshop on conflict-sensitive conservation was held in Kitabi on September 22 and 23, 2011.

The objectives of the workshop were to introduce RDB staff and stakeholders to the CSC methodology, identify existing and potential conflicts affecting the conservation of Nyungwe National Park and the surrounding communities and prioritize those conflicts that require action, analyze the prioritized conflicts, and identify potential solutions through which RDB and its partners can address these conflicts. The findings of the workshop, as well as those from consultations with conservationists and communities, form the basis of the conflict analysis presented below and will contribute to the development of a conflict resolution strategy for Nyungwe National Park.

For a map of the park and the agenda of the workshop, please see Annexes 1 and 2.

Conservation Context: Nyungwe National Park

Nyungwe National Park is Rwanda's newest—and largest—national park. It is situated in the southwest of the country and, along with the contiguous Kibira National Park in Burundi, lies in Africa's most biodiverse region, the Albertine Rift. The park straddles the Nile and Congo river basins and is crucially important to Rwanda's water supply: 70 per cent of the country's rain falls in Nyungwe. It is home to a wide variety of flora and fauna, including approximately 100 species of orchids; 13 species of primates, including chimpanzees, L'Hoest's monkeys, blue monkeys and large colonies of Angolan colobus; almost 300 bird species, including a number of enigmatic turacos; and a number of other species of mammals, reptiles and insects.

The forest was first protected in 1903, when it was declared a forest reserve by the colonial administration, but protection was not expanded until more than a hundred years later, when in 2005 Nyungwe was finally declared a national park. RDB is responsible for the management of the park, and is supported by a strong partnership with WCS. The park, covering approximately 1,000 square kilometres, operates with just 62 park rangers. Surrounding communities are not included in park's decision-making processes and are not permitted to access the natural resources within its boundaries.

Tourism is growing by approximately 30 per cent per year; in 2010 the park welcomed approximately 4,000 visitors. Tourists are drawn to the recently opened canopy walk, chimpanzee and colobus-tracking opportunities, hiking trails and birding. There is, however, currently no mechanism in place to monitor growth in tourism, nor is there a concerted tourism strategy for Nyungwe.

Five per cent of national tourism revenues are allocated to projects in communities near each of Rwanda’s three national parks: Volcanoes, Nyungwe and Akagera. Funding is divided among the parks (Volcanoes receives 40 per cent, Nyungwe 30 per cent and Akagera 30 per cent), and is then distributed to communities in the districts surrounding each park.¹ Funding typically goes to support housing and education projects, mainly in those communities that pose the biggest threat to the park.

The main challenges to the continued protection of Nyungwe’s ecosystems and biodiversity are population pressures, high rates of poverty, a high reliance on natural resources for livelihoods in the communities surrounding the park, forest fires (fires in 1997 consumed 5 to 8 per cent of the park), hunting pressures (particularly for large mammals), pressures from artisanal and industrial mining, and deforestation for firewood and construction materials.

Conflict Identification

A variety of current (and potential) conservation-related conflicts affect Nyungwe National Park and the activities of RDB and WCS. Identified in consultation with park stakeholders, they can be broadly placed into six categories: resource access conflicts, wildlife-human conflicts, benefit-sharing conflicts, park-people conflicts, institutional conflicts and transboundary conflicts. The full list of conflicts, along with short descriptions, can be found in Table 1 below.

TABLE 1: CURRENT AND POTENTIAL CONFLICTS IDENTIFIED FOR NYUNGWE NATIONAL PARK

Conflict	Short description	Conflict type
Resource access	Tensions between the immediate use of Nyungwe’s land and natural resources for revenue and livelihoods and the conservation of those natural resources for ecosystem services, biodiversity and future generations. A number of these types of conflicts were discussed, touching on a range of resource types and livelihoods: bamboo and firewood cutting, hunting, artisanal and industrial mining, beekeeping, farming (including narcotics), traditional medicines and livestock grazing. The conflicts varied in terms of human and conservation impacts (see Figure 1 below).	Resource access conflicts; park-people conflicts
Crop raiding by wild animals	The destruction of community crops by park fauna and the lack of compensation for those losses are a significant source of tension between communities and the park.	Wildlife-human conflicts
Buffer zone management	A lack of community access to the resources in the buffer zone, a lack of coordinated decision-making and management of the zone, and a lack of benefit-sharing mechanisms for buffer zone resources has led to tensions between park personnel, the communities and the institutions managing the buffer zone.	Institutional conflicts; park-people conflicts; resource access conflicts
Transboundary issues	Conflicts resulting from weak law enforcement in Kibira National Park in neighbouring Burundi, as well as along the shared border, and corresponding illegal activities in the protected ecosystems of both countries.	Transboundary conflicts

¹ There are five districts surrounding Nyungwe, and these are further divided into 23 sectors.

Infrastructure development	The decision to develop infrastructure inside the park (including current road improvements) often comes from other ministries without consultation with or the participation of the RDB.	Institutional conflicts
Equitable sharing of benefits	Perceived inequalities among communities in the distribution of park revenues and payments for ecosystem services, leading to questions of why communities should protect the park if they receive few or no benefits from it.	Benefit-sharing conflicts
Increased population inside the park	Conflicts arising from the impact of an increasing number of people inside the park, including tourists, the military, and people along the main road that passes through the park's centre (which contributes to pollution, accidents and traffic).	Park-people conflicts
Regional insecurity	Threats resulting from greater regional insecurity in Burundi and the Democratic Republic of Congo.	Transboundary conflicts

Conflict Prioritization

Conflicts in Nyungwe can be prioritized for further action according to the severity of both their human impacts (the damage inflicted by the conflict on community livelihoods) and their conservation impacts (the direct and indirect effects of the conflict on the conservation activities of RDB and WCS). Following discussions with stakeholders, the conflicts have been ranked on a scale of high impacts to no impacts, as presented in Figure 1. Those conflicts with the highest human and conservation impacts (i.e., the conflicts of highest priority) are in the top-left square.

		Human impacts			
		High	Medium	Low	None
Conservation impacts	High	- Crop raiding - Buffer zone management - Artisanal mining - Bamboo cutting - Forest fires - Hunting	- Transboundary conflicts with Burundi - Infrastructure development	- Roads (pollution, accidents, traffic)	
	Medium		- Unequal benefit-sharing - Traditional medicines - Farming encroachment (i.e. for cannabis)	- Increasing number of people in the park - Industrial mining	
	Low	- Firewood collection	- Livestock passage and grazing	- Regional insecurity - Impacts of military presence	
	None				

FIGURE 1: CONFLICT PRIORITIZATION ACCORDING TO THE HUMAN AND CONSERVATION IMPACTS OF IDENTIFIED CONFLICTS

Conflict Selection

Based on the matrix in Figure 1 and on further discussions with stakeholders, we selected three conservation-related conflicts for further analysis:

1. **Resource access conflicts:** A consolidation of conflicts surrounding bamboo and firewood cutting, hunting, artisanal and industrial mining, beekeeping, farming (including narcotics), traditional medicines and livestock grazing.
2. **Wildlife-human conflicts:** Centred on crop raiding by park fauna.
3. **Buffer zone management conflicts:** Centred around issues of buffer zone management, resource access and benefit-sharing.

Conflict Analysis

Conflicts were analyzed using two tools: the **conflict tree** and the **conflict map**. These tools are designed to help the participants better understand the conflicts and to allow them to reflect on how the ongoing and planned work of RDB and WCS in Nyungwe might either resolve or exacerbate the identified conflicts.

The first tool is the **conflict tree**. A conflict tree (shown below) is used to identify conflict issues and organize these issues into the core problem and its causes and effects. The tool helps to stimulate group discussion about conflict, define and agree on the core problem, relate causes and effects to each other, and identify conflict issues that could and should be addressed (Hammill et al., 2009).

The second tool is the **conflict map** (also shown below). Building on the conflict tree, this tool allows participants to identify stakeholders affected by and affecting a conservation-related conflict, and to see what relationships exist among stakeholders, see where RDB and WCS are situated among Nyungwe stakeholder groups, clarify where power lies, identify (potential) allies, and identify openings for intervention or action (Hammill et al., 2009).

We present the conflict analyses and suggested solutions for each conflict below. For an index explaining conflict map relationships, please see Annex 3.

Conflict 1: Resource Access Conflicts

Tensions have arisen between park personnel and the surrounding communities over the immediate use of Nyungwe's land and natural resources for revenue and livelihoods, and the conservation of those natural resources for ecosystem services, biodiversity and future generations. Communities are highly dependent on a number of natural resources for their livelihoods (including bamboo, timber, honey, minerals, medicinal plants, farmlands, pasture and bushmeat), but do not legally have access to the park's resources; conflicts have emerged around many of those resources.

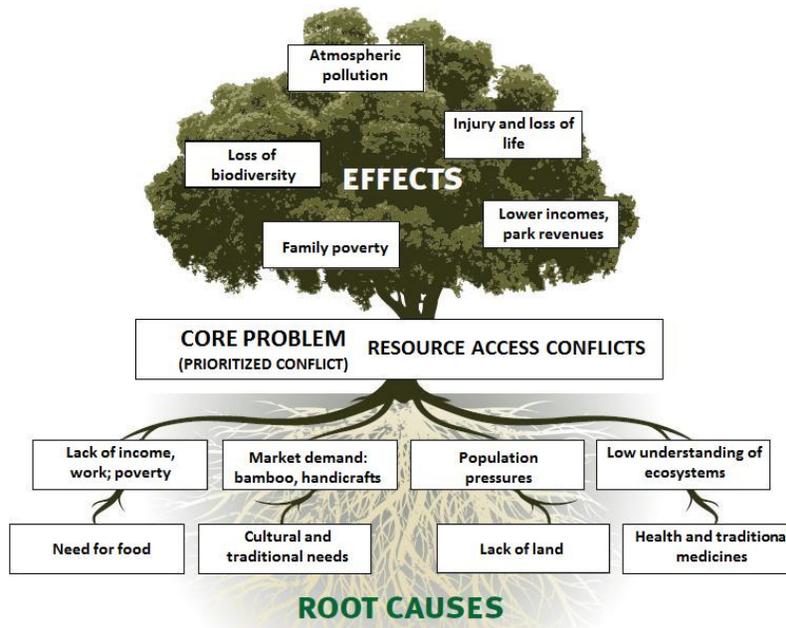


FIGURE 2: CONFLICT TREE, RESOURCE ACCESS CONFLICTS

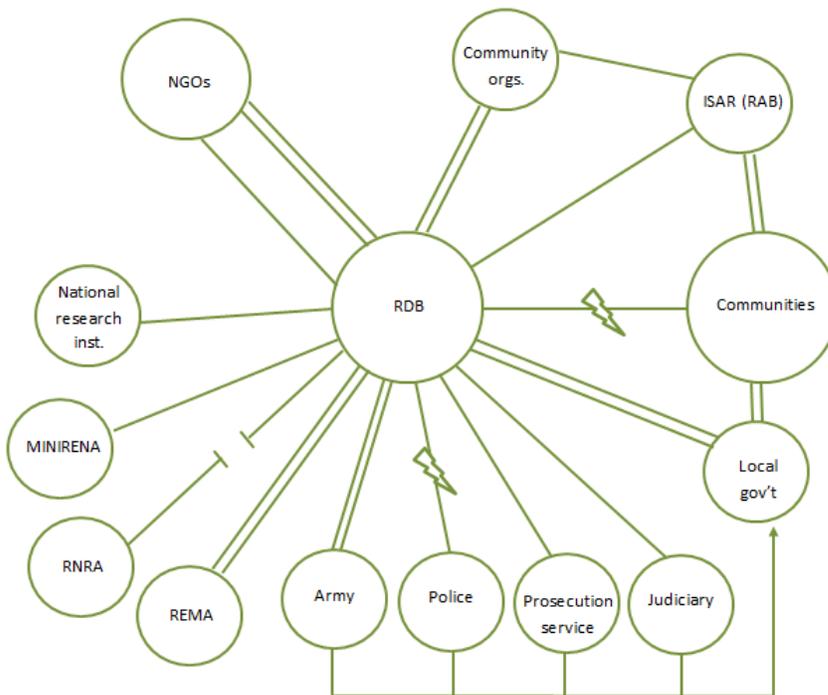


FIGURE 3: CONFLICT MAP: RESOURCE ACCESS CONFLICTS²

² NGOs represented on the map are the WCS, MIG, SNVI, PEA, ARDI, DAI, Re-Direct, ACNR, REDO, KAGENO project, PAB, AEE/CARE, SDA-Iriba, GEF. Local community organizations are ANICO (Animateur de conservation), associations, cooperatives; ISAR (RAB): Regional Agricultural Board. National research institutes are NUR and IRST.

Conflict Causes

High levels of **poverty and a lack of employment** opportunities are the main causes of resource access conflicts in Nyungwe. People need incomes to support themselves and their families, and they will often turn to park resources—timber, minerals, bushmeat and honey—for that support. Markets are not lucrative but can bring much-needed incomes into households; for example, one bundle of firewood is worth approximately US\$0.50, or 300 Rwandan francs, in the local market, and one kilogram of honey is worth US\$2.50, or 1,500 Rwandan francs. Continued—and in some cases increasing—**market demand** for bamboo products, **traditional medicines** and animal products, as well as high prices for minerals such as gold and coltan, mean that this resource exploitation is likely to continue in the absence of appropriate enforcement.

The **need for food** also drives populations into the park. Bushmeat hunting remains a significant problem, but is difficult to curtail given the very porous park boundary and low enforcement capacity: ranger posts are typically found at intervals of 20 to 30 kilometres, and only 62 rangers patrol an area of 1,000 square kilometres. This has led to the elimination of the park's elephant and buffalo populations and a dramatic reduction in the number of large mammals, particularly ungulates, still living inside the park. Livestock are also encroaching into the park, threatening habitats, as **population pressures** reduce the amount of **land** and pasture available per person and herders must turn elsewhere for grazing.

Agricultural encroachment is less common, though the remoteness of the park and the opportunities this presents for carrying out unauthorized activities have led to land clearance and the cultivation of illegal crops like cannabis by some farmers inside the park boundary. Also related to agriculture, some farmers turn to collecting firewood inside the park in order to raise funds to improve their crop yields through the purchase of fertilizers. Without the means to purchase these fertilizers, a family's food security can be threatened and farmers may turn to bushmeat poaching for sustenance.

Resource access conflicts are particularly acute in the south of the park near the Burundi border. In Burundi, weak law enforcement, low levels of conservation funding and political support, low capacities for conservation, and a national parks authority in the process of rebuilding itself mean that poaching, mining and bamboo cutting occur on both sides of the border. Bamboo cutting presents a particular conservation threat to Nyungwe, as the main bamboo grove in the south of the park is home to East Africa's only population of owl-faced monkeys.

Within the conflict map, RDB is perceived as having a conflictual relationship with the police force, as the police are not seen as properly valuing the resources in the forest, and arrests rarely lead to fines or imprisonment. Conflicts arise from the level of impunity with which illegal activities can be carried out in the park due to weak policing. In addition, tensions exist between RDB and the Rwanda Natural Resource Authority due to the Authority granting mining concessions to companies operating close to the park. This has led to artisanal miners mining in the park and selling the minerals they extract to the companies operating adjacent to the park.

Conflict Effects

The **loss of biodiversity** is the primary effect of resource access conflicts, according to stakeholders. This includes the loss of endemic species and park fauna, as well as threats to habitat through soil degradation, erosion, fires and a reduction in pollination. Fires in the park are typically a result of illegal honey collection: fires are lit to smoke out bees, easing honey collection, but can lead to the initiation of wildfires if not controlled. Forest fires destroyed 5 to 8 per cent of the park in 1997, and they remain a problem. Some community members also reported being coerced into participating in firefighting without due compensation, another potential source of conflict.

The loss of biodiversity could present a threat to future ecotourism and cultural tourism, with consequent **declines in tourism revenues** and local employment opportunities. Blocked resource access, as well as fines and possible imprisonment for exploiting park resources, can lead to **increased household poverty**. Additionally, the informal and unregulated nature of illegal resource exploitation in the park has led to **personal injuries** and even death among miners and poachers as they fight among themselves. Finally, stakeholders also recognize a link between the loss of forest cover and **increased atmospheric pollution**, as well as a negative contribution to climate change.

Conflict-Sensitive Response Strategies

Based on the conflict analysis, the following response strategies were suggested by Nyungwe stakeholders to reduce the risk of resource access conflicts:

1. Increase community awareness of the park and the role of conservation, targeting local authorities, park staff, community members and stakeholders.
2. Support small and medium-sized community projects to increase the number of funded projects conferring park benefits to the communities (such as basic infrastructure projects and beekeeping expansion).
3. Improve law enforcement, particularly through increased patrols, and reduce impunity for park-related crimes.
4. Create incentives for efficient collaboration with the park (such as study tours).
5. Increase the level of collaboration among stakeholders, particularly among security forces such as the police, army, judicial officials and park staff.
6. Involve communities in park management and decision-making.
7. Work with beekeepers to protect colonies from illegal woodcutting.
8. Identify woodcutter groups, encourage them to organize, and work to sensitize them to the importance of the forest and to the laws governing the use of resources in the park.
9. Increase the amount of nursery space available to communities for sapling growth and eventual plantations, with a focus on fast-growing crops.
10. Support family planning and land-use consolidation.

Conflict 2: Wildlife-Human Conflict

The destruction of community crops by park fauna and the perceived lack of compensation for those losses are a significant source of tension between communities and the park, as well as within communities. Households are in large part dependent on crops for income and food security, and reduced harvests due to crop raiding by baboons, chimpanzees and other park fauna can result in significant livelihood losses, as well as the perception that the park authority is not doing enough to limit these incidents.

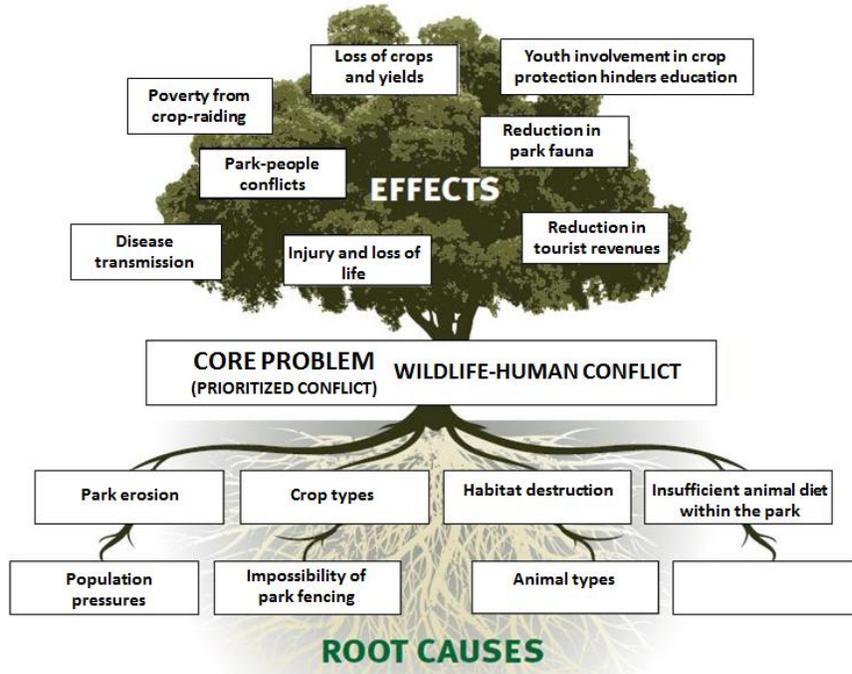


FIGURE 4: CONFLICT TREE, WILDLIFE-HUMAN CONFLICT

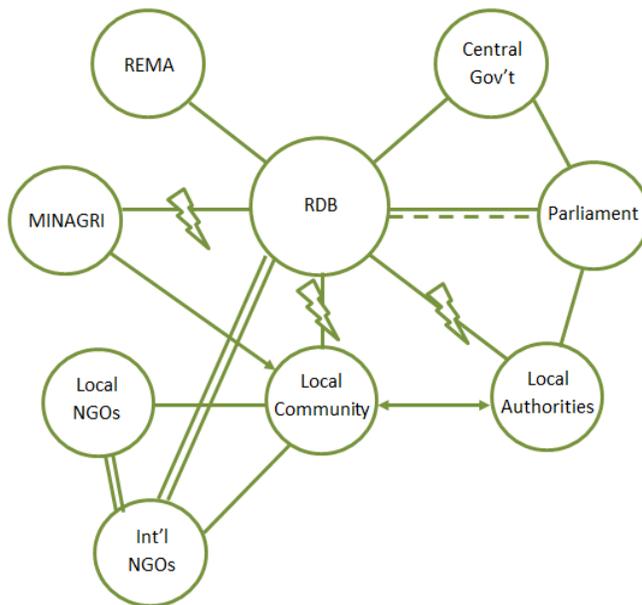


FIGURE 5: CONFLICT MAP, WILDLIFE-HUMAN CONFLICT³

³ Local NGOs represented are: REDO, MCMR, ARECO. International NGOs: WCS, DAI.

Conflict Causes

Crop choice plays a significant role in driving conflicts between the communities surrounding Nyungwe and the park's fauna. Primates, including baboons and chimpanzees, are typically attracted to the same crops as humans, and so for subsistence farmers to make a dramatic change to a crop in which animals show little interest (for example, a broad change from potatoes, maize and cassava to a cash crop like tea) is impossible if food security is to be maintained.

Population pressures have increased the frequency with which animal and human populations come into contact with one another. With more people, the expansion of agriculture and timber cultivation has gradually led to the loss of animal habitats throughout Rwanda, and—until Nyungwe was declared a national park in 2005—had led to the erosion of the reserve's boundary. The size of the park and the types of animals within it (primates) mean that it would be difficult and ineffective to install a fence around Nyungwe to reduce all of these conflicts.

Among stakeholders, crop raiding has led to park-people tensions, as well as institutional conflicts for RDB. Specifically, relations between RDB and the local authorities are strained when the local authorities side with communities when they ask for compensation for crop losses. In addition, tensions have emerged between RDB and the Ministry of Agriculture as animals from the park destroy crops provided by the Ministry to the local population.

Conflict Effects

Decreased crop yields and harvests are the primary impact of wildlife-human conflicts in Nyungwe, and these lead to a number of negative knock-on effects. The loss of crops leads to increased poverty at the local level, as well as food insecurity. This, combined with a perceived lack of compensation for crop losses, results in negative attitudes among community members toward the park.

Increasing contact between human and animal populations has led to both the death of park fauna and injuries among the surrounding population. There are fears that this could lead to a reduction in tourism revenues. These conflicts have also resulted in the transmission of disease: up to 70 per cent of the disease affecting communities in the region is of animal origin, typically associated with jackals infecting village dogs with rabies, which is then passed on to the local population through dog bites. The task of protecting crops from animal incursions often falls to children in the communities, and this means they must often stay out of school to preserve the family's livelihood.

Strategies

Based on the conflict analysis, Nyungwe stakeholders suggested the following response strategies for reducing wildlife-human conflicts:

1. Raise awareness of family planning at the community level to help slow population growth.
2. Increase training and education programs for the population on crops that do not attract animal populations, encourage cash crops where appropriate, and work with the Ministry of Agriculture to focus seed distribution on crops that are not typically damaged by park animals.
3. Implement and raise awareness of the new national compensation law (passed in August 2011) and increase capacity for submitting claims. The lead agency is RDB.
4. Educate the population on non-violent responses to animal incursions.

5. Encourage the population to better protect their crops through community patrols and increased cooperation, and encourage reduced participation of children.
6. Expand the buffer zone surrounding the park into those areas where it does not yet extend.
7. Increase NGO activities that are focused on reducing conflicts between the park and surrounding communities.
8. Work to improve existing relationships between RDB and the local communities with regard to crop raiding.

Conflict 3: Buffer Zone Management

The buffer zone on the edge of Nyungwe forest was established in 1984 as a means of protecting the reserve and its ecosystems from resource exploitation and reducing contact between the reserve's wildlife and the local population.

The zone is divided into three principal zones: tea, eucalyptus and pine plantations. The tea plantations are run by private companies and provide jobs to the local population, as well as serving as an effective barrier to crop-raiding incursions by park fauna (primates dislike the taste of tea). The pine plantations were initially intended as government-managed timber concessions; communities could harvest trees that had fallen in the zone for firewood, but otherwise could not extract resources from the buffer zone. Despite these plans, the government never built the internal capacity necessary to exploit the timber resources themselves, and the plantations matured without any logging. Benefits did not flow to the local population (i.e. in the form of jobs or resources), as many people had expected, generating some ill will.

In 2011 the government—through the National Forests Authority (NAFA)—signed a logging agreement for the pine section of the buffer zone with a private British company, the New Forests Company (NFC). Neither RDB nor the local authorities were included in these discussions, and the conditions of the agreement remain largely unclear to most stakeholders. Some did not even know that an agreement had been signed. It is unclear how communities or the conservation authority will be involved in buffer zone management moving forward, or if benefits will accrue to the communities.

In addition, the majority of beekeeping is currently carried out inside the buffer zone. It is unclear whether the privatization deal could be a source of conflict involving this group; previous efforts to move hives from the park and buffer zone into villages have resulted in intra-community conflicts, with people being stung and retaliating against the beekeepers and their hives.

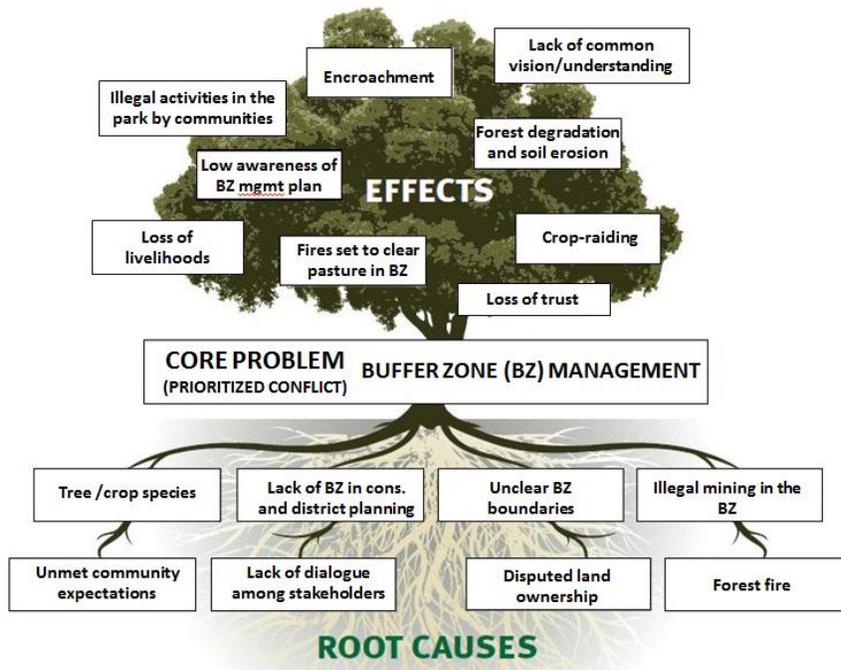


FIGURE 6: CONFLICT TREE, BUFFER ZONE CONFLICT

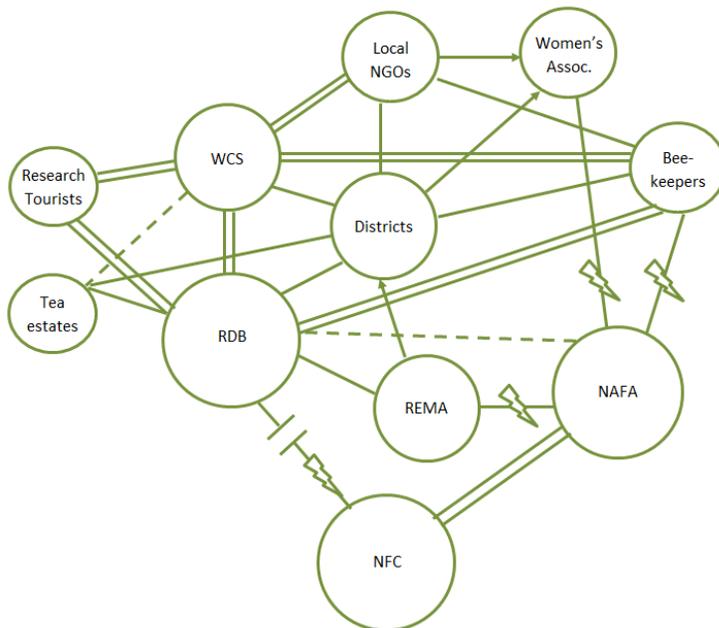


FIGURE 7: CONFLICT MAP, BUFFER ZONE CONFLICT

Conflict Causes

Unmet community expectations are one of the principal sources of tension and friction with regard to the buffer zone. Communities for the most part do not derive financial benefits from the zone, cannot access the resources within the zone (such as timber for firewood and construction materials, or minerals), and get no jobs from those sections of the buffer zones not devoted to tea plantations. Benefits, when they exist, are not evenly distributed: a community living near a buffer zone-designated tea plantation has the promise of jobs and a barrier against crop-raiding animals from within the park, but neither benefit exists for those communities adjacent to pine or eucalyptus plantations.

Communities are also largely excluded from buffer zone decision-making and management processes. This exclusion extends to conservationists as well: the buffer zone is **not included in district development plans or park management plans**, despite its impacts on both. There is a **lack of dialogue** among the key stakeholders: NAFA's decision to grant a logging concession in the buffer zone to the NFC came as a surprise to most stakeholders. The lack of information flowing from NAFA to other stakeholder groups has created tensions, and it is likely that NAFA's conflictual relationships will now be inherited by the NFC as NAFA steps back from management of the zone. The NFC is currently quite isolated, but will be influential in terms of how the conflicts will evolve.

Unclear boundaries mean that community members often inadvertently cross into the park to access resources they believe to be inside the buffer zone (which is also illegal). These unclear boundaries have also resulted in **disputes over land ownership**. **Illegal mining** in the zone also leads to tensions between artisanal miners and the management authorities of both the park and the buffer zone, and can have environmental impacts on Nyungwe.

Finally, the local population is often brought in to help fight **forest fires** in the park and the buffer zone. This can lead to tensions between and within communities, as some communities resent not gaining the benefits of firefighting (rations), while within the communities some claim that they are coerced into participating in firefighting.

Conflict Effects

A lack of dialogue and cooperation among stakeholders has meant that, broadly, there is a **lack of understanding regarding buffer zone management** and any **future strategies** relating to the space. The absence of coordination between the managers of the buffer zone and the park has resulted in an increase in the number of **illegal activities** being carried out in both spaces: beekeeping, hunting, logging and woodcutting, pasture-clearing (at times using fire), mining, and **encroachment** for farming. There is also a lack of coordination to reduce **crop raiding**. This has harmed crop production, created negative attitudes within communities toward the animals and the park, and resulted in a **lack of community trust** in local authorities.

The end result of this lack of coordination is a **loss of livelihoods** for communities unable to access or benefit from the resources in the buffer zone and further **environmental degradation** from illegal activities carried out near the park's edge, particularly mining, woodcutting and fires.

Strategies

Based on the conflict analysis, stakeholders developed the following response strategies for the RDB and WCS to reduce buffer zone conflicts:

1. Explore with NAFA and NFC opportunities for increased community support, benefit-sharing possibilities and (perhaps limited) resource access for local communities adjacent to the buffer zone. This could include using royalties from the new NFC logging concession to support community projects.
2. Conduct an analysis of the biodiversity and economic benefits of the various types of buffer zone crops. For example, tea plantations are good for generating employment and for reducing crop raiding, but are ineffective for protecting against wind erosion. Pine or eucalyptus forests protect the park from wind erosion, but provide few benefits at the local level. This study could then feed into coordinated buffer zone planning.
3. Work with the districts, NAFA and NFC to include the buffer zone in park management plans and to include communities and park management in buffer zone decision-making processes.
4. Improve the demarcation of the buffer zone's inner boundary (improving the demarcation of the outer boundary is the responsibility of NAFA, NFC and tea estates).
5. Support community-based firefighting initiatives, possibly generating the funds to support these initiatives through contributions from the NFC or through increased royalties from the national tourism revenue-sharing agreement.
6. Work with security organizations (police, military and judiciary) to stop illegal mining in and around Nyungwe.
7. Conduct awareness-raising programs among communities on the new national compensation law to help reduce tensions surrounding crop raiding.
8. Conduct a mapping exercise of the buffer zone and park edge to identify threat hot spots and provide a focus for protection efforts.
9. Establish links among the local communities (including women, farmers and beekeepers' groups), the tea estates and the NFC and NAFA.

Designing, Implementing and Monitoring CSC Solutions

RDB and WCS can now use the analysis above to select which conflicts to address and to design new or modified conservation activities that minimize conflict risks and enhance peacebuilding opportunities. Both organizations should look at the activities they are undertaking in Nyungwe and situate them within the conflict context to establish whether the activities have an influence on conflicts. They can then use this understanding to identify how they should design their projects and programs moving forward, to address some or all of the identified conflicts. Actions may include modifying existing activities to enhance already positive influences, modifying activities to reduce negative impacts or developing new activities.

The response strategies developed during the conflict analysis can be used as a starting point for the design of CSC solutions; further consultations with affected stakeholders beyond the CSC workshop will only strengthen the strategies. These response strategies can be broadly categorized in six ways, which align quite closely with conservation work that both RDB and WCS are already doing: awareness raising, benefit sharing and project support, enforcement, coordination and collaboration, capacity building, and research. A consolidated list is presented in Table 2 below.

TABLE 2: SUGGESTED CSC SOLUTIONS FOR CONFLICTS AFFECTING NYUNGWE NATIONAL PARK

Type of CSC solution	Resource access conflicts	Wildlife-human conflicts	Buffer zone management conflicts
Awareness raising	<ul style="list-style-type: none"> - Increase community awareness of the park and role of conservation - Identify woodcutter groups, organize them and sensitize them to conservation laws - Support family planning 	<ul style="list-style-type: none"> - Support family planning - Raise awareness of the new compensation laws 	<ul style="list-style-type: none"> - Raise awareness of the new compensation laws
Benefit sharing and project support	<ul style="list-style-type: none"> - Support and increase the number of small and medium-sized projects conferring park benefits to the communities - Work with beekeepers to protect colonies from woodcutting 	<ul style="list-style-type: none"> - Expand the buffer zone - Increase NGO activities focused on conflict prevention and resolution 	<ul style="list-style-type: none"> - Explore possibilities for increased community support with NAFA and the NFC - Support community firefighting
Enforcement	<ul style="list-style-type: none"> - Strengthen law enforcement - Increase collaboration between security forces 	<ul style="list-style-type: none"> - Promote community patrols 	<ul style="list-style-type: none"> - Improve demarcation of inner buffer zone boundary within the park - Work with security organizations to stop illegal mining
Coordination and collaboration	<ul style="list-style-type: none"> - Create incentives for collaboration with the park (i.e. study tours) - Involve communities in park management and decision-making 	<ul style="list-style-type: none"> - Work with the Ministry of Agriculture on seed distribution for park-adjacent communities - Improve relationships between RDB and local communities 	<ul style="list-style-type: none"> - Work with districts, NAFA and NFC to include the buffer zone in park management plans - Establish links between NFC and other stakeholders
Capacity building		<ul style="list-style-type: none"> - Increase understanding of which crops to plant to reduce wildlife-human conflicts - Strengthen capacity for submitting claims for compensation - Support non-violent responses to crop raiding 	
Research			<ul style="list-style-type: none"> - Conduct analysis of the conservation and economic benefits of buffer zone crops - Conduct a threat-mapping exercise for buffer zone hot spots

When deciding on which strategies to proceed with, RDB and WCS should keep in mind the risks these activities might pose to staff; whether the level of institutional support is sufficient; whether the action fits within their organizational mandate; how to ensure stakeholder participation; whether adequate financial, technical and human resources are available; and what actors might participate as implementing partners (Hammill et al., 2009). They should also develop conflict solutions that are sustainable: a temporary, band-aid intervention may only temporarily reduce tensions, and could exacerbate the conflict in the long run.

Indicators and Evaluation

As RDB and WCS staff design CSC interventions according to their own internal project development guidelines, they should also develop peace and conflict indicators that they can use to measure the impact of their CSC interventions on the conflict context. These indicators can be both qualitative and quantitative, and can be closely tied to the specific conflict causes, effects and relationships identified in the preceding analysis. In their development, RDB and WCS should ask the following questions:

- Is the data available, or will it be generated? If so, who is responsible for generating it?
- Is the data source reliable?
- Can the data be prepared in a consistent way, so that values can be compared over time?
- How often will data have to be collected? Who will be responsible for this?
- For quantitative data, does a baseline exist from which to measure results?

Indicators for Nyungwe could include:

Quantitative:

- Number of reported crop-raiding incidents.
- Number of compensation claims for crop-raiding losses.
- Number of arrests inside the park for illegal resource extraction.
- Number of snares confiscated.
- Area of forest affected by forest fire.
- Number of projects supported by benefit-sharing programs.

Qualitative:

- Has the park done enough to reduce crop-raiding incidents?
- Are communities receiving sufficient benefits from the NFC-managed pine concessions in the buffer zone?
- Has the level of cooperation improved among stakeholders?
- Have coordination meetings been a useful way of improving relations among Nyungwe stakeholders?

Given that RDB and WCS already have an extensive ranger-based monitoring programme, opportunities should be explored for integrating peace and conflict indicators into these existing structures.

Monitoring

Over time, the prioritized conflicts for Nyungwe are likely to change in terms of their human and conservation impacts. Periodically returning to the matrix originally presented in Figure 1, RDB and WCS staff can try to track how the impacts of the targeted conflicts have changed since the project’s inception and gauge whether those changes can be attributed to the implementation of their CSC activities (for a hypothetical example, see Figure 8 below). Some key questions (Hammill et al., 2009):

- Are the prioritized conflicts moving in the right direction?
- Can this movement be attributed to the implementation of the CSC activities of RDB and WCS?
- If movement is positive, can we further enhance it? If negative, what can we do to correct course?
- Are other conflicts moving in unintended ways? Have new conflicts emerged that we should be concerned with?

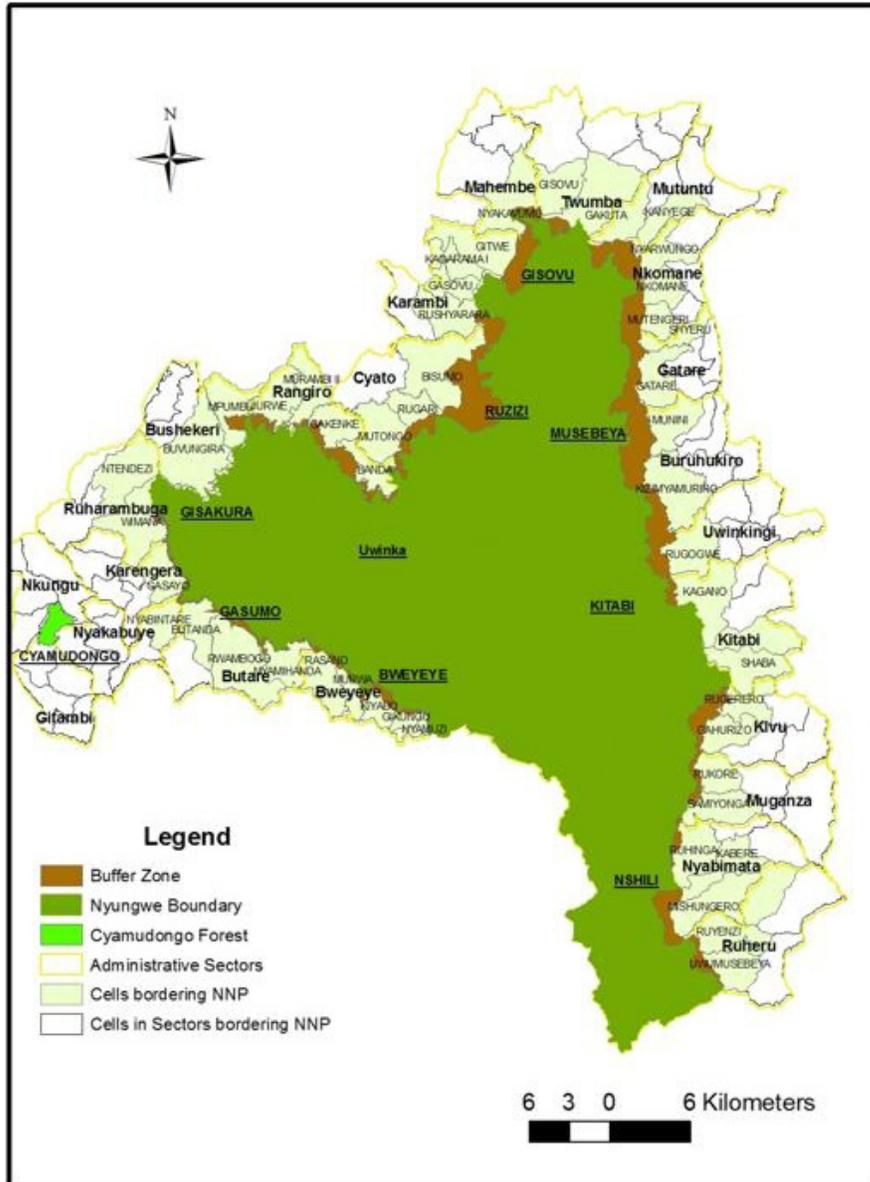
		Human impacts			
		High	Medium	Low	None
Conservation impacts	High	- Crop raiding - Buffer zone management		- Crop raiding	
	Medium	- Buffer zone management			
	Low				
	None				

FIGURE 8: CHANGES IN THE CONFLICT MATRIX OVER TIME

Monitoring and evaluating ongoing CSC interventions will allow the project team to gauge their success and make adjustments to interventions as and when necessary.

For more information on conflict-sensitive conservation, please see www.iisd.org/csconservation.

Annex 1: Map of Nyungwe National Park



Source: WCS, personal communication (2011). Reprinted with permission.

Annex 2: Workshop Agenda

September 22, 2011

8h30	Welcome and introduction	Aaron Nicholas, WCS
8h45	Participant introductions	
9h00	Rwanda: Conservation and conflict	Aaron Nicholas
9h30	Introduction to CSC	Alec Crawford, IISD
10h00	Brainstorming on conflicts	Plenary (Lead: Alec Crawford)
10h45	Coffee break	
11h15	Prioritization of conflicts	Plenary (Lead: Alec Crawford)
12h30	Lunch break	
13h30	Conflict tree: introduction	Alec Crawford
13h45	Conflict tree group exercise	4 groups of 5-6
15h00	Coffee break	
15h15	Conflict tree and solutions (report)	Plenary (Lead: Alec Crawford)
16h30	Close	

September 23 2011

8h00	Welcome and re-cap	
8h15	Conflict map: introduction	Alec Crawford
8h30	Conflict map	Group work
10h15	Coffee break	
10h45	Conflict map and solutions (report)	Plenary (Lead: Alec Crawford)
12h00	Lunch break and close	

Annex 3: Conflict Map Index

Parties involved in the conflict: Relative size denotes ability to influence the conflict	
Regular exchange or contact	
The direction of influence	
Alliances	
Informal, non-regular links	
Broken connections	
Open conflict and friction	

References

Hammill, A., Crawford, A., Craig, R., Malpas, R., & Matthew, R. (2009). *Conflict-sensitive conservation: Practitioners' manual*. Winnipeg: International Institute for Sustainable Development.

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