Evaluation of the Development Smart Innovation through Research Agriculture – Rwanda (DeSIRA):

Improving resilience of farmers' livelihoods to climate change through innovative, research proven climate-smart agroforestry and efficient use of tree resources in the Eastern Province and peri-urban areas of Kigali city.

ENABEL RWA1800311

Rwanda

Cowater International S.A.

Final report

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This evaluation was carried out as part of the cooperation between Rwanda and Belgium.

The report was drawn up by independent external experts.

The opinions expressed in this document represent the views of the authors and are not necessarily shared by Enabel, the Belgian Cooperation or the authorities of Rwanda.

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Acronyms

AF	Agroforestry
ARECA	Alliance for Restoration of Forest Landscapes and Ecosystems in Africa
CD	Country Director
CLIMBIO	Climate adaptation and mitigation through biogas at household level in Rwanda
COMBIO	Climate change through enhancing community-based biodiversity conservation in the Eastern Province of Rwanda
CSA	Country strategic advisor
CSTF	Cross-Sectoral Task Force
DAC	OECD's Development Assistance Committee
DESIRA	Development Smart Innovation through Research Agriculture
DPCC	District Project Coordination Committee
ENABEL	Belgian Development Agency
EQ	Evaluation question
EU	European Union
FAO	Food and Agriculture Organisation
FFEM	Fonds Français pour l'Environnement Mondial
FFS	Farmer Field School
FGD	Focus Group Discussions
FIP	Forest Investment Plan
FLR	Forest Landscape Restoration
FLR	Forest Landscape Restoration
FLRTF	Forest landscape Restoration Cross-Sectoral Task Force
FMBE	Forest Management and Woody Biomass Energy Support
FNL	Forest, Nature and Landscape
FNS-SA	Food Security and Sustainable Agriculture
FONERWA	National Fund for Environment (Rwanda Green Fund)
FSSP	Forestry Sector Strategic Plan
GDP	Gross Domestic Product
GGCRS	Green Growth and Climate Resilience Strategy
GIS	Geographic Information System
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GO	General Objective (Impact)
GoR	Government of Rwanda
HH	Household
ICRAF	International Centre for Research in Agroforestry
ICS	Improved Cooking Stoves
INDC	Intended Nationally Determined Contribution
INTPA	European Commission's Directorate-General for International Partnerships
IUCN	International Union for Conservation of Nature
KII	Key Informant Interview
KUL	Katholieke Universiteit Leuven
LF	Logframes
M&E	Monitoring & Evaluation

MEL	Monitoring, Evaluation & Learning
MINAGRI	Ministry of Agriculture and Animal Resources
MININFRA	Ministry of Infrastructure and Energy
MoE	Ministry of Environment
MSc	Master students
MTR	Mid-term Review
NDCs	National Determined Contributions
NFP	National Forest Policy
NGOs	Non-Governmental Organisations
NLUDMP	National Land Use & Development Master Plan
OECD	Organisation for Economic Cooperation and Development
PGM	Programme Manager
PJM	Project Manager
PO	Project Officer
PSC	Project Steering Committee
PSTA5	Strategic Plan for Agriculture Transformation
PTC	Programme Technical Committee
QA	Quality Assurance
RAB	Rwanda Agriculture Board
REMA	Rwanda Environment Management Authority
RFA	Rwanda Forestry Authority
RM	Regional Manager
RSB	Rwanda Standard Board
SDG	Sustainable Development Goals
SIDA	Swedish International Development Agency
SO	Specific Objective (Outcome)
SSI	Semi-structured Interview
ToC	Theory of Change
ToR	Terms of Reference
ToT	Trained smallholder farmers
TREPA	The Transforming Eastern Province through Adaptation
UGent	University of Gent
UR	University of Rwanda
WRI	World Resources Institute

Project identification

Title	Improving resilience of farmers' livelihoods to climate change through innovative, research proven climate-smart agroforestry and efficient use of tree resources in the Eastern Province and peri-urban areas of Kigali city.
Project code	RWA1800311
Project zone	Eastern Province and Peri-Urban areas of City of Kigali, Rwanda
Priority sector (s) **Global Challenge (s)**	Forestry and Agroforestry SDG #2: Zero Hunger, SDG#3: Good Health and Wellbeing, SDG#7: Affordable and Clean Energy, SDG#13: Climate Action, SDG#15: Life on Land
Partner country(-ies)	Rwanda
Partner institution(s)	Rwanda Forestry Authority (RFA), Rwanda Standard Board (RSB), IUCN, University of Leuven (KUL), University of Gent (UGent), World Agroforestry Centre (ICRAF), University of Rwanda (UR), Rwanda Agriculture Board (RAB)
Target group and beneficiaries (related to the Enabel component – R3, R4, R5)	**Target groups and Direct Beneficiaries:** Research institutions (KUL, UGent, UR), with 4 PHDs (2 for IUCN component, 2 for Enabel component) and more than 26 MSc (18 for Enabel, 8 for IUCN), including around 28 lecturers/supervisors, and around 60 field technicians trained on survey/inventory protocol and tools (50 for Enabel component, 10 for IUCN component) Government agencies benefiting from the findings for policy/strategy review: Ministry of Environment, Rwanda Forestry Authority, Ministry of Agriculture, Rwanda Agriculture and Animal Resources Development Board, Ministry of Infrastructure, Rwanda Standard Board, 7 Districts Members of the AF Task Force and of the Clean Cooking Task Force, benefiting from finding/innovation. Agroforestry farmer beneficiary (280) being part of the experiment, with 28 trained lead farmers - 121 farmers trained on agroforestry and tree seedling production - 17 local actors trained on Tree-Finder and Regreening Africa digital solutions - 2 Improved Cooking Stove (ICS) manufacturers who benefit from the training on ICS design, 52 households who benefits from new ICS prototypes. **Indirect beneficiaries:** 100,000 households that will benefit from ICS dissemination and from AF dissemination by TREPA, (Transforming Eastern Province through Adaptation) based on Desira findings All actors of the AF and ICS sector that might participate or will be reach by finding dissemination events
Total budget	EUR 4,000,000 (2 M for Enabel component, 2 M for IUCN component)
Start date & end date of the specific agreement/ Contract	February 2020 to 31 August 2025 – Enabel Component January 2020 to 31 December 2025 – IUCN Component
Start date & expected end date of implementation	February 2020 to 31 May 2025 – Enabel Component January 2020 to 31 October 2025 – IUCN Component

Impact (General Objective)	To increase the pace and scale of agroforestry-based restoration of degraded agricultural land and sustainable use of biomass energy, with associated improvements of land health, livelihoods and poverty reduction.
Outcome (Specific Objective)	To effectively understand and d**emonstrate** the ecological, social and economic pathways **to the scale up of agroforestry-based restoration and sustainable biomass use** in peri-urban Kigali and drylands in the Eastern Province
Outputs	Result 1 (R1) (under IUCN execution). Evidence based knowledge in scalable agroforestry systems and components suited to the Eastern Province and peri-urban areas of Kigali City from an ecological services perspective (including biodiversity, carbon sequestration, water retention, microclimate and productivity). R2 (under IUCN execution). Evidence based knowledge in the further development and diversification of climate resilient, high nutrition value chains from agroforestry landscapes suited to the Eastern Province and peri-urban areas of Kigali city. R3 (under Enabel): Evidence based knowledge and local expertise in highly efficient, durable, affordable and user-friendly improved cooking stoves (ICS) and their supply chains is generated and strengthened. R4 (under Enabel): The most important socio-economic barriers to adoption of agroforestry-based landscape restoration practices are identified and incentive mechanisms to boost agroforestry economic and environmental benefits are elaborated R5 (jointly by Enabel & IUCN): Enhanced institutional capacity to create enabling conditions for agroforestry-based landscape restoration and improved and sustainable use of biomass energy.
Period covered by the evaluation January 2020-December 2025	January 2020-December 2025

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Evaluation team

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- Quality Assurance (QA)/Advisor: Alexandre Naud

1 Background and context

1.1 Project location

Land degradation and environmental stressors pose a significant threat to the livelihoods of communities in Rwanda's Eastern Province and Kigali City, increasing their vulnerability to climate change. These areas—characterised by low tree cover and dependence on rain-fed agriculture—experience drought and chronic water shortages as well as serious periodic flooding and soil loss due to climate-induced extreme weather events (Rwanda Environment Management Authority (REMA), 2021; UN Food and Agriculture Organisation (FAO), 2022), which also cause loss of life and livestock. Rapid population growth adds pressure on already strained land, forest, and water resources, further intensifying environmental degradation and a reduced quality of life for the people living there.

The Eastern Province, in particular, has one of the lowest tree densities in Rwanda and suffers from a significant fuelwood deficit. This gap between supply and demand drives unsustainable exploitation of trees and shrubs, in both forest and agroforestry landscapes, accelerating soil erosion and land degradation (World Resources Institute (WRI), 2020). Compounding the issue is the limited use of Improved Cooking Stoves (ICS), especially among low-income farming households. Traditional stoves remain prevalent due to a lack of affordable, context-adapted alternatives, sustaining high demand for fuelwood (Ministry of Infrastructure MININFRA, 2023).

Geographically, Eastern Province is characterised by the elevation generally falling from north to south while also falling more gently from west to east. At the same time, annual rainfall also diminishes from west to east. As annual rainfall variation tends to increase as the overall total becomes lower, the climate during the project period will also need to be taken into account. The window for effective tree and shrub planting shortens in concert with diminishing rainfall and this factor, as well as overall rainfall variation, will have a strong influence on planting success. Higher elevations in the north may also experience low night temperatures.

The topography and soils also vary across Eastern Province with steeper slopes in the north and generally flatter topography in the south. Soil texture and fertility vary according to the underlying geology and, when combined with steeper slopes, this results in extensive, highly degraded soils and severe soil loss in some locations but much less in others.

For smallholder farmers, land is often divided into several small parcels with differing potential. While land ownership in Rwanda is well documented, the very small size of most plots can lead to disputes, particularly when farming or agroforestry activities on one parcel affect neighbouring plots.

Recognising these challenges, the Government of Rwanda made a landmark commitment in 2010 to restore two million hectares of degraded land under the Bonn Challenge, the first African country-

level commitment to the global restoration initiative (Bonn Challenge, 2023)[1]. This was followed in 2014 by the National Restoration Opportunities Assessment. This initial appraisal identified Agroforestry as the single most significant restoration opportunity, with a total potential area of 1.1 million ha.

The National Strategy for Transformation (MINICOFIN, 2018) identifies largescale dissemination and use of highly-efficient clean cooking stove technology as a priority for reducing drastically wood consumption per capita, while reducing significantly unhealthy smoke, climate change impacts and deforestation. Potentially, the full deployment of highly-efficient cooking stoves to rural households is estimated to reduce the demand for wood from 4.5 million to 2 million tons per year.

Despite policy momentum, two critical bottlenecks hinder large-scale land restoration in the Eastern Province:

1. Low adoption of agroforestry (AF) practices – Limited incentives, weak extension services, and insufficient access to technical support reduce farmer uptake of sustainable land use models.
2. Limited diffusion of ICS – A lack of affordable, farmer-appropriate technologies undermines transitions away from traditional biomass cooking methods.

1.2 Project description

To address both these bottlenecks, and financed through the framework of EU initiative on climate-relevant Development Smart Innovations through Research in Agriculture (DeSIRA), the DeSIRA Rwanda project's General Objective (Impact sought) was: *To increase the pace and scale of agroforestry-based restoration of degraded agricultural land and sustainable use of biomass energy, with associated improvements of land health, livelihoods and poverty reduction*.

The Specific Objective the project was: *To effectively understand and demonstrate the ecological, social and economic pathways to, and resultant benefits from, the scale up of agroforestry-based restoration and sustainable biomass use in peri-urban Kigali and drylands in the Eastern Province of Rwanda*.

As presented in the Project Documents, there are five inter-related results:

Result 1. Evidence based knowledge generated on scalable agroforestry systems and components from an ecological services perspective (including biodiversity, carbon sequestration, water retention, microclimate and productivity);

Result 2. Evidence based knowledge generated on the further development and diversification of climate resilient, high nutritious value chains in the different agroforestry landscapes;

Result 3. Evidence based knowledge generated and local expertise strengthened on highly efficient, durable, affordable and user-friendly ICS and on their supply chains;

[1] The Bonn Challenge is a global goal to bring 150 million hectares of degraded and deforested landscapes into restoration by 2020 and 350 million hectares by 2030.

Result 4. The most important socio-economic barriers to adoption of agroforestry-based landscape restoration practices are identified and incentive mechanisms to boost agroforestry economic and environmental benefits are elaborated; and

Result 5. Enhanced institutional capacity to create enabling conditions for agroforestry-based landscape restoration and improved and sustainable use of biomass energy.

The project was designed with two components. Results 1 and 2 were the responsibility of IUCN while responsibility for Results 3 and 4 was assigned to Enabel. Responsibility for Result 5 was shared jointly between the two agencies.

Overall, DeSIRA aimed to benefit 75,000 smallholder farmers and rehabilitate 60,000 hectares of drought-affected, degraded land.

This design responds to national commitments, needs, challenges and priorities as articulated in Rwanda's National Strategy for Transformation (NST 1 & 2) and many other government policies and strategies, including the National Land Use & Development Master Plan (NLUDMP), Rwanda's Green Growth and Climate Resilience Strategy (GGCRS), Rwanda' National Determined Contributions (NDCs), National Forest Policy (NFP), National Forestry Sector Strategic Plan (FSSP) and National Agroforestry Strategy (2018). It is exemplified in the Theory of Change in Figure 1, below.

The DeSIRA Rwanda project engages a wide range of stakeholders at different levels.

At the **policy level**, key actors include the Ministry of Environment (MoE), the Ministry of Agriculture and Animal Resources (MINAGRI), the Ministry of Infrastructure (MININFRA), the Rwanda Forestry Authority (RFA), and the Rwanda Agriculture and Animal Resources Development Board (RAB). These institutions should ensure project results inform national strategies on land restoration, agriculture, and clean energy.

The **donor and core implementers** are the European Union, Enabel, IUCN, and ICRAF. Enabel leads on ICS and socio-economic dimensions, while IUCN focuses on agroforestry research and value chains. ICRAF provides technical expertise across both these areas.

Research institutions: KU Leuven, University of Ghent, and the University of Rwanda—generate knowledge, train students and researchers, and anchor results in academic programmes.

At the **community level**, around 280 farmers directly participated in experiments, with lead farmers, trained households, and ICS manufacturers testing and applying innovations. Indirectly, up to 100,000 households could ultimately benefit from the dissemination of agroforestry and clean cooking practices.

Task forces such as the Agroforestry Task Force and the Clean Cooking Task Force, along with district governments, NGOs (*e.g.*, ARCOS, One Acre Fund), and private suppliers, act as multipliers, spreading proven approaches and integrating them into wider programmes.

Together, this stakeholder ecosystem connects government, donors, research, and communities to promote agroforestry-based restoration and sustainable biomass energy in Rwanda. The project is articulated as follow. Results 1 and 2, focused on agroforestry, were led by IUCN in direct collaboration with University of Gent (UGent), University of Rwanda (UR) and ICRAF, which provided the research and skills building elements. Result 3, on ICS technology and supply chain, and Result 4, on barriers to agroforestry take up, were implemented by Enabel in collaboration with the University of Leuven (KUL), UR and ICRAF. Result 5 was jointly implemented by Enabel and IUCN in collaboration

with ICRAF and the Universities. Although being delivered by different actors, there is substantial interlinkage between all three results, not least because the target beneficiaries are largely in the same group of poorer farmers living in a challenging environment.

While Results 1, 2 and 4 focus on the production of biomass, food and fodder, Result 3 concentrates on reducing demand for biomass by developing and introducing ICS. As well as fuel efficiency, the aim was to provide ICS that were also both affordable and user friendly.

Result 5 aimed to improve institutional capacity to create enabling conditions for agroforestry-based landscape restoration and more efficient and effective use of biomass. Its focus is on knowledge generation and the transfer of that knowledge into policies, strategies, guidance and extension materials to improve the uptake and application of the findings.

These interlinkages mean that the evaluation has to look into the common threads that interlink the results, regardless of who delivered them. In addition, the timing of activities is also of great importance. Long term research results cannot be available early in the project's life but the project was also required to undertake field activities early on. The plan was to use existing knowledge initially and refine this as further knowledge and understanding became available.

Although designed and delivered as a single project, the structure with two primary implementing partners each with their own results and only a single shared result, which also engaged other actors, could also have been delivered as two separate but closely related projects.

1.3 Theory of Change

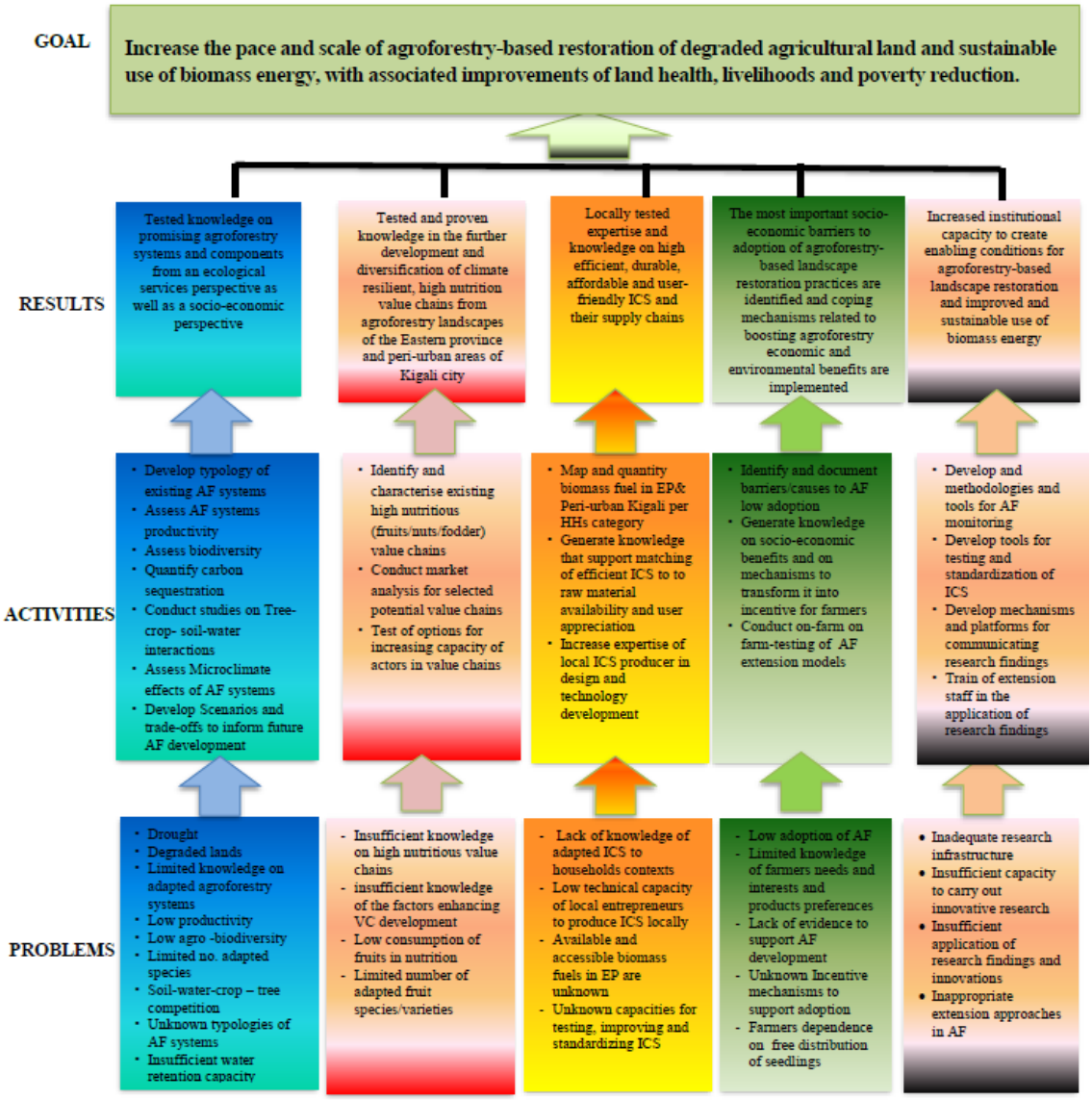

Figure 1. Theory of Change

This structure, defined by the complexities of the design, also necessitated a relatively complex project management structure. This challenge was further compounded by the varying lead times required for the different components. The project proposal included a three-tiered governance structure comprised of:

1. The Programme Steering Committee, responsible for strategic decision making, validation and approval of plans and reports and available to provide advice.
2. The Programme Technical Committee, chaired by KUL for validation of research plans and reports, QA for research outputs and approval of ToRs for consultancies.
3. The Project Implementation Unit responsible for coordination and delivery of activities, procurement, logistics, budget management, monitoring and evaluation (M&E) and reporting.

All the elements of the project had been touched upon to varying degrees by earlier initiatives and there were also similar overlapping initiatives in place within Rwanda. The project focus was tightly specified to cover Eastern Province and peri-urban Kigali and to complement other initiatives in place in Rwanda and in Eastern Province, while also building on earlier interventions.

The project Logframe was created at the start of the project and is descriptive with quantitative targets. This was updated annually to provide numerical progress against the targets. In subsequent annual reports, notably those from IUCN, these targets are further subdivided to activity level.

The DeSIRA M&E system was initially designed with three-pillar set-up including Monitoring, Reporting, Evaluation, under the governance of the Project Manager, with the support of the Programme Technical Committee (PTC), Project Steering Committee (PSC), IUCN, Enabel and the EU Delegation.

This complex project structure necessitated a robust but flexible and responsive management structure for its delivery. This role is that of the Project Implementation Unit to provide oversight and respond quickly to difficulties arising. This required the project's M&E system to be responsive to divergences and bring these quickly to the attention the relevant decision makers. The other two Committees had a large membership, often with multiple attendees from the same institutions. There was also quite a rapid turnover of people holding senior positions within the Project Implementation Unit.

Monitoring was expected to rely on a results framework with indicators/targets and a risk register; the Project Manager being responsible for consolidating the data and the PTC ensuring scientific quality. Reporting packages were planned to be into an annual, EU-compliant, Project Implementation Report endorsed by the PSC. Evaluation was expected to provide independent assurance via a Mid-Term Review and Final Evaluation, with audits coordinated by IUCN.

The project outcome objective was to: *Increase understanding of the ecological (social and economic) pathways to, and resultant benefits from, agroforestry-based restoration in peri-urban Kigali and drylands in the Eastern Province among all stakeholders (researchers, extension officers, farmers, policy makers*), with four outcome indicators and their associated targets as shown in Table 1.

Table 1. Project Outcome (Specific Objective) Indicators

Outcome (Specific Objective) Indicators	Target
1.1.1 Number of high nutrition value chains developed within Agroforestry (AF) systems	4
1.1.2 Areas (ha) of agricultural ecosystems where sustainable management practices have been introduced with EU support	3,260
1.1.3 Number of Households (HHs) practising agroforestry	500
1.1.4 Number of new and/or updated policy support tools for AF M&E	3

Combining and contributing to these outcomes the project logframes (LF) used 45 output indicators, with associated targets. All logframe indicators were quantitative, no qualitative ones were specified. It was expected that there would be a Monitoring and Evaluation matrix but despite requests, this has not been forthcoming. Physical progress has been reported as an updated target achievement in the various logical frameworks.

The utility of much of the project reporting has been undermined by the often excessive length of most reports. This made it hard for the evaluation team to quickly understand clearly (i) what had

been done and (ii) the progress made towards achieving the project objectives. This is, unfortunately, an increasingly common problem, partly facilitated by the ease with which material can be copied and pasted when what is required is abstraction and summary of the key points and issues.

In this case, with a very complex design and parallel activities overseen by two separate actors, the lack of clear and concise reporting has made the tight control required a much more difficult and time-consuming task. While it is obviously essential for there to be detailed reports on specific activities, these should have been complemented by short reports noting where there were successes but particularly noting very clearly where there were divergences from the planned timetable and achievements predicted by a clear and overarching logical framework. This required a different, more focused reporting structure from that which was predominantly used.

The project had to deal with two unexpected but significant events, neither directly related to the project itself. Firstly, the occurrence of COVID in 2020 affected early project implementation, and was the primary justification for a no-cost extension. The effect of COVID restrictions was felt more strongly in Rwanda than by the supported students who were already in Belgium. Secondly, the deterioration in diplomatic relations between Belgium and Rwanda early in 2025 caused some problems for Enabel staff within Rwanda. Even though it was late on in the project, local staff had difficulties, for example, arranging transport for the field mission. To add to these challenges, both Enabel and IUCN country-based staff positions have seen significant turnover within the project lifespan.

1

2 Objectives and methodology

2.1 Objectives, scope and users

As all five Results are interconnected, this allowed for evaluation of the overall activities supported. The purpose of the evaluation was to support accountability to partner countries, donors and other stakeholders as well Enabel itself. The findings of the evaluation on project design and management are to inform future decision making by Enabel and IUCN as well as their partners and stakeholders.

There were two specific objectives proposed for the evaluation. The first being Accountability and the second Learning. Specific focus was requested on the core elements of effectiveness, efficiency and sustainability.

Underpinning these objectives was the consideration, across all aspects of the project, of the Cross-Cutting themes of gender and youth inclusion and of climate change.

The field mission was undertaken from 7 to 18 July 2025 in Eastern Province and peri-urban areas of Kigali. It covered the main project sectoral foci of agroforestry (AF) and household (HH) biomass energy, particularly ICS.

The Terms of Reference (ToR) provided a set of evaluation questions, which were reviewed for logic, relevance, clarity and scope; three further questions were added. In line with Enabel's evaluation policy, the team prepared an evaluation matrix (Annex 4) as a roadmap for analysing each question and sub-question. Project-specific evaluation questions aligned with each OECD-DAC criterion were drafted and grouped under the evaluation objectives; for each, assessment criteria and performance indicators were defined, and data collection was structured to ensure an evidence-based evaluation.

The **main users** are those who are primarily affected by the results of the evaluation:

a. Those likely to make decisions directly related to the results of the evaluation;
b. Those affected by and/or interested in the implications of the findings, recommendations and actions that will result.

These are those Government of Rwanda ministries and agencies looking to the evaluation to inform policy and planning, such as The Ministry of Environment (MoE), the Ministry of Agriculture and Animal Resources (MINAGRI), the Ministry of Infrastructure (MINIFRA), the Rwanda Forestry Authority (RFA) and the Rwanda Agriculture and Animal Resources Development Board (RAB).

A second group of main user comprises the donor and main implementing partners, desiring a comprehensive assessment of the project's achievements, and to receive useful recommendations to guide future interventions in the sector. For DeSIRA Rwanda, these comprise Enabel, IUCN, ICRAF and the EU.

The research institutions comprise the third set of main users (KUL Leuven, University of Ghent and University of Rwanda) wishing to capture the knowledge gained and update their education and research programmes in the light of lessons from the project.

Secondary users are those interested in the findings, but not directly affected by the evaluation.

These include: the members/partners of the Clean Cooking Task Force (MININFRA) and of the Agroforestry Task Force, interested to learn from the key findings and benefit from lessons learned;

key agroforestry and biomass cooking stakeholders (such as ICS suppliers, Districts, NGOs, ARCOS, One Acre Fund, and likeminded organisations) wishing to use the findings to disseminate innovative solutions, proven concepts and good practice.

2.2 Methodology

Although the evaluation object was presented as a single project within the wider EU DeSIRA framework, with five Results included in the Theory of Change, as exemplified above under Project Description, it is almost two separate projects with an overlapping Result 5 focused on enhanced institutional capacity informed by the two sets of Results. The lead agencies for implementation, Enabel and IUCN, largely operated separately with separate budgets and reporting. This has created substantial challenges for the evaluation team in their assessment of overall progress.

The overarching question adopted by the evaluation team was, given the aims of the project, to determine the difference between what was expected and compare this with what was found and/or observed. It was anticipated that there would be differences, no project ever works exactly according to plan. The aim was to determine, in the time available, to what extent the project had followed the plan, where there were divergences, the reasons for these and the causes of the divergences. This is a classic contribution analysis evaluation based on the Theory of Change and related documents.

The evaluation process followed four steps:

- Phase 1: Defining the evaluation framework and the methodology for data collection;
- Phase 2: Extracting and collecting the necessary information for the evaluation;
- Phase 3: Analysing, triangulating and synthesising the information gathered; and
- Phase 4: Drafting and finalising the report based on comments and inputs received.

The initial documentation supplied was sufficient for the evaluation matrix to be constructed. Further information from the three sources listed below was gathered during the field trip and triangulated as far as possible. Triangulation was iterative and recursive and additional documentation was requested wherever gaps in this became apparent.

The evaluation relied on three data sources:

1. Document review

Project documents were reviewed for an understanding of the design and objectives, and then assessed for information in relation to progress, performance and results against each results area.

Documents reviewed include: the project technical proposal, logframes and workplans; the mid-term review report, a selection of implementation annual reports and financial annual reports; and project output documents such as study reports, policy briefs and training materials.

A full list of the documents reviewed is provided in Annex 5.

2. Engagement with stakeholders through: Key Informant Interview (KII); Semi-structured Interviews (SSI); and Interviews with project stakeholders and actors

Key informants and stakeholders for interview were selected on the basis of the resource person list within the Terms of Reference and through discussion with project staff during the field mission.

Table 2 provides a summary of the number of interviews conducted, by stakeholder type and reference to the focus of the interview by evaluation questions.

Table 2. Interviews by stakeholder type

Engagement Approach	Stakeholder groups	Number	Evaluation Questions
Key informant interview	Students	**4**	EQ 6 & Supplementary EQ 1
	Enabel & IUCN Project staff	**3**	All
	Implementing Partner staff	**2**	EQs 3-6, 8, 10, 12, 14 With EQ's 7, 18 & 19 as relevant to their activity area
Interview / SSI	GoR (Government of Rwanda) Agencies & Local Authorities	**6**	EQs 1, 4-7, 9, 12-14, 16-17, 19 and supplementary EQ3
	Research Institution	**3**	EQs 9,11,14,18 & supplementary EQ3
	Donor	**3**	EQs 2,5,14 & supplementary EQ3

Stakeholder interviews and discussions were approached with an open mind and in a manner to build trust and facilitate discussion. Open questioning was used to allow respondents to express their views and experiences of the project, providing a fuller picture, and allowing for the emergence of additional information of value, rather than specific questioning alone.

So far as was possible, the required information was gleaned through iterative discussion responding to the stakeholders' experiences, with more focused questioning, based on the evaluation matrix (Annex 4), drilling down for more detailed explanations and evidence.

Annex 6 provides a full list of interviewees.

3. Field Visits & Focus Group Discussions (FGD)

The evaluation field team visited 10 project beneficiary communities across 6 of the 9 project Districts and undertook Focus Group Discussions (FGD) in each location, with a total of 75 (35 female and 40 male) participants. The full list of participants in the FGDs is provided in Annex 9.

Table 3. Village / Community Visits and number of FGD participants

District	Village / Community group	Number of FGD participants
Bugesera	Kagasa	10
Bugesera	Cooperative: "Twite Ku Bidukikije"	6
Kirehe	Nyamugari Cell	7
Kirehe	Kamabuye	10
Gatsibo	Ngarama	7
Gatsibo	Simbwa	7
Nyagatare	Akinyambo	6

Nyagatare	Kagonga	10
Gasabo	Mutokerezwa	7
Rwamagana	Bicaca	5
Discussion Focus on Evaluation Questions: 3-4, 6-9, 14, 16-17 and supplementary Q2		

The field visits itinerary (see Field Mission Agenda, Annex 7) was developed between the Evaluation team, and the IUCN and Enabel project teams in Kigali. It was designed to best use the time available in terms of travel logistics and in order to visit areas where both agroforestry and ICS interventions had been undertaken.

4. Analysis

The project documents were scrutinised for detailed information pertinent to the answering of the evaluation questions. In particular the logframes and annual reports were studied for progress and results data, details of challenges, lessons and implementation approaches.

The resultant notes and findings were collated and assimilated with the information from the interviews and field visits according to the OECD-DAC criteria and associated evaluation questions (see Tables 2 and 3 and Annex 4). The analysis process concentrated on triangulation of the findings, wherever possible using more than one source to confirm these.

The main information gathered through the field visit was either from key actors or ultimate beneficiaries. For the latter, this was primarily from group discussions. The evaluation team had no control of those attending group meetings with ultimate beneficiaries, which were conducted in Kinyarwanda, since the invitation was an open one for members of the communities visited. Following the field visit, the evaluation team followed up with key actors and stakeholders to request further information and clarifications, where needed, and to confirm the initial findings.

The information gathered in the field fell into two broad categories. The first is the information gathered from interviews and discussions, which reflects the perceptions and feelings as well as factual matters. The second category is information gathered from inspection of the field activities by the evaluation team. This enabled a gap analysis to be conducted on the extent to which the views, perceptions and ideas of beneficiaries matched the equivalent views of the actors and enablers who had delivered the project activities.

The evaluation team met regularly to iteratively review findings, identify gaps and progress and to assign follow up and further tasks to individual team members and, where appropriate, stakeholders and contact persons. Specific analysis was undertaken on the logframes, outputs and outcome indicators (see section 3). Clarification and gap-filling information was requested from project staff, with the collation, assimilation and triangulation process then repeated.

2.3 Constraints, Limitations and Gaps in information

No evaluation can be fully comprehensive and will be dependent of the availability of documents and stakeholders for interview, as well as being affected by logistical and seasonality constraints at the time of its undertaking.

The evaluation as a whole, and especially the field mission, was time-constrained and undertaken during the summer, holiday months, limiting the availability of stakeholders for interview. No representatives from the University of Ghent were available, which has precluded detailed discussion and analysis of the progress being made by their students or on wider issues around the modality of

the project using universities in Belgium and status of the links established between them and sister institutions in Rwanda.

Time and resources for the field mission was particularly limited because of the unexpected declaration of four days of public holidays in Rwanda during the planned first week. The revised time frame meant that the team leader was unavailable for the whole period, due to already noted prior commitments. The changes to the timing meant that the team was only able to visit the project sites listed in Table 3.

Detailed financial information was only made available in late August / early September. That from Enabel and IUCN were in rather different formats and it required substantial time to extract an overview. Information on the Project Steering Committee and Project Technical Committee was also received around the same time and lacked full details of their operating procedures

2.4 Ethics

The Review was conducted in full compliance with the ethical standards laid down by OECD- DAC for evaluation, Enabel normative framework as well as their MoRe Results framework, and Cowater International Quality Standards. The team further acknowledges Enabel Code of Conduct, Enabel's Policy regarding sexual exploitation and abuse, Enabel's Personal data protection Policy and Enabel's Policy regarding fraud and corruption risk management for the ethical considerations during the evaluation.

Cowater International's ethical guidelines for evaluation are based on commonly held and internationally recognised professional ideals. All experts engaged in an evaluation with Cowater International are subject to a Charter of Conduct which obliges them to conduct themselves in accordance with the highest standards of integrity. The Guidelines apply to the conduct of all evaluations undertaken by Cowater International.

Further, and aligned to Enabel's evaluation guidelines, the team ensured that the evaluation was gender-sensitive and respected the rights-based approach of "leaving no-one behind" and "do no harm" principles.

The team leader is a Member, and the evaluation adviser a Fellow, of the (UK) Institute of Chartered Foresters and both scrupulously follow the Institute's code of ethics, as required by virtue of their membership.

The evaluation team remained independent from the project, including its policy, operations, and management functions, as well as from intended beneficiaries and declare that none of its members has any conflict of interests.

1

3 Analysis and findings

3.1 Performance analysis

This analysis of the evaluation criteria as defined by the OECD DAC guidelines, provide an assessment upon the performance against each criterion across the project as a whole.

RELEVANCE: The extent to which the intervention's objectives and design respond to beneficiaries' global, country and partner/institution needs, policies and priorities, and continue to do so if circumstances change

Related question: Is the intervention doing the right things?

Key findings:

- The project was well aligned with Rwanda National Strategies for Transformation 1 and 2 and sectoral policies and plans.
- The research topics generally focused on national and regional challenges and priorities.
- Some studies (ICS design, fruit trees) informed the project but most are still in progress.
- Focus on ICS and agroforestry was very appropriate for Eastern Province and consistent with Enabel and IUCN wider policies.
- The two primary partners, Enabel and IUCN, brought their solid and well-established complementary experience and expertise together while requiring good internal communication.
- Engaging ICRAF was a sensible move, given their wider network and knowledge base on agroforestry.

Comments:

As originally designed, the project, has high relevance for the national priorities of the donor and recipient governments. The Theory of Change presents five results and a goal that confirm this. The results and activities laid out in the design required engagement with a range of partners whose focus and expertise are consistent with that required and the design. It also identifies appropriate target beneficiaries, emphasising women, youth and other disadvantaged groups. The choice of the two primary implementing partners, Enabel and IUCN was logical and appropriate, given their complementary policies, experience and expertise, as was engaging with ICRAF for assistance with the agroforestry elements. Bringing in ICRAF meant their agroforestry trial plantation offered the project the benefit of their previous work and could start from a higher knowledge base.

This complex structure with the diverse results created a project the essential elements of which required tight oversight and control to be successful. There are significant linkages and potential synergies between the results. Therefore, strong internal communications and control were essential for linked activities to be delivered at the correct time.

Despite this, there is potential for further engagement with other donors post-project to secure at least some further benefits from what has been done and from the linkages made by the project with other ongoing projects in Rwanda, which amplifies the relevance.

COHERENCE: The compatibility of the intervention with other interventions in a country, sector or institution.

Related question: How well does the intervention fit?

Key findings:

Internal coherence

- The three partners, UGent, KUL and UR brought improved academic diversity and synergy for the MSc and PhD students increasing the range of topics that could covered by student research.

External coherence

- The project has linked up with relevant projects supported by other donors, *e.g.*, TREPA, Alliance for Restoration of Forest Landscapes and Ecosystems in Africa (ARECA) and Community-based biodiversity conservation in the Eastern Province of Rwanda (COMBIO), that can capitalise on the project's interim progress

Comments:

The internal coherence, as designed, was valuable and appropriate for consolidating combined expertise and experience but the complexity of having multiple primary actors required robust, timely and effective coordination mechanisms to be put in place. The topics within the two pairs of results led by Enabel and IUCN required good cross linkages to ensure that the findings from each were used to inform the other and optimise the overall benefits from the complementarities.

The three universities all have differing areas of expertise and focus. This allowed for a wider range of research topics to be addressed by postgraduate students than would have been the case if only a single institution were used.

External linkages with other donors created good opportunities for exchanging experience while avoiding duplication and offering potential benefits for enhancing sustainability

EFFICIENCY: The extent to which the intervention delivers, or is likely to deliver, results in an economic and timely way.

Related question: How well are resources being used?

Key findings:

- Both implementing agencies have an underspend against their overall budget, the latest figures available show total expenditure as Enabel (69%) and IUCN (88%)
- The lack of a clear project-wide logical framework linked to budgetary information precluded any detailed analysis but expenditure in each category was largely in line with the budget allocation
- Using costly nurseries only retained for one year, with no simpler and cheaper alternatives being offered to continue support throughout the project by making plants available locally in subsequent years, was a missed opportunity for ensuing availability of planting material and undermined the efforts on raising awareness and interest.
- No comprehensive risk analysis and risk management strategies were seen or made available.

Comments:

Implementation

Reporting is almost entirely separate for the two implementing agencies rather than being consolidated for the project as a whole.

The efficiency of the overall project delivery was affected by the frequent turnover of key senior people responsible for oversight of the project as a whole. This was particularly so given the complex, interconnected structure. The size of the Steering Committee seems overly large to be a responsive unit and the summaries suggests a major focus on large events at the expense of project progress and the need for remedial action. At the last meeting in June 2025, there was an update on the PhD students' progress. See Box 2.

The reasons for the late provision of planting material have not been provided, despite requests; it could have been linked to finance availability or purchasing delays. Nor has the rationale for the work on ICS to focus on fuel efficiency without parallel attention to affordability and cultural acceptance been made available. This suggests sub-optimal value from the work paid for.

The initial logical framework and its partial successors do not appear to have identified and analysed risks in a systematic way. No risk management plan has been provided. Yet risk is present in all development projects and identifying potential risks and having risk management strategies in place is a fundamental part of effective project management.

Financial alignment

Overall expenditure appears to be broadly in line with the budget.

While delays such as that caused by COVID are fully understandable, decisions such as to utilise costly nurseries rather than cheaper and more widely distributed ones have not been explained. This is a

particularly serious issue as the central nursery was only used for one year and much of the material, such as frames and shade netting, has now been removed by theft.

There is an underspend that could be used to ensure that the findings from still to be completed research, as well as that only recently completed, can be taken through to inform revision of relevant policies, strategies, guidance, training and extension materials.

Complex project designs such as this one, while valuable for their wider perspective, require consistent and tight management to be fully successful.

EFFECTIVENESS: The extent to which the intervention achieved, or is expected to achieve, its objectives and its results, including any differential results across groups

Related question: Is the intervention achieving its objectives?

Key findings:

- No up-to-date project-wide logical framework was made available.
- Indicators used in reporting are almost entirely quantitative. Qualitative information was either not collected or not reported.
- The student research, while of good quality, was never going to be available in time to be fully taken up to any extent by the project.
- Agroforestry interventions were poorly delivered. *Grevillea* was strongly promoted despite its unpopularity for widespread use, especially in small plots.
- ICS delivered to HH were often not used; ICS research concentrated too heavily on efficiency.
- Several research findings are still in process of preparation prior to inclusion in policies and practice guides so that they can be used by practitioners.
- There appears to be no mechanism in place to consolidate skills development at the community level. Capacity building efforts have largely focused on individuals, such as farmers, technicians, or students—without sufficient structures to embed this knowledge within local organisations or institutions, limiting the potential for sustained and collective impact.

Comments:

Separating the research conducted by post-graduate students from other project activities is important, as their work primarily contributes to long-term knowledge generation and academic outputs, whereas the rest of the project is more directly oriented toward immediate field implementation and community impact. All the selected students are regarded by their institutions as of high calibre but their selection and placement took time and had to fit in with the academic dates of the institution in which they were registered. Some studies have been completed and are in process of being published together with the findings potentially being integrated into policies and training materials but this has only just started. Others are still to be completed and have yet to reach this stage. Nevertheless, this element of the project has been the most effective and valuable benefit generated by the project.

Apart from the fruit tree study and basic training offered to community members, the support to agroforestry has been haphazard. There is no evidence confirming concentration on the poorest households. *Grevillea robusta* has been widely pushed as the predominant species, despite evidence that it is far from universally liked and appreciated. This suggests a serious disconnect between community engagement and project response. It certainly undermines the value of the agroforestry activities quite severely and could create resistance against future efforts to promote it.

The work on ICS has focused, for reasons that remain unclear, on maximising efficiency but without considering adequately both affordability and user friendliness; both of these are clearly flagged in Result 4. There has been a relatively poor uptake of ICS. While there has been some potentially useful knowledge gained, the project's aims for ICS have not been well met.

There will, in due course, be improved information from the student's studies available for informing policies and training materials, as well as further research required. This will mainly only be secured by others, outside the control and time frame of the project.

The effects of COVID early on in the project were largely overcome by a time extension. The political issues between Belgium and Rwanda made life more difficult than previously for in-country staff towards

the end of the project. Overall, the weaknesses noted above have resulted in sub-optimal achievement of the proposed outcomes.

IMPACT: The extent to which the intervention has generated or is expected to generate significant positive or negative, intended or unintended, higher-level effects.

Related question: What difference does the intervention make?

Key findings:

- Some research studies have already been completed, while others are still in progress with most but not all expected to be finalised within the remaining project timeframe.
- There has been only limited progress so far on integrating study results to inform policies and practice.
- Rather limited direct benefits in terms of land management, improved ICS, gender and youth mainstreaming, carbon sequestration, and climate change adaptation.

Comments:

Many field interventions were of uneven or suboptimal quality, limiting their potential effectiveness and sustainability. The project's contribution to strengthening farmers' livelihood resilience has so far been modest and remains limited so far.

With both agroforestry and ICS, the project envisaged technical improvements developed in concert with beneficiaries' needs and supportive training but this has not been done adequately. Examples are the ICS focus on efficiency and the promotion of *Grevillea robusta* as the primary agroforestry species, despite its apparent unpopularity due to shade and root invasion when used in small plots. This has downgraded the potential impact and limited the value of efforts made on consultation and opinion gathering. Potential impact has been further eroded by the lack of attention to timing in delivering materials for agroforestry interventions.

The most successful component of the project, the student conducted research, has not yet reached the point at which it is able to be fully taken up and integrated into policies, training materials and other guidance. This will only happen if it so taken forward post project. There is good potential impact from the students' research that may accrue but this currently remains uncertain.

In respect of the cross-cutting themes, the direct impact on climate change is likely to be insignificant due to the limited area of agroforestry and the poor quality of its application. The ICS focus on efficiency without adequate consideration of affordability and user-friendliness is also likely to yield limited impact.

Gender and youth are flagged as an important theme but again, the impact appears to be quite limited. There have been no specifically focused interventions and the apparent absence of an effective M&E framework has limited reporting to be only the numbers of men and women engaged and whether representatives of youth were included with no information on the benefits they received.

The logical framework relies almost entirely on quantitative indicators, yet assessing both impact and effectiveness requires complementary qualitative measures. For instance, reporting the number of people trained—even when disaggregated by gender—does not reveal whether the training was relevant, retained, or applied in practice. The absence of qualitative reporting makes assessing potential impact uncertain.

SUSTAINABILITY: The extent to which the net benefits of the intervention continue or are likely to continue.

Related question: Will the benefits last?

Key findings:

- There will be valuable research results but timing means that few will be fully available for integration into policies and practice guides until after the project ends, unless action is taken now.
- Some students will not complete their degrees before the project ends and this needs to be addressed.
- Many of the project activities focused on poorer beneficiaries will require incentives if they are to be taken up in the future.

Comments:

Despite its difficulties and limited successes so far, the project has done some valuable and interesting work but it is unclear that planning for sustaining any improvements was done adequately. While the connections made with institutions and actors are valuable, there does not appear to be a process in place to ensure that those activities the project has successfully started will be capitalised and secured. In the limited time remaining to the project, it would be very useful to focus on securing the outcomes that have been achieved.
Capturing the potential benefits that could accrue would require a clearly defined and effectively delivered exit strategy. Without concrete action, those outputs from the project that do have some potential value may simply subside and be quickly forgotten.
The long lead time for student research to be available to inform policies and guidance does not appear to have been fully appreciated. This will not now be done within the project life. There are several parallel and ongoing projects through which this could be done but there is no confirmation that the process for achieving this has been put in place.

3.2 In-depth analysis

The approach taken in this section is to group the evaluation questions into three broad categories: (i) Design; (ii) Implementation and results; and (iii) Cross-cutting. In making the grouping, as some evaluation questions relate to more than one OECD-DAC criterion, they have been positioned to make the narrative flow as smoothly and informatively as possible.

3.2.1 Design

- **Relevance**

EQ1: To what extent the intervention remained relevant with the evolving context all along the implementation period and is still [relevant]. To what extent the response provided is adequate to the original and emerging needs?

EQ15: To what extent and with which means/tools the gender dimension has been taken into consideration at design level?

The design identifies apposite target beneficiaries, while emphasising women, youth and other disadvantaged groups. The choice of the two primary implementing partners, Enabel and IUCN, was logical and appropriate, as was engaging with ICRAF for assistance with the agroforestry elements and the Universities of Rwanda, Ghent and Leuven, in Belgium, for post graduate students to undertake research on relevant topics. The support for post graduate students forms a major element in the overall project design.

The flexibility of the project in engaging with a wide range of partners beyond those engaged directly in project delivery has allowed useful institutional links to be established. Of particular note are the sharing of findings, results and lessons with the National Forest Landscape Restoration (FLR) Cross-Sectoral Task Force, inputs informing MININFRA's Ministerial Guidelines for Clean Cooking Technologies and the signing of a Memorandum of Agreement with MINAGRI to support the strategic plan PSTA5 (Strategic Plan for Agriculture Transformation) for building resilient and sustainable agrifood systems.

A very positive approach used by the project was the adoption of the ICRAF long term agroforestry experimental and trial plantation in Bugesera. This was established under a previous, Australian funded, project. It provided mature and semi-mature example of agroforestry species, which was of

great help to the project in its own work on agroforestry species suitable for wider promotion. This approach is an efficient use of an existing resource, provided continuity in research and local community engagement and early opportunities for research that would otherwise not have been possible within the project period.

Fundamental elements of the project design do not appear to have been critically assessed. One major observation is that the design does not appear to have satisfactorily taken into account timing and sequencing issues for research undertaken by post-graduate students. It was always going to be a challenge (especially for PhDs) for this to be completed within the project timeframe, especially as the project start date did not necessarily fit with the academic timetable. At the University of Leuven (KUL), the standard study period for a doctoral student is 4 years, to which has to be added a 6 to 12 month "predoc" preparation period, plus possible further delay depending on the academic calendar and the allowed starting dates.

This point was made in the Mid-term Review and is also noted in the Steering Committee minutes from September 2023. At the time of writing this report, none of the PhD students has yet graduated. Three are expected to complete their qualification during 2025 but one of the students is not expected to complete her thesis until 2026, as she has huge data sets to analyse.

In respect of gender and youth, good efforts were made to include these groups in community based activities but there were no activities specifically designed to meet the differing needs of these groups. Consequently, while there was inclusion, there was no effective mainstreaming.

The initial logical framework covered all five results and included 19 indicators. All were quantitative and some encompassed multiple targets for assessment. Enabel and IUCN subsequently developed logical frameworks but in doing so, created some confusion, with Enabel reporting against result areas 3, 4 and part of 5 and IUCN reporting against two different logframes for result areas 1 and 2 and part of 5: one summarised and one provided in the narrative reports.

The two IUCN logframes use different output indicators and the numbering of the activities used in the IUCN narrative report does not correspond to the numbering of the output indicators in either of the two IUCN logframes. Individual studies were listed under activities and allocated separate indicators. This made assessing, assimilating and connecting progress against project targets extremely difficult. No separate M&E matrix has been located.

For assessment and to illustrate these inconsistencies, two tables have been constructed, the first comparing both sets of indicators from the two IUCN logframes and the narrative report text for Output 1 and the second comparing the IUCN Narrative Report LF Output 1 objective and indicators, with the associated Report Text Output title and Activity list. These are provided in Annex 10.

In the revised LFs, it appears that the vertical LF logic has not been understood. Indicators should combine the product of several activities and demonstrate how this combined product contributes to the achievement of the Result under which the activities have taken place. What seems to have been done is to misuse the term indicator for a trigger that the activity was completed.

The logical frameworks should include assumptions required for success and identify possible risks to implementation. The three versions seen do not deal with this. The strategy is that the initial extension work would by itself be sufficient to persuade farmers who, often with no experience of AF, would be motivated to start undertaking it; none of the risks in this strategy is mentioned. Risks are further discussed later in this report under effectiveness.

As originally designed, while the project remained relevant to the evolving context throughout its implementation period, the disparate reporting and the apparent lack of information between the two delivery partners makes it very hard to determine clearly the extent to which its continued relevance was ensured. The vast majority of the output indicators are quantitative and it would have been useful if more qualitative indicators had been adopted, to encourage and facilitate thinking about the quality of implementation as well as the bald quantitative achievement.

- **Coherence**

EQ2: To what extent the activities implemented were coherent with both IUCN and Enabel 'action' strategies and to what extent the internal coherence has been ensured? How synergies and complementarities have been successfully built by both Enabel and IUCN, with other relevant actions and initiatives aiming to generate comparative advantages?

The project design, with parallel activities on agroforestry to address land stability and productivity combined with development and distribution of improved cook stoves, targeted farmers in Eastern Province and peri-urban Kigali, which was good internal coherence. Delivery required engaging with a range of actors outside Enabel and IUCN, who could bring complementary experience and expertise into the project.

An explicit part of the project was the inclusion of the Research Institutions, particularly the KUL, UGent and UR. This has been positive in ensuring wide-ranging quality research that adequately matches national priorities and avoids redundancy in research topics, but the linkages and collaboration appear to have been largely associated with the delivery of their research activities or based on individuals with existing working relationships rather than at a more institutional level. A further step will be required to consolidate and embed the findings into policies, strategies, guidance and extension materials so they can be applied at scale. While this has happened for some research, much still awaits the completion of higher degrees.

There have also been highly valuable links established with other land and resource-based projects and initiatives, with significant potential for increased adoption of improved practices as a result of DeSIRA studies. The TREPA project was strategically developed to build upon the evidence and lessons learned from DeSIRA.

Other relevant linkages include: the Swedish International Development Agency's (SIDA) project aiming at reducing vulnerability to climate change through COMBIO project; RFA/IUCN ARECA programme, led by the FAO; Climate adaptation and mitigation through biogas at household level in Rwanda (CLIMBIO project; and, under development, the *Fonds Français pour l'Environnement Mondial* (FFEM) (). These initiatives are all being informed by the project's results, which overlap strongly with their own interests.

These linkages will also be important for both long term impact and sustainability. They can build on the work supported by the project, but which could not be fully completed within the time frame, so that it will be used as fully as possible.

3.2.2 Implementation and results

- **Effectiveness**

EQ6: To what extent the planned outputs have been delivered, and the expected outcomes have been achieved, both in terms of quantity and quality?

EQ7: To what extent the whole intervention has contributed to dissemination and adoption of innovative and best Agroforestry and Clean Cooking practices among communities targeted?

The collaboration and partnerships with the Universities of Rwanda, Ghent and Leuven in Belgium, and ICRAF, combined with the recruitment of committed and high calibre PhD and MSc students, has resulted in the completion or near completion of valuable studies in strong alignment with Government of Rwanda priorities. All the selected students went on to study higher degrees.

The research has resulted in the publication of a number of papers. These are reported as 13 published with 4 under review, with 8 published in international and national journals. In addition to these papers, each research activity has, or will in due course, produced individual study reports and the students' theses, as well as resulting in the publication of research briefs.

Conference papers and posters were presented at the two National Conferences on Agroforestry and the studies will inform the forthcoming World Agroforestry Congress and World Congress on Conservation.

Project activities have built capacity within the research institutions and of the students themselves, largely through the discipline of following a higher degree programme, as well as providing training to local authority staff, extension workers, farmers and households. Innovative approaches have started to be adopted in the use of and training in digital platforms, such as Tree Finder and Regreen Apps. These capitalise on the capability of smartphones that are widely owned in the country. Although there has been reporting of the number of people trained, there are no reports of qualitative assessment following this training. It would have been useful to have had a simple test of knowledge before and after such training to confirm the level and utility of the training for the participants and their usage of these Apps post training.

Whilst some of the value chain studies were used to inform implementation actions, the ability of the project to utilise the research conducted by post graduate students to inform practice has been limited because of the long lead-time before results are available to be integrated into policies, guidance and extension material. This cannot and will not be completed before the project end date. The issue of the time required for student conducted research does not appear to have been given sufficient weight and consideration at the project identification and appraisal stages.

The provision of fruit trees was informed by the value chain studies but it is unclear how well the results from other completed studies and emerging findings of ongoing research were able to inform the direct community support, nor how these were, or are planned to be, integrated to inform practical implementation.

Grevillea robusta was the most common species distributed to communities and is a dominant AF species within the project area. This provision may have been informed by study results showing positive relationships between *Grevillea* and maize and beans, yet only one of the visited villages expressed a preference for *Grevillea.* Indeed, the team learnt that *Grevillea* had sometimes been deliberately not maintained and, on occasion, uprooted. Thus, even though the project has found benefits from *Grevillea,* the findings from field visits suggests that these benefits had not been fully understood or accepted by community members, or that they held other priorities or preferences.

Furthermore, it is not clear how further provision of such a dominant species contributes to biodiversity, diversification and climate change adaptation objectives. The excessive promotion of *Grevillea* is against diversification of tree species and promotion of indigenous tree species on farm and in plantation forests, which is the current Government policy. The NST2 (2024-29) stipulates increasing forest densification with indigenous and climate-resilient tree species and promotion of

agroforestry and fruit trees. It appears that some of the project actors were not fully aware of local resistance to *Grevillea*.

The Mid-term Review noted the prevalence of *Grevillia* and commented that other agroforestry species such as *Calliandra calothyrsus*, *Leucaena diversifolia* and *Gliricida sepium* are all nitrogen fixing and better intercropping and fodder species than *Grevillea*, which is not nitrogen fixing and has foliage that is less nutritious. Furthermore, as a large tree, if *Grevillea* is left uncut, the large size leads to shade and root competition; this is why it is not popular in fields. Despite discussions, the evaluation team was unable to find an explanation for the pressure to plant *Grevillea* in light of its widespread unpopularity other than as a roadside or shelterbelt tree.

The poor survival of the agroforestry planting was, in substantial part, due to late planting. It is widely known that tree planting in challenging environments such as Eastern Province is highly time critical. The Evaluation Team has been unable to establish the reasons for this. In FGD discussions, participants reported survival rates of 20 to 40%. One PhD student's study of the survival of trees distributed to 560 households in Eastern Province found a survival rate of 42.2%. Potted planting stock planted at the correct time should be expected to have a survival rate of at least 90% other than in years with severely abnormal rainfall patterns.

Result 4, overseen by Enabel, focused on enhancing knowledge related to barriers and opportunities for improving agroforestry technologies and uptake in the light of findings from on farm experiments. Although the work on this seems to be progressing well, it is not yet completed. It is already well known that the initial loss of productivity in transferring to intercropping is a strong deterrent to its uptake, particularly by those with high time preference rates. This makes the reported poor survival particularly serious as it is seen as a waste of the inputs made. This is also why incentives, particularly financial ones, are important as they can be designed to provide a bridging payment

In respect of ICS, many agents and actors have been developing, supporting and promoting ICS technology on design and manufacture to improve efficiency while also respecting affordability and usage patterns to improve uptake for several decades. The main ICS component of the project, under Result 3, focused on two different elements:

- Assessment and testing of different biomass supplies
  - As of the end of 2024, two studies had been completed and the other 3 studies were nearing completion.
- Assessing different ICS types, which led to the development of more efficient stoves
  - As of the end of 2024, all bar one of the assessment studies had been completed, with the final one almost finished.

Additional output indicators refer to cost-benefit analysis (CBA) of ICS technologies and the training of local producers in the manufacture of ICS.

The project facilitated the design of improved efficiency ICS (fixed and mobile) and their production by Ruliba Ltd. and distributed 52 of these stoves. The understanding of the evaluation team is that the materials required for the manufacture of these stoves make them too expensive for widespread distribution, let alone for independent purchase by HHs.

The project has directly distributed 2970 stoves, mostly of the 'Umurabyo' type. Whilst these are appreciated by HHs, these are not the improved efficiency stoves developed by the project and produced by Ruliba. The evaluation team has not had a satisfactory explanation of why so much was

invested in the production of what turned out to be an 'unaffordable ICS', even though it proved to be technologically more efficient.

Nor has it been made clear to the evaluation team what process was followed in designing this area of intervention. For example, whether lessons from the vast quantity of previous work had been drawn upon fully and why the emphasis on technological improvement was determined as the most appropriate project focus over affordability and clearly expounded user preferences.

Although very expensive, fixed mud stoves are much preferred by farmers (Uwizeyimana *et al*. 2024). This was also observed in the post distribution assessment carried out by Enabel in 2024, which showed that in surveyed households 85% of cooking was done on newly constructed fixed mud stoves and 55% of the cooking was done on the mobile version.

Cultural suitability and affordability are among the factors well known to hinder uptake in adoption of ICS and a project focus on these barriers to uptake could have been a more efficient use of project resources than mainly technological improvement.

Example of the need for Cultural Considerations for successful ICS uptake

During village visits undertaken as part of the field mission, it was observed that some households only stored their received ICS because they do not consider them convenient to use.

In another village, households were not using the fixed mud stoves because they had only two small plates of equal sizes while they prefer plates with varying size on the same stove framework for cooking.

In another instance, the stove's chimney had been removed because it was causing a dispute with the neighbour.

Box 1. Example of the need for Cultural Considerations for successful ICS uptake

The issue of poor adoption of ICS is well known and has been widely documented in Rwanda and more widely (Uwizeyimana *et al*., 2024; Tigabu *et al.* 2017). The free distribution of ICS is also a problem. During the field evaluation mission in July 2025 in Gatsibo district (Simbwa village) a number of abandoned ICSs were observed that were distributed free, sometimes even without the consent of the users although some accepted them simply because they were given free. Despite having the free ICSs, one household subsequently paid to have a fixed mud stove that is being used. Among the 10,000 ICS distributed by DeSIRA, TREPA and ARECA projects , it is not known how many were used or are still in use today.

EQ12: To what extent evidence-based positive effects have been produced and are promoting changes and transformation in the community of beneficiaries?

EQ14: To the extent possible unforeseen effects are identified, observed and evidenced and have affected positively or negatively the implementation and /or the achievement planned of DeSIRA Agroforestry Research across the 5 results?

Project staffing has undergone significant turn-over during the project period with all the Rwanda-based staff having multiple other commitments. It is unclear to the evaluation team: i) who held overall responsibility for delivering the project in a holistic way; ii) how the individual studies were to be synthesised to provide integrated recommendations for policy and practice; and, iii) how the process of adapting and sharing results and findings to best inform policy and practice was planned.

Whilst the activities have been managed to successfully deliver the majority of the research and studies, the overarching project management appears to have been weak, with Enabel, IUCN and ICRAF each undertaking and reporting on their delivery separately.

Each of the implementing agencies produced annual reports detailing only those activities undertaken during the associated year, with no information on previously undertaken activities other than notes to the effect that these were reported in the relevant annual report. The latest reports received provide project updates only to the end of 2024 but no project wide reports were made available.

As detailed in Table 1, the project uses four outcome indicators, two of which refer to area of land under sustainable management and number of HH practising agroforestry. The reported achievement against these two outcomes is difficult to assess and poses a number of questions on which the evaluation team have been unable to obtain clarity. Table 4 provides the two IUCN Outcome indicators together with their LF targets, reported results and explanatory notes.

Table 4. Outcome Indicators 1.2 and 1.3, with targets, reported results and explanatory notes

Outcome Indicator	Target	Results (combined 2023 & 2024)
1.2. Areas (ha) of agricultural ecosystems where sustainable management practices have been introduced with EU support	3,260	13,902
Notes in LF: The area covers zones of interventions on value chain, biodiversity and crop productivity and typology (2023 – 13,205ha). Tree and fruit planting increased the areas (2024 – 697ha)		
1.3. Number of Households (HHs) practising agroforestry	500	5,569
Notes in LF 221 people under Biodiversity, 62 people under water balance, 150 people under Macadamia, 150 people under Orange, 217 people under Avocado and 210 people under Mango value chain (2023 – 1,010HH) 530 households by trees, 3915 HH from fruits, 107 ICRAF trials and research plots (4,559HH)		

The large area reported in 2023 for Outcome Indicator 1.2 appears to mostly relate to studies on biodiversity, value chain, crop productivity and AF typology studies. The large area of land quoted, 13,902ha, appears to be a potential area rather than the area on which the project actually worked.

The figure 697ha reported for 2024 as field intervention support through training and provision of planting stock does not specify whether it takes into account the total planted or the surviving area under AF trees and no clarification on this has been forthcoming. However, in two of the three such supported communities visited, the nursery and seed provision had been made late, in December, leading to later than ideal planting which, together with drought conditions, has resulted in a low survival rate of the planted trees. The 697ha of land associated with this was reported at the end of 2024 around the same time as the planting was undertaken. Given the survival of less than 50% experienced in at least some of the sites, the evaluation team believes that this area figure should be adjusted to take account of the losses.

Whilst the provided numbers under the 2023 result totals 1,010 HH, the notes state this is the number of people rather than the number of HH. To achieve this number of HH would require each person to represent a single, separate HH with each receiving only a single type of support, *i.e.*, no person / HH was supported in more than one area.

The 2023 results appear to mostly relate to studies on biodiversity and water balance plus value chain studies on nuts and fruit trees. This mixes studies undertaken and results applied and studies still in progress, such as those on biodiversity and water balance. The results of these latter studies are not yet available and cannot as yet have had any influence.

There appears to be a discrepancy between the list of HH supported in 2024 and the total result (530+3915+107 = 4552 rather than 4559). It could be assumed that the 2024 results refer mostly to the HH involved in the seedling and fruit tree nursery provision undertaken in 2024 but this implies that no HH was supported by any combination of provided AF trees, fruits or support via the ICRAF trial, *i.e*., the support given was only one of these three options.

If the number of HH is accepted, and the 2024 result under outcome indicator 1.2 is used, this would imply an average HH land holding of 0.16ha (697ha /4,445HH) whereas the Enabel final report cites average landholding of 0.32ha.

The project has supported a wide range of studies related to agroforestry, including important background studies on agricultural crop:tree:soil:water relationships, micro-climatic conditions, biodiversity, carbon stocks and value chains for products. In 2024 support to communities was provided through provision of nursery materials, seed and training and the supply of fruit trees.

The project activities related to agroforestry uptake by farmers include provision of planting material and training events. The first section of the above noted Risk Matrix briefly describes the project approach. This is based almost entirely on extension advice delivered through a good range of community structures. However, neither this document nor the Logframe appears to consider whether this approach is by itself adequate to persuade farmers to adopt agroforestry practices.

Successful uptake of AF requires motivation on the part of the target beneficiaries and provision of high-quality planting material being available at the right time. Section 3 of the Risk Matrix notes, correctly, that drought and increasingly erratic rainfall are key climatic issues for Eastern Province. Yet there is no mention of the importance of timing for the production and use of high-quality planting material.

Furthermore, it would have been expected that at the Project Appraisal stage, there would have been at least pilot investigations to determine the level of interest, as well as the current capacity of the target beneficiaries for taking up improved AF interventions. Some of the student theses listed potentially cover this issue but they should be refining knowledge, awareness and level of interest not providing the first tranche of such information.

The findings from the field visit by the evaluation team, as illustrated in the need for incentives Box 1 above, make it clear that without some additional financial benefit, few farmers were willing to engage in activities, regardless of being made aware of the potential value and receiving basic training. In hindsight, it is evident that without a financial incentive mechanism, the uptake of AF practices has not been effective. The earlier Enabel FMBE project, which operated in much of the same areas of Eastern Province, provided financial incentives through employment in addition to its other extension activities.

There have been some notable achievements in developing capacity, including:

i) Of the students in undertaking research
ii) Of the research institutions in AF / ICS research processes and approaches
iii) Through community training in nursery practices

iv) Through farmer-farmer training using locally trained champions in AF
v) Through the hosting of National Conferences to discuss approaches to AF
vi) Through use and training of digital platforms, such as Tree Finder and Regreen Apps

The Risk Matrix 01/01/2025 to 30/06/2025 notes the risk from poor student selection and it appears that this risk has been well-handled. However, although the assumption is that the students will return to Rwanda on completion of their studies, the only mechanism in place to ensure that this happens is a bond, breaking which would require repayment of fees and other support. Rwandan nationals with a PhD from a good university are likely to be highly sought after by international organisations and become based outside the country. Indeed, one of the PhD students has already been offered a post-doc position in the USA. Given the disparity between international salaries and terms of service and salaries in Rwanda, the bond would need to be substantial to prevent the loss of valuable personnel.

The majority of the capacity development built currently resides within individuals with limited institutionalisation or embedding in national systems so far evident. This should change with consolidation as these individuals start work in institutions.

Whilst the national conferences appear to have been very well received by the participants and are to be commended, these, in and of themselves alone, will not translate into improved policy or practice in the field and substantial further work will be required to secure this.

EQ11: To what extent the approach adopted linking research and practices have been innovative and useful to enhance the effectiveness?

While the research being done by postgrad students is predominantly focused on valuable science there have also been useful short-term studies on people's needs, perceptions and constraints that should have been helpful to inform field and household based interventions but the extent to which this was done is often unclear.

It was done for selecting fruit trees but it is not evident that it was done effectively for ICS or species selection for agroforestry. Using a central tree nursery was also sub-optimal, especially as it was only used for one year. The field interviews recorded considerable disappointment that plants were no longer easily available once the central nursery closed, which suggests that the results of efforts to encourage agroforestry tree planting were not sustained and will need to be redone in future.

Small family run nurseries (see Box 5 below) reduce the plant transport distance, provide HH income, especially for women and could have been a good strategy for the project to follow. These can ensure that plants are available locally and this encourages and helps sustain interest as well as improving planting success by limiting nursery to field transport distance.

- **Efficiency**

EQ3: To what extent the implementation mechanisms have ensured a smooth deployment of resources and means to make the achievements possibles? To what extent is the spending aligned to what was forecasted and planned at the design stage and during the annual reviews?

EQ5: To what extent the monitoring and evaluation and system was appropriate in collecting data, including gender-disaggregated information?

The project management structure is clear and appropriate although no detailed Terms of Reference or operating procedures for the three Committees have been provided for review. Most reporting

was done separately by the two implementing agencies, Enabel and IUCN, rather than in a combined form.

In terms of overall expenditure, both Enabel and IUCN have an underspend and there were no major divergences from the allocated budget lines.

Table 5. Enabel Budget Summary

Cost category	Budget	Total Cumulative Expenditure	% Spent
Output 3.1	511,437	259,091	51%
Result 3.2	201,842	174,398	86%
Result 3.3	53,708	60,528	113%
Result 4	440,105	315,108	72%
Result 5	290,145	175,515	60%
Z – General Means (staff, office etc)	371,922	303,261	82%
Total (direct costs)	**1,869,159**	**1,287,900**	**69%**
Indirect costs (renumeration)	130,841	90,153	69%
Total	**2,000,000**	**1,378,053**	**69%**

Figures for Enabel do not include €77,000 earmarked for supporting the World Agroforestry Congress in late 2025

Table 6. IUCN Budget Summary

Cost category	Budget	Total Cumulative Expenditure	% Spent
Human Resources	955,756	841,065	88%
Travel	14,698	8,084	55%
Equipment and supplies	80,346	65,080	81%
Local office	215,675	226,459	105%
Other costs, services	71,318	34,946	49%
Other	528,057	469,971	89%
Total (direct costs)	**1,865,850**	**1,645,604**	**88%**
Indirect costs (renumeration)	130,900	115,192	88%
Total	**2,000,000**	**1,760,797**	**88%**

In particular, the lead time required for research results obtained by post graduate students to be obtained and then converted into findings to allow incorporation into policies, strategies and guidance material does appear to have been fully appreciated either at appraisal or during project delivery.

The total amount of underspend is not yet defined. Because of the time delay inevitable for bringing the research done by students to the key users for inclusion in policies and practice guides, a clear exit strategy was required. There are several ongoing projects such as TREPA and COMBIO through which this could be done but no confirmed arrangements have been reported.

In respect of monitoring and evaluation, it is observed that indicators and reporting were planned to be almost exclusively quantitative. Many of the activities of the project, for example such as skills building, require confirmation that new knowledge has been gained and is being applied. This has not been satisfactorily achieved. No overall M&E framework has been produced.

The project design was understandably complex and it engaged with appropriate external expertise. The main gap is in the absence of tight oversight to ensure that all the diverse but complementary activities were being undertaken efficiently and at the correct time, in the correct sequence and with clear channels of communication between the different actors and beneficiaries.

EQ4: To what extent the implementation approach and mechanisms proposed has been sufficiently adequate to overcome the challenges/bottlenecks faced?

EQ10: To what extent the implementation approaches and solutions proposed have been appropriate to overcome obstacles and challenges? To what extent there are lessons that can be drawn and practices useful to apply for further action design?

Splitting responsibility for research on field-based agroforestry (Results 1 and 2) from increased understanding of the socio-economic barriers to the take up of agroforestry (Result 4) required close coordination but this seems to have been too light to be fully effective. Two primary examples of where things were suboptimal are the nurseries and the focus of the work on ICS efficiency at the expense of affordability and neglect of cultural acceptance. Alternatives, such smallholder nurseries and closer contact between ICS developers and their potential clients would have been beneficial.

The number of participants in the Steering and Technical Committees seems excessive for their tasks and, given the additional challenge of rapid turnover of senior people directly responsible for oversight, the inputs from the supporting committees have drifted away onto high profile events, such as the World Agroforestry Conference at the expense of a tight focus on the short term progress of the project and resolving difficulties with timing, staffing or unexpected challenges caused by external events.

Summary of Minutes of Desira Partner meetings

In total 12 minutes were availed on 2nd September 2025, they date from July 2023 to June 2025:

1. Minutes of Desira Partner meeting of 10 July 2023
2. Minutes of Desira Partner meeting of 4 September 2023
3. Minutes of Desira Partner meeting of 9 October 2023
4. Minutes of Desira Partner meeting of 13 November 2023
5. Minutes of Desira Partner meeting of 11 December 2023
6. Minutes of Desira Partner meeting of 13 May 2024
7. Minutes of Desira Partner meeting of 10 June and 8 July 2024
8. Minutes of Desira Partner meeting of 23 September 2024
9. Minutes of Desira Partner meeting of 16 December 2024
10. Minutes of Desira Partner meeting of 13 January 2025
11. Minutes of Desira Partner meeting of 8 April 2025
12. Minutes of Desira Partner meeting of 24 June 2025

The content of the minutes is mainly on updates about the progress of the project research activities such as:

- The preparation and organisation of the National Agroforestry Conference organised in May 2024;
- The Mid Term Review conducted in 2023
- The Agroforestry World Congress initially planned for May 2025 and later shifted to October 2025 in Kigali, Rwanda (Submission of 6 to 8 abstracts and contribution to reviewing abstracts)
- Proposals to VLIRUOS and Horizon calls (CLIMSMAG and G_STIC proposals submitted but not successful)

- No cost extension up to August 2025 and December 2025
- Participation to Desira lift workshop/conference in Brussels on "Boosting agrifood research and innovation cooperation for impact and scale" from 11 to 13 March 2025
- End of project review mission planned in July 2025

In the last Partner meeting held on 24 June 2025, in addition to updates on end of project review mission, the PhD students' progress was also provided:

- **Jean-Aimé** 's preliminary defence is planned for **October 2025**. One article still in review and one about to be submitted.
- **Jean-Bosco**: one article published; 2 under review. He aims to finish by **June 2026**
- **Gatesi** submitted an abstract on micro-climate & soil; completed a paper on citizen science and aims to complete the PhD by **February 2026**
- **Valens** has 1 article published, 2 submitted and a fourth one in progress. He aims to finalise **before the end of 2025**.

Given the overall structure was effectively two parallel projects run by Enabel and IUCN with joint responsibility for Result 5, if it was to work efficiently and effectively there had to be excellent communication and collaboration between the two delivery partners. Unfortunately, this does not seem to have been achieved, for reasons that remain unclear.

On the basis of the documentation and reporting seen by the Evaluation Team, and discussions with the management team in Rwanda, it appears that while both partners focused on their specific tasks, there was inadequate engagement and cross flow of information between the two partners to generate clear and succinct reporting and sufficient joint attention to the achievement of overall, as opposed to partner-specific, project aims. As both Enabel and IUCN had a project manager position, there does not appear to have been a single individual with clear overall responsibility for delivery, at least for a significant proportion of the overall duration.

In particular, the lack of a single project-wide logframe and succinct reporting against appropriate indicators made it very hard to secure a clear view of overall project progress. The various project committees also appear to have lost sight of the need to focus on overall project progress and resolution of emerging divergences from plan.

Impact and Sustainability

EQ8: To what extent the benefits produced, and the changes expected will continue? Which are the key factors that can ensure their sustainability and scale-up after the end of the project?

EQ9: To what extent and how the collaboration between research partners will be continued on these thematic?

EQ13: To what extent the intervention has influenced policy formulation or review in the sector of intervention?

It was always going to be a severe challenge for research predominantly conducted by post graduate student theses to be completed within the project duration. This is because of the lead time in selecting students, delays because of student registration start dates and the limited amount of material from a thesis than can be published before a thesis is examined and approved, a universal requirement for academic institutions. Delays due to Covid exacerbated this challenge, although the effects were greater in Rwanda than in Belgium for those that had already started their study period.

Consequently, while a substantial body of new material has been garnered in student theses, the translation of this into the briefs and discussion documents necessary for policy changes is still in process and there is always a long time period before policy changes, however desirable, will be enacted.

Although the DeSIRA project has delivered its major objective in commissioning, facilitating and undertaking good quality research studies, these have not yet reached a stable end point, not least because some still remain uncompleted, with the result that their findings have not been able to be fully consolidated. There is no doubt that the breadth and depth of the studies could have significant potential to contribute towards improving Rwanda's future approaches in agroforestry, land and resource management and HH energy use but it has not been able to complete these to that point within the project duration.

The project has built links with other initiatives, has and is sharing study results to inform their implementation and there is potential for the benefits from DeSIRA to these other projects to increase greatly as the studies are completed. The findings will have to be assimilated, integrated and appropriately shared.

The Transforming Eastern Province through Adaptation (TREPA) project is closely linked to DeSIRA, with TREPA strategically developed to build upon the evidence and lessons learned from DeSIRA. DeSIRA is also informing the SIDA COMBIO project, the RFA/IUCN ARECA programme and the KU Leuven CLIMBIO project. TREPA and COMBIO provide possible partners to take up and apply the findings and knowledge generated by this project.

Findings, results and lessons from DeSIRA are shared with the National FLR Cross-Sectoral Task Force (CSTF) and TREPA hosted District Project Coordination Committee (DPCC) as well as informing future project development, such as FFEM, which aims to scale up agroecological technologies and practices in additional regions beyond the DeSIRA project areas.

The two National Conferences on agroforestry, held in 2022 and 2024 were mentioned under effectiveness. The project is also heavily engaged in supporting the quite imminent World Agroforestry Congress and findings will also be shared at the World Congress on Conservation. These are both scheduled to be held later this year. While these will raise the profile of the support provided by the project, they will not result directly in changes to actions and activities in the project target area without further support, potentially from the other parallel projects addressing similar issues.

Two valuable national contributions from the project are the inputting of findings into MININFRA's Ministerial Guidelines for Clean Cooking Technologies and the signing of a Memorandum of Agreement with MINAGRI to support the strategic plan PSTA5 for building resilient and sustainable agrifood systems.

By using the ICRAF species trial plot referred to earlier under Coherence, the project benefited from clear results shown by semi-mature and mature trees established pre-project. This plot provides an example of the longer-term use of a resource beyond its initial project period, illustrating the value of longer-term support than is possible within a single project lifetime, usually far longer than most project cycles, for research and land-based interventions.

One of the most interesting findings from the work at the ICRAF plantation was the impressive performance, local suitability of and benefits from *Faidherbia albida*.

Faidherbia albida

The ICRAF experimental plot has clearly demonstrated that the phenology, growth rate and tree:crop relationships of *F.albida* has the potential to be of high value and provide significant benefits from AF within the Eastern Province of Rwanda.

F.albida, however, has not previously been present in Rwanda and it appears that there is no approved seed source yet identified for facilitating scaled up adoption of *F albida* as an AF species within the Country.

This appears to be a missed opportunity for the project. *F albida* is widely used in other countries within the region and sourcing of seed from these countries, together with assessment of suitability for other locations and / or trialling of it with other communities, could have been explored earlier given its impressive performance within the ICRAF plot in Bugesera.

Box 2. Faidherbia albida

Although the use of the ICRAF plantation is to be commended, it is unclear how the findings of the research undertaken within the plots was used to inform the support to other communities more widely beyond the local cooperative connected to the site.

Linked to this is the consideration of the need for incentives to galvanise and consolidate uptake of improve approaches offered to individuals, families and local communities with whom the project has engaged.

For both AF and ICS support to communities it appears that engagement with the project is largely dependent on the provision of incentives in addition to the potential benefits from the adoption of the improved technologies or practices.

This is not unique and is a shared experience across other many other projects and countries.

Cooking fires may be valued as a source of light as well as heat, especially for very poor HHs. Rwanda is advanced compared with other countries in the region in the use of solar powered lighting. One incentive for ICS adoption could have been solar power panels, rechargeable portable LED lights and the ability to recharge mobile phones.

Uptake of AF systems that include intercropping may be limited because of reduced agricultural productivity in the early one or two years. Very poor people are often unable to bridge this gap in food supply and are hence resistant to the change. While there will be improved crop production in the future, for those with a very high time preference rate, this is irrelevant since immediate survival is more critical.

Box 3. The Need for Incentives

- ## Cross-cutting Themes

Q16: To what extent gender equality and equity have been adequately mainstreamed during the implementation?

Q17: To what extent the project has produced positive effects benefiting specifically the women and youth?

Gender and Youth

The received project reports provide good information on the gender split of students, trainees and community participants in project activities.

The reports state that gender and youth inclusion was integrated throughout project design, implementation, and capacity-building. They also report that the project adopted a participatory, community-driven approach to ensure the inclusion of women and youth in the selection of beneficiaries and in on-site research activities. The evaluation team, however, has not seen details of these processes and approaches.

Whilst inclusion of women and youth across the project activities is good, the evaluation team believes that there could have been further ways to strengthen and deepen the project's delivery whilst providing specific opportunities for women, for example, through support such as illustrated in the small famer nurseries described in Box 5 below.

These were developed for social forestry programmes in India and Nepal in the 1980s but there are plenty of small household nurseries in Kigali, mainly selling garden ornamentals and fruit trees.
Example of a small HH nursery raising 5000 plants.
Space required for pots at 250/m² - 20m²
Maximum daily water requirement of 35L/1000/day – 175L/day
All plants direct sown – no seed bed or transplanting required
Inputs required – initial training and follow up support visits, pots, seeds, simple tools
Shade can be made from grass and bamboo or small poles, similarly fencing to keep chickens and livestock away
Revenue generated (RWF200/plant) – RWF 1 million (~USD 667)
Very suitable for women, can be done close to the house, compatible with domestic duties
Women are well known to maintain better quality control of repetitive tasks than men and predominate in nursery workforces
Potential to increase HH income, create small businesses and be gender focused

Box 4. Small farmer nurseries

On the basis of the information reviewed and received, it is clear that women and youth were not excluded and that deliberate efforts were made to ensure they participated in project activities. While this is better than nothing, it does not really constitute gender mainstreaming. There are well-known strategies to do this by using interventions such as that described in Box 4 above, which are deliberately designed to meet the specific needs of a potentially excluded group.

Q18: To what extent the project has contributed to reduce the carbon sequestration in term of research conducted, recommendations provided, and practices initiated on the field?

Q19: To what extent the project has contributed to improved climate change adaptation in term of research conducted, recommendation provided and practices on the field?

Climate Change

The evaluation matrix requests an assessment of the progress of the project in improving carbon-sequestration and climate change adaptation through its research, recommendations and practice in the field.

Carbon sequestration potential was assessed and modelled in relation to different AF systems but the LF output indicators related to this refer solely to the number of theses/reports, plots used for

assessment and equations used in modelling. The team is unclear as to how and how much the findings from these studies informed the practical support to communities in the field.

Understandably, actual field level tCO_2 eq. sequestered under the project will have been low due to the main areas being planted in late 2024 and still being under one year in age. Despite the disappointing survival rates of at least some of this planting, noted previously, if these plots are well maintained the levels of sequestered and stored CO_2 will increase significantly over time.

Additional, and potentially nationally significant, sequestration could also be accrued via the linkages DeSIRA has with TREPA, COMBIO, CLIMBIO and ARECA, as well as more widely through the incorporation of the research findings into National and District planning and AF implementation.

Reduced emissions from ICS using less biomass will also indirectly improve C-sequestration through reduced pressure on forest resources for fuel meaning more trees continuing to photosynthesise. As for AF, results from DeSIRA can contribute to this in due course, providing the study findings are well integrated into planning and used but this will not be achieved during the project period.

Climate Change Adaptation covers a multitude of factors, including adoption of appropriate technical and technological approaches and practices, resilient species selection and management, and adoption of best practice through to increased HH income and assets, livelihoods diversification and small business opportunities. The research studies generated by DeSIRA hold strong potential to enhance climate change adaptation, provided their findings are effectively disseminated and translated into practice.

4 Conclusions

1. **Research outcomes and knowledge generation**. The project achieved its objectives of generating research outputs, producing multiple publications, conference contributions, and policy-relevant insights. These outputs align with Rwandan government priorities, but not all studies have been completed within the project timeframe.

2. **Research and interventions need to "*stand on the shoulders of giants*".** The project did not adequately take into account lessons and insights from previous work. AF interventions were undertaken late and household energy approaches focused too much on technological innovations and too little on other factors affecting uptake or alternative technologies.

3. **Partnerships and institutional linkages**. Collaborations with Research Institutions is a useful means of delivering research through utilising a wider range of human and infrastructural resources than would be otherwise possible.

4. **Future benefits contingent on effective dissemination.** The most significant impacts of the project will only materialise fully after its closure. This will require additional support to ensure effective dissemination, integration into policy, and uptake by stakeholders.

5. **Capacity Development.** The capacity building done by the project will quickly erode unless there is further support available for consolidation by embedding and institutionalising it within research institutions, national agencies, local government structures and the ultimate beneficiaries themselves.

6. **Community engagement requires Incentives.** Participation in project activities relied on, and reflected, the provision of incentives in addition to the benefits accruing directly from the intervention.

7. **Design and sequencing weaknesses**. The project design did not adequately consider the time: i) required for research to be completed; and ii) before findings and results are able to inform policy and practice.

8. **Project Management and Reporting**. The project structure with two lead implementing agencies and four partner institutions led to uncoordinated and fragmented reporting and required greater active coordination and oversight. This led to missed opportunities for synthesising and integrating outputs' results for informing decisionmakers and practitioners.

9. **Inadequate M&E system**. The absence of an integrated logframe, lack of connection between outputs and outcome, use of different output / activity numbering and emphasis on quantitative indicators has resulted in inconsistent, unclear reporting of achievements with limited disaggregation and of poor qualitative value.
10. **Risk Identification and Management.** The lack of comprehensive risk identification and establishment of an appropriate risk management strategy reduced project effectiveness through missing opportunities for pro-active and anticipatory planning and action.

5 Recommendations

As an end-term evaluation, many of the recommendations are given long-term priority, as referring to the design of future interventions. Some of these would be recommendations for short-term or medium-term action by the project if it was a mid-term or annual review within the project timeframe.

Recommendation 1	Related Conclusion(s)	Targeted Actor(s)	Level(s)	Priority	Type[2]
Ensure future research-focused projects tackle priority problems, build on existing knowledge, have appropriate timeframes and add real value within the project duration.	2 & 7	Enabel HQ and country offices, INTPA, TREPA, other donor and national government partners IUCN HQ and country offices, university partners, ICRAF and similar technical partners.	3 & 4	Long (design phase of future projects)	S

Future projects' design should reflect the reality of the time required to undertake and complete research and incorporate appropriate sequencing of research-dependent activities. The starting point for research, especially for informing practice, should be to ensure that what is already well-known about the most important factors for success is applied rigorously.

For AF, it is well known that planting high quality material at the right time is crucial for success, and for ICS the importance of taking into account cultural factors and affordability has been well documented over decades. Future projects should ensure that research design and focus fully take into account what is already known and aim to build on, address gaps in or add depth to existing knowledge. Intervention approaches should then apply both existing and new understanding rigorously.

Recommendation 2	Related Conclusion(s)	Targeted Actor(s)	Level(s)	Priority	Type
Ensure future projects develop a single integrated project logframe, with appropriate qualitative and quantitative output indicators clearly linked to outcomes to provide meaningful and coherent tracking of achievements.	5	Enabel country offices, EU and donor partner field offices, IUCN, universities and other delivery partners.	1, 2	Long (design phase of future projects	O

[2] Type – Strategic (S) or Operational (O)

A clear, integrated, logframe provides a strong basis for monitoring and reporting progress and achievements, and clarity in work planning and delivery. Future projects should develop and use such a logframe, ensuring the output indicators clearly inform the outcomes and provide both qualitative and quantitative information on progress in achieving the outcomes.

Recommendation 3	Related Conclusion(s)	Targeted Actor(s)	Level(s)	Priority	Type
Ensure future projects with multiple implementing partners establish a project management structure by designating a clear overall lead for coordination, synthesis, integration and reporting of results.	8 & 9	Enabel HQ, EU and other donor and government agency partners.	3, 4	Long (design phase of future project)	S

The project has used multiple implementing partners, offering a wider range of expertise and skills than would otherwise have been possible. This, however, is a complex delivery model that would have benefited from clear oversight and coordination and a greater synthesis and integration of results and reporting to capture more fully synergies and opportunities for adding value to individual research outcomes.

Future projects seeking to capture added value from a multi-partner delivery approach should incorporate an agreed and clear project management structure, with designated roles and responsibilities for oversight, coordination and integration of activities, results and reporting.

Recommendation 4	Related Conclusion(s)	Targeted Actor(s)	Level(s)	Priority	Type
Develop a dissemination and uptake strategy to ensure research outputs effectively inform policy, training materials, and extension guides.	4	Enabel, donor & implementing partners, target government agencies.	1, 2	Short (before project closure)	O

The project design, M&E system and activity plans do not reflect project achievements adequately. For full benefits to be captured, a defined component, parallel to delivery of the studies themselves, for planning a suite of systematic and effective processes for integrating, adapting and disseminating findings and results to decision makers and practitioners could have been of value. Even if full delivery of such a process extended beyond an individual project timeframe, it would establish clear guidelines, roles and responsibilities for its completion.

Such a component could also provide added benefit in facilitating strong national ownership through the close involvement of, and clear plans for completion by, the appropriate agencies. So far as it is possible in the remaining project time, such plans should be produced.

Recommendation 5	Related Conclusion(s)	Targeted Actor(s)	Level(s)	Priority	Type
Prioritise continuity of student support until graduation to ensure completion of all degrees and finalisation of associated studies.	1 & 7	Enabel HQ, IUCN, Universities, EU &relevant	1, 3	Short	O

	other donors in Rwanda.

A number of students are not going to complete their studies within the planned project period. As there is underspend in the project budget, these funds could be made available to enable the students to finish their work and support integration of findings into policies and guidance.

Recommendation 6	Related Conclusion(s)	Targeted Actor(s)	Level(s)	Priority	Type
Utilise partnerships and institutional linkages to identify future roles for the students and develop plans for institutionalising the capacity that has been built.	3 & 5	Enabel HQ, EU, TREPA & other donor partners, RAB, REMA, RFA, UR, local councils in Rwanda.	2, 3	Short (Before project closure)	O

To ensure Rwanda derives maximum benefit from increased knowledge and skills, plans for students' future roles should be made in liaison with the students themselves, the research institutions and national partners.

Recommendation 7	Related Conclusion(s)	Targeted Actor(s)	Level(s)	Priority	Type
Ensure future projects clearly and comprehensively identify risks and utilise an appropriate risk management strategy, such as: https://amg.um.dk/tools/guidelines-for-risk-management	10	Enabel and other current and future donor partners.	3, 4	Long (design phase of future project)	S

International development projects involve risks. Their detailed consideration is therefore an essential element that must be included at all stages of the project cycle. Future projects should include the requirement for the early development of a comprehensive risk management strategy to increase confidence in delivery of expected results and prevent avoidable negative impacts.

Recommendation 8	Related Conclusion(s)	Targeted Actor(s)	Level(s)	Priority	Type
Future projects should undertake detailed appraisal of whether incentives are required and, if so, develop systems for determining their nature, any reciprocal commitments and appraising the implications for sustainability of the results.	6	Enabel, EU and other current and future donor partners.	3, 4	Long (design phase of future project)	S

Community member engagement in project activities often requires the provision of incentives in addition to the benefits from the support provided. This has implications for both delivery – where incentives are not provided – and for the sustainability of outcomes. Future projects should therefore

clearly plan for how and where incentives are needed, used and managed together with developing an appropriate exit / sustainability strategy that takes their use into account.

6 Lessons learned

For Institutional Partners, Linked and Future Projects

1. **Projects with diverse research studies require very tight planning and oversight:** Projects with both pure and applied research and widely different time frames for completion must have a clear strategy for their timing and management to optimise their synergy and value.

For Project Originators and Designers

2. **Timeframes matter:** Research-focused projects require realistic timelines. PhDs, longitudinal studies and the use of findings for policy and practice cannot easily fit within short project cycles.

For Project Designers and Implementing Agencies

3. **Partnerships can add value:** Collaboration with universities and government bodies can increase policy relevance and sustainability but needs clear leadership and coordination.

4. **Integration is critical:** Multiple partners, reporting and logframes without a unifying framework and regular effective coordination will lead to fragmentation and missed synergies.

5. **Research-to-practice linkage is multi-faceted:** Benefits are maximised only if dissemination and uptake mechanisms are identified, tailored to different users, facilitated and embedded.

6. **A coherent integrated Logframe is essential:**
   Qualitative indicators are essential to validate information from quantitative indicators and require specific action to clearly demonstrate qualitative gains.

7. **Early consideration of risk safeguards delivery:**
   Clear and comprehensive identification of risks together with the establishment of a tailored risk management monitoring strategy can minimise negative impacts, and increase effectiveness, by avoiding problems before they occur or being able to quickly address them if they do occur.

8. **Incentives are needed:**
   Many household and community members require incentives to continue to engage in project activities; this can affect the delivery and has implications for the sustainability, of results.

For Implementing Partners and National Agencies

9. **Capacity Development can be fragile:**
   Where significant capacity development is invested in individuals, its ongoing value is determined by their future roles and positions. Embedding generated capacity within relevant agencies and organisations can institutionalise the benefits and safeguard against the risk of the capacity becoming unavailable for national use.