

Challenges on the valorisation of local knowledge: Preliminary assessments in the Rubi-Tele Hunting Area (DRC)

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Abstract

The management of protected areas (PAs) and their surrounding landscapes is generally associated with the response of the Democratic Republic of the Congo (DRC) to biodiversity conservation and climate change. The general aim is to reduce deforestation and preserve biodiversity. This preliminary study aims to identify the local knowledge and potential challenges associated with their valorisation in the Rubi-Tele Hunting Area (RTHA), a PA in the northern DRC.

The methodological approach included the combination of qualitative and quantitative elements through a triangulation approach, and results show that the collective memory of local communities retains traditional knowledge (practices, beliefs, and perceptions) that promote biodiversity preservation. Unfortunately, changes in the socio-economic situation of the country and the local context threaten this knowledge. Additionally, l'Institut Congolais pour la Conservation de la Nature (ICCN) has not tried to build on traditional knowledge memory to promote local biodiversity conservation. To avoid deforestation and a biodiversity crisis, the participatory approach can be useful for mainstreaming traditional/local knowledge in the management plan of protected areas of the DRC, such as RTHA.

Keywords: local participation, local knowledges, biodiversity, protected area, Rubi-Tele Hunting Area, Bas Uele, Democratic Republic of the Congo



1. Introduction

The Democratic Republic of the Congo (DRC) has an exceptional natural heritage that represents more than 60% of the Congo Basin rainforest (Desclée *et al.* 2014) and contains an extensive network of protected areas (PAs) that include eight national parks and fifty-seven reserves and hunting areas (UICN-PACO 2010). According to the Institut Congolais pour la Conservation de la Nature (ICCN), these PAs are globally representative of regional ecosystems and are characterised by a high degree of endemism (ICCN 2012).

However, the PAs are dramatically threatened by multiple pressures, including poaching, illegal logging, deforestation, and land-use conversion, which is characterised by agricultural exploitation, pastureland transformation, artisanal mining, and settlement in PAs (UICN-PACO 2010).

The Rubi-Tele Hunting Area (RTHA) is no exception to the general conditions of protected areas in the DRC.

Additionally, the RTHA is among the PAs omitted from the agendas of the government and its technical and financial partners (Majambu *et al.* 2020) and is confronted with the inexistence of a clear legal status (Omasombo Tshonda 2014), the absence of collaboration between RTHA managers and local communities, and the perception of illegitimacy by local communities (Mokolonayenga 2016).

These are the most significant difficulties that limit the preservation of biodiversity in this protected area.

Created in 1930, the RTHA was inhabited by several local communities that had long interacted with the forest resources and they had developed local knowledge that is demonstrated through practices, beliefs, and perceptions favourable to preserving the natural resources. Stevenson (2005) notes that traditional environmental knowledge is the collection of practices and beliefs that are transmitted through oral tradition and direct observation and includes a classification system, a set of empirical observations of the local environment, and a system of self-management governing the use of natural resources.

However, despite guaranteeing social sustainability, the valuable knowledge, developed by local communities, is in danger of disappearing (Maindo *et al.* 2017). The collective memory of local communities in the RTHA deserves to be highlighted before it disappears completely. Thus, this preliminary study aims to identify the local knowledge and potential challenges associated with their valorisation in the RTHA, northern DRC.

2. Methodological framework

2.1. Presentation of the Rubi-Tele hunting Area

The Rubi-Tele hunting Area (RTHA) is located in the Democratic Republic of the Congo (DRC), in Bas Uélé Province, south of Buta, the provincial capital. The RTHA is one of the first protected areas in the DRC and was created as a hunting reserve by the Ordinance N°51/ agri of 12 December 1930 and modified by the ordinance N° 64/Agri of 28 November 1932 (Mokolonayenga 2016). The RTHA covers

an area of 6,191 km² (UNEP-WCMC 2020).

Management of hunting areas was formerly the responsibility of the Department of the sustainable natural resources management of the ministry of the conservation and sustainable development. However, management was transferred to the ICCN by Ministerial Order N° 36/DECNT/BCE/78 on 13 July 1978.

The RTHA is crossed by National Road Four (RN4) that connects Buta to KISANGANI and other eastern DRC cities. This study primarily focused on Sukisa, Ngbete, and Boboso, the three largest villages in the RTHA located along RN4 (Figure 1).

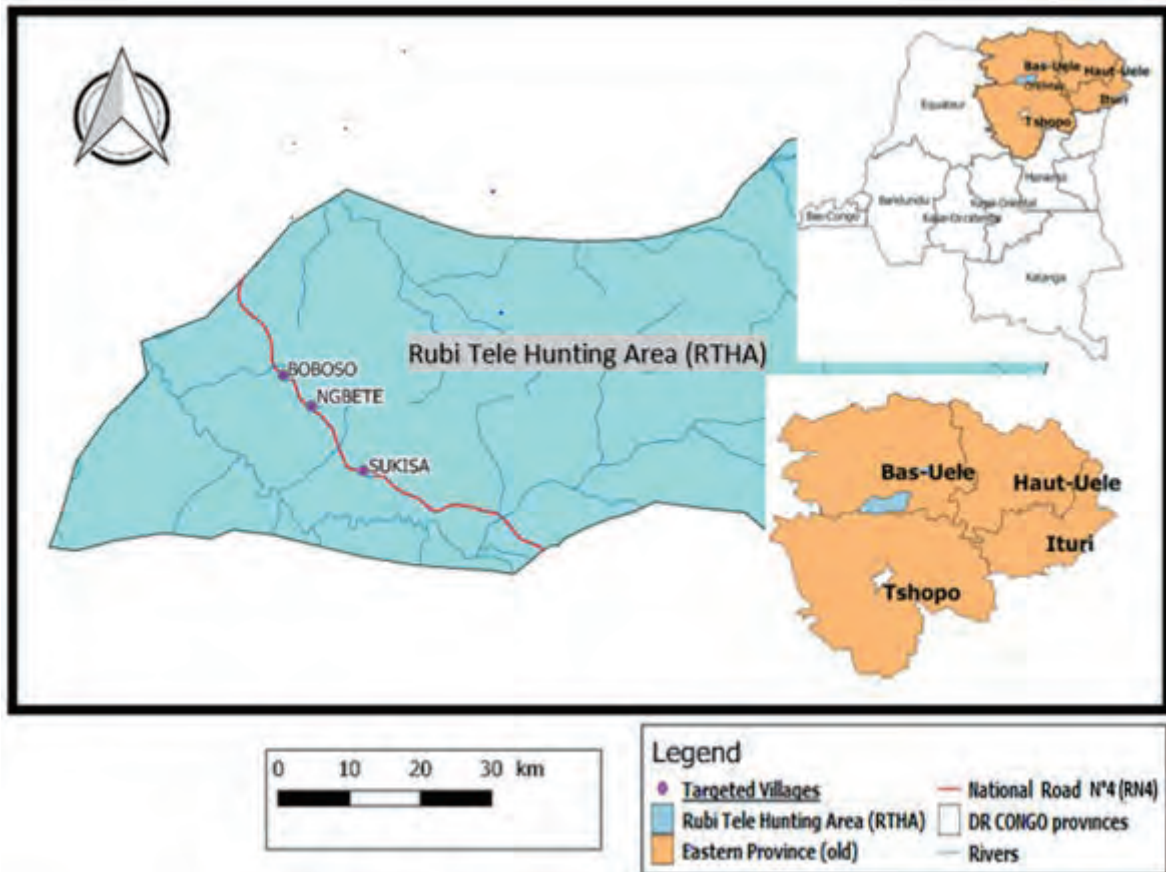


Figure 1. Map of the Rubi-Tele Hunting Area (RTHA) produced by the authors

2.2. Data collection and analysis

This study was based on the combination of qualitative and quantitative elements through a triangulation approach (Anadón 2019). To best comprehend local knowledge in the RTHA, we conducted household surveys and individual interviews with the village chiefs, household heads, and the RTHA manager. Data collection was completed from on 3–13 April 2018. Globally, this study covered a sample of 62 people, divided into 57 household heads, three village chiefs, the ICCN/RTHA manager, and the ICCN/RTHA research officer. We used questionnaires and an interview guide to collect the information.

Local communities gave the names of animals in the national language (Lingala). We relied on a

specialist (a doctor of zoology who was part of the team) to give us the binomial names of the species identified by the respondents, as recommended by Chevallier *et al.* (1988).

Data from the household surveys were written in Excel for the production of the graphs, and calculation of the central tendency measures was also facilitated by R studio version 3.3.2.

The qualitative data and consulted RTHA documents were subjected to content analysis. A GPS (Global Positioning System) was also used to take geographical coordinates and map the villages through QGIS software version 2.18.18.

3. Results and Discussions

3.1. Local knowledge favourable to wildlife conservation

Table 1 below shows that each family has a totemic animal, and most tribes living in the RTHA, such as the *Baboa*, *Bangelema*, *Bambole*, and *Bamugbwali*, have developed beliefs around some animal. Consequently, these animals have been prohibited for consumption, contributing to their preservation. Furthermore, the above-mentioned tribes have developed expressions and maxims that favour biodiversity preservation. For example, the *Bamugbwali* say: ‘Wasimo loli’, meaning ‘You mustn’t kill a leopard’. Likewise, the *Bambuza* use expressions, such as ‘Okeke amukunda oyilake’, meaning ‘When you go into the forest, don’t eat the turtle!’

We realise that most of these beliefs generally promote discrimination against women, particularly pregnant women. For example, the *Bangelema* mention ‘Akali kaye angile’, meaning ‘A woman should not eat the turtle’. The *Baboa* note also that ‘Enka kayagage nyame ya lemo nabalo’, signifying ‘Women cannot eat the meat reserved for men’.

The ancestors of the under-reviewed tribes have long demonstrated the desire to sustainably use forest resources. The ancestors of the *Baboa* tribe suggest: ‘Ya ékede obisa akwa, gbami gbaye goto’, meaning ‘Eat with moderation to keep the opportunity to enjoy for the children’. The *Bangelema* ancestors emphasise ‘Kamagna wagepala’, which recommends that ‘following generations do not destroy the forest’.

A chief of the Ngbete village added: ‘In the past, among the *Baboa* people, the hunting activity was organised by the *Angbadili* or the chief advisers, who regulated hunting activities. They controlled the duration of the closure period and the number of traps set by each hunter. Additionally, traps were made so that the young animals were spared as much as possible’.

Thus, the *Baboa* and *Bangelema* cultures have similar customs to those observed by Massaer Diallo and cited by Cisse *et al.* (2004) who recognises that, what is now called ‘environmental preservation’ and ‘sustainable natural resource management’ have equivalents in traditional cultures and age-old societies.

Table 1. List of animals with particular traditional values

Animals	Local language	Scientific Names	Cultural status	Traditional beliefs	Social group/ tribe
Leopard	Nkoyi (Lingala)	<i>Panthera pardus</i>	Not edible for women or children.	Considered a messenger (of good or bad news) to the person who meets it	Bamugbwali
Turtle	Koba (Lingala)	<i>Kynixis erosa</i>	Not edible for women	Embodies hypocrisy from its behaviour, which consists of withdrawing into its carapace when in contact with other animals.	Baboa
Genette	Bolende (Bambole)	<i>Genetta geneta</i>	Not edible for women	Ancestral tradition	Bangelema
Atherure	Ndjiko (Lingala)	<i>Atherurus africanus</i>	Not edible for women	The person (woman) who consumes this animal can adopt the same behaviour as the animal and run away to escape married life.	Bambole, Baboa, Mugbwali
Antelope	Mboloko (Lingala)	<i>Cephalophus moticola</i>	Not edible for women	The person (woman) who consumes this animal can adopt the same behaviour as the animal and run away to escape married life.	Bambole
Water chevrotain	Elebe	<i>Hyemoscous aquaticus</i>	Not edible for pregnant women	In case transgression, there is a risk of abortion or giving birth to a malformed children	Baboa
Yellow-backed duiker	Mulimbu ou mbiye	<i>Cephalophus silvicultor</i>	Not edible for pregnant women	In case transgression, there is a risk of abortion or bleeding after giving birth	Baboa
Oryctérope du Cap	Ngbonda	<i>Oryzteropus afer</i>	Forbidden, especially for women	This animal (especially its nails) is used for fetish practices.	Baboa, Bangelema

Animals	Local language	Scientific Names	Cultural status	Traditional beliefs	Social group/ tribe
Hippopotamus	Ngubu (Lingala)	<i>Hippopotamus amphibius</i>	Prohibited to kill or eat	To the fisher people, this animal is a guardian of the waters and must be protected.	Bangelema
Aquatic civet	Libobi	<i>Civettictus civetta</i>	Prohibited to kill	Ancestral traditions	Baboa
Pangolin		<i>Manis</i>	Not edible for pregnant women	There is a risk of giving birth painfully, in case of transgression because of this animal's habit withdrawing into oneself.	Baboa and Bangelema

Source: Field data collected by the authors from interviews with household heads and village chiefs

3.2. A chimerical valorisation of local knowledge in an unfavourable local context

The local context in and around the RTHA must be analysed to present the challenges of the cultural and socio-economic situation that obstructs local knowledge valorisation in this protected area.

We realise that the local knowledge valorisation is blocked by the following factors: cultural characteristics of the local communities and internal migration, the demographic composition of households, modern religious domination, household survival strategies, the local and global socioeconomic situation and the institutional weakness of the ICCN in the RTHA.

3.2.1. Socio-cultural characteristics of local communities and internal migration

The tribes more represented in the three villages are the *Bangelema*, *Baboa*, *Bangbandji*, *Bambuza*, *Bamugbali*, *Bambole*, *Bamokere*, and *Bamangwetu*.

The *Baboa* tribe, renamed the *Ababua*, consider themselves the native people of the RTHA. Moreover, all RTHA areas are located in the *Baboa* chiefdom. These people are preferably farmers and, unlike the *Bangelema* who arrived from Banalia and Basoko territories, in the Tshopo province, are great hunters and fishermen (Hart 2007).

Tribes long ago migrated from their ancestor land to the RTHA in search of natural resources. Results show that people considered allochthones, account for 61.7 % of respondents. Among them, the *Bangelema* are more represented 47.3% of respondents. Other tribes include the *Bangbandji*, *Bambuza*, *Bamugbali*, *Bambole*, *Bamokere*, and *Bamangwetu*. Most note having left their ancestral land since the Simba rebellion that occurred from 1961–1964, in the DRC.

A notable member of the *Baboa* tribe, contacted in Boboso village, added that since the *Bangelema* and other tribes arrived in our area, all the animals have become edible. They hunt and consume all animals without distinction, unlike the *Baboa* tribes.

In the same sense, Feloche (2009) confirms that traditional practices, beliefs, and perceptions evolve through contact with others.

Moreover, the RTHA is crossed by national road number four (RN4), one of the factors explaining the intensification of hunting and mining activities, as increasing numbers of people practice these activities in the RTHA. Thus, internal migration into the RTHA creates a multicultural context that obliges local communities to import the new practices and new beliefs that alter their traditional management of the natural resources.

Additionally, Kyale and Maindo (2017) reinforce that the consolidation of traditional practices of nature conservation among the *Turumbu* and *Bamanga* tribes is not satisfactory because of the multiple mutations observed in the Yangambi Biosphere Reserve in Tshopo Province.

3.2.2. Demographic composition of households

Statistical measures of central tendency facilitate analysis of the demographic composition of

households. The mean number of people per household is 9.22, and the highest frequency is 11.

The head of a household in Ngbete mentioned: ‘When you have a large family, it is not easy to select which animal to kill for the meal and which one to let go. Moreover, nowadays, it is very difficult to catch it in the forest’.

Two great paradigms explain the link between demography and the environment. The first attributes all the evils of the Earth to population growth, and the second denies human expansion almost any role in environmental deterioration. For the former, the pessimists, disaster must be avoided with birth control and a rigorous family planning policy. To the optimist, population is a secondary and sometimes favourable factor that is less of a priority than poverty, inequality, inadequate technology, agricultural policies (priority to cash crops), land ownership, urban bias, wars, and political regimes (Tabutin and Thiltgès 1992).

In the RTHA context, demography is a factor that explains the unsustainability of local knowledge. However, other local and global elements can be added as ingredients in the analysis of local knowledge valorisation in the RTHA.

3.2.3 Traditional belief versus the expansion of Christianity and other religions

Figure 2 shows that Christians (Catholic and Protestant) represent 58% of the respondents; 2% are animists, which is the category of people admitting they practice a traditional religion.

The Catholic Apostolic Prefecture of Uele was created at Buta in May 1898, and Protestant communities in Bas Uele province were created during the Heart of Africa Mission in 1913 by Englishmen Charles Thomas Studd, and Alfred B. Buxton. Many Protestant revival churches in Bas Uélé come from other parts of the country but have local representations in the province. Kimbanguism and the Islam are also present and considered the former competitors of the Catholic and Protestant churches in the DRC (Omasombo Tshonda 2014).

The presence of these religions has destroyed most of the above-mentioned myths and the traditional practices. For example, one woman in Ngbete noted: ‘Our ancestors were so greedy and egotistical that they prohibited women from eating anything that was delicious. Nowadays, you must be pagan to respect all these myths and beliefs about animals’.

The traditional myths do not hold out against the political and religious ideology (Louis-Vincent 1976). In the same sense, the traditional practices and beliefs of the Niominka in Senegal were losing many supporters, because of Islamic influence (Cisse *et al.* 2004).

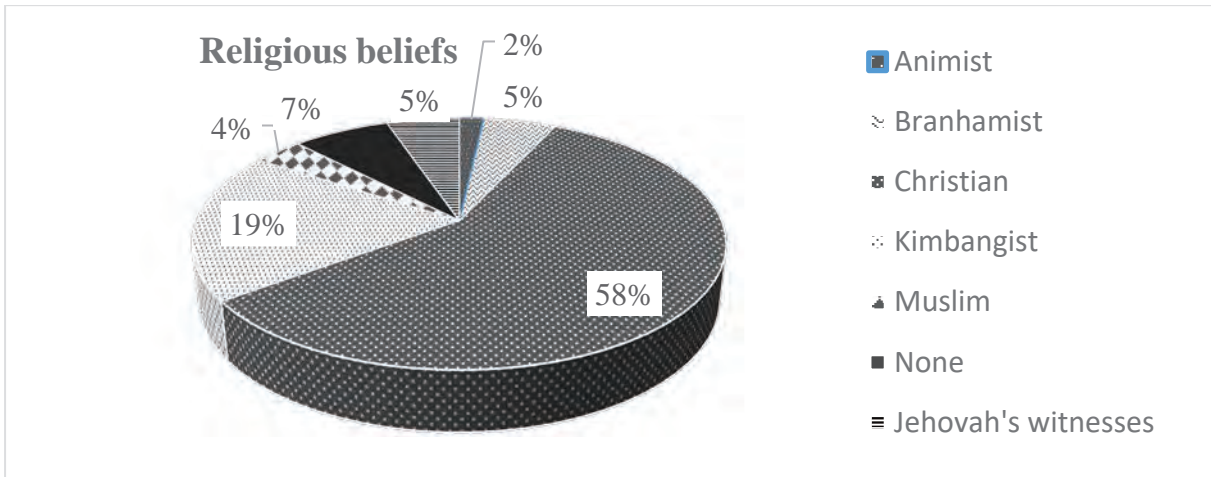


Figure 2. Distribution of respondents according to religious belief, from field data collected by authors

3.2.4. Survival strategies and local socio-economic context of RTHA residents

Local RTHA communities survive by natural resource exploitation (Figure 3). Agriculture, hunting, and gathering are the primary survival strategies.

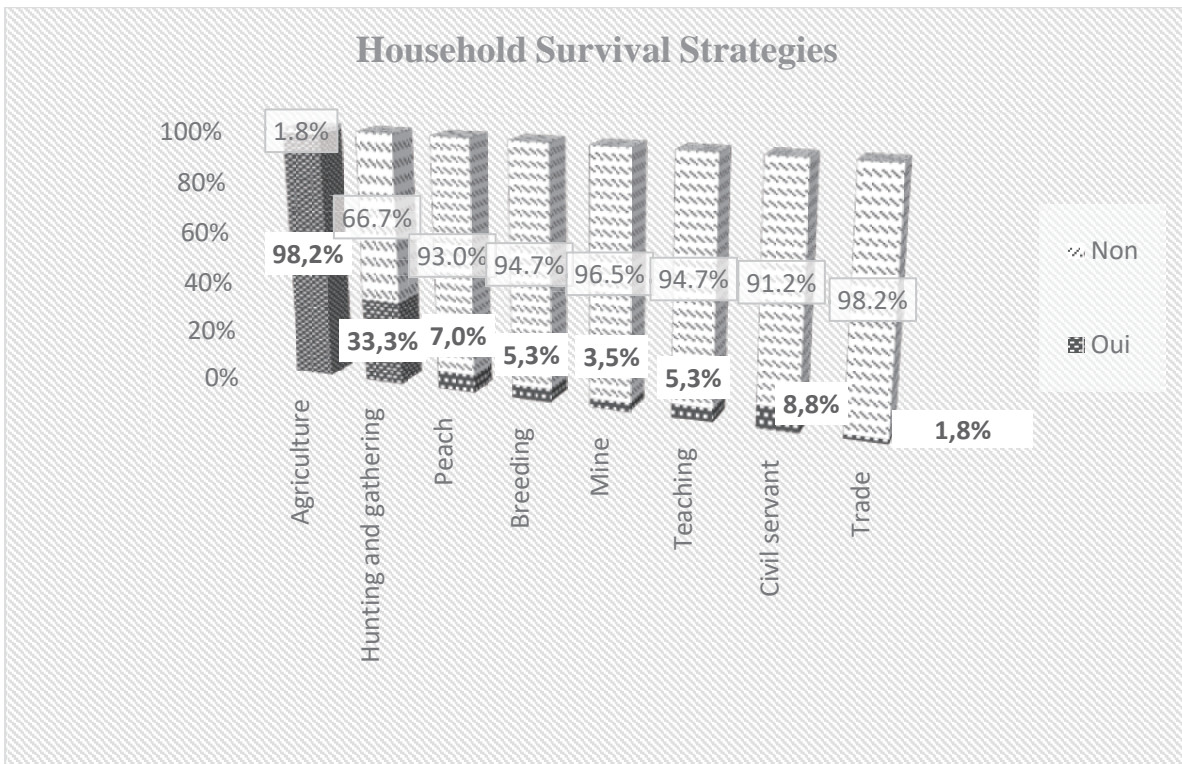


Figure 3. Distribution of respondents according to their survival strategies, from field data collected by authors

Gathering and collecting are seasonally regulated seasonally and constitute complementary activities to agriculture (ACF 2008). In the DRC, the informal agricultural sector employs 59.7% of the workforce. Nevertheless, income is the lowest in this sector, in contrast to hunting and mining activities (INS 2012).

However, agropastoral production of food crops, fishing products, and livestock in Bas-Uele does not satisfy demand. Household self-sufficiency is generally less important, because food is not permanently available. Thus, the population often lacks food during the dry season, and market stalls suffer (Omasombo Tshonda 2014).

A household chief, contacted in Ngbete village, has declared that mining quarries in the RTHA are a factor that explain internal migration and intensify hunting because of the increased demand for food.

RTHA is not an isolated entity in the country, and residents experience the same socio-economic situation as most of the rural DRC population, particularly those in Bas Uélé province. All the villages on RN4 between the Tele River and Buta lack a commercial exchange area (Hart 2007). Additionally, schools and health posts are inadequate for local communities.

The residents of Bas Uélé province, particularly the RTHA, live in very precarious conditions. That can be explained by the breakdown of the socio-economic fabric caused by a series of events that are often well-known but sometimes unclear. In chronological order, these events include the Simba group rebellion that began in 1961; economic circumstances and historical events, such as zairianisation and looting in the early the 1990s; repeated wars between the AFDL (Alliance des Forces Démocratiques pour la Libération du Congo) and MLC (Mouvement pour la Libération du Congo) from 1998–2003; and incursions by foreign armed groups in recent years (since 2008). In addition to historical-socio-economic obstacles, climate, water resources, and the ecosystem are also key factors influencing the daily lives of the population (Omasombo Tshonda 2014).

3.2.5. Institutional disability of the ICCN at RTHA

The Institut Congolais pour la Conservation de la Nature (ICCN) is a public institution that manages protected areas in the DRC and is a technical and scientific institution for nature preservation.

ICCN has developed partnerships with other organizations in order to contribute to the financial and technical assistance of protected areas in the DRC (Pelissier *et al.* 2015).

Interviews of the RTHA managers revealed that this protected area faces several challenges, the most important of which are related to the opacity of the legal status, the absence of limits materialisation, the insufficient number of eco-guards and agents, the absence of a management plan, the lack of a comprehensive fauna and flora inventory, inadequate infrastructure and equipment, the available budget in deficit, and the reduced capacity to mobilise, benefit, and involve local communities. Majambu *et al.* (2020) have noted that the RTHA is ignored by the government and by the technical and financial partners that accompany other protected areas in the DRC. To illustrate this, the ICCN staff assigned 42 agents to the RTHA to secure an area of 6,227.74 km² of the 42 agents, only six are paid by the Congolese government.

Thus, the agents lack the necessary resources to organise significant patrols in the surrounding forest (Hart 2007).

Regarding the community based conservation, interviews with village chiefs and RTHA managers mention the lack of opportunities for meetings and collaboration between the ICCN and local communities according the RTHA management. In this sense, Mokolonayenga (2016) confirmed that there is no collaboration between ICCN agents and local communities in the RTHA and added that existing contact is limited to the SUKISA control post, where the ecoguards confiscate hunting products from some recalcitrant members of the local communities. The valorisation of local knowledge seems unrealistic for the RTHA in these conditions.

Peluso and Padoch (1996) suggest that local communities should participate in decision-making process and the implementation of development actions that directly affect the forests that constitute their essential source of livelihood.

4. Conclusion

Local RTHA communities have developed beliefs and restrictive practices regarding certain wild animals; however, most of these beliefs and practices are discriminatory against women.

Our results show that local and global contexts do not currently favour biodiversity preservation and the valorisation of local knowledge in the RTHA.

The local context is characterised by internal migration in search of natural resources, the propensity of modern religious beliefs, the high natural resource demand of local households, socio-political and economic instability in Bas Uélé province, and institutional disability of the ICCN/RTHA.

Regarding the global context, the RTHA is not an isolated entity but is influenced by political dynamics, the socio-economic situation, and the protected area management policy of the Democratic Republic of the Congo.

Thus, the model of sustainable management in the RTHA adapt to the global context and simultaneously fit in the local context through participatory approaches that encourage the consideration of local knowledge.

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