GCCA+
THE GLOBAL CLIMATE CHANGE ALLIANCE PLUS INITIATIVE

Funded by the European Union

Case Study Nr. 20 – DRC

IMPACT AND SUSTAINABILITY STUDY

DEMOCRATIC REPUBLIC OF CONGO

FOREST AND CLIMATE CHANGE IN CONGO (FCCC)

CRIS CODE: DCI-ENV/2011/023-162

MARCH 2021

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List of Acronyms

ACF	African Conservation Fund
AF	Action Fiche
AMCC	Alliance Mondiale contre le Changement Climatique (or GCCA)
BSc	Bachelor of Science
CC	Climate Change
CGIAR	Consultative Group for International Agricultural Research
CIFOR	Center for International Forestry Research
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement
CPDN	Contribution Prévue Déterminée au niveau National
CRIS	Common Relex Information System
DGD	Direction Générale de Développement (Gouvernement Belge)
DRC	Democratic Republic of Congo
EC	European Commission
ERAIFT	Ecole Régionale Postuniversitaire d'Aménagement et de Gestion intégrés des Forêts et Territoires tropicaux
EU	European Union
EUD	EU Delegation
FA	Financing Agreement
FCCC	Projet "Forêt et Changement Climatique au Congo"
FORETS	Projet "Formation Recherche et Environnement dans la Tshopo"
GCCA+	Global Climate Change Alliance Plus (GCCA+ or AMCC+)
ICCN	Institut Congolais pour la Conservation de la Nature
ICRAF	International center for Research in Agroforestry
INBAR	International Bamboo and Rattan Organization
IT	Information Technology
M&E	Monitoring and Evaluation
MECNDD	Ministère de l'Environnement, Conservation de la Nature, et Développement Durable
MECNT	Ministère de l'Environnement, Conservation de la Nature, et Tourisme (previous name)
MEDD	Ministère de l'Environnement et Développement Durable
MONUSCO	Mission de l'Organisation des Nations Unies pour la Stabilisation en RD Congo
MRV	Measuring, Reporting and Verification
MSc	Master of Science
OO	Overall Objective
PhD	Philosophiæ doctor (doctorate)
PNVi	Parc National des Virunga
R&SD	Resources and Synergies Development
REAFOR	Projet "Relance de la Recherche Agronomique et Forestière"
REDD+	Reducing Emissions from Deforestation and Forest Degradation Plus
REFORCO	Projet "Recherche Forestière au Congo"
ROM	Result Oriented Monitoring
SIDA	Swedish International Development Agency
SO	Specific Objective
TAPS	Technical and Administrative Provisions
UAV	Unmanned Aerial Vehicle
UCG	Université Catholique Graben à Butembo
UNIGOM	Université de Goma
UNIKIN	Université de Kinshasa
UNIKIS	Université de Kisangani
UOB	Université Officielle de Bukavu
WWF	World Wide Fund for Nature

II. Project Details and Outputs Delivered

PROJECT TITLE: Prise en Compte du Changement Climatique en République Démocratique du Congo (RDC) par l'Alliance Mondiale contre le Changement Climatique (AMCC/GCCA) : Appui à la Formation et au Reboisement CRIS CODE: DCI-ENV/2011/023-162		
AAP YEAR: 2011	DURATION: 84 months[1] starting with the signature of the Financing Agreement[2].	DATE OF COMPLETION: 13/3/2017 (operational implementation phase)
TOTAL PROJECT COST: 14,000,000 EUR		GCCA ALLOCATION: 14,000,000 EUR
AID MODALITY: Project modality		MANAGEMENT ARRANGEMENTS: ▪ Financing Agreement between the EC and DRC ▪ Joint management through a Contribution Agreement[3] (CA) with the Centre for International Forestry Research (CIFOR) (training programmes and infrastructure; reforestation) - 12,950,000 EUR[4] ▪ Direct centralised management through service contracts (development of a national strategy for the Ministry of Environment, Nature Conservation and Tourism (MECNT), audits, M&E)
GEOGRAPHICAL COVERAGE: The activities under the CA with CIFOR were undertaken in the *Province of the Tshopo* (ex-Province Orientale) (University of Kisangani (UNIKIS) and surroundings) and in the *Province of North Kivu*, particularly the Virunga National Park and surroundings (agroforestry plantations, rehabilitation of natural forests, and institutional support to the universities of Goma and Butembo). In addition, institutional support to the University of Bukavu (*Province of South Kivu*) was envisaged.		
MAIN STAKEHOLDERS AND BENEFICIARIES: MAIN STAKEHOLDERS: ▪ The Centre for International Forestry Research (CIFOR) – main implementing organisation, beneficiary of the Contribution Agreement with the EC. ▪ The Ministry of Environment, Nature Conservation and Tourism (MECNT) (referred to henceforth as Ministère de l'Environnement, de la Conservation de la Nature et du Développement Durable – MECNDD) as main local partner and beneficiary.		

[1] With an operational implementation phase of 60 months and a closure phase of 24 months
[2] 13 March 2012
[3] EU Reference number of the Contribution Agreement is DCI-ENV/2012/309-143. The name of the sub-programme is « Forests and Climate Change in Congo – FCCC". The project was launched in February 2013, with a duration of 48 months.
[4] Le programme FCCC s'inscrit dans la continuité d'interventions antérieures de l'UE, notamment un programme de coopération avec l'Université de Kisangani (REFORCO – Appui à la Recherche Forestière au Congo, mise en œuvre par CIFOR), le projet d'appui au développement de la plantation agroforestière de Mampu en Province de Kinshasa, le projet « Makala » portant sur l'étude et l'amélioration de la filière de production du charbon de bois, et le projet "EcoMakala" qui a initié le travail sur les plantations agroforestières à l'est de la RDC.

- Main implementing partners to CIFOR[5]: Resources and Synergies Development SIA (R&SD) for project coordination and management (budget 1,226,656 EUR); WWF Belgium for the reforestation and agroforestry activities in North Kivu (budget 1,327,068 EUR) ; the World Agroforestry Centre (ICRAF) (budget 240,733 EUR) ; the African Conservation Fund (ACF) (budget 1,600,000 EUR) ; the University of Kisangani (UNIKIS) (budget 600,000 EUR) and the Centre for International Sustainable Development Law (budget 270,000 USD)
- Other partners: the Virunga Foundation; the Congolese Institute for Nature Conservation (ICCN) ; the University of Gembloux (Belgium); the Botanical Garden of Meise (Belgium)
- Supported universities in DRC: University of Kisangani (UNIKIS), University of Goma, Catholic University of Graben in Butembo and the Catholic University of Bukavu

BENEFICIARIES

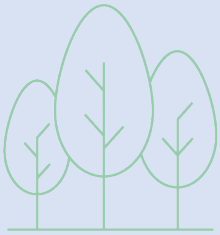
- The communities living around the Virunga Park. The project will strengthen the links between parks and communities on priority areas such as fuelwood, income-generating projects through the sustainable development of natural resources. Women, who are the main actor using charcoal, will be the first concerned.
- The private sector, in the field of forestry and tourism. Operators need trained staff. Some operators (public works companies and civil society) will participate in the execution of the planned rehabilitation works.
- The global population, who will benefit from the forests of the DRC in their function as a "global public property" better conserved and managed, thus ensuring regulatory biological activities for the benefit of all.

GCCA PRIORITY AREA(S):

Adaptation, REDD

MAIN SECTOR(S):

Forestry (conservation, agroforestry, rehabilitation of degraded natural forests), Education and research, Energy (fuelwood, charcoal)



OVERALL OBJECTIVE:

- To support the DRC in the implementation of its climate change policy by strengthening its programme for reducing carbon emissions and enhancing carbon stocks. (FA/TAPS)

FROM THE FCCC PROJECT FLYER (CIFOR COMPONENT):

To support DRC's capacity building and applied research efforts to reduce deforestation and forest degradation and thereby mitigate climate change.

SPECIFIC OBJECTIVE(S):

- SO1: To implement training programmes on CC adaptation and mitigation at different levels (FA/TAPS) - (*from FCCC final report*)
- SO2: To support the establishment of agroforestry plantations and the restoration and management of degraded forests in Eastern DRC. (FA/TAPS) - (*from FCCC final report*)

FROM THE FCCC PROJECT FLYER (CIFOR COMPONENT):

1. *To build capacity to address climate change and for forestry research at UNIKIS in the Oriental Province, the University of Goma and the Catholic University of Graben in Butembo, North Kivu, and the University of Bukavu in South Kivu Province. (or, Component 1: building academic and research capacity in forestry)*

[5] Partnerships were formalised through Letters of Agreement

2. *To promote the development of plantations and agroforestry systems outside Virunga National Park and the restoration of degraded lands and forests inside its boundaries, thereby reducing pressure on the Park itself. (or, Component 2: reducing pressure on Virunga National Park with trees in landscapes)*

EXPECTED RESULTS:

1. Better trained and more efficient human resources to address issues related to climate change adaptation and mitigation. (FA/TAPS)
2. Agroforestry plantations and restored, managed forest ecosystems provide fuelwood and income to local populations, increase carbon stocks and reduce pressure on the protected forests in Eastern DRC. (FA/TAPS)

OUTPUTS DELIVERED[6]:

From FCCC final report

COMPONENT 1 – BUILDING ACADEMIC AND RESEARCH CAPACITY IN FORESTRY

RESULT 1.1: INFRASTRUCTURE AT UNIKIS REHABILITATED AND FUNCTIONAL

- Strategic plan for infrastructure development, to be implemented in 3 phases (phase 1 by FCCC; phases 2 and 3 are to be funded by future donor interventions, e.g., EU)
- Auditorium (building 14) fully rehabilitated (598m²)
- Other infrastructure upgraded (3100m²)
- Building 6 (2500m²) under construction (ongoing)
- Local artisans trained on the job by the constructor
- Reception Center at Toengaho village completed (entrance to Yangambi Forest)
- Management system for equipment and materials developed (UNIKIS)

RESULT 1.2: ACADEMIC AND RESEARCH CAPACITIES AT UNIKIS STRENGTHENED

- 42 persons trained in forestry (MSc level), 34 graduated
- Curriculum of second and third cycles including CC-related topics developed
- 4 PhD students graduated (5 ongoing and due to complete by December 2017)

RESULT 1.3: CAPACITY OF MECNT, ICCN AND OTHER RELEVANT INSTITUTIONS TO ADDRESS CC CHALLENGES ARE STRENGTHENED

- 1200 staff from a variety of relevant institutions (including private sector) trained in topics related to forestry and CC (short courses)
- Short courses covering 10 technical and methodological study areas developed
- Initial steps for a digital library system developed

RESULT 1.4: APPLIED RESEARCH IN THE AREAS OF FOREST MANAGEMENT AND BIODIVERSITY CONSERVATION IN A CONTEXT OF CC IS IMPROVED

- 6 research programmes are set up with UNIKIS (1. Bushmeat; 2. Forest governance; 3. Forest dynamics; 4. Wildlife; 5. Non-timber Forest Products; and 6. Evolution of landscapes and CC)
- 2 publications related to one PhD produced (UNIKIS)

COMPONENT 2 – REDUCING PRESSURE ON VIRUNGA NATIONAL PARK WITH TREES IN LANDSCAPES

RESULT 2.1: PRELIMINARY AND ACCOMPANYING STUDIES CONDUCTED

- Study on social and environmental impact of FCCC activities on the National Virunga Park and surroundings completed
- Technical guide for agroforestry in North Kivu developed (ICRAF)

[6] Structured according to the result areas as presented in the final FCCC report.

- Online toolbox for 120 indigenous and exotic forest species developed
- Study « Analysis of the charcoal, fuelwood and timber value chains in the Province of North Kivu » completed in December 2014. (authors: Apollinaire Biloso Moyene, Claude Akalakou Mayimba, Divine Foundjeum Tita et Emilie Smith).

Result 2.2: Capacities of educational and research centres in eastern Congo are strengthened

- Universities of Goma, Butembe and Bukavu equipped (furniture, computers, power generators, etc)
- 30 people trained in forestry (BSc level)
- 24 Bachelor's thesis / practical work completed

Result 2.3: Restoration, conservation and management of natural forests in the surrounding of the Virunga National Park is undertaken

- Mapping study of invaded and degraded areas and of human activities
- Communities in the surroundings of Virunga National Park sensitised
- Platform for concertation « Alliance Virunga » established

Result 2.4: Small fuelwood lots planted and managed by the local population (WWF)

- 3153 has of agroforestry and fuelwood plantations established (5.5 million trees produced and planted)
- 8 trainers trained in propagation techniques of bamboo
- 6 training modules on bamboo propagation techniques developed, translated in Swahili and disseminated

III. Analysis of impact

2.1. Impact expected as per logframe objectives and their indicators:

- The Overall Objective (OO)- as formulated in the logframes attached to the programming documents (Action Fiche and FA) is: To support the DRC in the implementation of its climate change policy by strengthening its programme for reducing carbon emissions and enhancing carbon stocks.
  The four responding indicators are:
  - Indicator OO1: Effective, efficient and fair strategies for CC adaptation and mitigation
  - Indicator OO2: Institutional arrangements
  - Indicator OO3: Synergistic activities between CC adaptation and mitigation
  - Indicator OO4: Improved MRV practices
- Specific Objective 1 is: To implement training programmes on CC adaptation and mitigation at different levels.
  The three responding indicators are:
  - Indicator SO1-1: 2000 technical staff trained in CC-related issues
  - Indicator SO1-2: 200 decision-makers trained in and sensitised to issues related to CC
  - Indicator SO1-3: 10 PhDs and 30 MSc in technical areas of interest
- Specific Objective 2 is: To support the establishment of agroforestry plantations and the restoration and management of degraded forests in Eastern DRC).
  The three corresponding indicators are:
  - Indicator SO2-1: 3000 ha plantations established by this action (representing a potential of 5000 tonnes of charcoal/year)
  - Indicator SO2-2: 17000m³ fuelwood (equivalent to 3250 tonnes of charcoal) produced in year 5 of the action
  - Indicator SO2-3: 5000 ha of degraded forest restored and managed

APPROPRIATENESS OF LOGFRAME OBJECTIVES AND INDICATORS TO ASSESS IMPACT:

- There is an considerable gap between the overall objective and the actual focus of the project as described in the final project report and project flyer. This actual focus was (1) on building academic and research capacity in forestry and (2) on reducing pressure on Virunga National Park through tree planting programmes and restoration of degraded forest areas. There is no reference in the available project documents to support for DRC's climate change policy or a national programme for reducing carbon emissions and enhancing carbon stocks. The same applies to the selected indicators. While they might be relevant to the OO, there is no close link with the intervention. In addition, they are not very specific and lack clear baselines and targets.

- Similarly, the specific objectives are also not fully aligned with the actions. SO1 refers to training programmes on CC adaptation and mitigation, while the real objective was to build capacity in the forestry sector, with CC as a particular point of attention. SO2 refers to agroforestry plantations and to restoration and management of degraded forests, while the real objective was to reduce pressure on Virunga National Park. Also, both specific objectives as formulated in the logframe refer to outputs/outcomes rather than to impact. The latter is also apparent in their indicators, which are all output-related.

2.2. Direct and indirect impact as reported in the available documents (desk phase):

FROM THE FCCC PROJECT FINAL REPORT, 2016:

The project has achieved its two specific objectives. Overall, the FCCC project is deemed a success, as confirmed by the monitoring report issued at the end of 2015, and by the values obtained from the objectively verifiable indicators (OVIs[7]). The project met or exceeded the OVIs in 80% of the results. For the remaining results, the project *partially achieved* the indicator targets.

The design of the project was relevant. On the one hand, postgraduate courses (MSc and PhD) met a very important need expressed by the Congolese partners and the international community. On the other hand, the plantations, established with the support of CIFOR's partners, cover more than 4600 ha, which will represent appr. 1.4 million tons of CO2 stocked. By relieving pressure on the resources of the Virunga National Park and by ensuring an increased supply of fuelwood to the large towns in North Kivu, these plantations will contribute significantly to the conservation of ecosystems and biodiversity and will provide hundreds of rural jobs.

The section on lessons learned provides several insights on the drivers for success/failure in terms of achieving the objectives and generating impact:

- Implementing partners should be selected with specific attention to proven competence and on evidence of readiness to undertake the actions assigned. These aspects should be thoroughly analysed before concluding a partnership agreement. The quality of the partners' work is an important factor of success.
- In view of achieving a high percentage of successful graduations, the scholarship beneficiaries were selected through competition. Moreover, it can be expected that graduates with a higher capability will generate more future impact by better performance in their future positions. Apart from selection through competition, also the quality of coaching by trainers and/or promoters is essential in preparing students for a successful future professional career and therefore in generating wider impact in the country.
- The short-term trainings (10 topics) that were provided to technical staff of several public institutions had little or no effect. In order to be effective, the trainings should have been better linked to the job content/needs of the trainees and the trainings should have been accompanied by institutional reforms.
- Instead of providing some support to 3 universities in the eastern part of DRC, more potential impact would have been generated if support would have been concentrated to only one university. Spreading and diluting support increases the risk of ending up with little or no impact.

FROM THE FCCC PROJECT FLYER:

From outcomes to impact - The FCCC project views communication of its research findings as a key component. It will be producing documentary films intended for broadcast, guidebooks and technical manuals, and will ensure that its research outputs, including scientific articles, MSc theses and PhD dissertations, will be translated into factsheets, policy briefs and disseminated widely at workshops and conferences and through local and international media. CIFOR's Communications Group works closely with the project to ensure outcomes lead to impact with policymakers, forest users and other partners.

2.3. Findings from the desk phase and specific issues that were explored further during the field phase

As discussed in box 3.1, the objectives and indicators as listed in the logframe (FA/TAPS) do not provide a relevant and adequate framework to assess the impact of the project's activities and efforts. Therefore, during the field phase (and reflected in the field report), an *additional* analysis was carried out in respect of achievement of the objectives as formulated in the project flyer (see box 1) using the common I&S methodology. This included

[7] As mentioned in box 3.1, these indicators are output/outcome indicators associated to the intervention level of expected results, hence not really adequate to describe and assess impact.

exploring whether these objectives had corresponding indicators formulated during implementation. The final project report only reports against indicators at results level; there is no mentioning of (achievement of) indicators at the objectives level.

Very few reports or project documents were available for the desk phase. The following documents could provide valuable information on impact and sustainability and should be traced and consulted during the field phase:
(1) the study on social and environmental impact of FCCC activities on National Park of Virunga and surroundings and
(2) the ROM (Result Oriented Monitoring) reports of the 2 ROM visits that were paid to the project during its implementation.

Referring to the statement from the project flyer « CIFOR's Communications Group works closely with the project to ensure outcomes lead to impact with policymakers, forest users and other partners » (see box 3.2), the extent to which this statement has been effectively materialised and the impact it has generated was verified during the field phase.

2.4. Achievement of the logframe indicators at overall and specific objectives levels (direct impact)

INDICATOR	LEVEL OF ACHIEVEMENT	EXPLANATORY NOTES
Overall Objective Indicator OO1: Effective, efficient and fair strategies for CC adaptation and mitigation **No baseline, no target**	75 %	There is no official and multi-sectoral climate-change policy or strategy in DRC and the design of such strategies was not part of the project's action plan. However, the activities defined and implemented under the project are highly relevant for CC adaptation and mitigation and could definitely be integrated in the frame of a CC policy and related strategies.
Overall Objective Indicator OO2: Institutional arrangements **No baseline,** **No target**	50 %	The OO2 means that the project should set up institutional arrangements for a better ownership and effectiveness of the project. However, there is no information or activity in the initial project linked to this indicator. The 2015 FCCC final report does not refer to this OO. According to the 2019 final ROM report, a national steering committee was set up with representatives of the Ministry of Environment MEDD, ICCN, UNIKIS, COFED, ERAIFT, CIFOR and a representative of the EU, coordination meetings were organized. However, no indications were provided concerning the impact of this committee. For the component 1, the 2019 final ROM[8] report considers that better institutional arrangements would improve sustainability: "Efforts should be made to improve relationship and complementarity between the different public authorities / institutions to ensure that the results of the project are more

[8] FCCC Final ROM Report, 2019, DUE, summary, main conclusions, p11

		anchored in the national system; to lead to a better ownership." With regard to component 2: ▪ The institutional collaboration between the PNVi and the public institution ICCN is a success. ▪ As for the plantation set up by EcoMakala, there is no information regarding provincial authorities' involvement in the project.
Overall Objective Indicator OO3: Synergistic activities between CC adaptation and mitigation **No baseline, No target**	100 %	For Component 1: The training activities carried out provides synergies between adaptation and mitigation because the set of options and training courses supported by the project covers both topics. For Component 2: Planting and restoration activities also demonstrate synergies between adaptation and mitigation by increasing carbon sink and combining it with adaptation co-benefit (e.g. improved communities' resilience through income generation from forest-related sustainable activities; ecosystem and biodiversity restoration, etc.).
Overall Objective Indicator OO4: Improved MRV practices **No baseline, no target**	100 %	By providing UAV's technologies, the FCCC programme improved MRV practices, including data collection in protected areas[9]. The data collection initially targeted fauna and anthropic activities, but was extended to include the observation of degraded or reforested forest areas. This methodology was also used to plan a study to quantify carbon stocks in its activity 9.6 "Monitoring the evolution of the carbon balance and evaluating the potential wood and charcoal production of the plantations carried out". Due to safety issues and administrative complications, the UAV flights were stopped, and the activity could not be developed as expected[10]. Nevertheless, protocols have been drawn up and show that this research methodology is worth deepening and using for other initiatives as the FORETS project in Yamgambi[11]. Furthermore 3 students trained by the project (2 in Bukavu and 1 in Butembo), oriented their Bsc on the theme of carbon storage[12]
Specific Objective 1	60 %	According to the FCCC final report and the M&E report of 2015, 1200 staff from diverse relevant institutions (ICCN, MEDD, NGOs, and private sector) were trained in forestry- and CC-related topics (short courses)[13]. However, the

[9] FCCC final report 2016, and interview with Dr Semeki
[10] FCCC final report 2016 p47; also Annex 3 p88
[11] From the interview with Paolo Cerruti
[12] List of PhD, Msc, and Bsc during the FCCC programme
[13] The information concerning the quantity of people exists in the FCCC annual report of 2015, and the same information has been recycled in the FCCC final report of 2016. The consultant has asked the list of participants in order to justify the number, and also the list of short courses which have been done to the participants, but no additional information have been collected, thereby the main information concerning the quantity of participants comes from the M&E reports of FCCC. It was not easy for the met people during the field mission to search all the

Indicator SO1-1: 2000 technical staff trained in CC-related issues *Baseline*: 0 agents *Target*: 2.000 agents		stakeholders could not provide the lists of participants during the field mission. It is assumed that part of the participants were technical staff, part were decision-makers (SO1-2)
Specific Objective 1 Indicator SO1-2: 200 decision-makers trained in and sensitised to issues related to CC *Baseline*: 0 agents *Target*: 200 agents	50 %	As mentioned above, we assume that part of the 1200 people trained from ICCN, MEDD, NGOs, and private sector were decision-makers.
Specific Objective 1 Indicator SO1-3: 10 PhDs and 30 MSc in technical areas of interest *Baseline*: 0 students *Target*: 10 PhDs and 30 MSc	96 %	⇒ MSc: 38 students have been supported by the FCCC project (only 3 women) ; 126 % of the objective ⇒ PhDs: 11 students have been supported by the FCCC project (8 have finished to defend) : 80 % of the objective in 2021 The results are confirmed in the final ROM report of 2019[14]. The field mission included a meeting with Professor Kahindo (UNIKIS) who follows the students who benefited from FCCC programme support. These results come from a list regularly updated[15]. They all benefited from the courses which were related with CC. The themes developed by the Doctorates' thesis, or Masters' memories are all CC related topics (forestry, biodiversity, governance, sociology, management of natural resources, carbon storage…etc.).[16]
Specific Objective 2 Indicator SO2-1: 3000 ha plantations established by this action *Baseline*: 0 ha *Target*: 3.000 ha	105 %	2.520 plantations have been set up for a total surface of 3.153,14 ha 574 plantations have been harvested to date (about 679.55 ha) out of 2.520 plantations (3153.14 ha). The planting process has been continued after 2016, again through the WWF EcoMakala project, through which other donors are investing in reforestation, including SIDA, DGD and MONUSCO. The EcoMakala project already planted 12.037.55 ha, out of which 7.598.8 ha were planted before

required documents because the programme is closed from a long time, and the people which were involved in the project have generally have now others duties.

[14] FCCC Final ROM report 2019

[15] The list has been given from Pr Kahindo (UNIKIS) during the field mission at Kisangani

[16] The list of master's memories and thesis' subjects have been made available by UNIKIS during the field mission,

		the FCCC, 3.153,14 ha during the FCCC, and the rest afterwards. A map of the distribution of FCCC afforestation in North Kivu is available as well as some pictures in Masisi Territory taken during the field mission.
Specific Objective 2 Indicator SO2-2: 17.000m³ fuelwood (equivalent to 3250 tons of charcoal) produced in year 5 of the action *Baseline*: 0 m3 fuelwood *Target*: 17.000 m3 fuelwood	576 %	According to the information provided by WWF during the field mission, 574 plantations are already being harvested, including 521 Acacia mearnsii plantations and 54 Eucalyptus and Grevillea plantations. This represents an area of 618.12 ha of Acacia mearnsii and 61.43 ha of Eucalyptus and Grevillea; i.e., a total of 679.5 ha exploited, i.e., 21.5% of the total planted area. In terms of volume m3 of wood energy, this represents: • For Acacia mearnsii, in 5 years: 88,082 m3 of fuel wood corresponding to 57,253 tons of fuel wood (0.65 t/m3); • For Eucalyptus, in 5 years: 9,982 m3, corresponding to 5,490 tons of fuel wood (0.55 t/m3); The total volume of wood (Acacia, Eucalyptus, and Grevillea) is 62,743 tons of fuel wood. In carbon equivalent, the volume of wood in the harvested area is equivalent to 29,803 tons of Carbon.
Specific Objective 2 Indicator SO2-3: 5000 ha of degraded forest restored and managed *Baseline*: 0 ha *Target*: 5.000 ha	35 %	1500 hectares of the PNVi degraded forests have been restored in Karuruma, Kasaka, and Bwino using local species. Reforestation took place in 2016. It should be noted that the recurrent security problems have affected the implementation of the Park's restoration strategy including: (1) the participatory demarcation of the park's boundaries (2) the relocation of the population to avoid encroachments. The area planted is occasionally monitored by agronomists from the PNVi's "green development" department. However, the security situation does not allow a real scientific follow-up. The electric fence that had been erected also contributes to the restoration of degraded natural forests in the central western part of the park (Rutshuru).

1.5 Achievement of the overall and specific objectives (direct impact, exceeding the scope of the indicators)

OVERALL OBJECTIVE (OO): To support the DRC in the implementation of its climate change policy by strengthening its programme for reducing carbon emissions and enhancing carbon stocks

Achievement: "1" (> 75%)

EXPLANATORY NOTE:

The level of completion was calculated by averaging the 4 OO indicators.
The implementation of this objective is largely supported by the achievement of SO1 and SO2, which were directly implemented by the project. Two specific points were mentioning:

1. The institutional part should demonstrate the level of involvement of the decision-makers in the establishment of institutional arrangements for a good implementation of the national CC policy. With the exception of the institutional arrangements in the academic area, the project demonstrated that more efforts are still need to be made in institutional support and climate change policy.
2. For the objective linked to MRV strengthening, the activities carried out provided access to modern equipment and relevant skills to measure and value carbon stocks, which are essential in terms of calculating GHG emissions and carbon balance. In addition, the EcoMakala project set up a system for the valorisation of carbon credits partly based on the plantations financed by the FCCC.

In general, OO was largely supported by the success of indicators 1, 3 and 4 on which the project had a direct impact. Indicator 2, on the other hand, was mainly related to the willingness of decision-makers to take ownership of the national policy and implement it through the project activities.

SPECIFIC OBJECTIVE 1 (SO1): To implement training programmes on CC adaptation and mitigation at different levels.

Achievement: "2" (between 50% and 75%)

EXPLANATORY NOTE

The University of Kisangani, through its Faculty of Sciences implemented trainings on climate change adaptation and mitigation. Its involvement was a continuation of the support received in previous phases through other projects (REAFOR and REFORCO).

The implementation of this objective has been carried out along two lines:

1. The construction and rehabilitation of buildings suitable for training: the programme of rehabilitation and creation of new buildings allows UNIKIS to have the required structures today for the implementation of long-term training courses related to CC.
2. In the academic field, the planned training programmes on CC topics have been created and are still active 4 years after the end of the project. These trainings are strongly recognized in the country and enabled several students to graduate with a Master degree or Doctorate students, and then disseminate knowledge (especially the ones who became teachers) and broaden the impact of the project.

Therefore, it can be concluded that the impact of this specific objective is strong and sustainable. The level of completion could certainly have been higher if the level of training of decision-makers (SO1.2) could have been assessed during the field phase of the mission. SO1.1 nevertheless indicates that 1200 participants received short-term training, but no information was found on the proportion of decision-makers.

SPECIFIC OBJECTIVE 2 (SO2): To support the establishment of agroforestry plantations and the restoration and management of degraded forests in Eastern DRC)

Achievement: "1" (> 75%)

EXPLANATORY NOTE

The activities carried out aimed at reducing the impact of the populations' activities on natural forest resources by offering them support in the creation of sustainable wood resources (with plantations), while restoring naturally degraded landscapes, particularly within the boundaries of the PNVi.

The planting part was carried out by WWF through the EcoMakala project. Even though agroforestry was not always applied in the plantation, the targets for fuelwood production were exceeded according to the EcoMakala project and the model is being replicated. This has a strong and effective impact in particular on the supply of wood energy from sustainable sources for the city of Goma.

The restoration part was carried out by the PNVi in complex security conditions. In spite of this situation, the PNVi managed to restore part of its landscape. However, the quantification of the objective was not easy to determine given the security constraints. The part restored with natural species is complemented by the installation of an electrified fence preventing the intrusion of human activities inside the park, thus allowing vegetation to grow naturally.

2.6. Signs of indirect impact

- **Graduate students disseminate the knowledge acquired during their training on CC topics**, unfortunately the lack of follow-up mechanism limits the details on their current activities and impact.
- **Women are more involved in the decision making at the household level:** part of the planters request their wives' agreement to carry out a plantation as they are in charge of farming the agricultural area to feed the family, and the plantation is often established in replacement of this agricultural area.
- **The production of afforestation has led to the development of honey production**; FCCC plantations have benefited from the establishment of beehives financed by other programmes. This initiative supports economic diversification, strengthens economic resilience and reduce poverty.
- **The nursery in Sake / Kisheke is on the road to financial autonomy;** since 2017 the nursery benefited from the development of the surrounding woodlands originally supported by the project.
- **Scale-up opportunities**: according to the ONFi report 26,400 ha would be available for planting, out of which 16,000 ha belong to planters possibly interested in replicating the project (10,400 ha belong to beneficiaries of the project). An estimation of 35,200,000 USD could potentially be invested in the business model promoted by EcoMakala project.
- **Return of wildlife** and more birds with the plantations[17]**.**
- **Improvement of the micro-climate**[18]**.**
- **Erosion has decreased,** allowing more viable land to be maintained**.**

2.7. Conclusions on direct and indirect impact generated by the project and discussion on factors for success and failure

- **Awareness on CC topics and fight against environmental degradation** has been spread by the afforestation activities and trainings.
- **Several structures benefited from the expertise of teachers and researchers trained** in the three universities UNIKIS, UNIKIN, and UOB at Bukavu- host teachers who have received their training and diplomas thanks to the FCCC project support and continue to train students each year.
- Over 3,000 hectares of plantations have been established in the surroundings of the Virunga Park, **these plantations are still in place and contribute to** the fight against climate change. The FCCC project has guaranteed, through its training, the valorisation of the plantations, job creation and income generation for associations and planters, but also an impact, in the long term, to the **improvement of a sustainable supply of wood products in Goma**, and thereby to reducing the pressure on the PNVi.

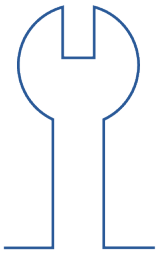
[18] ONFI Report, 2019

- The FCCC component of the PNVi improved **the reconstitution of the vegetation cover**, thanks to the reduction of invasions, but also thanks to the impact of the fence at Rutshuru[19].

The objectives and indicators complemented another and each of them contributed to the project's impact. It is worth noting that the security issue in the target area (North-Kivu) hampered the implementation of the activities and associated impact.

ELEMENTS THAT ENHANCED THE GENERATION OF IMPACT:

- The effectiveness and efficiency of the activities carried out[20]
- Good communication between CIFOR / R&SD / UNIKIS[21]
- **The identification of serious partners** for the implementation of specific activities (e.g., WWF / plantations)
- **Regular maintenance and controls of the plantations**: Obtaining a viable plantation is important to guarantee sustainable effects of reforestation.
- **The initial financial support** that is given to the management associations and the planters is crucial to start the planting system.
- **The valorisation of non-cultivable soils**: Afforestation can grow in a degraded soil more than crops.
- One of the PNVI's main success factor is the **flexibility of its strategy**, which can adapt to unexpected events. Knowledge of the context is also key to achieve the best possible results despite serious security issues.



FACTORS HAMPERING THE GENERATION OF IMPACT

- According to the actors met by the 2019 ROM mission, **the training modules organized by UNIKIS are too academic and not sufficiently "professional"**[22]. Technical modules would allow a better professional integration in the productive sectors and encourage entrepreneurial spirit.
- More specifically, the FCCC final report[23] highlights aspects that affected generation of impacts:
  - Lack of motivation of the candidates in the long term;
  - Lack of knowledge of the English language, which is essential for a researcher or master's profile;
  - Lack of engagement of the Ministry of Education[24] ;
  - Lack of communication / collaboration between partners[25] ;
  - Lack of ownership[26] ;
  - Lack of sectoral coordination from the government[27].
- **Poverty and unemployment** pushing people to engage in reckless income-generating activities, such as charcoal or other activities degrading forest; and to settle in non-authorised areas (in the PNVi for example).
- **Minimum surface area of a field for afforestation**: the establishment of a forest lot is considered by the planter only when he has enough space and when he is food self-sufficient.
- **Security issues in the area affecting the planning for planting and productivity.**
- **Population density** adding pressure on land tenure and land use mechanism.
- **Misinformation of the population by local leaders**: false information maintains a state of confusion that affected planters' engagement and productivity.

[19] FCCC final ROM report 2019, p40
[20] FCCC final ROM report 2019, summary, p10
[21] FCCC final ROM report 2019, chap. 4.2, p62
[22] FCCC final ROM report 2019, presentation, p167
[23] FCCC final report 2016
[24] FCCC final ROM report 2019, summary, p11
[25] FCCC final ROM report 2019, summary, p11
[26] FCCC intermediary ROM report 2015, p3
[27] FCCC intermediary ROM report 2015, p3

IV. Analysis of sustainability levels

3.1. List of services, systems and products that were established/delivered under the project and that should have been maintained (based on the outputs delivered):

- Phases 2 and 3 of the strategic plan for infrastructure development at UNIKIS implemented / under implementation. To what extent is the plan implemented?
- Rehabilitated auditorium (building 14) at UNIKIS well maintained and still in use
- Upgraded infrastructure at UNIKIS well maintained and still in use
- Building 6 at UNIKIS completed and in use
- Reception Center at Toengaho village well maintained and still in use
- Management system for equipment and materials at UNIKIS still in use
- PhD and MSc graduates (UNIKIS) and BSc graduates (Goma, Butembe, Bukavu) in forestry currently employed in the forestry (or related) sectors
- Forest curriculum at UNIKIS still including CC-related topics
- Short courses (10) in topics related to forestry and CC that were developed under the project still used for training
- Digital library system further developed and in use
- 6 research programmes set up with UNIKIS still active and producing publications. Effective dissemination of research findings and applied/adopted by decison-makers and practitioners.
- Technical agroforestry guide still in use / updated
- Online toolbox for 120 indigenous and exotic forest still used by practitioners
- Equipment supplied to the universities of Goma, Butembo and Bukavu well maintained and still functional
- Alliance Virunga still existing and actively pursuing its goals
- Agroforestry and fuelwood plantations still existing, managed, productive.
- Training modules on bamboo propagation techniques still in use

3.2. Information and comments on sustainability aspects from the available reports (desk phase):

FROM THE FCCC PROJECT FINAL REPORT, 2016:

The sustainability of the impacts is undoubtedly the strength of the FCCC project. Three examples among several possible illustrate this statement.

- First, the design and creation of smart infrastructures with a limited carbon footprint in construction and operation (quasi-passive building) will have positive impacts for decades to come.
- Second, the training of doctors who have become professors in their home academic institutions and master-level staff working either in civil society, the private sector, administration or in training and research institutions all contribute to better management of forests, the environment and climate capital of the largest forested country in Africa.
- Third, plantations in the densely populated province of North Kivu are established in partnership with the rural populations and in secured areas. These plantations will provide benefits to rural and urban beneficiaries for decades to come.

3.3. Summary findings from the desk phase and specific issues to be further explored during the field phase:

- The reports made available for the desk phase study provided very little information on (potential) sustainability.
- During the field phase, the general guidelines – provided in the I&S field phase terms of reference – for assessing the levels of sustainability will be applied.

3.4. Results of the sustainability analysis (as per table in Annex)

During the field mission, most pieces of evidence (10/17 items) were found by direct observations (marked "D" in the table in Annex), the other observations (marked "R") have been communicated by an actor directly concerned by the issue, therefore reliable information; or collected from another source (e.g., a report, a recent picture, ...) that is considered up to date and reliable.
17 items were checked, and information could be collected for all of them. The scores are as follows:

- 4 items (23%) scored 1, meaning that they were fully sustained and expanded/improved
- 8 items (48%) scored 2, meaning that they were fully sustained in a "status quo" situation
- 4 items (23%) scored 3, meaning that they still exist but with quality and/or coverage issues
- 1 item (6%) scored 4, meaning that they disappeared or lost their functionality

3.5. Conclusions on the sustainability aspects and discussion on factors for success and failure

CONCLUSIONS ON SUSTAINABILITY:

Given the issues the project had to face, the sustainability of the activities can be considered as generally good four years after completion of the project. The buildings at UNIKIS, the training of MSc and PhD, and plantations at North-Kivu; all these results have sustainable impacts in the context of CC.

FACTORS THAT LEAD TO SUCCESS AND SUSTAINABILITY:

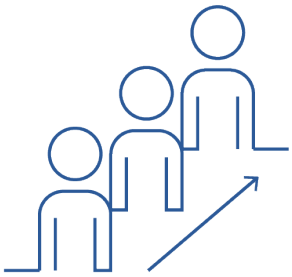
- **The continuity of the programmes**, REAFOR, REFORCO, FCCC, and FORETS[28], constitutes a driver that boosts and structures the UNIKIS agenda. This driving force will continue if UNIKIS maintains its academic reliability in the selection of students and the rigor of their supervision.
- **The quality of the coordination of the project** also appears as a key factor of success of the project, and thus reinforces its sustainability. The work of R&SD was very important, and the reliability of CIFOR, especially to advance funds, was crucial for the successful completion and sustainability of the project.
- **Training of academics and researchers** who can disseminate CC-related knowledge in other universities and areas.
- **The long-term rehabilitation of UNIKIS buildings**. UNIKIS benefited from smart infrastructure with a limited carbon footprint in construction and operation (quasi-passive building) will have positive impacts for decades to come.
- **Capacity of replication of technical trainings for plantations**: The technical background of participants trained in nursery- and plantations-related activities enable them to replicate knowledge elsewhere.
- **Partnership with organisations operating in a long-term in the region and that can raise funds from several sources:** The WWF EcoMakala project is a driving force for reforestation in the region because it received funding from several projects (including the FCCC) and it continues to establish afforestation until today.
- **Planter support mechanism**: WWF has made 20-year contracts with planters to engage in monitoring and maintenance of plantations.

[28] FCCC final ROM report 2019, summary, p10

- **NGO funding mechanism based on sale of first cut of plantations** set up by the EcoMakala project: the farmers return 20% of the sale of the first cut to the NGO that supervises them. In this way, the NGO becomes independent in its support and its activities can be sustained beyond the 20 years that the WWF contract guarantees its technical support.
- **Activity of plantation proposed by the project is profitable:** the profit generated with afforestation is about twice that of a hectare of agriculture (manioc); and makes the farmers' projects sustainable (1 hectare of afforestation produces about 3,000 USD in 5 years, while a field of manioc yields about 1,500 USD in 5 years).
- **Income generation guarantee and flexibility of planting:** the planter can adjust his incomes by deciding the number of trees to be cut, and the different sizes, to manage its capital; but also by developing different products (stick, fuel wood, poles, timber). The plantation is like a savings account that grows every year as long as the tree value grows.
- **Using participatory approach to set up planting activities**: involving customary and administrative authorities to ensure that the land is legally available and exploitable, and thus prevents possible land conflicts.
- **Promotion of good and sustainable practices** (i.e. support for "non-eucalyptus" plantations as eucalyptus tends to degrade soils in this region).
- **Dialogue with the people involved in the invasions inside the park (especially communities)** is an important element in achieving sustainable actions in the PNVi.
- **PNVi's electricity sales activities**, with a very low price, generated sustainable employment and improved economic situation around the Park.

FACTORS THAT NEGATIVELY AFFECT SUSTAINABILITY LEVELS:

- **The low level of education in the region/country**: the students lack background knowledge which are important for MSc or PhD programme.
- **The acquisition of skills can have the opposite effect to sustainability.** Indeed, in the context of the country, valuable diplomas and skills may lead to brain drain.
- **The low involvement and ownership** of high-level political stakeholders (for example the Ministry of Education)
- **The lack of financial support in research sector at national level**
- **The training tool not adapted to the audience:** The case of the technical guide on agroforestry is an example since it is a digital document targeted to planters whereas this audience has low education background and difficult access to the internet.
- **Security:** the security issues in North-Kivu affects the implementation of project's activities and their sustainability, including the planning of plantations, or data collection of carbon balance.
- **Poverty:** Afforestation profit may be diverted to a non-expected or a first-necessary expense (health, children's school, etc.).
- **Relatively low profit of plantation compared to the rest of the value chains:** planters may be discouraged by the comparison of the margin generated by the intermediary operators of timber sector (especially transporters);
- **Illegal taxation by the authorities**. This aspect can discourage planters.



VI. Additional elements

4.1. M&E Practice

M&E ACTIVITIES THAT HAVE TAKEN PLACE (INTERNAL AND EXTERNAL):

- **Internal**
  - 4 FCCC M&E reports:
    - 3 annual reports (2013 – 2014 – 2015)
    - 1 final report (2016)
- **External**
  - 2 ROM reports (organized by DUE)
    - 1 intermediary in 2015 (focused on component 1)
    - 1 final report in 2019

IN ADDITION TO THAT, THE PARTNERS REPORTED ON THE PROJECT IMPLEMENTATION:

- WWF/ONFi assessed the impacts of the EcoMakala project including FCCC's support.

% OF BUDGET ALLOCATED TO M&E THAT HAS BEEN USED:

100% of budget allocated to M&E has been used. However, there is no detail in the final report on the use.

ADDITIONAL M&E REPORTS THAT HAVE BEEN COLLECTED:

- PNVi final report on the FCCC/CIFOR project in 2017

4.2. Contributions to GCCA+ knowledge management and communication

PROJECT-SUPPORTED RESEARCH AND RESEARCH FINDINGS:

LINK WITH THE SCIENTIFIC COMMUNITY

- Specifically, the Science Week allowed UNIKIS to established contacts and collaboration with other Universities, of course in the DRC (UNIKIN, UOB of Bukavu, UNIGOM of Goma, UCG of Butembo) but also out of DRC as the University of Cambridge, Makerere University of Uganda, University of Namibia

PUBLICATIONS AND RESEARCH FINDINGS

- UNIKIS has made available a list of 42 publications from 2008 to 2020, which includes the publications of searchers who have benefited of the FCCC programme (e.g., publications of Dr Jean Semeki, Dr Kyale, Dr Milenge)[29]

COMMUNICATION MATERIALS:

The communication strategy was recognized as being too ambitious and therefore did not achieve all its objectives. This is reflected in the final ROM report and the project final report[30]. The main points that emerge are the following[31]:

[29] The list is available
[30] FCCC final ROM report 2019, chap. 2.1, p27
[31] See also the FCCC final report 2016, annex 4, p81

- Videos
  - 4 films were to be produced on themes related to CC. Out of the 4, filming has been completed for 2 i) The issue of carbon finance and the conversion of a conventional concession into a carbon concession and ii) Integrated landscape management. How to develop areas adjacent to protected areas to reconcile conservation and rural development. The pictures can be used in the FORETS programme.
  - Facilitation and support to interventions by Congolese actors during COP21 in Paris, including the production of a bilingual audio-visual documentary on Youtube: https://www.youtube.com/watch?v=nwZ0nbYy5To (but the link seemed no more accessible during the field mission)
- Visual materials
  - A poster about the project
  - A 2016 Calendar
- Use of websites for publications
  - The CIFOR's website especially through the "forests news" (e.g., https://forestsnews.cifor.org/38986/a-new-course-for-the-congo?fnl=en)
- Others
  - The organization of the Science Week, which provided visibility to the students' research work. After the project, this event has been organized again.

QUOTES, TESTIMONIES, AND SUCCESS STORIES

STORY N°1: THE CASE OF DR JEAN SEMEKI NGABINZEKE: THE EXPANSION OF KNOWLEDGE IN THE FIELD OF SUSTAINABLE MANAGEMENT OF NATURAL RESOURCES AND CLIMATE CHANGE

This student did his PhD from 2014 to 2016 at the University of Kisangani thanks to the support of the FCCC project. The project focused on "The potential of unmanned aerial vehicles in monitoring human activities within the protected areas of the Garamba Park". His thesis was defended in Kisangani in November 2017.

Thanks to the FCCC project, he was able to benefit from the necessary resources to carry out his thesis (without which it would have been impossible for him for financial reasons due to logistical costs, access to sites, purchase of a UAV, etc.). It also gave him access to facilities enabling him to carry out analyses and process his results, in particular by going as far as the school in Gembloux in Belgium. It is also thanks to this project that Dr Semeki has published 4 articles at the international level, including two in the journal Bois et Forêts des Tropiques (CIRAD journal), one in the Canadian journal "Journal of unmanned vehicle systems", and one in the book "Conjonctures de l'Afrique Centrale 2019" published by Harmattan.

From a career point of view, thanks to his thesis, Dr Semeki became a professor at the University of Kinshasa in the Department of Natural Resource Management of the Faculty of Agronomy of UNIKIN (Forestry department) in 2018 and also teaches at ERAIFT. The courses he teaches at UNIKIN include forest certification, reduced impact logging, forest policy, and wildlife management. At ERAIFT, he teaches courses on "Ecological monitoring".

During the 2018/2019 academic year, he contributed to the training of 30 students, and the same in 2019/2020. At ERAIFT, there are 42 students, including 16 from various African countries (Togo, Benin, Senegal, Chad, Niger, Burundi, Congo Brazza, and Cameroon), all actors in the field of natural resource management.

Finally, the support he has received from the FCCC project enables him to provide expertise at the national level with international partners and the Ministry of the Environment. This expertise has led him to innovate, notably on the theme of community forests, but also by carrying out a feasibility study to extend the methodology for using drones in the management of the PNKB and Lomami Parks for GIZ. Today, **the UAV methodology will be used again and extended to the FORETS project in Yangambi**.

According to him, the FCCC has enabled him "*to be competitive in his sector and to contribute to the development of society by integrating factors related to the fight against climate change in an effective manner*". Thanks to the courses he is teaching, it can now help Congolese students to be more efficient, but also those from other African countries. His only hope is to find more resources to do more research! In 2 years, with one person trained for 3 years, more than one hundred students have benefited from the transfer of knowledge on themes concerning all the sustainable management of natural resources and the issue of the climate changes.

STORY N°2: THE POSSIBILITY OF SUCCESS BY AFFORESTATION UNDER THE ECOMAKALA PROJECT THAT FCCC HAS HAD SUPPORTED[32]

Joseph Matata de Lubero et sa nouvelle petite boutique.

Agé de 49 ans marié et père d'une famille de 4 enfants. Joseph Matata est planteur d'abre dans le Lubero au compte WWF Ecomakala depuis plus de 10 ans. « Je connais aujourdhui l'importance d'abre dans le cadre de protèger l'environnement mais aussi pour la survie de ma famille. La vente de charbon a changé ma vie et aujourdhui j'ai eu une petite boutique dans la cité de Kirumba. Une économie issue des plantations Ecomakala sur un boisement de 4 ha. En plus ma maison est équipée maintenant de panneaux solaires grâce à la vente de charbon écologique « EcoMakala».»

Mr Kakule Bayala,Grâce à la plantation d'abre j'ai eu une voiture

Mr Kakule Bayala est un paysan planteur qui a béneficié de l'appui du Projet EcoMakala à Kirumba. Il a pu s'acheter une voiture d'occasion lui permettant de transporter des marchandises sur axe Luofu et desservir sa famille.

« Grace à la vente de sticks d'arbres et du charbon, j'ai pu acheter ma voiture et m'associer aux transporteurs de la cité de Kirumba. Avec cette activité associée a celle d'agriculteur et planteur d'arbre j'arrive à subvenir aux soins médicaux pour ma famille et scolariser mes enfants suite aux revenus de ma plantation de 2 ha gérées rotative-ment a temoigné Mr Kakule Bayala.»

STORY N°3:

The electric fence that was set up in the Virunga park over a length of 27 km on the east side had a huge impact:

- The communities are finally happy because they can plant banana trees again, whereas in the past elephants used to destroy their fields and the communities had to chase them away;
- The elephants have returned and are eating peacefully near the houses on the other side of the fence (observation made during the mission).
- Vegetation regains it's right on the side where the destructive activities have been abandoned, and the trees start to grow back naturally. The landscape is gradually restoring itself.
- The demarcation of the park boundaries is clear and has been done in a participative way; everyone recognises its place, in peace.

[32] *Kacheche magazine* N°10 (WWF - 2019)

STORY N°4: THE RESPONSIBLE OF FCCC ACTIVITIES FOR THE EASTERN PART HAS UNDERTAKEN A RESEARCH PROGRAMME BY HIS OWN FUNDS INVOLVING FORMER FCCC STUDENT BENEFICIARIES

"*In order to promote, and above all to relaunch scientific research, particularly on plants and ecosystem services, a Research Unit (under development) has been set up since 2018, on my own initiative and with my own funds*" explains Prof. Christian Amani.

This Unit has been made functional through the acquisition of own sites (purchased fields, formerly cultivated and now fallow, and some small plantations), the existence of some field equipment (GPS, compasses, tents, binoculars, etc.) purchased progressively, and above all the presence of a new generation of motivated young scientists (notably former finalists of the Master's programmes of the EU-supported FCCC and FOREST Projects at the University of Kisangani). The sites are located in the landscape of the Kahuzi-Biega National Park (high-altitude region) in South-Kivu. These sites are open to finalist students (undergraduate and graduate) who carry out their research there, as well as to lower-level students (practical course work). The observations made at these sites are also used to improve the grades of the various teaching modules.

Three main activities are currently underway, all of which are topics that can be integrated into the climate change theme:

1. **Monitoring the dynamics of mountain vegetation in degraded areas**. Since 2018, the cessation of agricultural activities in the acquired land has made it possible to monitor the dynamics of vegetation in this region of Congo, characterised by a high population density and related degradation of natural landscapes.

2. **Forest restoration and monitoring of tree growth**. The seeds of some forest trees (selected according to IUCN threat criteria) are put into nurseries and monitored, before being planted (introduced/re-introduced) on our sites. The growth phases are thus regularly observed (diameter and height measurements, etc.) with a view to setting up a database.

3. **Maintenance of ecosystem services**. Beehives have been installed in the plantations, with the general aim of conserving pollinators. Beekeeping is also used as one of the sources of income to finance the work of the Research Unit. The sites also serve as places for the exchange and transfer of knowledge between academics and villagers.

4.3. Opportunities for scaling up (future GCCA support activity)

For this part of the report, it was decided to highlight the mechanisms or strategies set up by the partners to improve / capitalise on the results of the project.

- **The Carbon approach**: Following the planting of a large area, WWF has developed a memorandum of understanding on the enhancement of forest carbon within the framework of the implementation of the WWF-DRC/Goma EcoMakala project carried out around the PNVi. This protocol was signed by the provincial government of North Kivu and the Belgian company Co2 Logic in Goma in September 2018. This agreement contributes to the development of carbon credits, through the Gold Standards certification system, so that the population participating in the reforestation, through associations of small farmers, can benefit from them and continue to perpetuate the large-scale reforestation project in this part of the DRC. According to Co2 Logic, by the end of 2016, around 11,000 ha of plantations have been planted (including those of the FCCC), of which 4,264 ha are considered eligible for Gold Standard certification and carbon credits.

- **Mechanism for plantation remote monitoring in a difficult safety context**: FARM-TRACE is a platform launched for plantation monitoring. This platform was developed within the framework of Plan Vivo, a carbon certification standard. The WWF is testing it in the framework of its carbon project in order to:
  - Calculate biomass and carbon estimates

- Taking stock to define corrective measures
- Reach plantations located in inaccessible areas given the safety context of the project area.

The use of the FARM-TRACE tool for the remote monitoring of the EcoMakala project plantations including the results of the FCCC is part of a vision to ensure the sustainability of the project based on carbon credit as one of the pillars for the sustainability of reforestation activities in the Virunga Landscape.

- For PNVi, **the strategy is to produce low-price energy around the Park** to support green growth in the area and divert people from exploiting natural resources[33]. PNVI's 2030 objective is to create 100,000 jobs around the park, aiming at reducing the illegal use of park's natural resources and biodiversity by providing people with an alternative source of income.

4.4. Climate Finance – evidence of funding mobilised from public and/or private local sources

- In the PNVi, the FCCC programme has acted as a "catalyst" for the implementation of other plantation activities, around and in the park, among them the "Muti Karibu Yetu" programme (2017), financed with the park's own funds. Every year about 25,000 trees of local and exotic species are distributed free of charge to public entities, associations, schools, churches, and all other organizations. Tree nurseries are set up for this purpose. The mission did not manage to collect information about the budget mobilised by the park for this project.

[33] 2020, Alliance Virunga, Presentation

VII. Sources of Information

DOCUMENTS COLLECTED AND CONSULTED FOR THE DESK PHASE ANALYSIS

PROGRAMMING DOCUMENTS

- Action Fiche (no annexes), 2011
- Financing Agreement + annexes (TAPs, logframe, budget), 2012

PROGRESS REPORTS

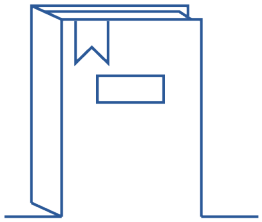
- Final Report by CIFOR/R&SD related to implementation of Contribution Agreement DCI-ENV/2012/309-143 between EC and CIFOR, 2016
- FCCC – grants and procurement contracts awarded in 2013 over US$ 100.000,00

MONITORING AND EVALUATION REPORTS

- No information

TECHNICAL DOCUMENTS

- FCCC project flyer



ADDITIONAL DOCUMENTS CONSULTED DURING THE FIELD PHASE

PROGRESS / EVALUATION REPORTS

- 2020, PNVi, Invasion assessment in the Park
- 2019, DUE, Final ROM Report SOFRECO
- 2019, ONFi, WWF, Évaluation de l'impact d'une décennie d'efforts visant à réduire la déforestation dans et autour du parc national des Virunga, province du Nord-Kivu, RDC
- 2019, PNVi, Annual report Virunga Alliance
- 2017, PNVi, Final report – FCCC / CIFOR project
- 2015, DUE, Intermediary ROM Report (2 parts - Monitoring Questions and Report)
- FCCC annual report 2013, 2014 and 2015

TECHNICAL DOCUMENTS

- 2021, WWF, map, EcoMakala plantations carried out with the support of CIFOR (FCCC)
- 2019, CGIAR & INBAR, Manual for Sustainable Management of Clumping Bamboo Forest
- 2019, CIFOR & INBAR, Scoping Study on Potential of Bamboo for Land Restoration within and around the Virunga National Park in North Kivu Province, Democratic Republic of Congo
- 2019, R&SD, Le coût de l'architecture durable en République Démocratique du Congo
- 2015, Guide Technique d'Agroforesterie pour la sélection et la gestion des arbres au Nord-Kivu
- 2015, Kaghoma C., Étude socio-économique sur la rentabilité des plantations autour du PNVi
- 2014, CIFOR, WWF, ICRAF, Analyse des chaînes de valeurs du charbon de bois, bois de chauffe, et bois d'œuvre, dans la province du Nord-Kivu

ACADEMIC DOCUMENTS

- List of master's dissertations under FORETS's programme
- List of master's dissertations under FCCC's programme
- List of theses under FORETS's programme
- List of theses under FCCC's programme
- Table of monitoring of the FCCC's students (Pr Kahindo)
- Programme of courses under FORETS programme
- Programme of courses under FCCC programme

OTHER DOCUMENTS

- 2020, Alliance Virunga, Presentation
- 2020, Updated list of equipment University of Butembo
- 2019, WWF, Kacheche N°10, Magazine d'éducation environnementale
- 2015, List of equipment delivered to the University of Goma (UNIGOM) (same list for all Universities)
- List of publications from 2008 to 2020 (REAFOR to FORETS programmes)

RELEVANT WEBSITES:

- CIFOR: www.cifor.org/library/5394/forets-et-changement-climatique-au-congo-fccc/
- University of Kisangani: https://www.unipage.net/en/22231/university_of_kisangani
- Virunga National Park: https://www.virunga.org/
- WWF Belgium: https://wwf.be/nl/onze-projecten/ecomakala/
- R&SD: https://www.resynde.com/fr/accueil
- ICRAF Climate Change: http://hubrural.org/ICRAF-Climate-Change.html
- INBAR: https://www.inbar.int
- World Agroforestry: https://www.worldagroforestry.org/advanced-search?search_api_fulltext=north+kivu
- Website to download the technical document of Agroforestry in North-Kivu: https://www.researchgate.net/publication/294087765_GUIDE_TECHNIQUE_D'AGROFORESTERIE_POUR_LA_SELECTION_ET_LA_GESTION_DES_ARBRES_AU_NORD-KIVU_-_Republique_Democratique_du_Congo_RDC

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Annex to the report: Sustainability Analysis

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
COMPONENT 1 – BUILDING ACADEMIC AND RESEARCH CAPACITY IN FORESTRY				
1	Phases 2 and 3 of the strategic plan for infrastructure development at UNIKIS implemented / under implementation. To what extent is the plan implemented?	2	D and R[34] (Pictures from the consultant, and explanations of the construction site supervisor (E. Tudico))	Phases 2 and 3 of the strategic plan for infrastructure development at UNIKIS is under implementation theoretically until 2022[35]. During the field visit, it has been observed that: Phase 2: Building 6.1, 6.2, 7, 9, and 18 ▪ 6.1: about 60% foundation are built (E. Tudico + pictures) ▪ 6.2: under construction (plan to be finished in September 2021 (pictures) ▪ 7: no evolution (pictures) ▪ 9: rehabilitated and used, well maintained (pictures out and inside) – World Bank funds ▪ 18: no evolution Phase 3: 3, 5, 8, 16 and garage ▪ 3: no evolution (pictures) ▪ 5: rehabilitated and used, well maintained (pictures out and inside) ▪ 8: no evolution ▪ 16: no evolution ▪ Garage: new building, achieved, used, and well maintained (pictures out and inside)

[34] Pictures taken by the consultant are available, as well as explanations of the construction site supervisor (E. Tudico) – all have been gathered during the field mission at Kisangani
[35] From the FCCC annual report of 2014

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
				The REFORCO project has funded buildings N° 1, 14, and 15. The FCCC Project has funded buildings N°6 and the garage (N°4). The FORETS project is funding buildings N°5, 6.1, and 6.2. There is no funding up to now for buildings N°3, N°7, N°8, N°16 and N°18 (new constructions). In conclusion, N°6.1, N° 3, 7, 8, 16, and 18 are still to be built or rehabilitated.
2	Rehabilitated auditorium (building 14) at UNIKIS well maintained and still in use	3	D[36]	The auditorium has been rehabilitated in 2015. However, the maintenance should be improved. Humidity problems are visible in the classroom and under the roof outside, and a broken glass was observed. The painting on the wall almost disappeared.
3	Upgraded infrastructure at UNIKIS well maintained and still in use	2	D	There are 2 types of renovation, rehabilitation of degraded functional buildings and new constructions. WITH REGARD TO REHABILITATED BUILDINGS: The installations are all functional and in use. However, some were built with lower quality materials that deteriorate. For example, the painting's colour changed, or infiltrations of humidity appear in certain areas of the buildings. A maintenance programme will be necessary.

[36] It exists pictures taken by the consultant during the field mission at Kisangani

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
				WITH REGARD TO NEW BUILDINGS: These buildings have been built in a more "sustainable" way. To this end, a 2019 R&SD note has been drafted on the cost of sustainable architecture in the DRC, in particular linked with the REAFOR, REFORCO and FCCC projects[37]. The maintenance is foreseen in the rehabilitation plan, but the funding is not decided yet. The field visit confirmed that these new buildings are clean, used and maintained.
4	Building 6 at UNIKIS completed and in use	2	D[38]	Building 6 has been achieved in 2019, and is functional, with classes and auditoriums. The building is naturally fresh, the acoustics is very good. The elevation of the building has been conducted by Mr Tudico.
5	Reception Center at Toengaho village well maintained and still in use	2	D[39]	The Centre of Toengaho village is functional, the 12 rooms, 4 apartments and common room are well maintained as confirmed by the field visit[40]. The centre employs a gardener and a manager, Bernadette Dzaringa Kpaka.

[37] This note had been suggested in the ROM report of 2015. According to this note, sustainable architecture costs 22% more and takes a third longer than conventional architecture. Apart from this ratio, the note puts forward technical arguments that justify the differences between conventional and sustainable architecture (e.g. method of manufacturing bricks; sustainable origin of the materials used, etc.) and complementary systems (rainwater harvesting for example) that give coherence to the building so that it is sustainable in time and in its functionality. According to this note, the workers benefitted from training to build in a sustainable way.

[38] It exists pictures taken by the consultant during the field mission at Kisangani

[39] Pictures are available

[40] Pictures are available

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
				The aspects to be improved: adapt the capacity of the reception during peak periods, restore the straw hut roof, and increase the kitchen capacity.
6	Management system for equipment and materials at UNIKIS still in use	1	R	According to the Deputy team leader of the FORETS project, the Access database elaborated by R&SD to manage equipment and materials is still in use. This database allows the encoding of equipment and consumables and the monitoring of inventories. It enables the tracking of equipment and consumables for around a hundred projects. The data related to equipment and consumables for FCCC and REFORCO projects are encoded in this database (annual report 2014). The logistician of the FORETS project confirmed database improvements with new functionalities for the printing of slips for stock entries and exits[41].
7	PhD and MSc graduates (UNIKIS) and BSc graduates (Goma, Butembo, Bukavu) in forestry currently employed in the forestry (or related) sectors	3	R	The Faculty (professor Kahindo) created a database to follow-up students' professional development after they graduated. Unfortunately, this database does not indicate the sector where the students currently work and the follow up is not organised by the faculty. According to the statistic of the UNIKIS: ⇒ Among the 38 MSc: ▪ 26% work in a University, most of them at UNIKIS, but others at Goma University, Lubumbashi, Bunia, Butembo ▪ 24% completed their studies with a PhD (FORETS's programme) ▪ 8% are searchers

[41] The consultant has interviewed the logistician and an email exchange confirmed the situation, see the contact list during the field mission

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
				▪ 8% work in the administration, of which 5% deciders ▪ 5% have no occupation ▪ 5% are lawyers ▪ 3% work in the private sector (forest) ▪ 3% work in the development sector (project) ▪ 3% work in unions sector ▪ For 16% information is not available ⇒ Among the 11 PhDs: ▪ 5 are Doctor (2 at UNIKIS, 2 at Bukavu universities, 1 at UNIKIN) ▪ 3 defended their thesis in January 2021 ▪ 3 delayed their PhD In conclusion (1) these statistics show that most of the masters' students found job opportunities or choose to continue their studies, and for Doctorates most of them can now apply their knowledge as Professor (2) the tool to monitor the student's employment situation exists, but it is not used to get updated information.
8	Forest curriculum at UNIKIS still including CC-related topics	1	D	At the end of the FCCC, the FORETS programme took over part of the curriculum. As a result, there are fewer courses in the current course programme but most of them are climate-change related topics. Other courses have been added and are very relevant to the theme of climate change: ▪ Agroforestry systems and forest plantations ▪ Forests and global change

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
9	Short courses (10) in topics related to forestry and CC that were developed under the project still used for training	2	D	The FORETS programme maintained at least 10 courses from the FCCC project. Among them: ▪ Zoology and Animal Diversity ▪ Forest governance ▪ Climatology and climate change ▪ Sustainable Management of Natural Forests and Community Forestry ▪ Introduction to Remote Sensing and GIS ▪ Research methods and survey techniques ▪ Statistics applied to forest inventories ▪ Forest inventory methods ▪ Applied GIS ▪ Forest economy and value chains
10	Digital library system further developed and in use	4	R	The 2014 annual report states that the development of the digital library is stagnating for several reasons[42]: ▪ Encoding work is taking longer than expected due to internet and intranet limited capacities in Kisangani. ▪ Secondly, the level of IT expertise is a limiting factor. The current responsible of the library explained[43] that the digital library worked until end of 2017 / beginning of 2018. Then it has been closed. In fact, the library still exists but it is not accessible. According to the principal IT agent of UNIKIS, after the end of FCCC, UNIKIS wanted to make the library accessible to the entire University, therefore the server should

[42] FCCC annual report 2014
[43] The responsible with the library at the Science Faculty has been met during the field mission at Kisangani. The main IT of UNIKIS has also been contacted to understand the problem of the library.

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
				have been transferred (during the FCCC project the server was installed the science faculty). Currently an antenna is missing to make the connection between the Sciences Faculty and the Administrative Building of UNIKIS where the IT server for the library is installed. Positive points, according to the IT agent: ▪ UNIKIS still agrees to develop the library. ▪ A room is theoretically available in each faculty to host the digital library server. ▪ The IT agent is operational to coordinate the connection of each faculty with the IT server. ▪ The computer equipment is adequate even if some parts should be renewed. Negative points according to the IT agent: ▪ Data collection and scanning require adequate equipment (scanner), and financial and human resources that are not provided by the university at the moment. ▪ The students are not very aware of the project and they do not understand the value of creating this digital library; they prefer searching on Google, Wikipedia, or other websites. To conclude, human resources and budget are required to update the library and make it accessible to the entire university.
11	6 research programmes set up with UNIKIS still active and producing publications. Effective dissemination of research findings and applied/adopted by	2	D	**About the 6 research programmes:** From the FCCC project, 6 research programmes have been developed: 1) bushmeat, 2) governance, 3) forest dynamics, 4) fauna, 5) non-timber forest products 6), landscape evolution and climate change.

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
	decison-makers and practitioners.			The 5 doctorates which have started under the FORETS programme are linked with 4 research programs: 1) bushmeat: 0 2) governance: 1 ▪ La cartographie participative comme un outil de la bonne gouvernance de la réserve de Biosphère de Yangambi 3) forest dynamics: 1 ▪ Dynamique forestière à l'échelle décennale et séculaire dans les aires protégées de la province de la Tshopo 4) fauna:1 ▪ Variabilité fonctionnelle des Chiroptères Afrotropicaux comme indicateur d'impact des perturbations 5) non-timber forest products: 0 6/ landscape evolution and climate change: 2 ▪ Étude de l'influence du sol, des lithofaciès et de la géomorphologie sur la structure de peuplement et la biomasse aérienne dans les plantations du Projet EcoMakala autour du parc national des Virunga ▪ Prédiction des stocks et flux de biomasse à partir d'une caractérisation tridimensionnelle de la structure des forêts tropicales

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
				Based on this analysis, it is possible to conclude that the research programmes are still active even if for the moment only 4 out of 6 are active if we consider PhD. If MSc is also considered, then all topics are active. **About publications**: Each year, a few publications are developed: 2020 - 4; 2019 - 9; 2018 - 3; 2017 - 5 ; and most of them are linked to forest or CC-related topics. Many of them are also linked t the research programmes (e.g.: Forest dynamics, Governance, landscape evolution and climate change). **The "Science Week":** An Effective way for dissemination of research findings. Another way used for the dissemination of knowledge and research findings is the event of the "Science Week". This event takes place at Kisangani and it is an annual opportunity for the doctorate's students to present their findings. This initiative is ongoing and there have been 6 editions since the end of the FCCC programme. A 7th edition should have taken place in May 2020 but was cancelled due to the COVID pandemic[44]. This event has an international audience, it attracts journalists and foreign countries' research centres and universities (e.g.: CIRAD, ICRAF, University of Cambridge, Makerere University of Uganda, University of Namibia, etc.).
12	Technical agroforestry guide still in use / updated	-	-	See the next point, it is the same output. The guide is still accessible on the internet[45]

[44] From the interview with Pr Kahindo at Kisangani,
[45] https://www.researchgate.net/publication/294087765_GUIDE_TECHNIQUE_D'AGROFORESTERIE_POUR_LA_SELECTION_ET_LA_GESTION_DES_ARBRES_AU_NORD-KIVU_-_Republique_Democratique_du_Congo_RDC

Nr	Description of Systems/Services/Products to be sustained	Score	Evidence	Explanatory notes
13	Online toolbox for 120 indigenous and exotic forest still used by practitioners	3	R	The online toolbox must be considered as the Agroforestry Technical Guide for Tree Selection and Management in North-Kivu produced by ICRAF. This document is downloadable on the internet and presents technical tables for 120 species. There are 2 versions: 1 of July 2015 and 1 of February 2016.[46] Prof. Amani, who was coordinating the East activities for the FCCC project, explains that the document is not really used by local planters. The main reason may be that is not well adapted to this audience. 3 workshops have been held on agroforestry to raise awareness on its use and the use of the Agroforestry manual (Goma and Butembo, and another workshop in 2016 on the sustainability of agroforestry). These workshops helped to present the book and disseminate hard copies to the participants, but they were not accompanied in the implementation. In conclusion, the tool should have been better adapted to the audience as many planters do not have the adequate level of education and internet access.
14	Equipment supplied to the universities of Goma, Butembo and Bukavu well maintained and still functional	3	R	An inventory of the equipment was requested from the universities. All of them received the same items. The quality of the inventory varies from one site to another. It should be noted that this request was made during the state of emergency linked to the COVID pandemic and the universities were closed. ▪ The University of Butembo sent a detailed list of equipment: 41 % of the items are still there, 10 % are lost or used or not functional; the whereabouts of the solar panels is

[46] During the field mission, it has appeared that this indicator and the previous one (N°12) are the same, therefore, the 2 indicators have been merged

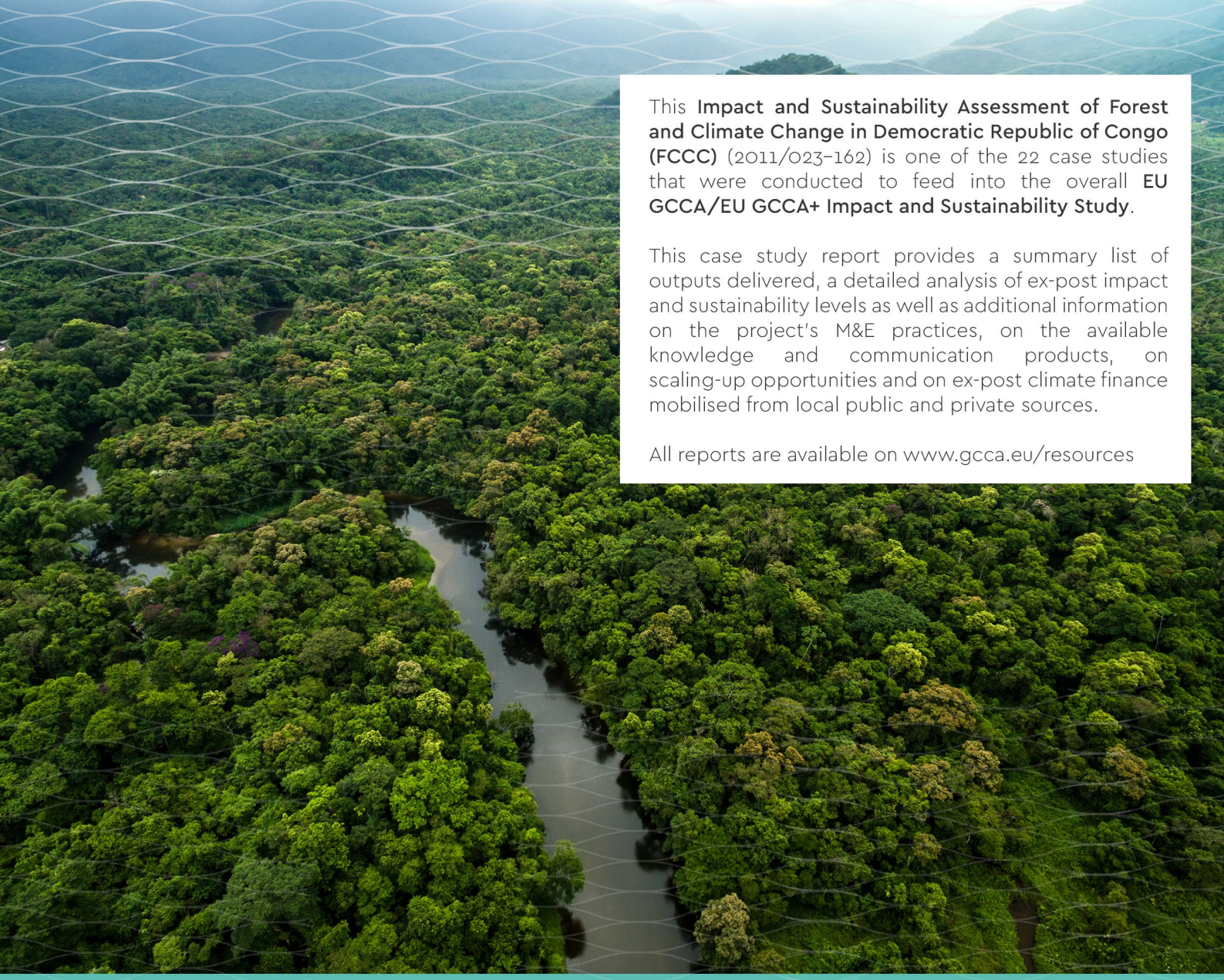
NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
				▪ unclear and batteries for solar installation have expired. The generator is still used and functional and it is very useful. ▪ The University of UNIGOM: during the field visit, a meeting took place. The material was dispatched between the Faculty of Agronomic Sciences and the other faculties (Geology for example). The generator is used by the entire UNIGOM. An updated list of equipment has been provided: 56 % of equipment is still there. There were also problems with solar equipment (solar panels not found, outdated batteries, convertor no longer available). ▪ The University of Bukavu UOB: according to the list they sent, the main part of the equipment is still there, but some should be renewed (as GPS, compass, etc). 37.5 % of the equipment is still functional, 57.5 % is no longer functional, and the others were not found. Here also, there has been a problem with the solar installation. The generator is still appreciated. For most of them, the solar batteries are no longer functional because outdated.
COMPONENT 2 – AGROFORESTRY PLANTATIONS AND RESTORATION OF DEGRADED NATURAL FORESTS.				
15	Alliance Virunga still existing and actively pursuing its goals	1	D	The Virunga Alliance still exists and is mentioned on the Virunga Park website. Its objectives are clearly stated on the internet: conservation, poverty reduction and contribution to peace. In 2013, the PNVi launched the Virunga Alliance, which brings together public authorities, civil society and the private sector of North Kivu around a common vision of sustainable development.

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
				The Virunga Alliance is a wide ranging programme that aims to sustainably develop the enormous economic potential of the Virunga National Park and several initiatives are emerging under this platform. The Virunga Foundation is a UK-based charitable organization whose mission is to contribute to the protection and development of the Virunga National Park and is one of the driving forces behind the Virunga Alliance. The Virunga Alliance implements activities through the Virunga Foundation, which in 2015 signed a cooperation agreement - a public-private partnership - that runs until 2040[47].
16	Agroforestry and fuelwood plantations still existing, managed, productive.	1	R	Agroforestry and fuelwood plantations still exist and are even in a process of being expanded. About 21,5 % of the planted surface have been harvested (the plantations of 2014). The EcoMakala project still carry on with afforestation through other funds. The minimum area to be integrated in the project is 0,10 ha; by this way, smallholders can also do afforestation, particularly using agroforestry, but with species other than eucalyptus. The basic concept is to introduce trees into fields. The associated cultures can be varied: banana, cereals, leguminous, etc… People were also trained in reforestation, and they are still active; some have even trained others. 2016: Total (end of the project) - 221 agricultural technicians and 240 nurserymen[48]

[47] Virunga Alliance annual report 2019; Virunga Alliance presentation document
[48] FCCC final report 2016 p44

NR	DESCRIPTION OF SYSTEMS/SERVICES/PRODUCTS TO BE SUSTAINED	SCORE	EVIDENCE	EXPLANATORY NOTES
				In addition, some of the NGOs, who guide the planters, began to develop themselves and try to be independent from the support of the project (it has been observed during the field mission in Masisi). A mechanism of retrocession has been set up to support NGOs to get their own funds to be independent.
17	Training modules on bamboo propagation techniques still in use	2	R	End of 2015, a *Scoping Study on Potential of Bamboo for Land Restoration within and around the Virunga National Park* has been carried out by INBAR[49]. The reports had recommended 3 links to access to technical manuals related with Bamboo[50]. The indicated links to download it are no longer available, but a lot of technical publications and manuals are available on the INBAR website. The expert of the Botanical Garden of Meise has selected and trained a team of 5 "senior" agronomists and about 20 gardeners, who will soon be reinforced by 9 "junior" agronomists. These technicians will be able to implement bamboo propagation techniques. It is planned that Bamboo reforestation work should continue in 2021 if safety conditions allow. A nursery has already been set up in Bukima.

[49] The report has been collected during the field mission
[50] http://bambootech.org/files/propagation.pdf; https://www.unido.org/fileadmin/user_media/Publications/Pub_free/Gui delines_for_cultivating_Ethiopian_highland_bamboo.pdf; http://www.inbar.int/sites/default/files/Bamboo%20plantation%20- %20LargeBambooPlantations.pdf; INBAR Website : https://www.inbar.int/fr/resources/



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