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Community participation in environmental protection projects in the Buhavu Chiefdom

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ABSTRACT

This study examines the level of community participation in environmental protection projects in the Buhavu Chiefdom. The overall objective is to determine the extent to which the community participates in environmental protection projects in the Buhavu Chiefdom. A sample of 384 respondents was

selected using the LUNCH formula. The results of this study show that the level of community participation in environmental protection projects in the Buhavu Chiefdom during the identification phase remains very low at 17 per cent. It also appears that during the planning phase, the level of community participation in these projects remains very low, at 15 per cent. Nevertheless, even though this population does not participate in the identification and planning phases

of these projects, its level of participation in the implementation of these projects is high at 69 per cent, as it is the beneficiary. However, when it comes to project evaluation, the level of participation by the population remains low at 12 per cent. In conclusion, this study shows that the level of community participation in environmental protection projects in this chiefdom remains low at 28 per cent.

Keywords: Participation, Population, Chiefdom, Projects and Environment.

Introduction

In the Democratic Republic of the Congo, forests cover more than 60 per cent of the national territory and account for more than 60 per cent of the forests in the Congo Basin, constituting the second-largest expanse of tropical forest in the world after the Amazon. With an estimated 128 million hectares of natural forests, the DRC possesses nearly 10 per cent of the world's total natural tropical forests and nearly 45 per cent of those in Africa (South Dakota State University, 2015) . This opportunity fosters the development of projects relating to the management of flora and fauna, sustainable agriculture, the green, blue and circular economies, environmental education, and the management of risks and disasters caused by human activities across all regions of the DRC.

Law No. 11/009 of 9 July 2011 on the fundamental principles relating to environmental protection states: 'Every person has the right to participate in the decision-making process concerning the environment and the management of natural resources. The public shall participate in the process by which public authorities draw up policies, programmes, plans and regulations relating to the environment within a transparent and equitable framework defined and established by those authorities. The public has the right to be informed of the final decision' (Art. 9). This Act is essentially based on the fundamental and universal principles of sustainable development. Its second principle is entitled '*Public information and participation in the environmental decision-making process*', (Constitution of the DRC, 2011) . The State has put in place standards and laws to protect the environment; these laws give the local community a prominent role in all phases of biodiversity management initiatives. The beneficiaries of environmental actions should be regarded as experts, whilst project initiators should act as facilitators. This is why this law places great emphasis on public information and participation in environmental management.

In South Kivu Province, natural disasters are a defining feature of the humanitarian situation, alongside population

movements and structural problems. The province has consistently experienced disasters of various kinds, notably floods, earthquakes, river flooding, water and wind erosion, rockfalls, landslides, fires and bushfires, etc., (Civil Protection, 2017) . It is with this in mind that this research will seek to assess the level of involvement of beneficiaries in the management of environmental projects designed to help the population combat the harmful effects of mismanagement that cause natural disasters, particularly floods, in the Kalehe territory.

In response to this situation in the province, policy-makers from the Buhavu chiefdom and NGOs have initiated environmental management projects. In the Buhavu chiefdom, various projects have been carried out as part of environmental protection efforts. The agroforestry seed propagation project for the benefit of communities living near the PNKB, implemented by the NGO WSS, distributed 100,000 seedlings to the people of the chiefdom in 2016. The FSPI ENYANTA project, implemented by WORLD VISION in collaboration with the non-profit organisations EST and FSPI, produced more than 270,000 seedlings as part of the 'hill approach'. The PKAJEF project, implemented by the NGO ITA (), involved producing seedlings and reforesting 20 hectares in the IRAMBO hills (Buhavu Chiefdom Office, 2025).

The landscape restoration project in the Buhavu chiefdom, carried out by the Buhavu chiefdom across two communities – ZIRALO and MUBUKU – resulted in the production of 100,700 seedlings over a period of 20 months; this project was funded by WFP/FAO as part of the P for P programme. The reforestation project in high-risk areas, carried out by the Gorilla Organisation, involved planting trees within the chiefdom. The reforestation project, implemented by PAV asbl and funded by the WFP/FAO, which reforested areas at risk of erosion in the MBINGA SOUTH community in the locality of Kasheke, involved setting up nurseries and planting trees for the local population who were unable to reforest their landholdings; The project lasted one year, the local population was recruited through the 'scoping' system; that is to say, beneficiaries were selected from a single area and were those who owned land, but for the most part, it was the wealthier members of the community who were selected, whilst other sections of the population provided only the labour force (Buhavu Chiefdom Office, 2025).

In light of the threats facing the environment, environmental management is fundamental to protecting our shared home, 'the Earth'; this is why several environmental management projects have emerged within the community. These projects must be carried out with the effective participation of the local population at every stage. The choice of this topic is motivated

by our desire to understand the extent to which the population participates in environmental protection projects within the Buhavu Chiefdom.

Despite calls from the chiefdom's political and administrative authorities, civil society and NGOs, it is apparent that in the Buhavu Chiefdom, the local population does not show much interest in environmental management projects. One might wonder whether this is because they do not feel sufficiently involved in the various stages of the environmental project cycle. A local leader from the Mbinga-Sud group emphasised that they involve the community in environmental management by sending agronomists to supervise the construction of toilets in villages and sub-villages, and that anyone who fails to comply with this decision is penalised with fines imposed by the sub-village and group offices. The offender may pay a goat, a hen or a sum of money, depending on the severity of their offence. NGOs arrive in this chiefdom, consult only the local leaders of the chiefdom, and set up these projects. This, is not viewed favourably by the population, as they feel sidelined from decisions relating to environmental management. Furthermore, NGOs arrive in the chiefdom with almost a full complement of staff already in place, and the local population finds itself sidelined in the management of the project, when they could be regarded as active participants rather than mere spectators. In this study, we will survey the local population regarding their participation in the projects mentioned above; this has prompted us to investigate the extent of the local population's participation in environmental protection projects in the Buhavu Chiefdom.

To carry out our research, we have set ourselves the objective of determining the extent to which the local population participates in environmental protection projects in the Buhavu Chiefdom.

1. General overview of community participation in the project

This section will outline the theory of community participation and the levels of participation.

1.1. Theory on community participation

According to RIFKIN, community participation is defined as a social process in which defined groups that share the same needs and live within a specific geographical area actively seek to identify their needs, make decisions and establish mechanisms to meet those needs. It involves engaging local communities in one, several or all of the following phases of a development project: problem identification, project design, implementation, monitoring and evaluation. Community

participation helps to increase the effectiveness of investments by better targeting the real needs of the population, and the sustainability of projects by creating the necessary momentum and capacity within the communities concerned (Ministry of Health, 2003).

The World Bank, for its part, adds that community participation enables governments: to obtain representative information on the needs, priorities and skills of local populations, as well as on the impact of government programmes and initiatives; to adapt programmes to local conditions; to deliver high-quality services; to mobilise local resources; and to improve the use and maintenance of government facilities and services. Participation also increases ownership of and motivation towards projects, a necessary but not sufficient condition for their sustainability. Participation is a human right because it recognises the fundamental right of individuals, local communities and national governments to be involved in decision-making that affects their future (Kalidou KY, 2012).

In the context of our study, community participation facilitates the involvement, negotiation, consultation, information-sharing, empowerment, consultation, sharing, commitment and collaboration of the local community in environmental protection initiatives within the Buhavu chiefdom. It embodies democracy and the community's right to participate in projects initiated by the Chiefdom, NGOs or the private sector, but which are in the public interest. Each of these terms represents, in its own way, the kind of participation that is becoming increasingly essential to the planning and funding of all types of development initiatives.

1.2. Levels of community participation in the project

The levels of participation relate to the various stages of the project's life cycle during which local communities can be involved.

Table 1: Public participation throughout the project cycle.

Phases	Community participation in:
IDENTIFICATION	Identifying the problems to be solved; identifying the central problem to be solved; describing the central idea; and reflecting on, considering and proposing solutions.
PLANNING	Analyse the project idea in detail (objectives, outcomes, resources, activities); Analyse the problems and options for addressing them; Make decisions on whether to proceed and draw up a draft funding proposal.
FUNDING	Estimate the contributions from the target population (local resources); Estimate the costs and resources required; Draw up a funding proposal and sign the funding agreement.
IMPLEMENTATION	Adhere to the timetable established during the planning phase; Fulfil one's share of responsibility; Identify and reflect on problems arising from the normal course of activities; Adjust certain objectives where necessary; and assess the overall progress of the work.
EVALUATION	Take stock of achievements; draw lessons for future projects and analyse the project's impact during the retrospective evaluation

Source: (Yoba, 2004)

2. Presentation of the Buhavu Chiefdom

Located in the northern part of South Kivu Province, in the Democratic Republic of the Congo, the Buhavu Chiefdom is one of the two chiefdoms that make up the Kalehe Territory.

It is bounded: To the north: by the Bahunde Chiefdom via the Chungiri River (Masisi Territory), with Lake Kivu separating it from the city of Goma. To the north-west: by the Bakano sector (Walikale Territory) via the Hombo River. To the south: the Kabare Chiefdom (Nyabarongo River, Musisi Marshes) and the Nindja Chiefdom (Kabare Territory). To the west: the Chiefdoms of Bakisi and Wakabango I in Shabunda Territory. To the east: Lake Kivu separates it from Idjwi Territory (Buhavu Chiefdom Office, 2025).

The Buhavu Chiefdom comprises seven groupings representing a mosaic of peoples. These are the groupings of Buzi, Kalima, Kalonge, North Mbinga, South Mbinga, Mubuku and Ziralo, comprising 63 villages, including: the

Buzi grouping, with 12 villages; the South Mbinga grouping, with 10 villages; the North Mbinga Group, comprising 6 villages; the Kalima Group, comprising 9 villages; the Kalonge Group, comprising 6 villages; the Mubuku Group, comprising 9 villages; and the Ziralo Group, comprising 11 villages (Buhavu Chiefdom Office, 2025: 17).

Table 2: Breakdown of the population by gender across the Groupings.

No.	Groups	Area	Men	Women	Total	Population density
1	Buzi	92 km ²	54464	54,984	109,448	1,189.65
2	South Mbinga	396 km ²	69,692	79,803	149,495	574,563
3	North Mbinga	1,190 km ²	35,995	42,037	78,032	574,563
4	Kalonge	605 km ²	55,248	64,164	119,412	197.375
5	Mubuku	744 km ²	23,557	27,331	50,888	68.3978
6	Ziralo	508 km ²	14,915	15,551	30,466	59.9724
7	TOTAL	3,535 km ²	308,298	343,184	651,482	184,295

Source: Local Development Plan for the Buhavu Chiefdom, 2025

3. Methodology

Our study population consists of the population of the Buhavu chiefdom, estimated at 651,482 inhabitants. It comprises men, women and young people from three sub-districts, namely: Mbinga-South (149,495 inhabitants), Mbinga-North (78,032 inhabitants) and Buzi (109,448 inhabitants), totalling 336,975 inhabitants across these three sub-districts. (Buhavu Chiefdom, 2025:23). To establish our sample, we set the following selection criteria: living within the Buhavu Chiefdom, specifically in the communities of Mbinga North, Mbinga South and Buzi; being men, women or young people (girls or boys); Having a permanent residence in one of these three local communities within the chiefdom; Having

participated in the most recent environmental protection project

The following were excluded from the sample: anyone outside the Buhavu chiefdom; any man, woman or young person who did not complete our survey questionnaire; anyone who had not yet participated in an environmental protection project.

It is universally accepted that if the population size is sufficiently large in relation to the sample, we used the LUNCH formula (Burns, 2018), which can be expressed as follows:

$$n = \frac{NZ^2 \times P(1 - P)}{Nd^2 + Z^2 \times P(1 - P)}$$

By estimating $p = 0.5$ (giving each member of the population an equal chance of being included in the sample), we opted for a 95 per cent confidence level, with a margin of error of 10 per cent. With Z^2 (confidence interval) = 1.96²; N (target population size) = 336 975 habitants ; P (probability) = 0.05; d (margin of error) = 0.05

The equation therefore becomes:

$$n = \frac{336\,975 \times (1,96)^2 \times 0,5(1 - 0,5)}{336\,975 \times (0,05)^2 + (1,96)^2 \times 0,5(1 - 0,5)} = \frac{323630,79}{843,39} = 383,7 \approx 384$$

As our study covered three communities within the Buhavu chiefdom, we carried out stratified sampling based on sample size. This type of sampling enabled us to determine, as far as possible, how many people to survey per community.

Table 3: Breakdown of the population into strata.

Community	Population	Distribution of the sample by stratum	Respondents per village
BUZI	109,448	$n = \frac{109448 \times 384}{336\,975} = 124.7 \approx 125$ individuals	125: 12 villages = 10
SOUTH MBINGA	149495	$n = \frac{149495 \times 384}{336\,975} = 170$ individuals	170: 10 villages = 17, i.e. 17 people
NORTH MBINGA	78032	$n = \frac{78032 \times 384}{336975} = 88.9 \approx 89$ individuals	89: 6 villages = 14

Source: Our field surveys, September 2025

We therefore conducted a survey involving 384 respondents. Primary data were collected using a questionnaire, taking into account our study variables. For respondents who could read and write, the survey was self-administered; for those who could not read, it was administered by an interviewer.

As for the methodology of the study, we used three methods and three techniques. Thus, the analytical method and the statistical method facilitated our work: *Analytical method*: this enabled us to analyse the information in our possession in order to interpret it. *Statistical method*: this enabled us to gather quantitative data on the level of community participation in the environmental protection project across three communities. As for the techniques, the following proved extremely useful: the literature review, interviews and the survey questionnaire. The *literature review* enabled us to consult books, journals, theses and the internet (websites) relating to the subject of our work. *Interviews* enabled us to speak with the target population about concepts relating to the subject of our study, whilst *the survey questionnaire* allowed us to use both closed and open-ended questions posed to a specific sample representing the survey population in order to obtain reliable data.

To determine the level of public participation in the environmental protection project, we used the average. Thus: Between 0 and 25 per cent: participation would be considered very low; Between 25 and 49 per cent: participation would be considered low; Between 50 and 75 per cent: participation would be considered high; From 76 to 100 per cent: participation would be estimated as higher. For each phase of the project, we calculated the average by taking the number of ‘yes’ responses confirming the respondents’ participation in each phase of the project and dividing this by the total number of questions in each phase; we then determined the average level of public participation in each phase of the project. We then calculated the overall average—that is, the sum of the averages for each phase—to conclude the study and determine the level of community participation in environmental protection projects within the Buhavu Chiefdom.

4. Results

This chapter presents the results relating to the level of participation by the population of the Buhavu Chiefdom in the various phases of implementation of environmental protection projects.

4.1. Identification phase

This session will present the findings regarding respondents' involvement in identifying the problems to be addressed by the project, in identifying the central problem, in contributing to the project's core concept, in brainstorming sessions to propose solutions to environmental problems, and in ensuring their views were taken into account during this identification phase.

Table 4: Average level of respondent participation in the identification phase.

Activities	%	Level
Identification of problems	12.2	Very low
Identification of the central problem	17.0	
Taking the other person's perspective into account	17.0	
The central idea of the project	10.7	
Brainstorming sessions on proposed solutions	14.9	
Taking into account respondents' views on the brainstorming sessions regarding proposed solutions	27.7	
$\frac{12.2+17+17+10.7+14.9+27.7}{6} = \text{average } 16.6 \approx 17\%$		

Source: Our field surveys, September 2025

Based on the results in this table, we conclude that the level of community participation in environmental protection projects in the Buhavu chiefdom during the problem-identification phase remains very low, at 17 per cent. This low level of involvement by the local community in this phase is due to the fact that project initiators arrive in the chiefdom with a fully formed project, without taking the community's views into account.

These findings are consistent with those of **Ndambo Nyange Marie** in her research, whose surveys showed that, in meetings to identify problems relating to the management of this forest reserve, nearly 70 per cent of the population of Luki consisted of non-indigenous people. In such a context, elections invariably place the latter in the foreground at the

expense of the indigenous people (rightful claimants). This may explain the climate of mistrust and thus hinder the participation of all sections of the population in identifying the problems that could affect this reserve. More than 30 per cent of those surveyed regarded the land of the Luki reserve as their own, whilst more than 60 per cent asserted, in line with the managers, that this land is the exclusive property of the State. One of the focus group participants said that 'neither the classification of the Luki reserve, nor its demarcation, nor its current management, nor even the identification of the problems affecting this reserve involve the local communities. Even the drafting of the Luki reserve management plan was carried out without us'. According to one of the managers interviewed by the author, 'there is a lack of resources to apply the participatory approach in all activities during the identification phase, given the time, financial and human resources required for such a process' (Nyange, 2014:149).

4.1.1. Planning phase

This section presents the findings of the survey regarding respondents' participation in activities during the planning phase, including: the feasibility study, stakeholder analysis, definition of project objectives, activity planning, the decision to proceed with or halt the project, fundraising, and the preparation of technical project documents.

Table 5: Average level of respondents' participation in the planning phase.

Activities	%	Level
Project feasibility	14.8	Very low
Stakeholder analysis	9.9	
Definition of project objectives	10.7	
Planning of activities	42.7	
Review of activities	10.2	
Project funding	8.6	
Preparation of technical project documents	7.6	

$\frac{14,8+9,9+10,7+42,7+10,2+8,6+7,6}{7} = \text{average } 14,9 \approx 15\%$	
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Source: *Our field surveys, September 2025*

From an analysis of this table, we conclude that the level of participation by the population of the Buhavu chiefdom in environmental protection projects during the planning phase is very low, at 15 per cent. This low level of community representation during the planning phase is due to the fact that the project initiators plan the activities to be carried out in the chiefdom themselves and merely inform the community without taking into account the community's views, consent and experience, the local context or their contribution.

The findings of **Kalidou KY**'s research into community participation in a development project revealed that, at the time the programme was being formulated, local authority officials did not have a clear understanding of their roles. This affected participation during the workshops, resulting in a limited analysis of participation and alternatives, as only the key stakeholders were represented. Efforts were made, but community participation – particularly amongst vulnerable groups – was insufficient, as young people and women, in particular, were only marginally involved (Kalidou, 2012: 39).

4.1.2. Project implementation phase

In this section, we will present the findings on respondents' participation in the implementation of the project.

Table 6: Average level of respondents' participation during the implementation phase.

	%
Carrying out activities	97.9
In the construction of nurseries	26.7
Transport of seedlings from the nursery to planting sites	98.9
Planting the seedlings	100
Watering the seedlings	96
Protecting seedlings from weeds and pests	99.7

Monitoring seedlings	77.7
Raising community awareness of seedling protection and its benefits	48.4
Raising public awareness of village sanitation	53.5
Adherence to the established schedule	33
Identifying and reflecting on the problems that arose during the course of the activities	74.5
Revising the project's objectives whilst it was being carried out	17.5
Average $\frac{97,9+26,7+98,9+100+96+99,7+77,7+48,4+53,5+33+74,5+17,5}{12} = 68.7 \approx 69\%$	
Level of participation: high	

Source: *Our field surveys, September 2025*

We concluded that the level of community participation during the implementation phase is high, at 69 per cent. This participation is due to the fact that NGOs arrive in the chiefdom having already identified and planned the activities, and invite the community to participate extensively in carrying out the activities as beneficiaries.

The findings of the report by Florence FERRARI and her colleagues showed that: the 'dialogue' pillar was not implemented as a coherent, logical process with a progressive sequence leading from a starting point to an end point during the project's implementation. It appears to have consisted of a series of discussion workshops on topics related to stabilisation, but without any strategic link between them. Whilst the population was represented, the involvement of the CDMs (Dialogue and Mediation Framework) and local leaders had replaced the participation of all sections of the population in the implementation of this project, a view not shared by the team. Higher-level authorities (territorial, provincial) appear to have been more involved, but still not enough given the requirements of a dialogue-based approach within the framework of a stabilisation programme (Florence Ferrari, 2017:34).

4.1.3. Evaluation phase

This section presents the results of respondents' participation in monitoring and evaluation activities.

Table 7: Average level of respondents' participation in the evaluation phase.

Activities	%	Level
Assessment of the overall progress of the work	14	Very low
Analysis of the results achieved by the project	12.8	
Assessment of project implementation	15.6	
Meeting to decide whether to continue or halt the project	9.6	
Analysis of the project's impact	7.8	
$\frac{14+12.8+15.6+9.6+7.8}{5} = \text{average } 12\%$		

Source: Our field surveys, September 2025

The data in this table show that the level of community participation in the evaluation phase is very low, at 12 per cent. Often, project initiators carry out the activities and then leave without evaluating the project's impact on the community and its environment. Once the activities have been implemented, project initiators do not return to report back to the community. This is because some NGOs complete their activities and do not return to the community to report back to the people.

In his research on community participation in a development project, **Kalidou KY**'s findings showed that, in the evaluation of agro-sylvo-pastoral projects in Ouagadougou, there was low community participation during this phase. He also noted that no mid-term evaluation took place in these projects. Such an evaluation should enable adjustments to be made to the approach used in order to increase the level of community participation (Kalidou, 2012) .

4.1.4. Overall average of respondents' participation in environmental protection projects in the Buhavu chiefdom

Table 8: Overall average level of respondents' participation in projects.

Phase	Average	Overall average	Level
Identification	17%	$\frac{17+15+69+12}{4} = 28\%$	Low
Planning	15%		
Implementation	69%		
Evaluation	12%		

Source: Our field surveys, September 2025

Ultimately, this table shows that the level of public participation in environmental protection projects in the Buhavu chiefdom is low, at 28 per cent.

Conclusion

This study examined the level of public participation in environmental protection projects in the Buhavu Chiefdom, with the target population comprising those who had participated in a more recent project and were aged 15 or over. A sample of 384 respondents was calculated using the LUNCH formula.

According to the results in the table in Chapter 3, the level of community participation in environmental protection projects in the Buhavu Chiefdom during the identification phase remains very low at 17 per cent. This low level of involvement by the local community is due to the fact that projects are drawn up in offices without taking into account the actual needs of the natural environment concerned. It therefore appears that, during the planning phase, the level of participation of this population in environmental protection projects remains very low, at 15 per cent. Nevertheless, even though this population does not participate in the identification and planning phases of these projects, its level of participation in the implementation of these projects is high, at 69 per cent, as it is the population that benefits from them. However, when it comes to project evaluation, the level of community participation remains low at 12 per cent, particularly as the project initiators leave without carrying out

an assessment of the project's impact on the community and its environment, especially given that the project design process was not participatory between the NGOs and the local beneficiary community. In conclusion, this study finds that the level of community participation in environmental protection projects in the Buhavu Chiefdom remains low at 28 per cent, as shown in Table 8 of this article.

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