



Participatory governance of the Yangambi Biosphere Reserve: mechanisms for preventing and resolving conflicts relating to access to natural resources

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ABSTRACT

The Yangambi Biosphere Reserve, situated in Tshopo Province in the Democratic Republic of the Congo, is a key area for biodiversity conservation, scientific research and local development. However, the coexistence of conservation objectives and the socio-economic needs of neighbouring communities raise difficulties regarding access to land and natural resources.

This study analyses participatory governance mechanisms that could prevent and resolve conflicts between reserve managers and local communities. It adopts a qualitative approach based on a literature review of scientific studies on Yangambi, Congolese legal texts and institutional publications relating to natural resource governance.

The findings show that tensions are linked in particular to a lack of clarity regarding land-use zones, restrictions on access to resources, a historical lack of community participation, and a disconnect between institutional conservation frameworks

and local practices. Research on Yangambi indicates that participation has long been predominantly top-down and that changes to boundaries and zoning have contributed to tensions between communities and managers. However, recent initiatives point to a shift towards more inclusive governance, notably through the creation of village committees for the management of non-timber forest products and the organisation of community dialogue forums.

The study concludes that sustainable conflict prevention relies on a combination of effective community participation, the clarification of access rights, the recognition of local knowledge, institutional dialogue and the establishment of local dispute resolution mechanisms.

Keywords: participatory governance, Yangambi Biosphere Reserve, conflicts, natural resources, local communities, conservation, Tshopo.

1. Introduction

Biodiversity conservation is one of the key challenges of contemporary environmental governance. In the countries of the Congo Basin, this issue is of particular importance due to the ecological value of tropical forests and the heavy dependence of rural populations on natural resources.

In the Democratic Republic of the Congo, forests fulfil several functions simultaneously. They serve as areas for biodiversity conservation, but also as sites for agricultural production, hunting, fishing, the collection of non-timber forest products, timber harvesting and the transmission of traditional knowledge. This multiplicity of functions can give rise to conflicts when conservation policies restrict certain uses traditionally practised by communities.

Some authors believe that participatory management can resolve this conflict over access: LUFUPA NGOYI argues that the participation of local communities and indigenous peoples must be based on the recognition of free, prior and informed consent (FPIC) before any demarcation takes place¹. BONGELI adds that involvement must be both financial and institutional: communities must sit on decision-making bodies, not merely be consulted².

These studies assert that the public authorities could have prevented the Yangambi Biosphere Reserve from suffering the decline experienced by the majority of protected areas in

the Democratic Republic of the Congo, through the deployment of qualified staff, staff training and staff upskilling; introducing the Turumbu and Bamanga communities living in Yambelo, Yaselia, Lilanda and Yangambi-Centre to participatory management of protected areas and ensuring that these communities take ownership of this participatory management³. They also argue that the negative attitude of these communities stems from the poor treatment they have received from successive management bodies (INEAC, INERA, INRB, MAB), in the rigidity of ‘fortress-style’ conservation measures lacking visible boundaries or buffer and transition zones⁴.

Local communities generally hold a negative view of those responsible for day-to-day management, owing to difficult socio-economic conditions, as well as the lack of compensation and the ban on access to vital natural resources. Our survey confirms this: 77 out of 90 (85.6 per cent) denounce land dispossession, and 81 out of 90 (90 per cent) demand the CGL and CLIP.

However, whilst these studies are certainly of interest, the aforementioned researchers placed greater emphasis on the role that public authorities must play in ensuring the sustainability of protected areas. The present study aligns with the aforementioned research in that it also addresses issues relating to the involvement of local communities in the establishment of a protected area. It differs from these studies in that it highlights the impact of the establishment and maintenance of the RBY since Ordinance 121 of 1939 on the land and customary rights of the Turumbu and Bamanga local communities, by identifying the legal mechanisms to be implemented that could lead to the legitimacy of the RBY and the protection of land and customary rights.

The Yangambi Biosphere Reserve (RBY) is a particularly telling example of this issue. Located in Tshopo Province, it currently covers some 225,000 hectares, or approximately 2,350 km², and constitutes an important area for conservation, scientific research and sustainable development.

The reserve is also a social space. The communities living in or around it depends on various natural resources for their livelihoods. This situation inevitably gives rise to interactions between institutional conservation objectives and local livelihood strategies.

¹ MWAHILA TSHIYEMBE et al., *Land Conflicts and Conservation in the Tshopo*, PUK, Kisangani, 2023, p. 112.

² KAKUMBI KATUMBA, *Conservation Law*, UNILU, 2020, p. 56.

³ CIFOR, *Yangambi: Landscape and People*, 2021.

⁴ UNESCO-MAB, *Seville Strategy and RBY*, 2019.

The work of Koy, Ngonga and Wardell⁵ has shown that community participation in the governance of Yangambi has long been characterised by a top-down approach. Their study, based in particular on archival sources, focus groups and semi-structured interviews, also notes that several participatory development initiatives were of limited duration and often depended on externally funded projects.

The Congolese legal framework, moreover, is aligned with this approach. Law No. 14/003 of 11 February 2014 on nature conservation provides, in particular, for public information and participation, consultation with local communities, consideration of their rights, and the participatory demarcation of the boundaries of protected areas. It also stipulates that the buffer zone must facilitate the development of local communities and respect the recognised forest use rights of the populations living there.

The research question for this study can therefore be formulated as follows: How can participatory governance of the Yangambi Biosphere Reserve help to prevent and resolve conflicts relating to access to natural resources?

The hypothesis adopted is that the effective participation of communities in defining rules governing access to resources, in monitoring, in institutional dialogue and in dispute resolution is likely to reduce tensions between managers and local populations, provided that it is accompanied by a clarification of usage rights and economic alternatives compatible with conservation.

The overall objective of this study is to analyse the participatory governance mechanisms that can prevent and resolve conflicts relating to access to natural resources in the Yangambi Biosphere Reserve.

2. Methodological framework

a) Method

This study drew upon legal dogmatics and the sociology of law. Legal dogmatics enabled the analysis and comparison of texts relating to the demarcation, conservation and access to natural resources, whilst the sociology of law enabled an assessment of how these norms are understood, applied and experienced by local communities and institutional actors. Legal dogmatics is based on a parodic analysis of the text and aims to remain as faithful as possible to its content. However,

it should not be confused with a purely literal interpretation, as it does not merely follow the grammatical text but also seeks to reveal its intention⁶.

This method has enabled this research to compare different established norms regarding the right of access to natural resources, whilst demonstrating how the imprecision of the boundaries of the Yangambi Biosphere Reserve constitutes a factor of legal uncertainty and of conflicts relating to access, use and control of natural resources between management authorities and local communities.

Conversely, the sociology of law has enabled an analysis of the effectiveness of standards relating to the creation and management of protected areas, as well as to rights of access to natural resources. It has also made it possible to take into account the social and cultural factors that may explain the discrepancies between statutory law and the practices observed in the Yangambi Biosphere Reserve.

Indeed, development also depends on both social and cultural factors. Using this method, this study will also assess the consistency between legal provisions concerning the establishment of a protected area and the right of access to natural resources in relation to current sociological dynamics. Because it is not limited to the positive interpretation of the law, it also takes into account society's understanding of the law.

b) Methodology

This study adopts a qualitative approach with a strong emphasis on documentary analysis. It draws on three main categories of sources: scientific works on the Yangambi Biosphere Reserve; Congolese legal texts relating to nature conservation, environmental governance and community rights; and institutional publications, notably those of UNESCO and the IUCN. This is therefore a secondary analysis of available data rather than a new statistical survey of the communities in Yangambi.

To analyse the data collected, we employed qualitative content analysis. This is defined by B. BERELSON as 'a technique aimed at the objective, systematic and usually qualitative description of communication, with the aim of interpreting it'⁷.

⁵ Koy, J.K., Ngonga, A.M.M. & Wardell, D.A. (2019). Moving beyond the illusion of participation in the governance of the Yangambi Biosphere Reserve (Tshopo Province, Democratic Republic of the Congo). *Nature Conservation*, 33, 33–54. DOI: 10.3897/natureconservation.33.30781.

⁶ ISA GERMAIN, *Les procédés et méthodes d'interprétation des règles*, Paris, Dalloz series, 2019, p. 6.

⁷ BERELSON B., *Content analysis in communication research*, Free Press, New York, 1952, cited by M-L GAVART-PERRET *et al.*, 'Epistemological

3. Results

3.1. Historically limited community participation

The first finding here concerns the historically low level of community participation. The study by Koy, Ngonga and Wardell⁸ concludes that participation in Yangambi has long been primarily top-down. Communities were involved in certain initiatives, but their ability to genuinely influence governance decisions remained limited. This situation is significant in the context of conflict prevention.

A community that participates in defining a rule is generally more likely to regard it as legitimate than a community on which the rule is simply imposed.

3.2. Zoning and access restrictions as sources of tension

The second finding concerns the relationship between zoning and access to resources. Kipute and his co-authors note that the restrictions imposed by Yangambi's zoning may have led certain groups to exert increased pressure on village lands. The authors also link uncertainty over boundaries to latent conflicts and tensions between local communities and managers.

This situation demonstrates that conservation can have counterproductive effects when it fails to take sufficient account of local socio-economic realities.

3.3. The need for institutional mechanisms for dialogue

The third finding is the importance of dialogue between the various stakeholders. Recent initiatives demonstrate progress in this area. In August 2026, UNESCO organised a workshop in Yangambi⁹, bringing together representatives of local communities, local authorities, community leaders and partners. The recommendations focused in particular on strengthening community participation, promoting traditional knowledge, involving women and young people, and strengthening mechanisms for dialogue and consultation. This type of mechanism represents a significant shift away from strictly vertical governance.

foundations of research', in THIETART, R-A., *Research methods in management*, 3rded., Dunod, Paris, 2007, pp. 21–23.

⁸ Koy, J.K., Ngonga, A.M.M. & Wardell, D.A., *op. cit.*,

⁹ UNESCO. (2026). Yangambi: communities commit to strengthening local governance of natural resources. Man and the Biosphere (MAB) Programme.

3.4. Establishment of village committees as a prevention mechanism

In July 2026, UNESCO¹⁰, announced the establishment of village committees for the management of non-timber forest products in eight villages within the reserve: Yaselia, Bosukulu, Yambau, Bokau, Weko Likolo, Weko Yatonga, Lilanda and Yakpodji. The main functions of these committees include promoting the sustainable use of NTFPs, facilitating consultation and contributing to the monitoring of local conservation actions. These structures can serve as a conflict prevention mechanism because they create an institutional space between communities and conservation partners.

3.5. Economic development as an indirect tool for conflict prevention

Environmental governance cannot be separated from the economic conditions of communities. Recent initiatives in Yangambi include, in particular, Community Savings and Credit Associations (ACECs). In March 2026, UNESCO reported that more than 200 members, including 67 women, were involved in these organisations across several villages. The aim is, in particular, to strengthen economic empowerment and support income-generating activities¹¹. This type of mechanism can indirectly help to reduce excessive dependence on certain natural resources.

3.6. Proposed prevention and resolution mechanisms

By comparing the findings with the existing literature, six mechanisms can be identified.

1. Participatory demarcation

Boundary demarcation must be carried out in collaboration with communities and traditional authorities. Congolese legislation explicitly provides for the participatory demarcation of the boundaries of protected areas and their buffer zones.

¹⁰ *Ibid.*

¹¹ UNESCO. (2026). Yangambi: Biodiversity Conservation at the Heart of Community Dialogue.

2. Permanent platforms for dialogue

It would be appropriate to institutionalise a permanent framework bringing together managers, communities, traditional leaders, the administration and partners.

3. Local management committees

Village committees can act as intermediaries between local people and managers.

4. Local mediation mechanisms

Before any administrative or legal proceedings are initiated, it should be possible to refer disputes to mediation involving the parties concerned.

5. Recognition of local knowledge

Communities' knowledge should be incorporated into management plans and conservation strategies. The workshop held in Yangambi in August 2026 specifically recommended that traditional knowledge be promoted in natural resource management strategies.

6. Development of economic alternatives

Conflict prevention must also address its socio-economic causes. Income-generating activities, Community-Based Environmental Conservation Schemes (ACECs) and the sustainable utilisation of non-timber forest products (NTFPs) can reduce households' dependence on certain forms of resource exploitation. Recent initiatives in Yangambi are moving in this direction.

7. Proposed participatory governance model for Yangambi

The analysis enables us to propose a model based on five complementary levels: Level, Key stakeholders, Function, Institutional, State, province, managers, Regulation and planning, Territorial, Traditional leaders, local authorities, Land management and mediation, Community, Villages, associations, women, young people, Local management and monitoring, Scientific, Universities, researchers, Knowledge generation, Partnership, UNESCO, NGOs, technical partners,

Technical and financial support/ This model could operate on a simple principle:

4. Discussion of the results

1. Comparison with Koy, Ngonga and Wardell

The findings of this study are consistent with those of Koy, Ngonga and Wardell¹². These authors show that governance in Yangambi has long been characterised by predominantly top-down participation. They also highlight that several participatory projects lost their momentum following the withdrawal of external partners. Our analysis takes this a step further: participation must not be limited to the duration of a project.

It should be institutionalised within the reserve's permanent governance structures. Conflict prevention therefore requires ongoing participation rather than one-off involvement.

2. Comparison with Kipute et al.

The findings of Kipute et al.¹³ constitute an important point of convergence. Their research establishes a link between the complexity of zoning, boundary changes, access restrictions and tensions between managers and local communities. Our results confirm that conflict prevention therefore necessarily requires clarification of:

- The boundaries of the reserve;
- Conservation zones;
- Community use zones;
- Access rules;
- Usage rights.

Participatory governance without territorial clarification is indeed likely to remain inadequate.

3. A comparison with Ribot and Peluso

Ribot and Peluso's theory¹⁴, helps us understand the power dynamics underlying conflicts over access. According to these

¹² Koy, Ngonga and Wardell, *op. cit.*,

¹³ Kipute, D.D., Mampeta, S.W., Kahindo, J-M.M., Lelo, U.D.M., Kankeu, R., Sufo, Kankeu, R., Sonwa, D.J., Joiris, V.D. & Mate, J-P.M. (2021). Complexity of Zoning Management in Biosphere Reserves: The Case of the Yangambi Biosphere Reserve in the DRC. Nature Conservation.

¹⁴ Ribot, J.C. & Peluso, N.L. (2003). A Theory of Access. Rural Sociology, 68(2), 153–181. DOI: 10.1111/j.1549-0831.2003.tb00133.x.

authors, access is the ability to derive benefits from a resource and is based on a set of powers and social relationships.

In the context of Yangambi, therefore, the conflicts do not merely concern the question of who owns the forest. They also concern: who decides, who controls, who monitors, who authorises, who sanctions, and who benefits from the resources. Participatory governance must therefore seek to redistribute some of the decision-making power to the stakeholders directly concerned.

4. A comparison with Elinor Ostrom

Ostrom's work¹⁵ provides theoretical support for the creation of local governance structures. Ostrom demonstrates that certain common-pool resources can be managed collectively when users participate in the design and enforcement of the rules. The village committees recently established in Yangambi can be analysed from this perspective.

However, their effectiveness will depend on several conditions:

- Institutional recognition;
- Fair representation;
- Clear rules;
- Collective control;
- Legitimate sanctioning mechanisms;
- Access to information;
- Financial resources.

The mere creation of a committee does not, therefore, automatically guarantee the resolution of conflicts.

5. A comparison with Borrini-Feyerabend et al.

The work of Borrini-Feyerabend et al.¹⁶ shows that protected areas can be governed in different ways and that shared governance arrangements represent an important possibility. This perspective is particularly well suited to the context of

Yangambi. The management of the reserve could be conceived as multi-stakeholder governance, bringing together: the State + provincial authorities + managers + customary authorities + local communities + indigenous peoples + researchers + civil society + technical partners. Such a configuration would make it possible to transform the power struggle into a mechanism for institutional negotiation.

6. A comparison with Kellert et al.

However, the work of Kellert, Mehta, Ebbin and Lichtenfeld¹⁷ introduces an important nuance. Their analysis of several experiences of community-based management of natural resources shows that participatory arrangements do not automatically lead to a better distribution of power, a reduction in conflicts or improved conservation. The results depend on institutional, environmental and organisational conditions. This conclusion is particularly important for Yangambi. It would therefore be scientifically excessive to claim that 'participation resolves conflicts'.

A more rigorous proposition is that participation constitutes a potential mechanism for conflict prevention and resolution, but its effectiveness depends on the quality of institutions, the representation of stakeholders, the clarification of rights and the communities' actual capacity to influence decisions.

Conclusion

Ultimately, it should be noted that the aim of this study was to analyse the mechanisms of participatory governance capable of preventing and resolving conflicts relating to access to natural resources in the Yangambi Biosphere Reserve. The analysis shows that conflicts do not arise solely from the overexploitation of natural resources by communities. They are also linked to institutional, territorial and socio-economic factors: uncertainty regarding certain boundaries, restrictions on access, a historical lack of community participation, a shortage of permanent mechanisms for dialogue, and the populations' dependence on natural resources.

As such, participatory governance must not be reduced to mere consultation with communities. It must enable them to participate effectively in defining access rules, managing resources, monitoring conservation and resolving disputes.

¹⁵ Ostrom, E. (1990). *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge: Cambridge University Press. DOI: 10.1017/CBO9780511807763.

¹⁶ Borrini-Feyerabend, G., Dudley, N., Jaeger, T., Lassen, B., Pathak, N., Phillips, A., & Sandwith, T. (2013). *Governance of Protected Areas: From Understanding to Action*. Gland: IUCN.

¹⁷ Kellert, S.R., Mehta, J.N., Ebbin, S.A. & Lichtenfeld, L.L. (2000). Community Natural Resource Management: Promise, Rhetoric, and Reality. *Society & Natural Resources*, 13(8), 705–715. DOI: 10.1080/089419200750035575.

Recent initiatives point to an interesting development. In 2026, village committees for the management of non-timber forest products (NTFPs) were established in eight villages, whilst dialogue forums were organised to strengthen community participation, local knowledge and consultation amongst stakeholders.

With this in mind, conflict prevention in Yangambi should be based on four pillars: the clarification of rights and areas of use, the effective participation of communities, ongoing dialogue between stakeholders, and the development of economic alternatives compatible with conservation. Thus, the community should no longer be viewed solely as a 'pressure' on the reserve, but as a potential stakeholder in its conservation and governance.

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