Focus group of women in Bumoga, Cifunzi, Kalonge, Kalehe/South Kivu

BASELINE STUDY REPORT

Consortia project entitled "Sustainable agriculture and better protection of tropical forests in the DRC" (REDD+)

September 2021

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List of acronyms and abbreviations

BCZ:	Health Zone Headquarters
FGD:	Focus group Discussion
FANTA	Food Nutrition Technical Assistance
KII:	Key Informant Interview
KM:	Kilometer
MEL :	Monitoring Evaluation and Learning
MEAL:	Monitoring Evaluation Accountability and Learning
NCA:	Norwegian Church Aid
PNKB:	Kahuzi Biega National Park
DRC :	Democratic Republic of Congo
REDD+ :	Reducing Emissions from Deforestation and Degradation
RM :	Raiya Mutomboki
VH-DRC:	Victim's Hope DRC

I. PROJECT AREA CONTEXT:

The Sustainable Agriculture and Better Protection of Tropical Forests in the DRC, "REDD+" Consortia project will be implemented through a consortium of partners - Caritas Norway (lead agency), Norwegian Church Aid, Église du Christ au Congo (ECC) and Caritas Congo ASBL - in the province of South Kivu in the Territory of Kalehe, on the Bukavu-Kalonge axis, straddling the Kahuzi-Biega National Park and in the province of Maniema in the Territory of Kailo, Sector of Balanga at 60 km from Kindu, on the Kindu-Lokando axis, on the edge of the Lomami National Park.

Political-administrative level:

Kalonge, is a groupement in the territory of Kalehe, which borders the territory of Shabunda and Kabare. It is an area partially occupied by armed groups from within and outside the groupement. These external armed groups come from neighbouring territories including Kabare and Shabunda. With an estimated population of 189,918 inhabitants, over an area of about 75 km^2

The territory of Kailo measures about 25,003 km^2 with an estimated population of 280,992 inhabitants. It is composed of three communities including Wasongola, Ambwe and Bangengele with a limitation by the territories of Punia, Ubundu, Shabunda, Pangi.

Economic level:

In both areas, the populations live mainly from agriculture as their main source of income and from the exploitation of ember and wood. Some mining areas are exploited artisanally and are often occupied by armed groups to the detriment of the local population. These areas have fertile soil with two seasons strongly favourable to several crops such as manioc, rice, maize, groundnut, plantain. Some local economic actors are available. The difficult physical access to these areas poses enormous problems for local economic operators and local populations for the sale of local products and the import of basic manufactured goods (Semolina flour, Corn flour, Form flour, Rice, Vegetable oil, Laundry soaps, ...). The easy means of access to the areas is by motorbike and bicycle and rarely by vehicle in the dry season due to the state of the roads, which are either very dilapidated or non-existent.

Socio-cultural level:

From the cultural point of view, the territory of Kalehe and Kalonge in particular is largely composed of Bahavu, Batembo, Bahunde, Banyarwanda, Bashi, Banyanga and Barega. While the territory of Kailo is composed of three major population groups of which the Basongola are represented at 36%, the Bangengele at 30%, the Balanga at 20%, which are the indigenous tribes. Alongside these, there are the Wagenya and the Arabized

The languages spoken are Swahili, Kihavu, Kitembo, Kinyarwanda, Kihunde and Mashi for the territory of Kalehe we find that the population speaks Swahili, Kisongola, Kingengele, Kilanga, Kizimba, Kilega, Kikusu and several other dialects

II. ABOUT VH-RDC

Victim's Hope DRC, headquartered in Bukavu, South Kivu, is a national organization under Congolese law created in April 2013 and registered with the Ministry of Justice under N°JUST.112/SKV/3912/2013 and with Social Affairs under N°08/003/DIVAS/SK/02/2018. It was created following the various recurrent natural and human disasters that have shaken

eastern DR Congo and the increased vulnerability that has characterized not only the victims, but also the indigenous populations.

Victim's Hope DRC specializes in quantitative and qualitative research to provide the humanitarian community with accurate and reliable high quality data and evidence to enable them to provide timely and effective assistance to the most vulnerable people in order to increase social impact.
He has extensive experience with many donors and international organizations and has conducted several research and evaluation activities in the provinces of South Kivu, North Kivu, Ituri, Tanganyika, Kasai and Kasai Central and Maniema.

III. ABOUT NCA

Norwegian Church Aid is an independent ecumenical and humanitarian organisation based in Oslo, Norway. In this consortium project NCA will maintain a supporting role at national level, helping local partners (ECC and Caritas Congo ASBL) to develop quality systems for monitoring, evaluation and learning, including a baseline studyNorwegian Church Aid works with people and organisations around the world to eradicate poverty and injustice. NCA provides emergency disaster relief and works for the long-term development of local communities. To address the root causes of poverty, NCA advocates for just decisions by government, business and religious leaders. We help those in greatest need, regardless of ethnicity, creed, political or religious affiliation.
NCA has been active in the Great Lakes region since 1994, beginning with an emergency response to the humanitarian crisis in the eastern regions of the Democratic Republic of Congo (DRC) caused by the Rwandan genocide. There are currently two NCA offices in the DRC : in Bukavu, South Kivu (SK), and in Goma, North Kivu (NK). In addition, there is a field base in Baraka.

IV. SUMMARY OF THE BASELINE STUDY

This report describes data from the document review and field data collection through key informant interviews (KII), focus group discussions (FGD) and household surveys in the areas of intervention of the Sustainable Agriculture and Enhanced Protection of Tropical Forests in DRC "REDD+" Project.

This baseline study aims to understand and/or assess the local community's basic knowledge, attitudes and practices prior to project implementation by the implementing partners in DRC against selected indicators in the results frameworks.

Study Design

Following the indicators monitored by the project and secondary data obtained from the literature review, data collection tools were developed including the household survey questionnaire, key informant interview guides and community focus group guides. After discussion and validation of the tools with NCA, data collectors were trained on the methodology and field collection tools in the two target territories. Household surveys were conducted in 233 households, 137 in Kalehe territory and 96 in Kailo territory. As for the key informants and focus groups, 21 interviews with local leaders including customary and religious

authorities and health care personnel as well as 12 focus groups, 4 of which were heterogeneous and 8 homogeneous, were conducted.

Limitations experienced during collection

During this field data collection, 4 main limitations were observed, including physical and security accessibility to some survey areas, telephone network coverage, unavailability of respondents and community wait-and-see attitude in some villages.

Physical and security accessibility: Due to the dilapidated road infrastructure and the precarious security situation in some of the villages covered by this survey, access to some areas was restricted. This is the case of Cibinda village in Kalonge and Chekanawo, Ibelebele, Dingi in Kailo.
The village of Kalonge is under the control of a local armed group that the leaders and the local security forces strongly advised against, in addition to their inaccessibility even by motorbike, and those of Kailo are only accessible by dugout canoe because they are located on the other bank of the Congo River, and the time was not right to cross.

Telephone network coverage: The majority of the villages sampled in South Kivu are covered only by a Vodacom network, and with very little stability. As for the province of Maniema, the entire sampled area is covered by the Vodacom network, but with a low throughput, as it depends on the intensity of the sun and the battery charge. All these situations did not allow for good supervision of the collection agents and communication between the field team members and the coordination team.

Unavailability of respondents: The preparation and collection of the data took place in a very short time frame and this did not allow time for the preparation of respondents in the field. That being said, once in the field and wanting to start the collection directly, some respondents were not available during the collection period. The interviewers were obliged to travel long distances to reach the respondents or to reach them in the field, depending on the case.
Community wait-and-see attitude: The community being used to the mechanism of humanitarian assistance, they were too attracted to the interviewers and expected identification for quick assistance in the near future. Some community members were carried away by the spirit of identification of beneficiaries and were ready to block the road to data collectors and sometimes even persuade them to be identified. On each occasion, VH/NCA should explain the nature and purpose of the data collection.

V. SUMMARY

Demographically, we can observe that 52.36% of our respondents are women and 47.64% are men. About 91.4% of the respondents are farmers on average in the two survey regions. The results showed that 37.3% of the respondents are illiterate and only 29.6% have primary or secondary education. However, it is important to note that 195/233 (83.69%) of the respondents are indigenous people with a minority of pygmies and IDPs.

From the **point of view of sustainable agriculture**, we note that 46.8% of the respondents claim to have applied certain forest protection and conservation practices in the last 12 months. Agroforestry is applied at 1.7% while the practice of modern agricultural techniques remains at 1.8% within the targeted communities. Overall, 88.4% of household heads claim to have missed some food in their household and about 84.1% claim to have gone nights without eating due to lack of resources.

The results obtained show that the majority of the population lives in either moderate (60.5%) or severe (25%) hunger.

For livelihoods, more than 88.8% of households claim to have access to cultivable land within two territories. Only 44.6% have a title deed, while the rest access land by renting and sharecropping without official documents guaranteeing land security from the owner, thus exposing them to expropriation at any time. The non-owners are mostly members of the community who have come from areas that are highly insecure because of the groups and have found refuge in areas that have not been affected by armed conflict. As the majority of them own their fields, they have a high level of confidence that they will have sustainable access to their land.

More than 79% declared that they had not recorded any change in their household income in the last 6 months, the majority of whom (58.36%) live on an average monthly income of less than US$10. The vast majority live on agriculture (90.6%) and fishing (13.7%) in rivers as the main source of income in their households. The most remunerative activities are fishing, animal husbandry and paid work, whose income varies between 30 and 50US per month.

Regarding **local initiatives** for sustainable management of natural resources, 60% of households practice more slash and burn agriculture than other practices. This practice is observed more in Kailo (94.8%) than in Kalehe (44.6%). This practice is adopted to increase production (207/233) or to reduce ecosystem destruction (18/233).
It is also worth noting that 63.69% of the households surveyed said that they intend to continue with their farming practices. 17.2% of households claim to have been trained in agroforestry and 15.5% in sustainable agriculture techniques in the past. More than 92% of households interviewed said they use bushwood for cooking within the household

VI. METHODOLOGY OF THE STUDY

4.1 Objectives of the baseline study

The main purpose of this baseline study is to obtain initial indicator values to assess the knowledge, attitudes and basic practices prior to project implementation among stakeholders including beneficiaries and project implementing partners in DRC in relation to the selection of indicators in the results framework.

4.2 Data Collection and Analysis

Data collection

Data collection in the field was carried out by a team of locally recruited enumerators in the two respective zones under the lead of supervisors from the VH coordination office. The enumerators were trained on the spot on the digital data collection tools and the survey methodology and ethics of qualitative and quantitative research.

Under the leadership of each supervisor, data collection in the field took place from September 7, 2021 to September 11, 2021 after a one-day training.

Quality Assurance

To ensure the quality of the data collected, collectors were selected locally and objectively and trained in the principles of mixed research, sensitivity and the use of different data collection tools to be used. In order to increase the quality of the data, the household form was scanned onto the Kobo server with necessary restrictions and page breaks to significantly reduce any data entry errors and inconsistencies in the quantitative data. The qualitative data was collected on paper and then the transcription of the notes was done and the cleaning of the quantitative and qualitative data. The evaluation team conducted a review of the data for completeness, consistency and high quality along the dimensions of data quality.

General analysis process

For the qualitative data: The various transcriptions of the interviews and the analysis of the data made it possible to draw the necessary information from the predefined indicators in an analytical manner. The qualitative data was directly transcribed into world and integrated with the quantitative data in a single, explained report.

For quantitative data : The data were collected through the Kobo collect data collection application, then cleaned and analyzed using SPSS software and presented in Word format. The analyses were done in a descriptive and analytical way.

The Chi2 test of independence was used to differentiate trends and assess the dispersion of data between regions and other different similarity and disparity parameters.

4.3. Limitations of the study

During this field data collection, 4 main limitations were observed, including physical and security accessibility to some survey areas, telephone network coverage, unavailability of respondents and community wait-and-see attitude in some villages.

Physical and security accessibility: Due to the dilapidated road infrastructure and the precarious security situation in some of the villages covered by this survey, access to some areas was restricted. This is the case of Cibinda village in Kalonge and Chekanawo, Ibelebele, Dingi in Kailo.

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travel long distances to reach the respondents or to reach them in the field, depending on the case.

Community wait-and-see attitude: The community being used to the mechanism of humanitarian assistance, they were too attracted to the interviewers and expected identification for quick assistance in the near future. Some community members were carried away by the spirit of identification of beneficiaries and were ready to block the road to data collectors and sometimes even persuade them to be identified. On each occasion, VH/NCA should explain the nature and purpose of the data collection.

The data from this baseline serves as the first phase of a survey cycle prior to the implementation of the project in the field. The second phase will occur at mid-term and the third at the end of the project to collect data on the same indicators established at the baseline. This pre-intervention design allows for the determination of statistically significant changes in indicators between baseline and endline; however, it does not allow for statements of attribution or causality regarding project impact.

Indicators to be measured

VH collected data to measure the core indicators of the REDD+ project, indicators related to sustainable agriculture and forest protection, sustainable land use in the intervention areas (Kailo and Kalehe), Involvement of religious leaders and local communities and indigenous peoples for environmental protection, Improved rights and livelihoods of indigenous peoples and local communities, access to land for sustainable natural resource management, sustainable livelihoods and production, household livelihoods, local initiatives for sustainable natural resource management as included in the MEAL plan of the project proposal. (see Table ...).

Table 1: **List of indicators measured**

#	INDICATOR FOR BASELINE
01	of families improving forest conservation and protection
02	increase in nutritional intake in households
03	Level of influence on duty bearers in approving and implementing sustainable forest and land use policies in DRC
04	2.1 % of targeted religious leaders and members of local communities and indigenous peoples (M/F) involved in forest protection, restoration and sustainable management initiatives
05	Level of household sense of security about sustainable ownership of household land
06	Rate of increase in income of member households (M/F) in local community forest concessions (LCCs)
07	4.1 Percentage of households (M/F) in local community forest concessions (LCCs) that adopt agroforestry
09	4.2 Percentage of households (M/F) in local community forest concessions (LCCs) that practice sustainable and innovative agricultural practices with low impact on deforestation sustainable agriculture
10	5.2 Percentage of households using improved stoves reporting reductions in indoor pollution

Review of secondary data and harmonization of approach

In order to refine the design of this study, a secondary data review (desk review) was conducted by the VH team to review project documentation including the results framework, the draft MEL plan, and the project proposal, the current DRC land law, the HHS-Indicator Aug2011, worldagroforestry, global-results-framework-2020-20302.

At the end of the secondary data review, the VH team conducted the preliminary interview with the NCA team to discuss the first orientations resulting from the document review for an effective implementation of the data collection in the field.
At the end of this preliminary stage, an initial report was put together defining the detailed methodology, operational schedule, and collection tools, which was submitted to NCA for validation prior to the field trip.

Sample design

Household survey

Based on a household questionnaire, the household surveys were planned to be conducted on a sample of 260 households, 130 per zone, a calculated sample of all direct beneficiaries expected by the project. This sample was not reached in Kailo due to the inaccessibility of the areas and the unavailability of respondents. 96/130 households were reached in Kailo and 137/130 in Kalonge.
The sample was calculated using the two-stage statistical sampling approach and the probability proportional to size (PPS).
Knowing the total population **(N)** that will be reached by the project, we calculated **n** with the following formula:

$$n \geq \frac{Nz^2.p.q}{N\varepsilon^2 + Z^2.p.q}$$

n≥ sera = $5000*(1.64)^2*0.5*0.5/5000*(0.05)^2+(1.64)^2*0.5*0.5$
n≥ sera = 3362 /12,5+0,6724
n≥ sera =3 362/13,1724
n≥ will be = 255 households which we reduced to 260 households.

Where :

Z = critical value of the normal probability distribution (90% confidence level: 1.64)
P = Proportion of the population with the desired attribute that is 50% : 0.5
ε = margin of error = 5% = 0,05
n = ?

Key informant interview (KII):

According to Guest, Bunce and Johnson[1], the first saturation of qualitative data is observed after the 18th interview and new information becomes scarcer. In parallel to this observation of data saturation, 21 resource persons were interviewed, including 5 religious, 3 health care workers, 12 customary authorities, and 1 member of civil society. This allowed us to assess the knowledge, attitudes and basic practices before the implementation of the project in relation to the list of indicators in the results framework.

Group discussion

12 focus groups were conducted, 4 of which were heterogeneous and 6 homogeneous, with 6 per study area. More or less 120 people were reached during the focus group discussions and this allowed

[1] Guest, Bunce and Johnson (2006) and Marshall*et al*(2013)

us to assess the basic knowledge, attitudes and practices prior to the implementation of the project in relation to the list of indicators in the results framework.

Survey question

A household survey questionnaire was established for quantitative data collection coupled with two guides (KII+FGD) for qualitative data collection according to the information needs to be collected in accordance with the monitoring and evaluation plan implemented by the REDD+ project as submitted by the MEAL NCA Coordinator.

The household questionnaire and the interview and focus group guides are all focused on the following themes

- Section A_General Information
- Section B_Demographic information
- Section C_Sustainable agriculture and forest protection
- Section D_Livelihoods of local communities and indigenous peoples
- Section E_Local initiatives and sustainable natural resource management

The household questionnaire was designed on Word, then scanned onto the Kobo server to facilitate digital data collection with the tablets. The key informant interviews and focus groups were conducted on paper and summarized in Word. All tools were designed in French and then translated into local languages during interviewer training to facilitate understanding and also in the field by the data collectors to facilitate data collection from community members.

VII. RESULTS ANALYSIS

The present analyses will demonstrate the results obtained during the household surveys, key informant interviews and focus group discussions with beneficiaries. For ease of reading, the results will be presented succinctly after the indicator table in demographics, sustainable agriculture and forest protection, community livelihoods and local natural resource management initiatives.

Table 2: Baseline values for indicators

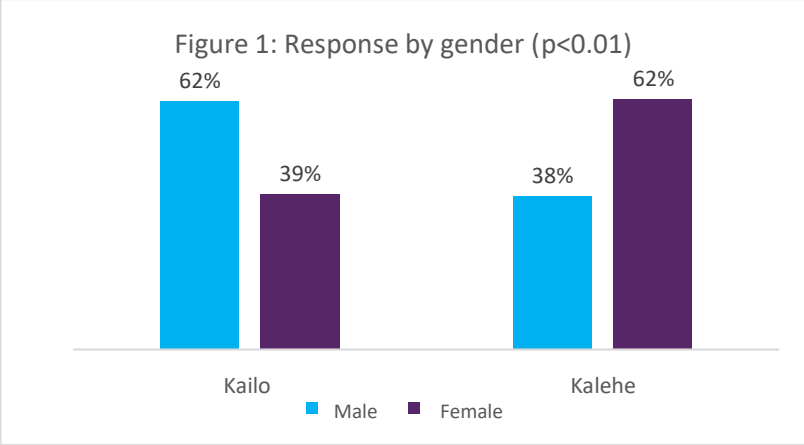
#	INDICATOR	Base value
01	of families improving forest conservation and protection	46,8%
02	increase in nutritional intake in households	2.8, Moderate hunger in households
03	Level of influence on duty bearers in approving and implementing sustainable forest and land use policies in DRC	Kailo : Level 1 and Kalehe : Level 2
04	2.1% of targeted religious leaders and local community members (M/F) involved in forest protection, restoration and sustainable management initiatives	13.3%
05	Level of household sense of security about sustainable ownership of household land	Very high=62.66%. High=25.75%. Less High=11.58

06	Rate of increase in income of member households (M/F) in local community forest concessions (LCCs)	10 USD on average
07	4.1 Percentage of households (M/F) in local community forest concessions (LCCs) that adopt agroforestry	1.7%
08	4.2 Percentage of households (M/F) in local community forest concessions (LCCs) that practice sustainable and innovative agricultural practices with low impact on deforestation sustainable agriculture	1.7%
09	5.2 Percentage of households using improved stoves reporting reductions in indoor pollution	1%
10	5.1.1 Number % of households with enhanced capacity for production and efficient use of wood energy	0%

1. DEMOGRAPHIC CHARACTERISTICS

Respondents by gender

Overall, this assessment interviewed a total of 233 household representatives, 122 of whom were women and 111 men. (Kailo =96 including 37 women and Kalehe=137 including 85 women).



The high participation of women is justified by the fact that they are more permanent in the fields and at home and during this study the interviewers could either find the respondents at home or in the fields. The men, on the other hand, are deployed in the mining areas or in the centres of attraction for small businesses and other activities to generate income for the survival of the household, while the women must stay at home to take care of the children.

Occupation, level of education and membership in a forest concession association.

In the two target territories, the results show that the members of the host community are mainly farmers as this category represents 91.4% of the population. In terms of education, illiterate people represent 37.3% and some members of a forest concession association in the local communities (32.6%).

Table 3: Occupation, level of education and membership of forestry associations

Characteristics of the respondent	Name of the Territory		Total	p
	Kailo n (%)	Kalehen (%)		
Profession				
1. Farmer	89(92,7)	124(90,5)	213(91,4)	
3. Fisherman	3(3,10)	0(0,0)	3(1,3)	0.021
4. Trader	0(0,0)	7(5,10)	7(3,0)	

5. Teacher	1(1,00)	2(1,50)	3(1,30)	
6. Nursing staff	3(3,10)	1(0,70)	4(1,70)	
7. Cleric	0(0,0)	3(2,20)	3(1,30)	
Total	**96(100)**	**137(100)**	**233(100)**	
Level of study				
1. Illiterate	18(18,8)	69(50,4)	87(37,3)	
2. Primary school	31(32,3)	38(27,7)	69(29,6)	
3. Secondary school	42(43,8)	27(19,7)	69(29,6)	
4. Academic	5(5,2)	3(2,20)	8(3,4)	
Total	96(100)	137(100)	233(100)	
Member of a local community forest concession association				
1. YES	50(52,1)	26(19)	76(32,6)	
2. NO	46(47,9)	111(81)	157(67,4)	< 0,01
	96(100)	137(100)	233(100)	

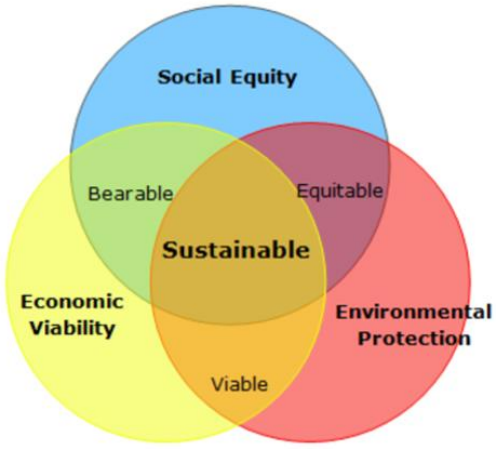
The local community forest concession associations identified in the study area are notably in Kailo, Mama BASIKAMBA TUJIKAZE and in Kalonge the Community Conservation Committee, 'CCC' as well as the Association of Indigenous Pygmies, 'AAP'.

Types of beneficiaries interviewed

Local communities were the main respondents in both territories than IDPs, returnees and finally indigenous pygmy peoples. p<0.05. Among the 233 respondents met within households, 193 (83.7%) were host communities, 23 (9.9%) were displaced households, the 10 returned households representing 4.3% and 5 indigenous pygmy households representing 2.10%.

2. SUSTAINABLE AGRICULTURE AND FOREST PROTECTION

Figure 2: Three pillars of sustainable agriculture



Sustainable agriculture is based on the need to develop technologies and practices that do not adversely affect natural resources while leading to improved agricultural productivity. Sustainable agriculture therefore calls for economically viable, environmentally responsible and socially equitable [2]agriculture.

The REDD+ project seeks to raise awareness of the centrality of forests to people's livelihoods and by promoting sustainable agricultural models for food and perennial crops that will increase family incomes while protecting forests, soils and water resources.

Indicator: 1% of families improving forest conservation and protection

The results of the household surveys conducted in the two territories showed that only 46.8% of the communities in Kailo and Kalehe territories applied at least one forest protection and conservation practice in the last 12 months prior to data collection. (P<0,41)

[2] http://www.fairebien.com/agriculture-durable/

Forest protection and conservation practices applied in the past 12 months are agroforestry in Kalehe and wildlife conservation in Kailo. P<0,01

Table 4: Forest protection and conservation practices

What forest protection and conservation practices have you implemented in the past 12 months?	Territory		Total	p
	Kailo	Kalehe		
1= Ecological energy consumption	13(27,1)	0(0,0)	13(11,9)	<0,01
2= Agroforestry practice	9(18,8)	55(90,2)	64(58,7)	<0,01
3= Wildlife conservation	26(54,2)	10(16,4)	36(33,0)	<0,01
4= Practice of modern agricultural techniques	1(2,10à	1(1,6)	2(1,8)	0,86

Although some of the respondents said that they were applying certain forest conservation and protection practices, it emerged from our investigations and qualitative data that the population of Kalonge and Kailo were engaged in tree felling and the search for forest animals, due to the level of poverty and the lack of awareness of the population of the good and bad practices of forest conservation and destruction. In interviews with the community, some bad practices of forest destruction were cited, notably the felling of trees as a result of artisanal exploitation and agriculture on bushland, bushfires, uncontrolled hunting of animals and the use of 12-gauge shotguns to kill forest animals. Regarding good practices for the protection of the forest, the population knows that trees should not be cut in disorder and if they are cut, another one should be planted or the 12-gauge rifle should not be used to kill forest animals.

In an interview with the indigenous Pygmy people at their Chaminunu site in Kalonge, the latter said that they are living the ordeal today, and that this is leading them to be tempted to go to the PNKB again to get food.
"Since we were settled in this camp, all the promises made by the government have never been fulfilled. It was promised that a school, a health centre, a church and means of subsistence would be built," laments this indigenous Pygmy people. This assumption was reinforced by the population of Bumoga, a population bordering the KBNP in the village of Cifunzi, where a significant number of indigenous Pygmy peoples also live in the same situation.

Indicator: 2% increase in household nutritional intake

According to the constant fact on the ground, the prices of food are increasing on the local markets, which leads to a decrease in food consumption of the households, mostly poor. The population is also experiencing an increasingly degrading nutritional situation, and in addition households do not have access to drinking water[3].
According to the survey, 88.4% of the households surveyed stated that they had missed some desired food items in their households during the four weeks preceding the survey. This lack is due to the low availability of economic resources and this situation is observed in all the territories visited (P=0.01). (P=0,01).

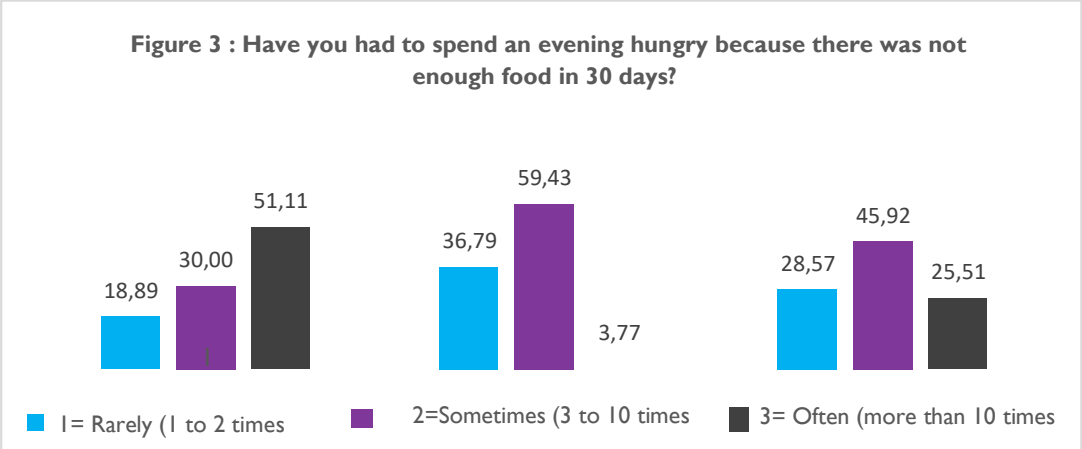
Table5: Missed any food in the household

	Name of the Territory	Total	P Value

[3] DRC Project description 19.5.2020 FINAL_NCA

	Kailo(n=96)	Kalehe (n=137)		
Missing any food at home of any kind due to lack of resources				
0. NO	9(9,4)	18(13,1)	27(11,6)	
1. YES	87(90,6)	119(86,9)	206(88,4)	
	96(100)	137(100)	233(100)	0,37

It should also be noted that overall 84.1% of households had to spend an evening hungry because there was not enough food in the last 4 weeks (30 days) and sometimes all day or more. (p=0,001).



Generally, 74.7% of the households surveyed said that they had gone a whole day and night without eating anything because there was not enough food in the last 4 weeks (30 days). This was true for both territories. P=0,001

Table 6 : Overall trend

	Name of the Territory		Total	P Value
	Kailo(n=96)	Kalehe(n=137)		
Missing any food at home of any kind due to lack of resources	87(90,6)	119(86,9)	206(88,4)	>0,05
One household member was forced to sleep hungry at night because there was not enough food in the last 4 weeks/30 days	90(93,8)	106(77,4)	196(84,1)	>0,05
A family member went one whole day and night without eating anything because there was not enough food in the last 4 weeks/30 days.	83(86,5)	91(66,4)	174(74,7)	>0,05

These data show that the nutritional situation is catastrophic. According to the inhabitants of Balanga interviewed in the focus groups, it is since we were forbidden in July 2021 to go and work in the forest that we are living such a critical food life.
As for Kalonge, the population used to live from agriculture, livestock and a very small percentage of small trade.
As a result of the growing insecurity in the arable land, the population can no longer reach their fields for cultivation, and if they have to reach them, according to data collected in the sub-village of Bumoga, in Cifunzi, they have to pay 100 US dollars per month to the armed groups. This population no longer raises livestock because at any time the armed group comes to steal their cattle and no longer engages in small-scale trade following the deterioration of the main road known as MADIRIRI, which does not allow the group to open up to outside areas for the supply or shipment of basic necessities to consumption centres (Mudaka market in Kabare, Beach Muhanzi market in Bukavu, KASHANJA and BITARA markets in Nindja, etc.).

Children are suffering from malnutrition and other diseases related to food insecurity, community members said in focus group discussions. You can't find food, and then agriculture, which should be the only refuge, you don't have seeds to sow and you don't have access to fields.
According to the interview with the Zone Chief Medical Officer of Kalonge health zone, the nutritional situation is in a state of alert. The last report of malnutrition rate at the beginning of the year 2021 stands at 11% of moderate acute malnutrition cases and 7% of severe acute malnutrition in the health zone of Kalonge on an estimated population of 218,416 inhabitants.

Famine score

According to USAID's Food and Nutrition Technical Assistance Project (FANTA), the HHS is an index of household food deprivation obtained from the previous questions in Table 6.

To total the categorical HHS indicator, two different cut-off values (> 1 and > 3) are applied to the HHS scores that were generated. The three categories of household hunger are presented below. Thus, it is apparent from these analyses that 75% of the population in Kalehe and Kailo territories live in either moderate hunger while 25% live in severe hunger.

Table 7: Hunger Score

N°	Zone	Household hunger score	Categories of household hunger	Number of households	Average household hunger score
1	KALEHE	0-1	Little or no household hunger	29 (12.4%)	0.55
		2-3	Moderate hunger in households	103 (44.2%)	2.77
		4-6	Severe hunger in households	5 (2.1%)	4.60
Subtotal1				**137**	**2.37**
2	KAILO	0-1	Little or no household hunger	5 (2.1%)	0.60
		2-3	Moderate hunger in households	38 (16.3%)	2.68
		4-6	Severe hunger in households	53 (22.7%)	4.49

Subtotal2	**96**	**3.57**
Grand Total	**233**	**2.86**

It is relevant to note that economic inaccessibility of healthy food is strongly associated with food insecurity and various forms of malnutrition, including stunting in children and obesity in adults.

Indicator: 3. Level of influence on duty bearers to approve and implement sustainable forest and land use policies in DRC

The objective of this indicator is to measure the effect and progress of strategies to influence decision-makers and actions to approve and implement sustainable forest use policies in the DRC.

This indicator is a progress indicator based on the assessment of several parameters to determine the level of influence at which we are where level 1 is the lowest and level 5 is the highest. The higher levels of influence measure impact and outcomes, while outputs are measured at all levels.

Data sources for this indicator are targeted households through focus groups with civil society members and local authorities by assessing policy proposals submitted/studies/recommendations, reports of awareness raising/advocacy meetings, media advertisements, speeches, statements by power holders, etc.

During this baseline survey, it was difficult to assess the level of this indicator reliably because most of the above-mentioned sources were not available and could not be obtained in such a short period of time as that in which we conducted the field surveys.

Nevertheless, based on data obtained during focus groups and interviews with some power holders on the spot, the level of influence was **level 2 for** Kalehe because the power holders are aware and some government documents exist and are known by them but no concrete actions are taken. For Kailo, it is **level 1 because** the power holders have only a vague knowledge.

Indicator: 2.1% of targeted religious leaders and local community members (M/F) involved in forest protection, restoration and sustainable management initiatives

In the two survey zones, we identified an average of 15 recognized religious communities in the zones, 13 communities in Kalehe including : 5th CELPA, 8th CEPAC, Anglicans, CECA 40, CEBCA, 55th CEBZE, Methodists, Revivalist Churches, Catholics, Jehovah's Witnesses, Adventists, Methodists, and Muslims and 5 communities in Kailo including 5^{è} CELPA, Catholics, Methodists, Come and See, and Nazarenes.

According to the data collected from the field, only 2 religious denominations including 5 CELPA and the Catholic Church are involved in the protection and sustainable management of forests according to the discussions and interviews we conducted in both areas. This brings to 13.3% the number of religious denominations involved in forest protection, restoration and sustainable management initiatives in the target areas.

We have also identified some local structures involved in protection, restoration and sustainable forest management initiatives. In Kalonge, these are

1. CCC « Community Conservation Committee », whose role is the protection of the environment, the sensitization of the population on the protection of the forest by planting trees, and the fight against the poaching of animals.
2. AAP « Association of Indigenous Pygmies », whose role is to promote the rights of indigenous people, the promotion of agriculture and sanitation.

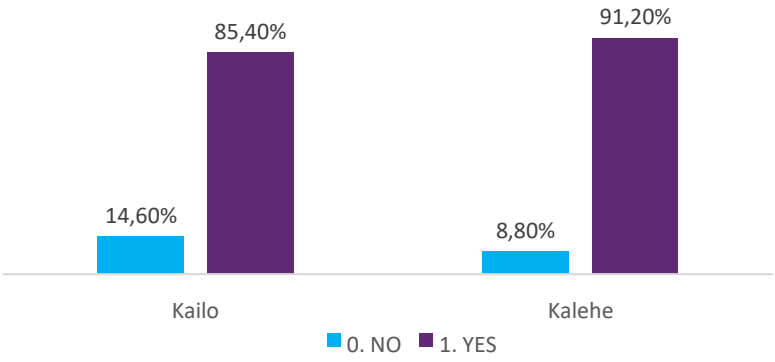
As for Balanga, it is a group of mothers, called « MAMAN BASIKAMBA TUJIKAZE », which provides aid to the population and grants agricultural support.

3. INDIGENOUS PEOPLES' LIVELIHOODS

Indicator: Number of households (M/F) expropriated from agricultural land

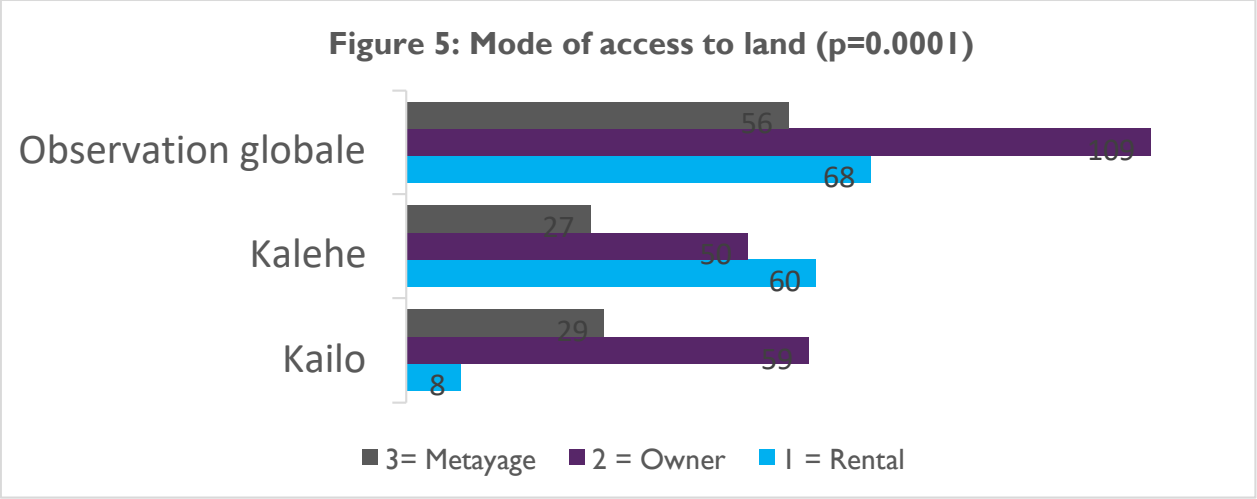
As we have experienced in the demographic data, about 91.4% of the respondents are farmers in the survey areas. The results on the graph below show that 88.8% of households claim to have cultivated land in the last 12 months. The trend is similar by territory. P=0,165

Figure 4: Access to arable land by your household in the last 12 months (p=0.165)



However, only 44.6% of households that have access to land claim to have title to the land they use. The trends are the same in both territories. P=0,82. We need to understand that the land code and cadastral services are very poorly operational in most rural areas of the DRC, giving way to continuous violations of farmers' rights, which in turn generate continuous land conflicts where concessionaires dominate over smallholders.

Among the farmers interviewed, 93.56% of them own the fields they farm while the rest have access to the fields through land rental or sharecropping. As the graph shows, there are significant differences between the two regions P=0.000. In Kailo, many farmers are landowners and sharecroppers, while in Kalehe, landowners and tenants dominate. It should be noted that Kalehe is also known to be one of the areas where large landowners occupy huge tracts of land and regularly rent it out to smallholders.



If tenant, leasehold title held

More than 60% of the landowning households do not hold documents. The difference being very significant in Kailo (100%) than in Kalehe (58.33%). (p=0,0001).

Table8 : If landlord, leasehold title held

If tenant, leasehold title held	Kailo		Kalehe		Overall observation		P
	n	%	n	%	n	%	
1= Commitment document	0	0	12	20.0	12	17.65	0,0001
2= Collaboration agreement	0	0	13	21.7	13	19.12	
3=No document	8	100	35	58.3	43	63.24	
	8	100	60	100	68	100.00	

If owner, title held; note that 60.74% of households holding title have customary titles.

Table9 : If owner, title held

	Kailo		Kalehe		Global Observation		P
	n	%	n	%	n	%	
1= Customary title	32	54.23	33	66	65	60.74	0,001
2= Cadastral title	1	1.69	13	26	14	13.08	
3= No title	26	44.06	4	8	28	26.16	
	59	100	50	100	107	100	

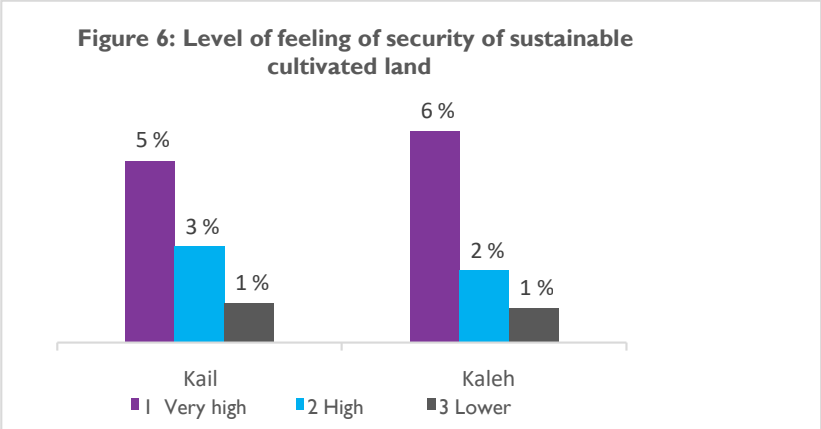
For this indicator, which focuses on land expropriation, we note that in Kailo, the practice of land expropriation does not exist. The population of Kailo asserts that everyone cultivates where and when they want and no one will come and take away their fields unless they decide to abandon them. As for Kalonge/Kalehe, the practice of land expropriation is decried by most of the population.

According to the data collected, the main perpetrators of this expropriation are those in power, who use their authority for these expropriations, based on the theory that the soil

and subsoil belong to the state, some names were cited of the owners of the fields that were taken away by the authorities in complicity with the PNKB. Other sources speak of certain political personalities in the region who, once in power, took away fields from peaceful citizens. As for the customary authority, it says that in its fiefdom, no one can take away someone's field, and speaks instead of the village of Rambo, where the village chief tried to register an entire village as private property. The matter has been referred to the authorities and is being followed up to this day.
In an interview with the clergymen, the priest of the Kalonge parish, some pastors of the 5th CELPA and the president of the CEV " Ecclesial Living Committee ", they affirmed the hypothesis of the population and specified that even the churches are victims of land conflicts in Kalonge, from where he launched an appeal to the REDD+ project to reconcile this population

Indicator: Level of household sense of security regarding sustainable ownership of household land

As we can see from the results below, about 57% of the members of the households interviewed say they have a very high level of feeling about the security of their land tenure. The high level of land security is due to the fact that the majority of the farmers who participated in our surveys are owners of their fields while they are working.



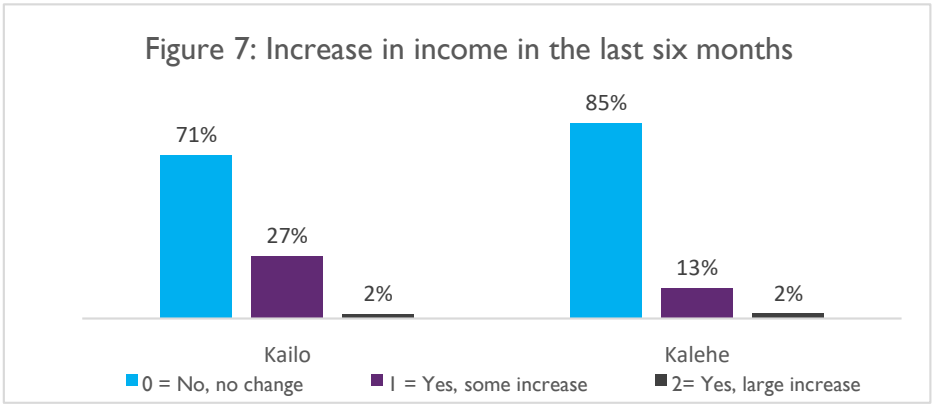
Although in all the territories the level of land security is high, there is a non-zero probability that the population responded to this question with reluctance, especially in the Kalonge grouping.

In the village of Fendula, 100% of the population surveyed said that they had neither the power to sell nor to buy land because they were all tenants of the customary authority and every year they had to bring something to the authority so that they could continue to live on or use the land, otherwise they could be chased away at any time.
However, when conducting the Focus Groups, some respondents confirmed that they were secure in the possession of their land, and perhaps because there were some leaders in this group and the population was afraid of the consequences that would follow.

Indicator: Rate of increase in income of member households (M/F) in local community forest concessions (LCCs)

According to the analysis of the results below, more than 79% report having recorded no change in their monthly household income during the last 6 months, with the majority (58.36%) claiming to live on an income equivalent to less than 10 US dollars. So there are no changes according to the respondents' statements.

Figure 15: Increase in household income in 6 months

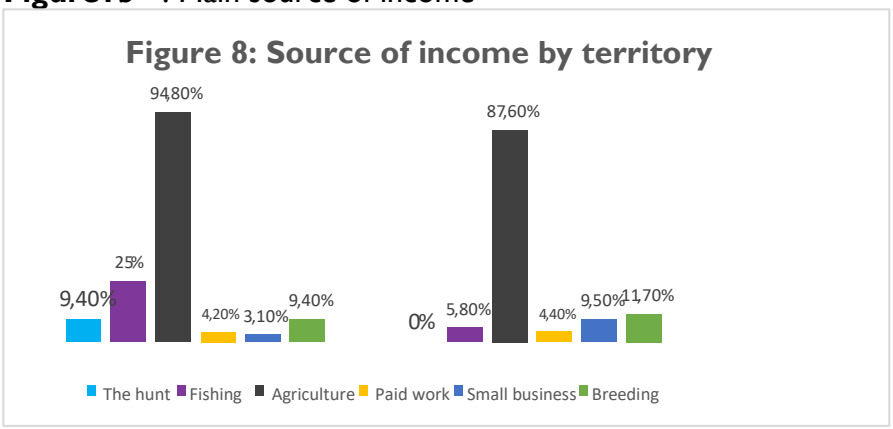


Main source of income in your household

Overall, agriculture is the main source of household income as reported by 91.2% of households interviewed during the quantitative surveys.

The vast majority of the surveyed population lives from subsistence agriculture (90.6%) and artisanal fishing (13.7%) as the main source of income in daily life. According to the same results, the activities that generate more income for the communities are fishing, livestock and paid work such as teaching and health personnel whose average income is $10 per month.

Figure16 : Main source of income



Note that the monthly income for those who fish (only in Kailo) is less than $ 30. In all the territories visited, the monthly income from livestock farming is generally less than $ 50. Compared to those who have taken up farming, most of whom earn less than $ 10 a month.

For the paid work benefit, the monthly income is less than $30 while for the small business, the monthly income is less than $10.

In general, there has been no increase in household income over the past six months in the two study areas. In Kailo, this was due to the closure of the Lomami Forest and the respect of the tempo zone demanded by the authorities, even though this area is the main focus of people's daily livelihoods.

As for Kalonge, this is due to the abandonment by the population of the income generating activities of agriculture and livestock following the increased insecurity in the arable land areas,

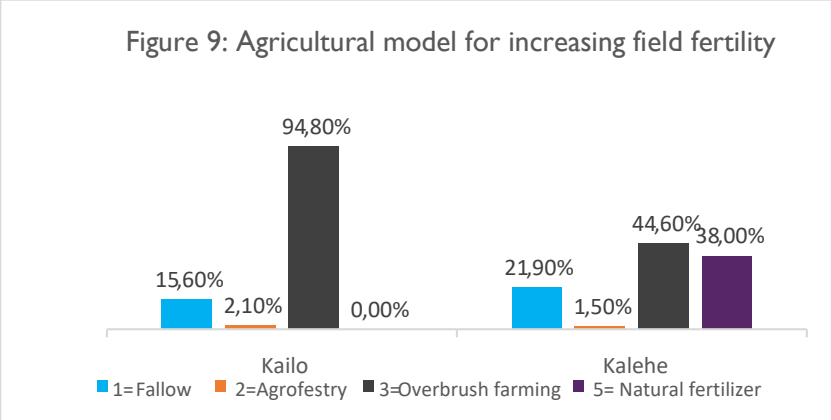
and the incursion of armed groups into the community taking away the cattle and thus causing widespread panic.

4. LOCAL INITIATIVES AND SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES

The REDD+ project seeks to ensure that local communities and indigenous pygmy (and religious) peoples are equipped with knowledge and understanding of public policy implementation, and local public authorities and institutions are empowered to support local people and ensure adherence to environmental policies. Through training and support to community initiatives that will strengthen the sustainability and resilience of CLFS, this project will also strengthen the legal and administrative framework for the protection of the land and its inhabitants.

Indicator: Percentage of households (M/F) in local community forest concessions (LCCs) that adopt agroforestry and innovative sustainable agricultural practices with low impact on deforestation sustainable agriculture

During these surveys, the research team wanted to understand the agricultural models that are currently practiced by the communities targeted by this project in order to promote sustainable agriculture according to local initiatives.
Overall, 60% of households practice more slash and burn agriculture than other practices.



This practice is observed more in Kailo (94.8%) than Kalehe (44.6%) with a significant difference with p=0.0001

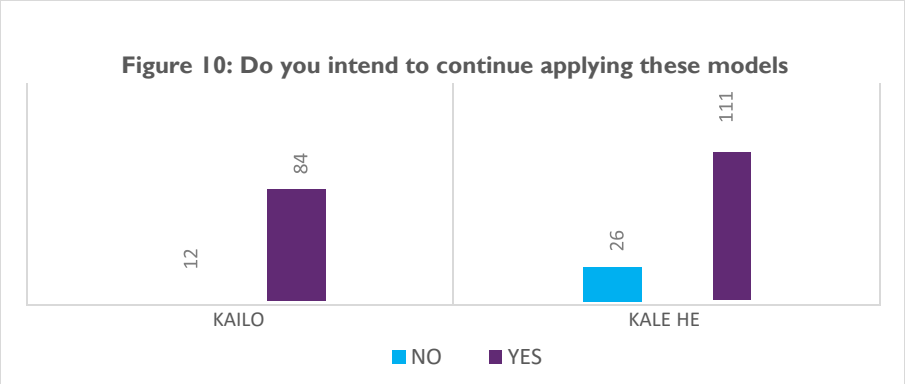
Reasons for applying the above agricultural models

We can see that the community uses these practices for no known reason on their part, the community members think that these techniques help restore the fertility of their soil as reported in the focus group discussions and interviews. However, quantitative data collection showed that 88.84% of the households think that these selected practices increase agricultural production and reduce the destruction of the ecosystem (7.7%) and/or it helps to reduce deforestation of the forests (3.43%)
The main reason cited by all household managers is to increase production.

Figure 10: Reasons for applying the above agricultural models

E.02 Why do you		Kailo	Kalehe	Global Observation

apply these agricultural models? (IN.4.2)	1 = Increase production	82	125	207
	2 = Reduce ecosystem destruction	12	6	18
	3= Reduce deforestation	2	6	8
	Total	96	137	233



195 of the 233 heads of household say they intend to continue using these models for longer. It can be seen from the data collected that the population of the two territories surveyed are still using traditional agriculture. According to them, slash-and-burn agriculture increases the fertility of their fields, and 83% prefer to continue this practice. With this type of agriculture, the soil is gradually becoming poorer, forcing farmers to look for fertilizer or to practice fallowing, which requires the abandonment of the fields for several years.

The major challenge remains the demographic explosion which pushes farmers to shorten the fallow time to feed their families, as a result, the land is increasingly depleted and man is forced to travel long distances in search of good fertile and cultivable land in order to obtain better yields.

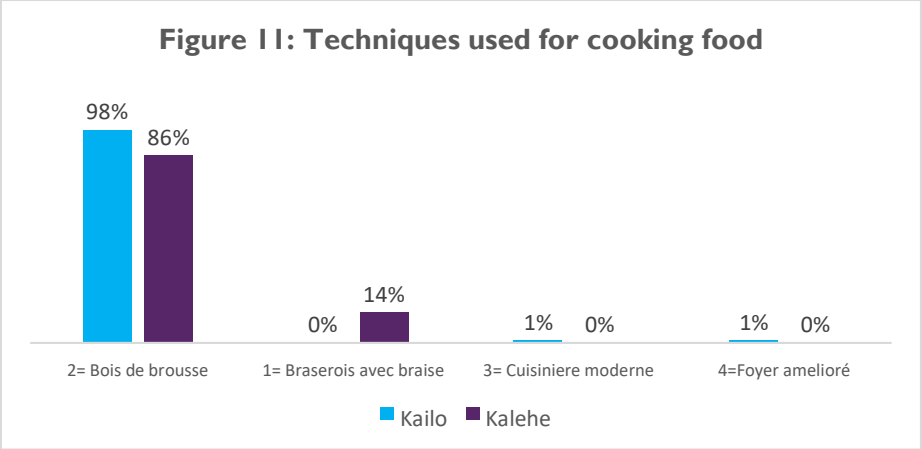
Table 11 : Agroforestry training

	Name of the Territory		Total	P
	Kailo	Kalehe		
Have you been trained in agroforestry	14(14,6)	26(19,0)	40(17,2)	0,31
Have you been trained on sustainable agriculture techniques in the past ?	9(9,40)	27(19,7)	36(15,5)	0,032

15 to 17% of the respondents say that they have been trained in agroforestry and sustainable agriculture techniques in the past but still need support in putting this theory into practice.

Indicator: 5.2 Percentage of households using improved stoves reporting reduced indoor pollution

Firewood is used more for cooking food. P=0,002



These data show that the population in both zones uses firewood for cooking (92%). Too few respondents in Kalonge use braziers with embers, again because of deforestation, to get wood and embers for cooking.
Improved stoves and modern cookers are unknown in the study areas

VIII. CONCLUSION AND RECOMMENDATIONS

Conclusion

In the two territories where the project will be implemented, the greatest threats to the forest are slash and burn agriculture and charcoal production/fuelwood collection. Therefore, the main objective of the project is to influence local communities and other stakeholders to adopt sustainable land use practices.
The formulation and implementation of the sustainable agriculture programme will contribute to reducing greenhouse gas (GHG) emissions. In the target areas, agriculture is the largest net source of GHG emissions. The conversion of land from one type to another results in the release and absorption of carbon. Burning of forest and savannah, burning of agricultural residues, cultivated soils, fuelwood collection and charcoal production all contribute to increased GHG emissions.
In terms of this survey, we can note that more than 52.36% of our respondents in this survey are women while 91.4% are farmers. The results showed that 37.3% of the respondents are illiterate and only 29.6% have a primary or secondary school education. Let us note that 83.69% are host populations with a minority of pygmies and displaced people.

Although more than 46% of the respondents say they apply certain forest conservation and protection practices, it is clear from our observations and qualitative data that the population in these areas is engaged in felling trees and searching for forest game, using the 12-gauge shotgun. This is due to the difficult life and lack of awareness because this population knows the good and bad practices of conservation and destruction of forests.

More than 90% of households claim to have missed some kind of food to eat at home due to lack of resources, at least one member of the households says that they have been forced to sleep hungry at night because there was not enough food in the last 4 weeks and at least one family member has spent a whole day and night without eating anything because there was not

enough food in the last 4 weeks. It also shows that the majority of the population is either moderately (60.5%) or severely (25%) hungry.

The health zones are in a nutritional alert situation with a very high rate of moderate acute malnutrition (11%) and severe acute malnutrition in 7% of the Kalonge health zone.

As for the increase in household income, generally speaking, there has been no increase in the last 6 months in the two study areas. In Kailo, this is due to the closure of the Lomami Forest, and the respect of the buffer zone demanded by the authorities, even though this area is the main focus of the population's daily livelihoods.
As for Kalonge, this is due to the abandonment by the population of the income-generating activities of agriculture and livestock following the increased insecurity in the arable land areas, and the incursion of rebels into the community to steal livestock.
It is observable from the data collected that the population of the two territories surveyed still applies traditional agriculture. 60% of the households affirmed that they apply slash-andburn agriculture to increase fertility in their fields, a traditional technique with serious consequences on nature, and 83% prefer to continue applying it.

In Kailo, the practice of land expropriation does not exist, the population affirms that everyone cultivates where and when they want and no one will come and take away their field unless they decide to abandon it. As for Kalonge, the practice of land expropriation is decried by most of the population.
According to the data collected, the main perpetrators of this expropriation are those in power, who use their power for this expropriation, based on the theory that the soil and subsoil belong to the state.

Although in all the territories the level of land security is high, there is a non-zero probability that the population responded to this question with reluctance, especially in the Kalonge grouping.
15 to 17% of respondents say they have been trained in agroforestry and sustainable agriculture techniques in the past but lack the means to put this theory into practice. The data show that people in both areas use firewood for cooking. Too few people in Kalonge use braziers with embers, again due to deforestation, to get wood and embers for cooking. Improved foyens and modern cookers are unknown in the study areas

Recommendations

- To train the community on good practices related to the protection and conservation of the forest and to sensitize them to abandon bad practices ;
- Introduce new short-lived seeds and vegetable crops in the community and plan pilot fields for better ownership ;
- To provide the community with the tools to apply modern farming and cooking techniques ;
- Where possible, establish income-generating activities for the most vulnerable households identified, with a view to getting them to abandon tree felling and hunting in the forest,
- Create some local operational committees that will facilitate monitoring and community awareness on sustainable agriculture and forest protection ;

- To train and/or create a framework for community exchange and to play the role of mediator for a solution to the land conflict in Kalonge ;
- Establish an advocacy mechanism with power holders for better management of natural resources in the entities ;
- Ensure the inclusion of people with special needs and minority groups such as pygmies in the interventions and ensure a community balance.

IX. ANNEXES:

Appendix 1a: Household Survey Questionnaire
Appendix 1b: Key Informant Interview (KII) and Focus Group Guide (FGD)
Appendix 2: Household survey database
Appendix 3a: KII Balanga Transcript
Appendix 3b : KII Kalehe Transcript
Appendix 4a : FGD Balanga Transcripts
Appendix 4b: FGD Kalehe Transcript
Appendix 5: Some photos and videos of the mission